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Billie H. Hix
 BILLIE H. HIX
 Chief, Technical Systems Branch
 The Albert F. Simpson Historical
 Research Center

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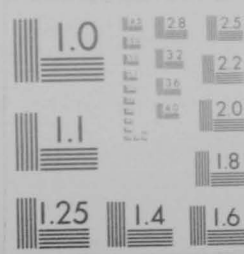
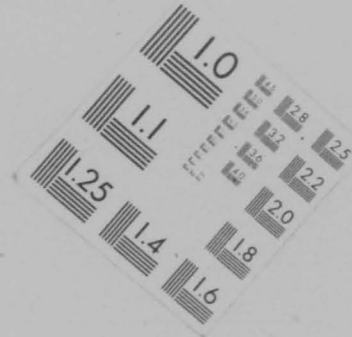
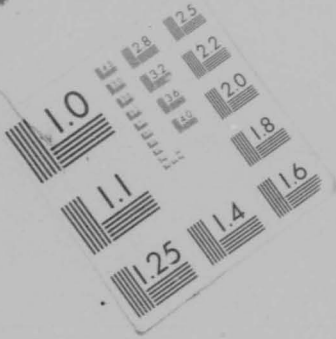
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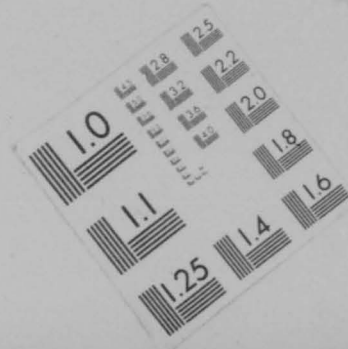
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NAFD

CONTINENTAL AIR DEFENSE COMMAND

AND

AIR DEFENSE COMMAND

History

January - June 1955

Volume V

SUPPORTING DOCUMENTS

Docs. No. 246 - 297

NAFD

Excluded from General Declassification Schedule

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CONFIDENTIAL

FILE NUMBER 3017

NAFO
Excluded from General Declassification Schedule

246

CONFIDENTIAL

NOT REQUESTED, h.c.
 FURNISHED 24 JAN 1955 *afm*
(Date) (Initials)

24 JAN 1955

(CONFIDENTIAL) INFO 017P (For Mr. T. E. McElhiney, Douglas Aircraft Co., Inc., 5855 Santa Monica Blvd., Santa Monica, Calif. Attn: Mr. A. E. Engstrom, Hughes Aircraft Co.) Reference Project King Dog meeting of San Diego 6 Jan 55 and conference at HQ AFM on 13 and 24 Jan 55. At each meeting informal information indicated possibility of solving "snap-up" delivery of the King Dog weapon. This delivery technique involves a pull-up of the interceptor with wings then before weapon release which will permit the launching of the weapon at an elevated angle. Such a capability would allow attacks to be made against targets above the operating altitude of the interceptor. Your comments on the feasibility and practicability of such a capability with King Dog weapon are requested. For your information, a copy of this message has been sent to Hughes Aircraft Co., Attention Mr. A. E. Engstrom.

GENERAL, USAF, COMNAV **CONFIDENTIAL**

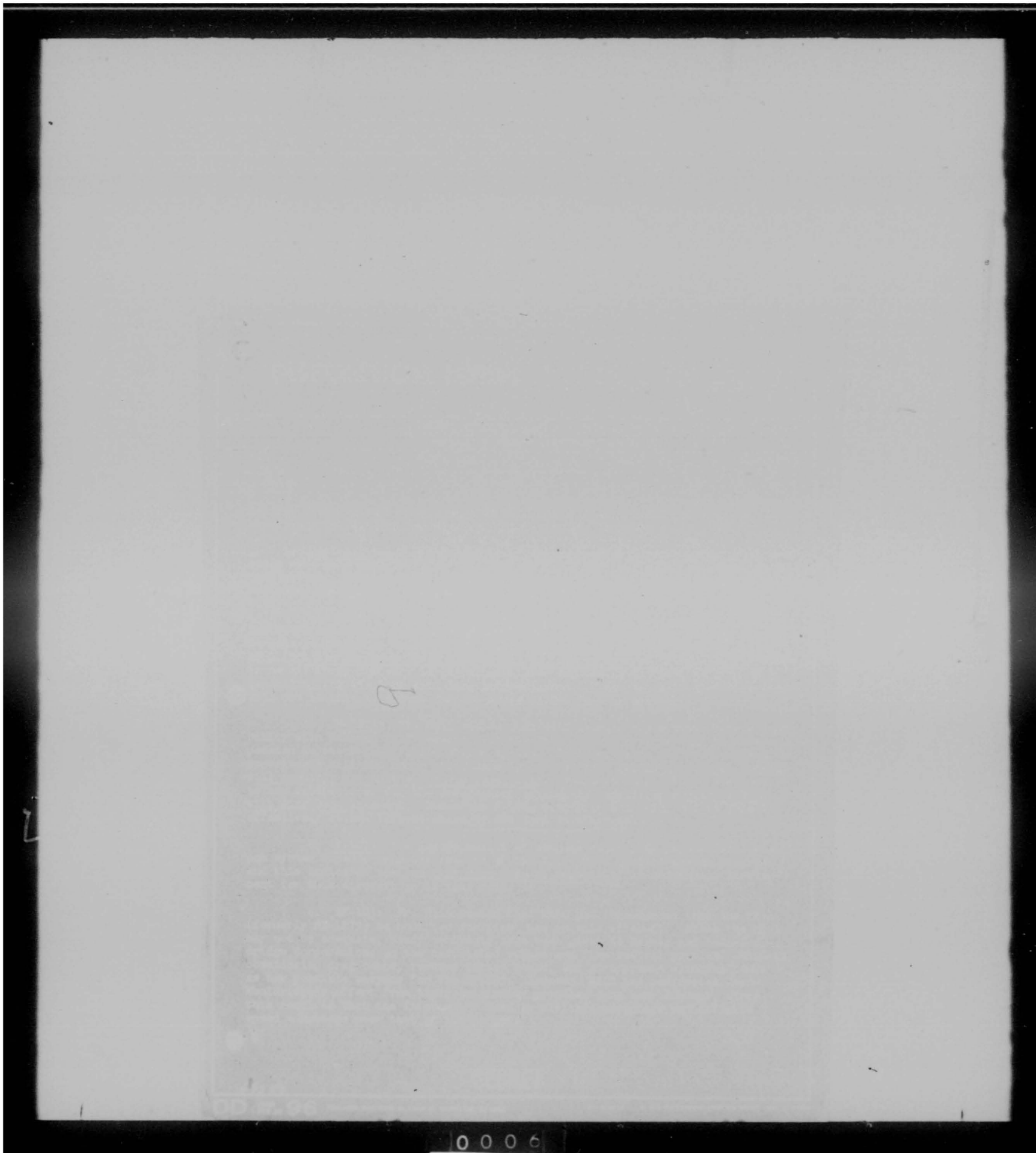
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Jan 55
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LT COL T. E. SOCIET

ADC BR 1111 **ADGFR**
CLEAR ARMAMENT BR.

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1576-1X



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Subject: (Uncl) Report on Trip to WADC and ARDC Concerning Status of Non-Coaltitude Attack Developments (Cont'd)

e. In addition to snap-up attacks, the status of rocket boost type attacks was discussed with Mr. Chin. There is no Air Force contract with any manufacturer to study the feasibility or relative advantages of the rocket boost type attack. WADC is conducting a feasibility study of the rocket boost attacks with the F-86D and F-102A, but Mr. Chin was unable to give a completion date of the study concerning the F-102A.

2. Discussion with F-102A Project Officer at WADC: The following subjects were discussed with Colonel Barney Turner:

a. Snap-Up with Ding Dong: Col Turner stated that Hughes Aircraft had informed him that a snap-up modification for the Ding Dong weapon could not be done in the time period of the MG-3 fire control system.

b. Weapon Load on F-102A: Col Turner stated that the basic requirements of the F-102A are a maximum speed of M 1.2 and maximum combat altitude of 50,000 feet, and that the loading down of the aircraft above the 27,500 pound gross weight will degrade the performance of the airplane in an unsatisfactory manner. Col Turner pointed out a recent study by the Armament Laboratory on the kill probabilities associated with various weapon loads. A copy of this study was obtained and is being evaluated by Operations Analysis Office of ADC. A letter was exhibited by Col Turner stating why the external mounting of the Ding Dong on the F-102A is unsatisfactory. The primary objections are:

- (1) A heavier wing structure is required on the F-102A.
- (2) The asymmetrical load obtained after one Ding Dong is fired will cause serious problems.
- (3) There will be a speed loss of M 0.1 and an altitude loss with the external configuration.

3. Discussion at Air Research and Development Command: The following individuals were visited at ARDC:

Maj J. R. Myer - Fire Control Systems Branch
 Capt Donke - Air Defense Division (Operational Readiness)
 Maj J. C. Newman - Air Defense Systems (Manned Interceptor Branch)

Discussion with the above offices at ARDC verified the information obtained from the Armament Laboratory at WADC and no differences between reports of the two commands were noted. Major Newman stated that the official guidance given ARDC was to place prime effort on developing interceptors which could climb to the altitude of the threat, and that such techniques as snap-up or rocket boost are considered as fix-up or intermediate with much lower priority as far as development is considered. It was generally concluded from the discussions

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Subject: (Uncl) Report on Trip to WADC and ARDC Concerning Status of Non-Coalitude Attack Developments (Cont'd)

that as a consequence of the prime effort directive, ARDC and WADC were not making any major effort on the non-coalitude attack developments such as snap-up and rocket boost.

4. Conclusions:


a. There is no Air Force development contract with the objective of providing Ding Dong non-coalitude attack capability for any manned interceptor.

b. There is no indication that ARDC or WADC are intending to undertake a major effort to provide non-coalitude attack capability for interceptors with Ding Dong Armament.

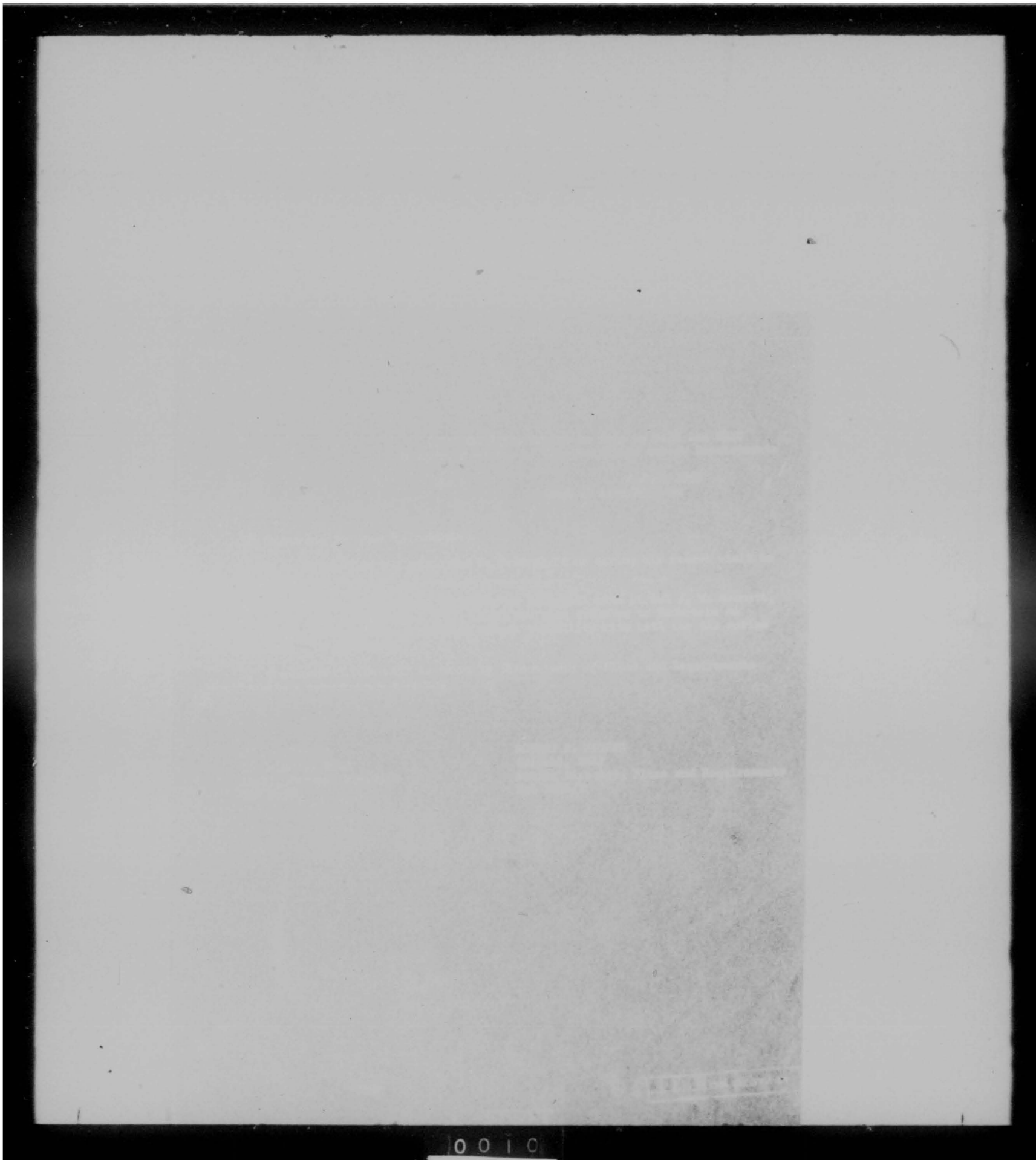
J. W. Armstrong, Jr.
J. W. ARMSTRONG, JR.
Operations Analyst
Ext 2742-3

P. S. Ball, Jr.
P. S. BALL, JR.
Chief, ADCOA
Ext 2742-3

0008

PROPOSITION FORM		SECRET
		FILE NUMBER 308.4
NAME (Last, First, Middle Initial) <i>John A. Bennett</i>		ON (Year to Year) FOR (Year) ON (Year to Year) FOR (Year)
TITLE <i>Major General</i>		DATE <i>6 June 1955</i>
SUBJECT <i>General's Report on Visit to USAF</i>		COMMENT NO. <i>2</i>
REPORT FOR YOUR INFORMATION: <p> The following information was received from General Price during his recent visit to the USAF. General Price, who is currently assigned to the USAF, was accompanied by Lt Col A. N. Bennett, USAF, who was assigned to undertake an inspection of the USAF's operations with both the GPR series and the GPR series.</p> <p> The USAF's operations are currently being reviewed by the Air Force Office of Plans and Requirements.</p>		
SIGNATURE 		DATE <i>15 June 55</i>
TITLE <i>Colonel, USAF</i>		COMMENT NO. <i>203</i>
POSITION <i>Asst. Dir., Plans and Requirements</i>		NAME <i>R</i>
ADDRESS <i>1000 17th St, NW</i>		TITLE <i>Colonel, USAF</i>
CITY <i>Washington, D.C.</i>		POSITION <i>Asst. Dir. Operations</i>

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FILE NUMBER **313.11**

6 JUL 1955

AIRAC-247

SUBJECT: (UNCLASSIFIED) Tentative Table of Equipment F-102A Aircraft

**TO: Commander
San Antonio Air Materiel Area
ATTN: SAMIRA-3A
Kelly Air Force Base
San Antonio, Texas**

**C-5-1057
WCS**

- The following changes in the TTE of the F-102 aircraft are required to meet the Air Defense Command requirements.
- The criteria requirements have been rewritten to agree with the AMO Maintenance Concept, as well as the Maintenance Plan prepared by SAAMA.
- The format has been changed slightly to meet the requirements of the AMO Combined Electronics Shop. Corrections have been made in red on the TTE form printed 20 April 1955.

COMEBACK COPY

Not requested, not furnished
 PM Fulfilled 6 JUL 1955 *WCS*
 (Date) (Initials)

Section II:

- Organizational and Field Maintenance of the F-102 Weapon System will be based on the deployed squadron plan (see F-102 Maintenance Plan) in a manner necessary to meet operational requirements. Maintenance activities will be organized under current Tables of Organization for F-102 aircraft, and T/O's for applicable support units.

Organizational maintenance will consist of preflight, preflight, periodic inspections, service, minor repair, and such other authorized maintenance within organizational capability. All Electronics Maintenance within the squadron capability will be performed at the organizational level of maintenance in accordance with ADOR 65-1. The Electronics Maintenance Shop includes armament, communications, instrument and electrical systems.

Field Maintenance of F-102 Weapon System and Components will be maintained as required to meet the operational commitment bases on the AMO Field Maintenance Manual 66-3 and in accordance with pertinent technical orders of the 66-25 series and such other current maintenance

Memo for the record not required
 Cy of Incl Unnecessary for AG File

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ADWMC-2A7 Subj: (UNCLASSIFIED) Tentative Table of Equipment F-102A
Aircraft

technical publications as revised to meet further plans and requirements.
Complete field maintenance support will be performed at each base support-
ing F-102 aircraft.

e. Table of Organization TO 1102 and T/O 750, Maintenance
Squadron, Fighter and TO 850, Motor Vehicle Squadron Jet Fighter and
existing T/D's for ADG Units.

f. (1) O.K.

(2) O.K.

PART II GROUND HANDLING AND SUPPORT EQUIPMENT LIST

1. Corrections inserted in appropriate sections of the enclosed
TTE.

FOR THE COMMANDER:

C. F. HUMPHREYS
Major, USAF
Asst Command AGF

2 Incl

1. Rev Cy of TTE-F-102A
2. Rev Cy of 263 Equip.

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Mil Pers	
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Log Plans	
Eq & Sec	
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GAA	

SUBJECT: (Unclassified) Revision of F-102 and TF-102 Program

**Chief of Staff
Headquarters USAF
Washington 25, D. C.**

1. The attached staff study is submitted for your personal and appropriate action. I concur wholeheartedly with the conclusions and recommendations contained therein.

2. No additional justification of ADC's requirement for the F-102 is included. The major points of discussion are:

- a. The conflicting reports on proposed production orders
- b. The time phasing between the F and TF-102 aircraft.

3. The entire concept of mass transitioning within this command is dependent on the timely availability of the TF-102. The success or failure of the scheme rests on whether or not these aircraft will be available in sufficient quantities at the right time. It is requested that this problem be treated as urgent.

FOR THE COMMANDER:

**WALTER E. SKILL, JR.
Major General, USAF
Vice Commander**

Will be Confirmed in **Staff Study**

Std Publication Form

Under par 3a, ADCOM

5-3 **NO**

Prepared by **BolBIMayoJr/cm**

Telr **2661-3**

Date **1 JAN 55**

5558

MEMO FOR RECORD: Not required

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(Date) (Initials)

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ADC Form 11
5 Feb 54 Revised

This correspondence is classified in accordance with
Par. 230, AFM 205-2, 24 Jul 53, or for the reason (a) stated.

115

Transition Program of F-4E and F-4E Aircraft

1. To outline the conversion of all squadrons to the F-4E with the production schedule of F-4E and F-4E aircraft.

Summary of the Program

2. Agreement has been reached for ADC to undertake a new transition program on the F-4E.

3. ADC will be responsible for the continued flow of new pilots into all squadrons.

4. The USAF agreed with ADC to convert aircraft in future all squadrons, after conversion training, in 1972.

5. Funding of the F-4E program will be only 10 of total aircraft.

6. ADC has recommended to Headquarters USAF that the F-4E program be terminated.

7. An attempt will be made in this study to justify ADC requirements for the F-4E. The problem treated herein is that of achieving an orderly and conversion to the F-4E, using F-4E as transition aircraft.

8. Agreement has been reached for ADC to bear the responsibility of the new transition training of ADC squadrons. The ADC responsibility is confined to the continued output of replacement pilots. Initially therefore, ADC should have prior claim to the total output of the F-4E until such time as production figures exceed ADC requirements. This should occur in the second quarter of FY 57.

9. In the original concept, after a new transition program had been completed, the ADC squadrons were to have retained four F-4E aircraft in addition to their complement of F-4E. In the new concept, the new transition program carried out exclusively on F-4E is retained, but squadrons will keep two F-4E, plus twenty-three F-4E. This principle is graphically illustrated in Appendix "A". This appendix also serves to illustrate the number of aircraft required and the time phasing necessary to sustain this plan.

10. Ideally, the squadrons should receive F-4E two months before they are scheduled to equip with F-4E. The figures in column (d) of Appendix "A" therefore, show the number of aircraft required at the beginning of the stated FY quarter. Column (e) shows the production schedule obtained from the current F-4E Program Status Report, from which it can be seen that in total numbers alone, ADC requirements are well covered to the output. The discrepancy exists in timing. If

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production and delivery of the TF-102 program. It is noted that the production and delivery of the TF-102 program is being accelerated in order to meet the requirements of the program.

11. In the production schedule outlined in the WAC "TF-102 Program Status Report", dated 15 September 1954,

a. All the aircraft are to be delivered by the end of the year.

b. The production of the TF-102 program is being accelerated in order to meet the requirements of the program. The delivery of the first 20 aircraft is to be completed by the end of the year.

In addition, the production schedule outlined in the WAC "TF-102 Program Status Report", dated 15 September 1954, is such that the first 20 aircraft will be delivered by the end of the year. The last of the TF-102 is to be delivered by the end of the year. The production of the TF-102 program is being accelerated in order to meet the requirements of the program. The delivery of the first 20 aircraft is to be completed by the end of the year.

12. It is understood that the production and delivery of the TF-102 program is being accelerated in order to meet the requirements of the program. The delivery of the first 20 aircraft is to be completed by the end of the year. The production of the TF-102 program is being accelerated in order to meet the requirements of the program. The delivery of the first 20 aircraft is to be completed by the end of the year.

CONCLUSIONS

13. It will be impossible to conduct a more complete program on the TF-102 in ADC, based on the production figures shown in the WAC "Aircraft Acceptance Schedule".

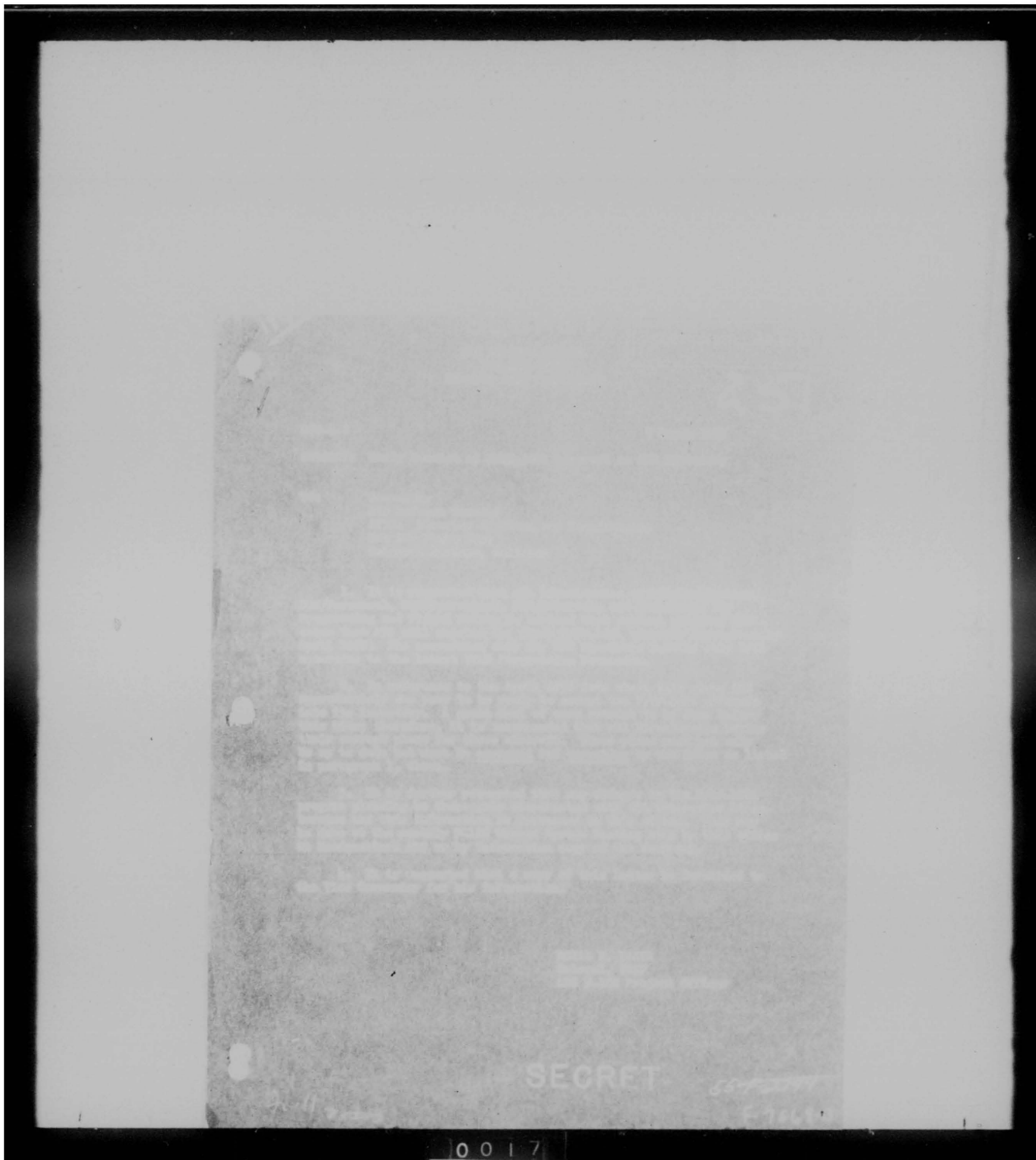
14. If the production schedule outlined in the WAC "Aircraft Acceptance Schedule" is followed, ADC will be able to fulfill acceptance of squadrons as programmed in Appendix "A".

15. Unless the quoted order of 20 TF-102s is increased it will be impossible to allocate two TF-102s per squadron as desired.

RECOMMENDATIONS

16. That the TF-102 program outlined in the WAC "Aircraft Acceptance Schedule", dated 15 October 1954, be revised in accordance to the schedule proposed in the WAC "TF-102 Program Status Report", dated 15 September 1954.

17. That the TF-102 program be put forward three months to enable all ADC squadrons to complete a thorough transition program.



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COMDR ADC

ROUTINE

ROUTINE

COMDR SADR STEWART AFB WESTBURY NY
 COMDR CADP GRANDVIEW AFB GRANDVIEW MO
 COMDR MADE HAMILTON AFB HAMILTON CALIF
 COMDR 4750TH ADMG (MHS) YUMA COUNTY AFB
 YUMA ARIZ

X

AFIR ORR 530 WALNUT ST CIV 1
 AFIR SWR RM 409 1114 CENTER ST CIV 2
 AFIR MHR FARM CREDIT FL G OMAHA 2 IOWA
 AFIR NER 857 COMMONWEALTH AVE CIV 15
 AFIR NPR 301 CUSTOMER HOUSE 220 N 8TH ST PORTLAND 9 ORE
 AFIR SFR 630 SANSOME ST SPRING
 AFIR SAR RM 1204 FEDERAL OFFICE BLDG 90 CHURCH ST NY 7 NY
 AFIR SAR 536 OLD POST OFFICE BLDG ATLA 1

Info: COMDR OOAMA HILL AFB OGDEN UTAH
 COFS USAF WASH D C

16 MAY 1955

(CONFIDENTIAL) ADMIS PR 3053. Fol info regarding future flight simulators has been rec from OOAMA and is furn for your guidance. F-102 simulator occupies an area 33 ft by 27 ft by 12 ft and F-101 simulator an area 26 ft by 31 ft by 12 ft. Instl dwcs have recommended a minimum 14 ft ceiling height which is concurred in by this hq. These simulators can be accommodated within existing or planned simulator rooms which are IAW DEF 23-14-03. 55 ft by 40 ft by 21 ft simulator room w/t rqr if F-151 gunnery component is attached to these simulators. This gunnery component is not repeat not asked for use by this comd. Design of simulator bldgs in FY-56 and FY-57 MCI's should, therefore, proceed on basis of DEF 23-14-03.

MESSAGE TRANSMITTED
 WITH FOLLOWING DATE TIME GROUP

B-7-16 162345Z

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Mr Wendland/instls/cbvm

ADMIS PR

2616

0018

HQ ADC

Subject: (Uncl) Allocation of TF-102 Aircraft

d. The defense capability of ADC will be considerably enhanced by the rapid conversion and acceptance of complete F-102 squadrons into the defense net.

4. Allocation of TF-102's as outlined in FX 57-1 is:

	<u>FY 57</u>				<u>FY 58</u>			
	1	2	3	4	1	2	3	4
ADC	6	13	23	44	81	110	121	109
ATRC	2	4	23	42	44	48	54	63

From this it can be seen that the numbers of TF-102's earmarked for ATRC are but a token allocation for the first three quarters of FY 57. ATRC during this period will be unable to carry out any worthwhile conversion program because of so few aircraft at their disposal. At the same time these aircraft added to the ADC inventory while falling short of our total requirement, would provide this command with a workable total number of aircraft to carry out a conversion program. Consequently, this headquarters urges that the originally planned allocation of TF-102 aircraft as obtained from the production schedules be adhered to as follows:

	<u>FY 56</u>	<u>FY 57</u>				<u>FY 58</u>			
	4	1	2	3	4	1	2	3	4
ADC	5	11	21	56	76	100			
ATRC					25	46			

5. In summation, the problem falls under the following main courses of action:

a. If ADC is allocated the TF-102's required for a mass conversion, the squadrons will be operationally inactive for a minimum period of time. The transition phase will provide a minimum of personnel movements. Further, training will be thorough and concentrated, under constant supervision, and of mutual benefit to squadron air and ground crews simultaneously without disruption of normal squadron routine.

b. If the figures in FX 57-1 are held firm, probably neither ADC nor ATRC will be capable of accomplishing a true conversion program for the first three quarters of FY 57. By the end of this quarter ADC will have nine (9) squadrons of F-102's.

Hq AEC

Subj: (Uncl) Allocation of TF-102 Aircraft

e. A third alternative would be to shoulder ATTC with the main burden of conversion training. Such a plan has the basic disadvantage of stationing large numbers of aircraft with high combat potential at other than tactical locations. It would also involve numerous personnel movements.

6. From both time and safety factor standpoints, the choice lies with the first course of action. These two factors so considerably affect the AEC defense capability that we strongly advocate a revision of PK 57-1 to conform to the plan as originally submitted under this headquarters' letter, Subject: "Revision of F-102 and TF-102 Program" dated 22 January 1955.



AFMPC-MP

SECRET
DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON 25, D. C.

255-11
30-11

SUBJECT: Transmittal of Document

JAN 12 1955

TO: Commander
Air Defense Command
ATTN: Brig. Gen. M. S. Roth
Ent Air Force Base, Colorado Springs, Colorado

Inclosed for your information is current chart, problem list and status report for the F/TF-102A Weapon System.

BY ORDER OF THE CHIEF OF STAFF:

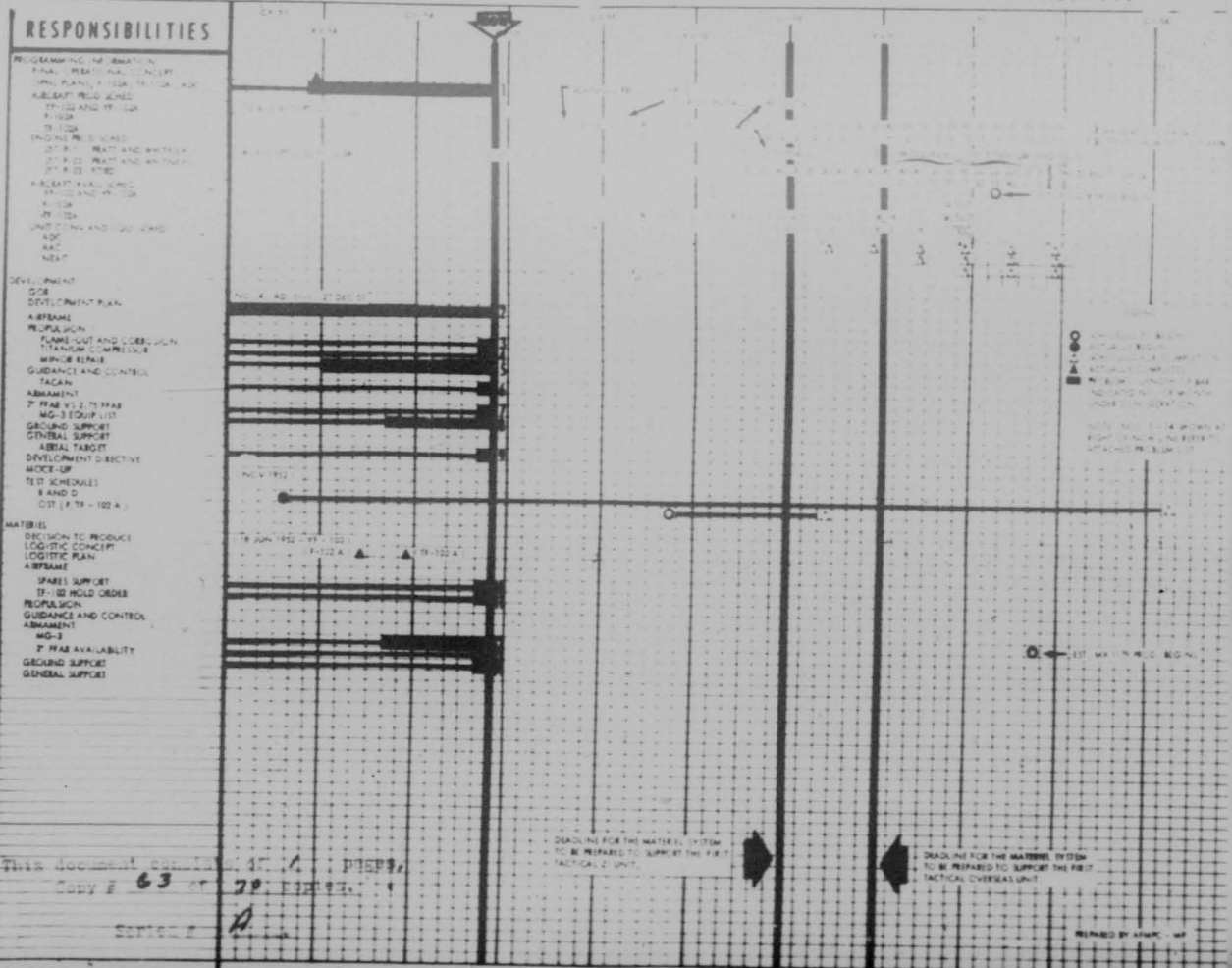
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As noted abv
(cy # 63)

Ned B. Chase
NED B. CHASE
Colonel, USAF
Deputy for Materiel Progress Analysis
Office, Asst for Materiel Program Control
Deputy Chief of Staff, Materiel

10023

F/TF-102A

2 November 1951



This document contains 107 pages, PREPARED BY AFMPC - 407
 Copy # 63 of 70
 SECTION # 4

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F/TF-102A WEAPON SYSTEM PROBLEMS
(AS OF 2 NOVEMBER 1954)

(NOTE: Offices concerned with each problem are listed in parenthesis. The office listed first has prime responsibility for taking the initial action to report status and/or resolve the problem.

A weapon system problem is defined by DCS/M Instruction 11-16 and DCS/D Instruction 11-4 as any development, production, or support matter which will limit the operational use or prevent the timely availability of the complete system by the programmed equipping date for the initial unit.)

1. The Operational Plan, F-102A, TF-102A has not been published by the Air Defense Command. (AFOOP)
2. No Development Plan has been published for the F/TF-102A. (AFDDP)
3. Engine flameout and corrosion may result from exhaust gases entering the engine ducts when the GAR or rocket is fired. (AFDRD)
4. Lack of titanium light-weight J-57 engines is retarding the F-102A weight reduction program. (AFDRD)
5. The J-57 engine is not designed to afford reasonable minor repair at base level with present facilities, tools, and skills. (AFDRD)
6. The desired navigation and terminal fixing aid (TACAR) will not be completely operational for the F-102 program before January 1956. (AFDRD)
7. No decision has been made relative to using the 2" (T-214) FFAR in lieu of the 2.75 FFAR on the F/TF-102A/B. (AFDRQ)
8. A complete list of MG-3 fire control support equipment has not yet been determined. (AFDRD)
9. It is not expected that a suitable aerial target will be available for use in the F-102 program. (AFDRD)
10. Airframe spares support for the F/TF-102A program cannot be assured. (AFMSS)
11. Definitive plans for support of the TF-102A cannot be accomplished because of the administrative hold-order on procurement of this aircraft with FY 55 funds. (AFMPE)
12. There is no realistic maintenance plan for the MG-3 fire control system. (AFMME)
13. The 2" FFAR is expected to be in short supply until August 1957. (AFMSS)
14. There may not be full concurrency of ground handling and support equipment for initial F/TF-102A units. (AFMSS)

SOURCE: AFPPC-4

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Copy # 43 of 200 copies.

Series # 17

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F/TF-102A WEAPON SYSTEM STATUS
(AS OF 2 NOVEMBER 1954)

1. Conclusions:

The materiel system will not be capable of fully supporting the initial F/TF-102A units scheduled for equipping during the first quarter of FY 57.

It is expected that development and test information over the next six months, including the first flight of the planned production article, will afford a comprehensive basis on which to evaluate materiel support capability. When this data is available, a realistic approach can then be made toward determining the validity of the presently established conversion and equipping target dates from a materiel standpoint.

This document consists of 4 pages.
copy # 63 of 70 copies.
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(CONTINUED) F/TF-102A WEAPON SYSTEM STATUS
(AS OF 2 NOVEMBER 1954)

11. Summary of Development Problem Areas:

a. Airframe: No serious difficulties have been reported in this area.

b. Propulsion: Engine flame-out and corrosion may result from exhaust gases entering the engine ducts when the GAR or rocket is fired. This is a common problem for all rocket or missile firing aircraft where exhaust gases enter the engine ducts. A coordinated program to solve this problem has been established with ARDC, Department of Navy, and Air Force contractors. No date has been forecasted for solution.

The F-102A weight reduction program is being retarded because of the lack of titanium light-weight J-57 engines. In view of the current B-52 priority, the availability of the light-weight titanium compressor J-57 engine to the F-102 program is not expected before January 1957. From January 1957 to September 1957, limited numbers of these engines will be available to the F-102, F-100, and F-101 programs. Beginning September 1957, it is expected that the B-52 requirements will be satisfied, and titanium engine production will be sufficient to satisfy other aircraft programs. Currently, the F-102A program has a number four (4) priority for J-57 titanium engines. The Program Status Committee has recently directed the DCS/O, DCS/M, and DCS/D to review the priorities for allocation of titanium engines to fighter aircraft to determine whether these engines can be made available to the F-102 program at an earlier date.

No substantial improvements have been effected in the J-57 engine design that will permit reasonable minor repair at base level with present Air Force facilities, tools, and skills. In view of this, the immediate consideration is the overhaul and maintenance of some 8,500 J-57 engines that are expected to enter the inventory by the end of FY 57. Without minor repair at base levels there will be a large increase in depot overhauls, resulting in such problems as funding, parts consumption, transportation, and additional trained personnel. Currently, Pratt and Whitney is conducting field studies to determine the extent to which the engine can be repaired at base level.

c. Guidance and Control: The desired navigation and terminal fixing aid (TACAN) presently programmed for the F-102 will not be completely operational throughout the ZI before January 1958. TACAN equipment has been developed and is being tested; however, DST is not expected to be completed before 1958. It is possible that sections of the ZI could be covered before 1958 as the equipment becomes available. It also must be pointed out that ground stations must be installed at intervals throughout the United States before complete operation of TACAN can be effective in Air Defense. At the present time, it is not expected that fully suitable alternate equipment can be made available for use in place of TACAN.

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(CONTINUED) F/TF-102A WEAPON SYSTEM STATUS

(AS OF 2 NOVEMBER 1954)

d. Armament: No decision has yet been made regarding the use of the 2" FFAR on the F-102A/B in place of the 2.75 FFAR. Hq USAF has recommended to the Department of Defense that the T-214 (2" FFAR) be used in lieu of the 2.75 FFAR. The T-214 is a 2" rocket sponsored by the Air Force and developed by the Army. Continued lack of decision makes firm production and support planning impossible.

A complete list of MG-3 fire control support equipment has not yet been determined. Until this equipment is specified, quantitative requirements cannot be computed or procured. Long procurement lead times for some MG-3 equipment may result in aircraft coming off the assembly line with incomplete fire control systems.

e. Ground Support: No serious difficulties have been reported in this area.

f. General Support: At the present time it is not expected that a fully suitable aerial target will be available for use in the F-102 pilot training program. Development of the Q-2, a 40,000 ft/500 knot target, is proceeding, but the complete system is not expected by January 1957, the starting date of the F-102 training program.

III. Summary of Materiel Problem Areas:

a. Airframe: Airframe spares support for the F/TF-102A program cannot be assured. Provisioning of the airframe took place in September 1953. However, changes in airframe configuration have required and continue to require rework and replacement of spares in the inventory. It takes several months for a configuration change to become reflected in the inventory. In addition, provisioning was of necessity accomplished without usage data. Quantitative provisioning will have to be revised when adequate usage data are available probably about February 1955. AMC is now considering a proposal to give CONVAIR the responsibility for supporting the first fourteen aircraft. This would simplify support problems for those aircraft in which the greatest number of configuration changes were effective.

The administrative hold order which has been placed on the procurement of TF-102's with FY 55 funds has not been lifted. Firm procurement, spares support, and personnel planning for this program cannot proceed. There has been no estimate as to when this problem will be resolved.

b. Propulsion: No serious difficulties have been reported in this area. (See Propulsion under "Development Problem Areas" above.)

c. Guidance and Control: No serious difficulties have been reported in this area.

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(CONTINUED) F/TF-102A WEAPON SYSTEM STATUS

(AS OF 2 NOVEMBER 1954)

d. Armament: There is no realistic maintenance plan for the MG-3 fire control system. Originally it was believed that E-9 personnel would be qualified to maintain the MG-3 system. It has now developed that additional training would be required for MG-3 personnel. Unless a specific plan for this system is developed without delay, adequately trained personnel may not be available to F-102 units on conversion and equipping dates. AFMME is currently expediting preparation of the plan.

AFMSS reveals that if a decision is made to use the 2nd rocket in lieu of the 2.75FFAR, sufficient quantities would probably not be available to support F-102 units until August 1957. This is based on estimates of six months to complete development, three months to process MIPR's, ~~eighteen-months procurement and production lead time~~, and six months to build the production rate up to 100,000 rockets per month.

e. Ground Support: AFMSS reports that items developed and released by ARDC late in the program cannot be programmed, bought, and produced in time to assure delivery to units when aircraft are delivered. Even when equipment is specified in time for incorporation in the tentative tables of equipment, shortages may occur because of late development or because of the generation of the same requirements by another weapon system for which items have not been previously procured.

f. General Support: The Operational Plans for the F-102A and the TF-102A have not been published by ADC, although these plans have been approved by HQ USAF. Until these plans are published and distributed, the Air Materiel Command cannot publish their Logistic Plans.

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0029

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FM HEDUSAF WASHDC
TO RJEDEN/COMAIRDEFCON ENT AFB COLO
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RJEXCR/COMNEACOM PEPPERRELL AFB NFLD
INFO RJEPYB/COMARDC BALTO MD
BT

ACTION: P+R
INFO: CM, IH, DO, OT
Supp: 5 JUN 55

16322

//C O N F I D E N T I A L// FROM CLN AFDRQ-AD/F 54485 A SATISFACTORY FUEL
AIR COMBUSTION STARTER CMM THE TENTATIVE STANDARD MA-2 CMM CAN BE MADE
AVAILABLE FOR INCORPORATION IN FIRST TACTICAL F-102A. PRESENT AIRCRAFT
HIGH PRESSURE SYSTEM WILL HAVE SUFFICIENT AIR STORAGE TO FURNISH ONE
SELF-CONTAINED START AFTER COMPLETION OF THREE CYCLES OF THE ARMAMENT
SYSTEM. PRESSURE FOR INITIAL STARTING WILL BE PROVIDED BY PNEUMATIC
SERVICE CART WHICH IS BEING DEVELOPED FOR THIS PURPOSE. TESTS INDICATE
83 PER CENT RPM CAN BE OBTAINED WITHIN 22-23 SECONDS DURING START.
EIGHT INCREASE OF THIS SELF-CONTAINED SYSTEM OVER SYSTEM PRESENTLY IN
USE IS 65 POUNDS. THIS WILL RESULT IN LOSS OF APPROXIMATELY 50 FT IN
COMBAT CEILING. HOWEVER CMM NO OTHER PERFORMANCE DEGRADATION IS
ANTICIPATED. STARTER CAN ALSO BE USED FOR AIR START. ADDITIONAL SELF

ACTION COPY

PAGE TWO RJEPHQ 117
-CONTAINED STARTS CAN BE PROVIDED BY CARRYING ADDITIONAL AIR BOTTLES.
NO ADDITIONAL FUNDS WILL BE REQUIRED FOR INCORPORATION OF THIS STARTER.
REQUEST YOUR HEADQUARTERS REVIEW AND RESTATE YOUR REQUIREMENT FOR
SELF-CONTAINED STARTER IN THE F-102 CONSIDERING INFORMATION OUTLINED
ABOVE

BT
041927Z JUN RJEPHQ
04-1927Z JUN 55

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ADC Hq-0-40 Form 22
9 April 53

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0030



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON 25, D. C.

257

AFDRQ

SUBJECT: (U) OST of F-102 Squadron

TO: Commander
Air Defense Command
Ent Air Force Base
Colorado Springs
Colorado

1. Phase II of AFGC Project Lock-On has emphasized the requirement for a thorough squadron OST at the earliest date after the first tactical squadron is equipped. This requirement is generated, not only by the need for development of new tactics and techniques to assist in speedy acquisition of combat readiness by converting units, but also by the desirability of incorporating in-production changes to correct deficiencies in the aircraft or its equipment which may be discovered during the test.

2. Request that you forward to this headquarters by 10 May 1955, your reaction to a plan whereby the F-102 Squadron OST would be conducted at George Air Force Base in October or November 1956 using equipment of the 94th F.I.S. Although this would allow only a relatively short period after initial equipping date prior to the OST, it is believed that the benefit to be derived from such an early test warrants its consideration. This headquarters recognizes that late receipt of necessary ground handling and test equipment, spare parts, mobile training detachments, etc., is often encountered by the first unit to convert to a new type aircraft. Since this would severely handicap an OST, firm plans would include provision for insuring availability of all required support items prior to initiation of the test.

3. In the event you do not concur with the plan outlined in paragraph 2 above, request your recommendations concerning alternate time, place and unit.

BY ORDER OF THE CHIEF OF STAFF:

cc: AFGC

GILBERT L. MEYERS
Colonel, USAF
Deputy Director of Requirements
Deputy Chief of Staff, Development

46: -2X
AFDRQ
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ADCOOT-E2

303.11

SUBJECT: (Unclassified) OST of F-102 Squadron

TO: Director of Requirements
Headquarters USAF
Washington 25, D. C.

1. Reference your letter, subject as above, dated 28 April 1955, this headquarters fully concurs in the need for an OST of the F-102 in squadron service, at the earliest possible date.

2. Headquarters ADC does not, however, agree with George Air Force Base as the selected base, mainly for the following reasons:

a. The near perfect weather conditions at George tend to introduce an artificial factor into an all weather interceptor OST.

b. In order to spread the load of OST's and special projects, this headquarters is reluctant to burden a George Fighter Interceptor Squadron with this task. In the past, George has tended to be an automatic choice. To avoid the possibility of the squadrons based there from being considered as "test" or favored squadrons some squadron elsewhere should be considered.

3. The questionable future of Portland precludes selection of the resident Fighter Interceptor Squadron as the operative medium for this OST, or even for early conversion to the F-102 aircraft.

4. The new ADC program will therefore prescribe the 11th Fighter Interceptor Squadron, Duluth Air Force Base in place of the 497th Fighter Interceptor Squadron, Portland, to be the second squadron in the first quarter of FY 57 to convert to F-102 aircraft. It is recommended that this squadron also be given the task of accomplishing the OST in November 1956.

5. This proposal admittedly differs from the one submitted in this headquarters' interim reply contained in our message ADCOOT-E2 dated 9 May 1955, but the recent discussions at Headquarters USAF (attended by Major Littlejohn of this headquarters) have necessitated a change in our original policy.

FOR THE COMMANDER:

MEMO FOR RECORD: Col Baker has been consulted (by phone) and concurs (4 May 55) and is in full accord.

Will be Continued in
Self-Defense Force
Headquarters ADCOT
Approved by
Telephone 2603.4
Date 20 May 55

Refer to Forward No
F-12754

ADC N. 11 (Rev)

This correspondence is classified _____ in accordance with
APOC 236, APR 205-1, 15 Dec 53, or for the reason (a) stated.

0032

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HEADQUARTERS
AIR DEFENSE COMMAND
Ent Air Force Base
Colorado Springs, Colorado

258

ADC PROGRAM DIRECTIVE NO. 55-5 (LONG RANGE)

6 April 1955

SUBJECT: (UNCLASSIFIED) F-102

1. Objective: To insure timely and coordinated staff action required for the introduction and integration of the F-102 weapon system into the Air Defense Command.

2. Preliminary Staff Consideration: Representatives from DCS/O, DCS/P, DCS/M, DCS/C and the Office of the Assistant for Programming met on 21 March 1955 to discuss the F-102 and to determine information and action for inclusion in this directive. Conferees are listed in Attachment No. 1.

3. Analysis of the Problem:

a. On 22 September 1954, the ADC Command council approved a fighter program that reflected equipping of the first ADC fighter interceptor squadron with F-102 aircraft in 1st Quarter FY 1957. This was a change from previous programs that converted the initial units two quarters earlier.

b. Headquarters USAF approval of this program is indicated in PE 57-1, "Equipping and Conversion Chart," January 1955.

c. The operational concept and operational plan for the F-102 have been published.

d. Based on known aircraft production schedules and USAF aircraft allocations, sufficient F-102A aircraft will be available to equip two squadrons during 1st Quarter FY 1957. The PX 57-1, "Projected Aircraft Inventory," January 1955, indicates that a few F-102 aircraft may be delivered to ADC during 4th Quarter 1956. The equipping schedule for F-102 units is listed in Attachment No. 2.

e. Facilities peculiar to F-102 units were first included in the FY 1951 PWP. Ready rocket storage, test and assembly buildings, including the "B" section for Falcon missiles, were authorized by Congress in 1953. At the present time, facilities are under design by district engineers. Sufficient Falcon missile facilities have been programmed for the F-102 program.

f. Due to an increase in length of the F-102 airframe, some alert hangars are too short to accommodate the F-102. Future hangars

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ADC PROGRAM DIRECTIVE NO. 5545 (LONG RANGE) (continued)

will be constructed to revised definitives. Headquarters USAF is determining the corrective action to be taken on hangars already constructed.

g. The first two units selected for conversion to F-102's pose problems in the facility line. The Tactical Air Command has informed this headquarters that no additional maintenance facilities can be made available for ADC use at George Air Force Base by the conversion date. Because of joint use difficulties at Portland, no new facilities have been constructed since postwar major Public Works construction began in 1951. There is no alert hangar, and hangars, ammunition storage and other operational facilities are inadequate. This headquarters requested authority to develop a new base as a substitute for Portland. No decision has yet been reached. However, Headquarters USAF has informally advised that OSAF, CAA and the Air Space Subcommittee have tentatively agreed that equitable arrangements can be made, whereby ADC can continue to operate from Portland. Because of this situation, no funds were appropriated for FY 1955 PWP items including base maintenance hangar, operational T&S parking apron, readiness building and other operational facilities. Unless utilization problems can be resolved and funds obtained for construction of FY 1955 PWP items in time to permit completion by 1st Quarter FY 1957, it will be very difficult to support the conversion to F-102's.

h. Adequate provisioning of tools and test equipment has been difficult due to frequent changes in weapon configuration. Provisioning has been monitored by ADMAC. Provisioning for spares and equipment commenced in 3rd Quarter FY 1955. However, it appears that we will be short on some spares and equipment due to the short lead time remaining.

i. Heating, cooling and loading of missiles, and air conditioning of electronic systems are problems which require further resolution.

j. A proposed T/O for F-102 units was forwarded to Headquarters USAF for approval in June 1954 and resubmitted in February 1955. Approval has not been received as yet.

k. MTD and flight simulators will be available prior to receipt of F-102 aircraft.

l. Qualitative requirements for personnel have not been fully established.

m. The F-102 will be equipped with the MG-3 or MG-10 fire control system with later models having the MX-1179 (MA-1) system with data link provisions. The training program for MG-3 and MG-10 systems has been forwarded to Headquarters USAF. Provisioning for long lead time equipment for training and MTD's has been accomplished.

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ADC PROGRAM DIRECTIVE NO. 55-5 (LONG RANGE) (continued)

n. Input to formal training in new specialties should commence in 4th Quarter FY 1955. However, this will be delayed approximately one quarter. This delay is counteracted by training that will be received by about 275 ADC personnel during Phase VI and VII testing by APOC. Phase VI tests will begin in 4th Quarter FY 1955 and Phase VII in 2nd Quarter FY 1956.

o. Preliminary planning for ADC participation in Phase VI and Phase VII testing has been completed.

p. Budget UAL's and MEAL equipment list have been prepared.

q. Tentative Table of Equipment (TTE) has been prepared and reviewed.

4. Agreed Course of Action:

a. Planning and implementing actions will continue for the integration of F-102's into the Air Defense Command in 1st Quarter FY 1957.

5. Implementation Required (By ADC Staff Action):

a. The Assistant for Programming will:

- (1) Through publication of the ADC Program and changes thereto, supply the air defense forces with program guidance concerning the F-102.
- (2) Revise this directive as required, and publish short-range program directives for individual F-102 units approximately seven months prior to scheduled unit activations or conversions. The first short-range directive will be published in December 1955.
- (3) Monitor staff progress reports on the F-102 system and keep the command section informed as to status of required staff actions.

b. The Deputy Chief of Staff/Comptroller will:

- (1) By July 1955, include funding for F-102 units in the FY 1957 budget estimate. (ADCBA)
- (2) Monitor and revise funding information on a continuing basis. (ADCBA)

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ADC PROGRAM DIRECTIVE NO. 55-5 (LONG RANGE) (continued)

- (3) In May 1956 include funding for F-102 units in the FY 1957 financial plan. (ADCBA)
- (4) Consolidate progress reports of participating staff agencies and submit an over-all monthly report which summarizes significant progress toward, and highlights deviations from, this directive to the Assistant for Programming. Information copies of the summary report will be forwarded to each participating staff agency. (ADCMA)

c. The Deputy Chief of Staff/Operations will:

- (1) Prepare and monitor the fighter interceptor program, revising as circumstances dictate. These program and revisions will be coordinated with the various staff agencies, particularly the Director of Installations, prior to delivery to the Assistant for Programming for consolidation into the ADC program book. (ADOOT)
- (2) Monitor the procurement of the TF-102 and program the allocation of these aircraft. (ADOOT)
- (3) Insure that appropriate troop strengths are entered into the ADC program document (at the time of preparation). (ADOMO)
- (4) Obtain approval of the T/O for F-102 units. (ADOMO)
- (5) Request non-T/O space authorizations necessary to support F-102 units nine months prior to scheduled organizational changes. (ADOMO)
- (6) Establish requirement for flight simulators to be in place sixty days prior to receipt of MTD (coordinate with DCS/M). (ADOOT)
- (7) Formulate and publish questionnaires, checkout and transition directives, training directives, operational directives, tactical procedures and pilot qualification criteria. (ADOOT)
- (8) Participate in operational suitability tests to determine the adequacy of manning and organizational provisions. (ADOMO)

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ADC PROGRAM DIRECTIVE NO. 55-5 (LONG RANGE) (continued)

- (9) Take normal activation or conversion actions in accordance with short-range program directives for individual units. (ADOMO)
 - (10) Monitor Phase VI and Phase VII tests to determine suitability of the F-102 in its present configuration for air defense operations. (ADOOT)
 - (11) In view of the facilities problem, review the program as concerns the use of Portland for the conversion of the second ADC unit to F-102's. (ADOOT)
- d. The Deputy Chief of Staff/Material will:
- (1) Beginning 4th Quarter FY 1955, monitor award of construction contracts and make periodic field inspections during construction period. (ADMIS)
 - (2) In 2nd Quarter FY 1956 prepare an ADC detailed maintenance plan. (ADMAC)
 - (3) In 4th Quarter FY 1955 provide Budget with information for M&O construction. (ADMIS)
 - (4) In 2nd Quarter FY 1956 provide Budget with information for FY 1957 financial plan. (ADMIS)
 - (5) Forward logistics plan to air defense forces by 3rd Quarter FY 1956. (ADMAC)
 - (6) Take normal activation or conversion actions in accordance with short-range program directives for individual units. (All sections)
 - (7) Monitor Phase VI and Phase VII testing. (ADMAC)
- e. The Deputy Chief of Staff/Personnel will:
- (1) In coordination with DCS/O and DCS/M, take action to provide best qualified personnel available for participation in Phase VI and Phase VII testing. Personnel will be selected insofar as practicable from units scheduled for early conversion to F-102's. Full advantage of individual training available will be made through 90-day rotation of all but minimum key personnel.

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ADC PROGRAM DIRECTIVE NO. 55-5 (LONG RANGE) (continued)

- (2) Take normal activation or conversion actions in accordance with short-range program directives for individual units.

6. Reports:

a. Each Deputy Chief of Staff or comparable staff agency named in preceding paragraphs will submit a monthly report to DCS/C (info ADHVP): Attention Directorate of Management Analysis. This report will be prepared as of 2400 hours the last day of each month, covering that month and will be delivered to DCS/C not later than 5th of each month following as of date. It will be prepared on Disposition Form (DD Form 96) as a brief narrative statement of all action taken during the period by the preparing agency toward accomplishment of this directive, and will show the current status with:

- (1) Positive action toward accomplishment.
- (2) Negative factors adversely affecting the program. The initial report is due 5 May 1955.

b. Negative reports may be submitted to Management Analysis by telephone.

2 Attachments

1. List of Conferees
2. Conversion & Equipping
Sked as of 3 Jan 55

Frederic H. Smith, Jr.
 FREDERIC H. SMITH, JR.
 Major General, USAF
 Vice Commander

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LIST OF CONFERENCE

ADHVP	Lt. Col. H. J. Masur Lt. Col. Y. A. Pitts, Jr. Major B. E. McKensie
ADOMO	Col. J. R. Wergin Lt. Col. A. W. Lewis
ADCMA	Mr. C. H. Frans
ADOCE	Major R. J. Streamer
ADOOT	Major R. D. Littlejohn
ADMLO	Major F. R. Smith Capt. O. Brewer
ADMAC	Lt. Col. L. R. Walker
ADPRT	Lt. Col. M. S. Johnson
ADMIS	Mr. A. E. Everett
ADOPR	Lt. Col. G. J. Butcher
ADCBA	Mr. F. V. Cava

Attachment No. 1

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**CONVERSION AND EQUIPPING SCHEDULE
AS OF 3 JANUARY 1955**

F-102

Qtr	Sq	Base	Qtr	Sq	Base
4/56	94	George	2/58	5	McGuire
1/57	497	Portland	2/58	61	Griffiss
2/57	58	Otis	2/58	324	Wurtsmith
2/57	63	Wurtsmith	2/58	83	Paine
2/57	518	George	3/58	76	Dover
3/57	327	K. I. Sawyer	3/58	95	Andrews
3/57	329	Griffiss	3/58	332	Newcastle
3/57	18	Portland	3/58	498	Bunker Hill
3/57	75	Suffolk	3/58	29	Great Falls
3/57	432	Truax	4/58	2	McGuire
3/57	64	George	4/58	47	Niagara
4/57	59	Wurtsmith	4/58	42	Kansasville
4/57	456	Truax	4/58	519	K. I. Sawyer
4/57	483	Minot	4/58	37	Burlington
4/57	482	Seymour-Johnson	4/58	93	Kirtland
4/57	98	Klamath Falls	1/59	54	Kilsworth
4/57	437	Otis	1/59	321	Walker
4/57	546	Cadillac	1/59	460	McGhee-Tyson
1/58	317	McChord	1/59	15	Davis-Monahan
1/58	65	Truax	1/59	74	Paine
1/58	413	Travis	2/59	62	Kansasville
1/58	331	Suffolk	2/59	14	Sioux City
1/58	465	McChord	3/59	85	Scott
2/58	48	Langley	4/59	318	Fresque Isle
2/58	46	Dover	4/59	326	Grandview
2/58	96	Newcastle			

Attachment No. 2

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FILE NUMBER

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F-102A

OPERATIONAL PLAN

1 June 1955

Headquarters
AIR DEFENSE COMMAND
Ent Air Force Base
Colorado Springs, Colorado

F-18147-A

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HEADQUARTERS
AIR DEFENSE COMMAND
ENT AIR FORCE BASE
COLORADO SPRINGS, COLORADO

1 June 1955

SUBJECT: (UNCLASSIFIED) F-102A Operational Plan

TO: See Distribution

1. The attached Operational Plan is forwarded to provide information to Department of the Air Force agencies concerning the operational use of the F-102A by the Air Defense Command in the air defense of the continental United States.
2. This document is classified SECRET in accordance with paragraph 23.c., AFR 205-1 dated 15 December 1953.

FOR THE COMMANDER:

K.P. Bergquist
Col., USAF
KENNETH P. BERGQUIST
Major General, USAF
DCS/Operations

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SECTION I

1. GENERAL.

a. The purpose of this plan is to provide guidance for the operational, logistic and installation support for the F-102A to all interested Air Force agencies and civilian contractors. It contains broad operational aspects and certain qualitative materiel considerations involved in the integration and utilization of this weapon in the air defense system.

b. Data appearing in current USAF Program Documents will supersede conflicting data contained herein.

c. The date of publication of this plan is 1 June 1955.

d. The F-102A Operational Plan is published in accordance with AFR 5-47 dated 20 December 1954.

e. This plan is based on the Operational Concept for the F-102A.

2. DESCRIPTION.

a. Airframe. The F-102A is a single place, delta wing, jet propelled, all weather fighter interceptor aircraft. Principal dimensions are: span - 38.1 feet; length - 68.3 feet; and height - 18.2 feet. It has tricycle landing gear with steerable nose wheel. The control surfaces are fully power operated with artificial feel fed into the control stick. Auxiliary braking is provided by a 14½ foot drogue chute.

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b. Engine. The power plant is a single Pratt & Whitney J-57-P-23 turbo-jet engine with afterburner and an automatic two-position exhaust nozzle. Static sea level thrust rating is 16,000 pounds with afterburner and 10,000 pounds at military power.

c. Electronics.

(1) Fire Control System. The MG-10 Fire Control System for the F-102A is composed of the following components: 250 KW radar; the Universal (Fire Control) Computer; the Air Data Computer; missile auxiliaries; provisions for an air-to-air IFF system; automatic flight control equipment; an optical sighthead designed for the F-102; ground-to-air data link (AN/ARR-14); and an integrated power supply consisting of a multi-output generator driven by a 400-cycle motor. This system is capable of firing GAR-1/LB and FFAR on radar lead collision attacks, GAR-1B on optical pursuit, and FFAR on optical lead pursuit attacks. The radar specifications require an 85% probability of detection and lock-on on a beam attack against a B-29 at 25 nautical miles.

(2) Communications. This will consist of the AN/ARC-34 UHF command radio, the AN/AIC-10 Interphone, and the AN/ARR-14 ground-to-air data link listed above as a component of the fire control system.

(3) Navigation and Landing Systems. These will consist of the AN/ARN-14 omni-range localizer, the AN/ARN-18 glide slope receiver, the AN/ARN-12 marker beacon receiver, and AILS coupler. Provisions are installed for the AN/ARN-21 Tacan system which is scheduled to replace the AN/ARN-14.

(4) IFF. The AN/APX-6 (with provisions for the AN/APX-25) is installed for air-to-ground identification.

d. Armament. This aircraft will carry 6 Falcon missiles, GAR-1 or 1B, and 2x 2.75" FFAR. These are carried internally in a missile bay located in the fuselage and are extended into the airstream for firing. The armament can be fired either automatically by radar on lead collision attack or manually using the optical sighting system after the pilot has preselected the number and type of missiles or rockets to be fired. Present planning does not call for the F-102A to carry Ding Dong rockets. An addendum to this plan will be incorporated at a later date if this capability is to be added to the F-102A.

3. MISSION. The primary tactical mission of the F-102A is to intercept and destroy enemy aerial objects under all types of weather conditions. It is designed to operate from ground alert and under ground control as a part of the overall air defense system for the aerial protection of our critical target areas.

4. OPERATIONAL CAPABILITIES.

a. Performance.

Combat Ceiling	52,500 ft
Combat Radius (Area Intercept)	365 NM

Maximum Speed	Mach 1.2 at 37,000 ft
Speed at 50,000 ft	Mach 0.98
Time to Climb - SL to 40,000 ft	4.4 min from standstill
SL to 50,000 ft	6.5 min from standstill
Takeoff Weight	27,500 lbs
Combat Weight	24,640 lbs
Takeoff Distance	2050 ft

b. Environment. The F-102A requires GCI assistance in making an interception, therefore, it must be deployed in areas possessing a compatible ground electronic environment. The aircraft is designed to operate under a wide range of climatic conditions but certain components will require heating and ventilation when operating on the ground. The missiles must be maintained between 0° and 130° F. at all times. When the radar is operating on the ground, an external source of cooling air must be provided.

c. States of Alert. The F-102A equipped with the MG-10 Fire Control System and armed with GAR-1/LB and 2.75" FFAR will be capable of meeting the conditions of alert outlined below. Normally, the aircraft will move progressively from one state of alert to the next higher state of alert. Provisions must be made to allow four combat ready aircraft to be placed on 5-minute alert and the remainder, estimated to be 14, on 15-minute alert. Prior to takeoff from any alert condition, the flight instruments, radar, and necessary communications must be operating. Since the missile gyros are caged until the nose gear retracts and then take approximately two minutes to warm up, there will be this time delay after all takeoffs before full combat capability can be realized. All alert aircraft will be fully armed.

(1) Readiness - 5-Minute Alert. Aircraft will be airborne within 5 minutes after the scramble signal. This is considered a normal state of alert for a limited number of aircraft in alert hangars. The specific requirements are:

- (a) Aircraft: in or near alert hangar.
- (b) Crew: in ready room.
- (c) External heat and cooling: as required.
- (d) Fire Control System: off.
- (e) Communications: off.
- (f) Engine: off.
- (g) Starting power: connected.
- (h) External electrical power: connected.
- (i) Shelter and/or cover: required during precipitation.

(2) Available - 15-Minute Alert. Aircraft will be airborne within 15 minutes after the scramble signal. This is considered a normal state of alert for a limited number of aircraft. The specific requirements are:

- (a) Aircraft: in alert hangar or turnaround shelter.
- (b) Crew: in ready room or vicinity of aircraft.
- (c) External heat and cooling: as required.
- (d) All systems: off.

- (e) Starting power: available.
- (f) External electrical power: available.
- (g) Shelter and/or cover: required during precipitation.

(3) At Ease. Aircraft will be capable of becoming airborne within 30 minutes after notification. Maintenance work may be done if aircraft can be prepared for takeoff within the prescribed time.

(4) Back-Up. Aircraft will be capable of becoming airborne within one hour after notification. These aircraft may be used on local training flights or receive maintenance if they can meet the prescribed alert takeoff time.

(5) Reserve. Aircraft will be capable of becoming airborne within 3 hours after notification. These aircraft may be used for training or receive maintenance if they can meet the prescribed alert takeoff time.

(6) Released. Aircraft and combat crews released from defense commitment.

d. Turnaround. The squadron will be capable of completely reservicing each aircraft within 15 minutes after its engine(s) stops, whether the squadron returns singly or en masse. "En masse" is interpreted to mean a maximum of 18 aircraft with a minimum landing interval

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of 30 seconds between aircraft. Thus, unit reservice time is 15 plus 9 minutes, or 24 minutes. Turnaround time will be measured from engine cut-off at reservice area until time the aircraft are ready to be scrambled for the next mission. Turnaround shelters will be required to meet the alert and turnaround requirements under all conditions of weather.

5. TACTICS. These are outlined in ADC Manual 55-6. This envisions the use of ADC interceptors in three airplane flights on lead-collision attack courses such as was done during Project Wolfpack. What effect, if any, the increased range of the Falcon over FFAR will have is unknown at present. These tactics may quite likely change with the advent of the SAGE system with its increased track handling capability. Under the present manual system, the GCI Director vectors the aircraft as a unit to the desired turn-in point where the individual aircraft pick up their targets. There is normally a 30-second take-off interval between aircraft in a flight and 1½ minutes between flights.

6. ORGANIZATION.

a. Squadron Organization. The F-102A is designed as an all-weather fighter interceptor and will be part of the unit equipment of a fighter interceptor squadron. These squadrons will be assigned to an Air Defense Group, Air Defense Wing or Air Division (Defense) as applicable and will be deployed in units of 25 aircraft (23 F-102A and 2 TF-102A aircraft). Units will be comprised of the following sections: personnel and administration, operations, materiel (to include aircraft, armament, communications and electronics, and supply). The only major

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change required in the present all-weather fighter interceptor squadron structure is the addition of an armament section capable of supporting GAR-1 (Falcon) operations.

b. Capabilities.

- (1) Performance of a continuous air defense alert mission.
- (2) An average flying rate of 50 hours per aircraft per month.
- (3) Performance of organizational maintenance on assigned aircraft, electronics equipment and armament, consisting of GAR-1's and 2.75" FFAR's.
- (4) Repair, maintain, and store in live condition GAR-1 and FFAR armament as required.
- (5) Performance of organizational and field maintenance on the fire control system and associated electronic equipment as specified or directed.
- (6) Performance of organizational maintenance on assigned motorized equipment.

c. Table of Organization. The F-102A Table of Organization is presently being published by Headquarters USAF.

7. UTILIZATION.

a. War. The anticipated sortie rate per aircraft in inventory is: 1st day - 3; 2d through 30th day - 1 sortie per day per aircraft; 2d through 3d month - 15 sorties per month per aircraft. Armament expenditure rate for

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the GAR-1/LB and FFAR is: 1st day - 80%; 2d through 6th day - 25%; 7th through 30th day - 10%; 2d through 3d month - 10%. Average sortie duration will be 1.2 hours with a fuel consumption of 750 gallons per hour.

b. Peace. Peacetime utilization of the F-102A is based on a yearly training program which provides each crew member with a minimum of 240 hours flying time per year. This figure does not include the hours required for active air defense missions.

8. TRAINING REQUIREMENTS.

a. Aircrew. Organizational aircrew members will receive their conversion training within the squadron. Mobile Training Detachment and flight simulator will be required as will TF-102A's as they become available. Replacement personnel will be trained by Air Training Command.

b. Maintenance Personnel. Mobile Training Detachment and Factory Assistance Teams will be required. Specialized training prior to receipt of aircraft will be required at Hughes Aircraft Company, Consolidated-Vultee Aircraft Corporation, and Air Training Command facilities.

9. TRAINING LEAD TIME.

a. Aircrew. The Mobile Training Detachment and flight simulator must be in place at a squadron 60 days prior to receipt of aircraft. Fifty hours of supervised flying training plus 30 days at a weapons training center will be required.

b. Maintenance Personnel. The MTD must be in place 60 days prior to receipt of aircraft. Factory maintenance teams should be

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attached to the unit concurrently with receipt of aircraft and remain for 4 months. Training times for various types of maintenance personnel are shown below.

- (1) Engine. Four weeks specialized training at Air Training Command for already qualified jet engine mechanics.
- (2) Airframe and Accessories. Five-weeks course by Consolidated-Vultee Aircraft Corporation at an Air Training Command facility for already qualified airframe mechanics. Convair will conduct this course until sufficient Air Force personnel have been trained to take it over.
- (3) Armament Systems. E-4, 5, 6 qualified personnel will require a 6-months advanced course at Hughes Aircraft Company. All others will require the 55-weeks basic Air Training Command course prior to the advanced Hughes course.

10. OPERATIONALLY READY REQUIREMENTS. It is desired that an F-102A unit be adequately manned, equipped and trained to maintain 75% of assigned aircraft in a combat ready status. All aircrews must be capable of performing air defense type missions under all conditions of weather.

11. OPERATIONALLY READY DATES. An air defense squadron will be ready to assume its air defense commitment within 60 days after receipt of

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50% of its prime unit equipment. An additional 30 days at a weapons training center will be required to combat qualify all crew members.

12. DEPLOYMENT. The F-102A will be deployed in individual squadrons in the same manner as other interceptor squadrons. The specific deployment of F-102A squadrons is published in the Air Defense Command Fighter Interceptor Program. The first squadron is scheduled for activation at George Air Force Base, California in 4th quarter FY 1956.

13. MOBILITY REQUIREMENTS. The F-102A can only be deployed to bases having required Falcon storage and checkout facilities and which are located within a ground radar environmental system compatible with the aircraft. Each squadron maintains an up-to-date loading plan for a permanent move of entire unit and for temporary move of a flight or detachment. Airlift will normally be provided by unit support aircraft within the Air Division (Defense).

14. CONTROL COMMUNICATIONS. The Standard Wire Communications Network for control of fighter interceptor squadrons is outlined in COMAD Regulation 102-1. This is supplemented by the Standard Fighter Alert Wire Communications Network installed at all Air Defense Command bases. In addition to this, the squadron alert post will have radio equipment enabling communication with the assigned aircraft.

15. COMMAND CHANNELS. An F-102A squadron will be assigned to an Air Defense Group, Air Defense Wing, or Air Division (Defense) as applicable. It will be under the operational control of the Air Division (Defense) Commander who may delegate the scramble authority to the Direction Centers.

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SECTION II

1. PURPOSE AND SCOPE. The purpose of this section is to provide continuity with and act as a guide for the Logistic Plan, published by the Air Materiel Command, San Antonio Air Materiel Area. As such, the prime considerations of manpower, material and equipment for the aircraft should be planned to attain the highest utilization of the aircraft and the accomplishment of the mission.

2. GENERAL. A ground support environment necessary to support peacetime operations as well as wartime commitments is required. In particular, one of the features of such an environment requires turnaround shelters for 14 aircraft. These are in addition to the 4 alert hangars.

3. PROCUREMENT. Ground handling, test and support equipment shall be shipped so as to arrive on base 60 days prior to activation or conversion date to F-102 and TF-102 type aircraft. Maintenance and test equipment requiring installation in shop facilities will be released by the Base Supply Officer upon receipt, installed and made operationally ready without delay.

4. SUPPLY.

a. Fighter Interceptor Squadron Responsibilities.

- (1) Maintain necessary records in accordance with current directives.

(2) Maintain munitions live storage and check out facilities. (See Installations and Logistics Plan when published.)

b. Support Base Responsibilities.

- (1) Maintain necessary supply records.
- (2) Maintain established level of spares, fuels, munitions, etc.

c. Air Materiel Command Responsibilities.

- (1) Provide depot support.

d. Support Base Stockage Objective.

- (1) Aircraft spares (less engines). (In accordance with current directives)
- (2) Aircraft engines. (In accordance with current WPC documents)
- (3) Ammunition.
- (4) Fuel.

e. Equipment Authorizations.

- (1) Each squadron will be authorized Unit Essential Equipment (UEE) as authorized by TO MEAL Concept and base support equipment from T/A allowances. (See AMC Tentative Table of Equipment for the F-102A.)

5. MAINTENANCE.

a. General. Maintenance concepts shall be in accordance with ADCM 65-1. In particular, one Field Maintenance Squadron shall be located on each and every base that has an F-102 squadron or

squadrons assigned or attached thereto. This squadron will not have the responsibility of field maintenance on airframe installed electronics, Fire Control System, communications and/or electrical systems.

b. Division of Responsibilities.

(1) Fighter Interceptor Squadron.

- (a) Organizational maintenance of the airframe, engine and ground support equipment to include periodic inspections.
- (b) Organizational maintenance of the GAR-1, including assembly and check-out.
- (c) Organizational and field maintenance of airframe, installed electronics, communications and electrical systems, to include Fire Control System.

(2) Support Base. Complete field maintenance capabilities for airframe and engines to include JEFM.

(3) Air Materiel Command. Depot maintenance and other maintenance beyond squadron and base capabilities.

c. Specialized Equipment (see current TTE for the F-102A).

(1) Specialized equipment is required to:

- (a) Process 2 GAR-1's and 4 rockets simultaneously at the rate of 2 - 3 GAR-1's per hour and 60 rockets per hour.
- (b) Repair, maintain and store in a "live" condition:

1. GAR-1's - 500 (108 of which are on aircraft).

2. FFAR's - 2016.

(2) The following specialized equipment is required for processing GAR-1's and 2.75" rockets.

(a) GAR-1 Special Equipment:

Ready Bench	2 ea
Check-Out Console	2 ea
Special Storage Rack (spares)	2 ea
Hydraulic Maintenance Cart	1 ea
Igniter Inserters	2 ea
Storage Cabinets (test equipment)	2 ea
Maintenance Bench (test equipment)	1 ea
Special Test Equipment	1 ea
Fork Lifts	3 ea
Pallets, Missile	250 ea
Frame - Missile Loading	15 ea

(b) 2.75" FFAR Special Equipment:

Bench - Assembly	1 ea
Bench - Test	1 ea
Test Cell - Rocket	1 ea
Pallets - Rockets	80 ea
Fork Lifts	3 ea

SECTION III

1. INSTALLATION FACILITIES. Minimum installation facility requirements for one F-102 squadron are as follows.

<u>FACILITY</u>	<u>UNIT</u>	<u>QUANTITY</u>	<u>USAF DWNG</u>
<u>a. Airfield Pavements.</u>			
Apron, access, hangar	SY	10,650	
Apron, harmonizing and boresighting	SF	10,000	
Apron, parking, operational	SY	39,656	
Apron, transit and base flight	SY	10,000	
Pad, aircraft blast, jet, light	SY	945	
Aircraft runup stand, jet	EA	4	
Runway, crosswind, light	SY	98,400	
Length, standard day conditions	FT	9,000	
Width	FT	150	
Runway, primary, light	SY	98,400	
Length, standard day conditions	FT	9,000	
Width	FT	150	
Taxiway, alert, new, light	SY	15,500	
Width	FT	75' to 150	
Taxiway, crosswind, light	SY		
Width	FT	75	
Taxiway, primary, light	SY	100,800	
Width	FT	75	
<u>b. Liquid Fuel Storage.</u>			
Bulk storage, base, jet	BEL	20,000	
Fill stand, truck	EA	2	
Operating, storage base aviation gas	GA	16,800	
Operating, storage base aviation lubricant	GA	5,000	
Operating, storage base diesel	GA	15,000	
Operating, storage base automotive gas	GA	5,000	

<u>FACILITY</u>	<u>UNIT</u>	<u>QUANTITY</u>	<u>USAF DWNG</u>
<u>c. Communications and NavAids.</u>			
Communications, base, general	SF	1824	39-04-11
Communications, base, receiver	SF	1023	38-12-10
Communications, base, transmitter	SF	1023	38-12-10
Communications, NavAids, base ILS			
Communications, NavAids, base TVOR			
Communications, power, emergency	KW	50	
Lighting, airfield, approach (HI)	FT	1500	
Lighting, airfield, RW (HI)	FT	9000	
Standard Fighter Alert Wire Connection Facilities (reference letter ADOCE-C, Hq ADC, 8 Nov 54, subject as above)			
<u>d. Operations Facilities.</u>			
Fire station, crash (4-stall)	SF	9,165	36-30-01
Operations, base, with control tower	SF	4,804	30-07-03M
Readiness, crew	SF	10,500	30-11-04M
Shelter, turn-around	EA	14	
<u>e. Aircraft Maintenance Facility.</u>			
Hangar, alert	SF	22,450	39-01-40
Hangar, maintenance, base	SF	21,640	39-01-41
Hangar, organizational (ready)	SF	21,640	39-01-39
Shop, maintenance, base	SF	12,580	39-01-41
Shop, maintenance, organizational, standard	SF	5,160	39-01-41M
Shop, maintenance, base, powered ground equipment	SF	5,000	
Building, rocket storage, checkout and assembly	SF	10,434	33-39-01
Test stand, jet	EA	1	
<u>f. Training Facilities.</u>			
Flight simulator, training, crew	SF	2,840	28-14-03
Range, facility, small arms	EA	1	

<u>FACILITY</u>	<u>UNIT</u>	<u>QUANTITY</u>	<u>USAF DWNG</u>
<u>g. Troop Housing and Messing.</u>			
Dormitory, airmen	MN	489	21-01-108
Mess, airmen	SF	10,800	36-05-67
OQ, men	MN	15	
<u>h. Family Housing.</u>			
Housing, airmen, appropriated funds	UN	0	
Housing, officers, appropriated funds	UN	5	
<u>i. Utilities.</u>			
Drainage, storm water	FT		
Electric distributing lines	FT		
Electric transmission lines	FT	21,120	
Electric substation	KVA	2,500	
Incinerator, refuse	EA	1	
Lights, street	EA		
Parking area, vehicle	SY	9,000	
Road	MI	6.3	
Sewage disposal mains	FT		
Sewage treatment	GD	172,000	
Telephone lines cable circuit (UG)	FT	1,500	
Telephone lines open circuit	FT	30,000	
Walkway	SY	28,000	
Water mains, potable	FT	10,000	
Water plant, filter and treatment	GPD	172,000	
Water pumping station	EA	1	
Water storage	GA	100,000	
Water well (280 GPM minimum)	EA	1	
<u>j. Real Estate Facilities.</u>			
Land, esement	AC		
Land, owned Government	AC		
<u>k. Medical Facilities.</u>			
Infirmery, base (6 bed)	SF	4,440	32-24-18

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<u>FACILITY</u>	<u>UNIT</u>	<u>QUANTITY</u>	<u>USAF DWNG</u>
<u>1. Storage Facilities.</u>			
Storage, cold	SF	1,588	33-04-06
Storage, inflammable, bottled gas	SF	250	
Storage, paint and dope	SF	238	33-17-07
Storage, open, AIO	SY	4,000	
Storage, open, bulk supply	SY	2,000	
Storage, open, motor pool	SY	4,000	
Storage, explosive and ATO	SF	6,440	33-15-11
Storage, bulk, rocket, magazine			33-39-02
Storage, segregated, magazine	SF	540	33-13-08
Supply and issue, organiza- tional	SF	2,050	33-01-09
Warehouse, base AIO	SF	2,048	33-09-07
Warehouse, base bulk supply	SF	40,000	33-02-22
Open salvage yard	SY	1,000	
Shed storage, salvage	SF	750	
<u>m. Personnel Facilities.</u>			
Chapel, base	SE	150	38-01-14
Recreation facility, multi-purpose	SF	7,000	31-06-05
Club, NCO	SF	4,000	
PX sales store	SF	4,992	36-06-28
<u>n. Administration Facilities.</u>			
Administration, AIO	SF	1,000	
Commissary, clothing sales	SF	2,000	
Fence, perimeter	FT	22,500	
Fence, security	FT	12,300	
Security, gate house	SF	100	27-05-04
Security, guard house and headquarters			
Air Police	SF	740	
Headquarters group air base	SF	6,600	
<u>o. Shop Facilities.</u>			
AIO shop, base	SF	2,000	
Auto maintenance shop, base	SF	6,516	35-02-14
Dinghy shop (where needed)	SF	860	36-33-04
Parachute shop, base	SF	6,022	36-33-04
Photo reconnaissance shop, base	SF	1,000	

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SECRET FROM COOP-OP-3 0704. REFERENCE MESSAGE THIS HQ, AF COOP-OP-3
DATED 1 APRIL 53 AND YOUR LTR DATED 29 APRIL 53. SUBJECT: "ALLOCATION
OF F-102 AIRCRAFT." ACTION IS BEING TAKEN TO INCREASE YOUR F-102
ALLOCATION. FOR PLANNING PURPOSES ESTIMATE THE FOLLOWING ADD F-102
INVENTORY TO BE AS FOLLOWS: FY 57 - 9, 17, 25, 35. FY 58 - 107, 129, 158
THOUGH ALLOCATION FOR FIRST THREE QTRS OF FY 57 DOES NOT MEET UR
STATED REQUIREMENT, IS REPRESENTS TOTAL PRODUCTION MINUS A/C REQUIRED
FOR TEST.
BT
15/21102 JUL RJEPHO

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262

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON 25, D. C.

4 JAN 55

AFPM-4-4

SUBJECT: Proposed F-102 Table of Organization

TO: Commander
Air Defense Command
101 Air Force Base
Colorado Springs, Colorado

1. Reference: Air Defense Command Letter, (ADND), 12 June 1954, subject as above.

2. Tables of Organization for the F-102 are being held in abeyance pending correction of the following points resulting from staff analysis of the T/O as first proposed:

- a. T/O should include AFSC's listed in AFM 35-1B and 35-1C.
- b. Functional coding should be in accordance with AFM 171-8.
- c. Three level career space should be provided in those areas where the job can be defined as the three level. Where possible AFSC's should provide progression through the career field ladder.
- d. Authorization for separate squadron operation is not contained in the proposed T/O. If such operation is considered to be necessary, provision should be incorporated in the T/O.

3. An equipment list must accompany the proposed T/O so that necessary entries can be made to equipping guides. Where equipment is required for the various "parts" of the T/O, it should be so specified.

4. It is requested that the proposed T/O be reconsidered in light of the above comments and resubmitted not later than 15 February 1955. Should it be expedient to personally justify the retention of certain points or concepts, it is requested that this headquarters be notified of intent by 10 February so that a conference can be convened for the purpose of resolving any points of difference.

BY ORDER OF THE CHIEF OF STAFF,

L/T M. R. HIGHTON
Colonel, USAF
Chief, Manpower Division
Manpower & Organization, HCS/O

10067

REF AFM-2-2 Subj: Proposed F-105 Table of Organization

b. Integration of all elements into one major electronic system requires that maintenance concepts and procedures, some of which are at variance with present day practices, be employed and that the training requirements be based upon these concepts. The important considerations are:

a. First, integration of the fire control system and its associated associated equipment requires that highly trained, highly qualified personnel be provided for maintenance purposes. This requirement results in a great amount of use of these level classes; however, there are certain classes at this level have been used in order to provide for preparation through the career field ladder. Extensive formal fundamental training to provide an introductory course technically for entrance into a specialized training program on the integrated electronic system is essential. The ideal situation would be to have the personnel trained for maintenance of the entire fire control system, but due to the complexity of the equipment, this would result in a prohibitive period of time required for training purposes. A division of maintenance responsibility is, therefore, necessary which will be compatible with the system. It is noted that initially in aircraft operation and functional tie-in where this division of maintenance possible on a functional basis. The division most suitable is that of "Radar Subsystem" and "Computer and Control Subsystem". With this division, there remains two common functions which require detailed knowledge on the part of both the "Radar" and "Computer and Control" maintenance men. These are the common control function and the power regulation and distribution function.

b. Secondly, the personnel classification system, and more specifically the Fire Control System Career Field Sub-Grades (SFG), is based upon requirements of similar aircraft. Job descriptions do not define the SFG elements of similar aircraft. Job descriptions do not exist for the F-105. Certain changes have been made to AFM 2-2 and these changes have been incorporated into the proposed SFG. Even though the career classification procedure and SFGs have been employed, it is noted that the present job descriptions are inadequate for the F-105 career field. In this connection, this memorandum has outlined and submitted for your approval a proposal for the establishment of an interim career field maintenance career field (reference 4, above). It is noted that within this report, outline 1, 2 and 3 have been added to outline 4, which is included in order to indicate specific work requirements as shown in the following:

- (1) add outline 1 maintenance training required on equipment applicable to the F-105 aircraft, except the intermediate control system.
- (2) add outline 2 maintenance overall functional training required on the F-105 system, and detailed aircraft knowledge on the radio, electric auxiliary and the SFG.

REF: AFM-2-4 (4) Revised F-400 Table of Organization

(1) AFM-2 will be a major element of the AFM-2 system, and will be subject to the AFM-2 system, and will be subject to the AFM-2 system.

2. In order to provide adequate personnel with the qualitative experience and training necessary, it is essential that the present AFM-2 system be reorganized to meet the needs of the AFM-2 system. This reorganization should be based on the AFM-2 system and should provide adequate experience of these systems like a full-time AFM-2 system. In the AFM-2 system, the AFM-2 system will be a major element of the AFM-2 system, and will be subject to the AFM-2 system.

3. When the AFM-2 system is reorganized, a detailed organizational chart has been prepared for the AFM-2 system and electronic equipment of the AFM-2. This chart indicates the personnel required for this AFM-2 system and the organizational arrangement believed to be most suitable. This chart is attached as Enclosure (1).

4. This headquarters has developed a Special Organization Plan for AFM-2 system. (Enclosure (2) above.) This proposal, when implemented, will incorporate those functions associated with the AFM-2 system as a major element of the AFM-2 system. This proposal will be subject to the AFM-2 system, and will be subject to the AFM-2 system. In the AFM-2 system, the AFM-2 system will be a major element of the AFM-2 system, and will be subject to the AFM-2 system.

5. In order to ensure that an adequate grade structure is provided for AFM-2 system, a special grade structure has been prepared. (Enclosure (3) above.) This proposal will be subject to the AFM-2 system, and will be subject to the AFM-2 system. In the AFM-2 system, the AFM-2 system will be a major element of the AFM-2 system, and will be subject to the AFM-2 system.

Enclosure and Index

2 of 200, 2100, 2200

AFM-2 system (AFM-2)
 AFM-2 system (AFM-2)
 AFM-2 system (AFM-2)

100
 100
 100

THE PROPOSED 1964 FEDERAL F-105 STATE OF CALIFORNIA

1. The large amount of general purpose equipment used on the F-105 aircraft makes the equipment for the 1964 general purpose equipment program a priority. In view of this, and in order to provide additional general purpose equipment for the general purpose used for this program, the following equipment is being requested and is included herein.

2. Reference is made to paragraph 10, basic letter. It is not intended a replacement will occur. The items will be to supplement existing equipment. Therefore, this provision has not been included in the 1964.

3. In connection with paragraph 4, basic letter, it is not intended a replacement will occur. The items will be to supplement existing equipment. Therefore, this provision has not been included in the 1964.

4. The proposed 1964 equipment list is attached as Indenture A.

5. The approval of our program for the establishment of a new inventory management system, under 1964, or the extension of the program, will require additional to be used for 1964 equipment replacement. Details of this is the proposed 1964, including the 1, 2, 3 and 4 included in Indenture B to the 1964 equipment list.

6. The completion of the presentation above, the 1964 and the equipment list is approved and published for use by this command.

3 Indentures
1. Proposed 1964 F-105
2. Proposed 1964 F-105
3. Proposed 1964 F-105
4. Proposed 1964 F-105
1964 F-105; Indenture B not use as files, basic letter and Indenture A and explanatory.

303.11

RDTSB

SUBJECT: (Unclassified) F-102B Configuration

TO: Commander
Air Defense Command
Fort Air Force Base
Colorado

1. Reference detailed F-102B configuration and program presented to Headquarters USAF on 4 May 1955 and to be presented to Headquarters AWC on 6 May 1955 and to the Air Staff, Headquarters USAF on 12 May 1955. (Unclassified)

2. The following F-102B configuration is recommended for approval:

a. Performance

- (1) Maximum Speed - M 2.0
- (2) Combat Ceiling (steady state 500 feet per minute rate of climb 35,400 feet)
- (3) Combat Radius - 375 NM

The F-102B as proposed will have a capability of attack at 50,000 feet but not as a steady state attack. This performance is estimated to be well within the maneuver capability of the weapon system, including the operable limits of the fire control system.

b. Engine - J 75

c. Electronic and Control System - MX-1179

d. Armament - Primary armament to be 6 Falcons (Combinations of GAR-1A and GAR-1C)

e. The requirement for 2.00 "FFAR" should be reaffirmed in view of the back-up capability of the 12 Falcons. (Secret)

3. The recommended programming for the F-102B includes flight of first prototype by August 1956, with accelerated production build-up (fully tested system) in June 1958. (Confidential)

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4. This proposed configuration and production schedule has been coordinated with lead users Mr. [redacted] (unclassified)

264

17 March 1955

From: Hq USAF, Washington D. C.
 To: Comdr ARDC, Balto, Md.
 Info: Comdr, ADC, Ent AFB, Colorado Springs, Colorado

~~/S E C R E T/~~ From AFDRD-AD 50107 Comdr ARDC, Attn: RDEED and
 RDEFA: Comdr, AMP: Attn: MEMEB, NFE and MFER-F; Info, Comdr,
 ADC Attn: ADCFR. Reference ARDC letter of 16 January 1955. Subj:
 "F-101A Development Program", with ME 1st Indorsement dated
 7 February 1955 and ADC, 2nd Indorsement dated 21 February 1955.
 This headquarters approves development of McDonnell two place
 F-101A/J-57 all weather interceptor with modified Hughes 3-4
 VES for the USAF inventory. No further consideration will be
 given to single place F-101A. Also approve development of MX-1179
 RCS with 40" antenna for possible later use on F-101B/J-57. You
 will continue development planning for the F-101B/J-57, however
 Hq USAF decision on this airframe will not be made until later
 date. Priority 1A is assigned for development of all these systems.
 Detailed answer to ADC message is being prepared. Meanwhile, pro-
 curement authorization 55-205, dated 16 February 1955, establishes
 \$8,770,400 under control symbol 55-134-2 to support pre-production
 costs for the planned FY 56, F-101 interceptor program. Funds to
 support MX-1179/40" antenna development will be made available
 upon request by ME. In the interim, funds presently authorized on
 CMI 55-134-2 may be utilized to support an early start on the

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From: HQ USAF To: Comdr AFDC, Balto, MD. (Continued)

MI-117/90" antenna development. IP-101A will be developed to carry armament in two basic configurations. First configuration is Ding Dong, with GAR-101B missiles and or 2,000 IFR's in combination yet to be determined pending results of current McDonnell studies and receipt of your recommendations. Second configuration is 6 x GAR-101B and 38 x 2,000 IFR's. Flexibility of basic armament configuration selection at lowest maintenance schedule is very much desired. Final decision on requirement for self-contained automatic navigator pending review with using commands. You will be notified as soon as possible. You will initiate immediate action to improve the IP-101 effective combat ceiling to at least 50,000 feet by whatever means available. This capability should be within the weapon system at time of operational buildup. Prime effort should be directed toward getting the interceptor itself to 60,000 feet by additional power augmentation. Other efforts such as missile "snap-up" or aircraft supercruise burn techniques should be fully exploited but must be regarded as minimizing need for the prime effort stated above. To eliminate confusion with other weapon systems request you designate new nomenclature for IP-101 systems and allied FCS. AFDC will assume executive responsibility for these systems. This headquarters processing formal documentation. Request development plan be expedited.

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AG01

COPY OF INCOMING CLASSIFIED MESSAGE

A-33-17

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DE RJEPYB 11C

P 172035Z

FM COMDR ARDC BALTO MD

TO RJEDWP/COMDWADC WPAFB OHIO

INFO RJEDWP COMAMC WPAFB OHIO

RJEDMH/CINCSAC OFFUTT AFB NEBR

RJEDEN/COMADC ENT AFB COLO

BT

SECRET//FROM RDTSD-6-31-E. THE FOLG WIRE FROM HQS USAF IS
QUOTED FOR YOUR NECESSARY ACTION. QUOTE: FROM AFMPP 54961 SUBJ
F-101B PROGRAM, PURSUANT TO DECISIONS REACHED BETWEEN ASSISTANT
SECRETARY OF THE AIR FORCE, MATERIEL, CHIEF OF STAFF, AND DEPUTY
CHIEF OF STAFF, MATERIEL THIS DATE, YOU ARE DIRECTED TO PLAN TOWARD
ACCELERATING THE F-101B PROGRAM IN ACCORDANCE WITH PRESENTATION
MADE TO THE AIR COUNCIL BY AMC/ARDC 8 JUNE 55. IN CONNECTION WITH
THIS PROGRAM, IT IS REQUESTED THAT YOU DEVELOP A PLAN TO CONVERT
F-101A'S ON PRODUCTION LINE TO F-101B AIRPLANE, OBTAINING AS
MANY F-101B'S AS POSSIBLE IN LIEU OF F-101AXS. THIS HEADQUARTERS

FILE NUMBER 308.4

ACTION: DM
INFO: CH, IS, DU, PR, DM

17833B

PAGE TWO RJEPYB 11C

CONSIDREING FINACING F-101B PROGRAM IN LIEU OF F-101A'S,
HEREFORE, CONSIDER COST EFFECT OF MAXIMUM NUMBER OF F-101B'S IN
REDUCING OR ELIMINATING FY 56 F-101A PROGRAM. PRIORITY ON THIS
PROGRAM IS ON F-101B INTERCEPTOR. NO PRODUCTION OR DEVELOPMENT PROB-
LEMS INVOLVING F/R F-101A'S SHOULD BE ALLOWED TO INTERFERE WITH
MAXIMUM ACCELERATION OF F-101B. WITH REGARD TO F-101B AIRPLANE,
THIS HEADQUARTERS DESIRES TO KNOW EARLIEST PRACTICABLE DATE IT
WILL BE POSSIBLE TO PHASE IN J79 ENGINE IN LIEU OF J57 ENGINE.
REQUEST INFORMATION BE FORWARDED THIS HEADQUARTERS ON THE FORE-
GOING QUESTIONS AS SOON AS POSSIBLE. UNQUOTE. INFORMAL INFORMATION
MADE AVAILABLE TO THIS HQS IS THAT THE J-79 ENGINE CONTRACTOR
HAS PROPOSED SIGNIFICANT ACCELERATION OF THE J-79 ENGINE PROGRAM.
THIS PROPOSED ACCELERATED J-79 ENGINE PROGRAM SHOULD BE EVALUATED
AS A PART OF YOUR ANSWER TO THE POSSIBLE "PHASE-IN" OF THIS ENGINE.
THE RISKS OF ACCEPTING THIS PROPOSED ACCELERATION FROM A DEVELOP-
MENT VIEWPOINT SHOULD BE COVERED. IT IS REQUESTED THAT YOUR ANSWERS
BE PREPARED IN PRESENTATION FORM IN COORDINATION WITH AMC

7/21/52 JUN RJEPYB

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GOLD SPRINGS, COLO.

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This is copy No. ___ of ___ copies.

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HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND **266**
Post Office Box 1178
Baltimore 1, Maryland

FILE NUMBER **303.10**

REPLY ADDRESS COMMUNICATION TO CHIEF,
AGC, ATTENTION FOLLOWING OFFICE SYMBOL

RDTSO 14 JAN 1954

SUBJECT: (Unclassified) IF-101A Development Program

THRU: Commander
Air Materiel Command
Wright-Patterson Air Force Base
Ohio

THRU: Commander
Air Defense Command
Ft. Air Force Base
Colorado Springs, Colorado

TO: Deputy Chief of Staff, Development
Headquarters, United States Air Force
Washington 25, D. C.

1. Reference is made to Headquarters AGC letter, subject, (U) USAF Interceptor Program, dated 22 June 1954 and its endorsement from Headquarters USAF dated 13 July 1954. (Unclassified)
2. The configuration of the interceptor version of the F-101A was determined by the IF-101A Configuration Conference 19 October 1954 and the Mock-Up Board 9 November 1954. The configuration agreed to in single place, will have an M-3 type fire control system, and carry 88 2" rockets and 6 Falcon (AIM-1/19) missiles. Other electronic equipments are listed in Inclosure 1. (Secret)
3. The performance listed in Inclosure 2 reflects latest revised estimate by the Contractor for the configuration approved by the Mock-Up Board and is concurred in by this Command. (Unclassified)
4. Equipment availability schedule, Inclosure 3, represents first production articles. No firm availability dates can be determined for data link, flight control system or AHS because development is not completed, but best estimates are that these items will meet the airframe schedule. Further, there are no items whose production lead time exceed that of the airframe. (Confidential)
5. The recommended aircraft acceptance schedule is listed in Inclosure 4. The contractor has proposed, and is capable of, a higher and faster rate, but in order to minimize possible rework and modifications, and to insure adequate testing of armament and fire control system, production build up is shown as commencing approximately after first prototype. (Confidential)

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 The above information is for the USAF, Subject: (Uncl) F-101A Development Program

6. A working version of the F-101A incorporating a modified fire control system could be delivered according to the schedule shown in Enclosure 4, which indicates a wing strength date three months later than the single plane version. There appear to be no development problems at this point which would significantly affect the schedule of the two-plane F-101A. (Confidential)

7. If it is decided to procure the F-101A as an interceptor, it is recommended that consideration be given to the follow-on development of an improved model incorporating J-57 engines and the MX-1179 fire control system. Since the performance of such an advanced version, reference Enclosure 2-4, approaches that desired in the long range interceptor, it is recommended that the fire control system incorporate an all-weather search range capability. The schedule shown in Enclosure 4 also does not consider the availability of MX-1179 with a 40° antenna as specified in connection with the Long Range Interceptor competition. The schedule shown would require a go-ahead as soon as possible with respect to the fire control system. Because of engineering overlap on the contractor in connection with the F-101A, a go-ahead with respect to airframe would not actually be necessary before about August 1955. This go-ahead should be for a limited number of aircraft for test purposes, with production release to be given only after successful completion of Phase II flight tests. (Confidential)

8. Enclosure 5 is an outline of the flight test program for the F-101A, and should be used for planning only since it is based on limited data. A summary of cost data and McDonnell production potential are included in Enclosures 6 and 7. (Unclassified)



THOMAS S. POWER
 Lieutenant General, USAF
 Commander

7. Enclosure
1. F-101A Configuration
 2. Performance Summary
 3. Comparison of the Various
 4. Production Schedule
 5. Flight Test Schedule
 6. F-101 Cost Summary
 7. USAF Production Rate

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IP-101A
Intercom

The general design philosophy of modifying
the present system by replacing the forward
and aft intercom intercomer section.
The present IP-101A from the Y-101A.
The IP-101A AFA of station 417,
for addition of engine
The present IP-101A is included in the present IP-101A

- AN-14 AN-21 (AN-14)* Omni - DME
- AN-34 HF Communications
- AN-35 Humber
- AN-36 Provisions including AN-31
- AN-2 Attitude Indicator
- AN-26 Interrogator
- AN-27 Transponder
- AN-10 Amplifier, etc.

The present IP-101A is replaced by 1-0 could be substituted for

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Stamp: *Stamp 14 from photo*
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SECRET

17-101A - SINGLE PLACE
 88 2nd Rockets
 6 GAR-1 Falcons
 J-57-P-13

		Area Interceptor		
		2-450 gal tanks	Max Internal	400 mi Radius
Takeoff Gross Weight	lbs.	49,700	43,436	38,925
Combat Gross Weight	lbs.	38,282	36,364	34,356
Landing Gross Weight	lbs.	31,197	30,904	30,677
Fuel (6.5 lbs./gal.) - Internal	gal.	2,200	2,200	1,506
External	gal.	900	-	-
Takeoff Ground Roll - Maximum Thrust	ft.	4,150	3,090	2,430
Military Thrust	ft.	7,180	5,190	4,020
Maximum Speed - 35,000 ft.	M	1.49	1.50	1.58
- 45,000 ft.	M	1.21	1.26	1.32
- 50,000 ft.	M	-	.98	1.03
Combat Speed at 45,000 ft.				
3 Min. Max. Per. Accel.	M	1.08	1.12	1.16
At Load Factor of 1.2 g	M	.96	1.03	1.11
Per Long. Accel. of .333 kts./sec.	M	1.06	1.12	1.19
Maximum Rate of Climb - 35,000 ft. ft./min.		12,550	13,450	14,400
- 50,000 ft. ft./min.		200	1,550	2,750
Time to Climb to 50,000 ft. (or Combat Ceiling if Less) from Brake Release				
Takeoff Wt.	min.	6.67	6.31	4.97
Combat Wt.	min.	4.90	4.30	3.71
Time to Climb to 50,000 ft. (or Combat Ceiling if Less)				
Takeoff Wt.	min.	-	-	4.49
Combat Wt.	min.	4.22	3.66	3.26
Combat Ceiling (500 YFM R/C)-Max. Thrust ft.		49,800	50,900	52,100
-Mil. Thrust ft.		45,500	46,500	47,700
(1.2 g) -Max. Thrust ft.		45,900	47,000	48,200
Landing Ground Roll (No Parabrake)	ft.	4,715	4,670	4,640
(With Parabrake)	ft.	3,045	3,020	3,000
Stall Speed (Landing Gross Weight)	kts	144	143	143
Combat Radius - Area Interceptor Mission (MIL-G-5011A)	na. mi.	926	686	400

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FV-101A - TWO PLACE
88 2" Rockets
6 GAD-1 Falcons
J-57-P-13

		2-450 gal tanks	Area Interceptor Max Internal	400 mil radius
Takeoff Gross Weight	lbs.	49,253	42,990	39,557
Combat Gross Weight	lbs.	38,414	36,471	34,935
Landing Gross Weight	lbs.	31,693	31,377	31,225
Fuel (6.5 lbs./gal.) - Internal	gal.	2,050	2,050	1,522
External	gal.	900	900	-
Takeoff Ground Roll - Maximum Thrust	ft.	4,070	3,025	2,520
Military Thrust	ft.	7,010	5,050	4,190
Maximum Speed - 35,000 ft.	M	1.49	1.49	1.50
- 45,000 ft.	M	1.20	1.26	1.30
- 50,000 ft.	M	.95	.97	1.00
Combat Speed at 45,000 ft.	M			
3 Min. Max. Per. Accel.	M			
At Load Factor 1.2 g	M			
For Long. Accel. of .333 kts./sec.	M			
Maximum Rate of Climb - 35,000 ft./min.		12,509	13,400	14,100
- 50,000 ft./min.		100	1,400	2,400
Time to Climb to 50,000 ft. (or Combat Ceiling if Less) from Brake Release				
Takeoff Wt.	min.	6.45	6.30	5.18
Combat Wt.	min.	4.95	4.35	3.88
Time to Climb to 50,000 ft. (or Combat Ceiling if Less)				
Takeoff Wt.	min.	5.39	5.45	4.45
Combat Wt.	min.	4.22	3.66	3.22
Combat Ceiling (500 FPM R/U) - Max. Thrust	ft.	49,700	50,900	51,800
- Mil. Thrust	ft.	45,400	46,400	47,300
(1.2 g) - Max. Thrust	ft.	46,300	47,300	48,300
Landing Ground Roll (No Parabrake)	ft.	4,700	4,740	4,720
(With Parabrake)	ft.	3,090	3,060	3,050
Stall Speed (Landing Gross Weight)	kts.	145	144	144
Combat Radius - Area Interceptor Mission (MIL-C-5011A)	na.mi.	859	617	400

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#27321
#65-58042
SACOB-14087-2

Performance Characteristics			
115 G. Interceptor			
A. Performance			
Takeoff Gross Weight	lb.	11,500	11,500
Combat Gross Weight	lb.	10,500	10,500
Landing Gross Weight	lb.	10,500	10,500
Fuel (6.5 lbs/gal) - Internal	gal.	1,000	1,000
Fuel (6.5 lbs/gal) - External	gal.	1,000	1,000
Takeoff Ground Roll - Maximum Thrust	ft.	1,000	1,000
Takeoff Ground Roll - Military Thrust	ft.	1,000	1,000
Maximum Speed - 35,000 ft.	mph.	4,000	4,000
Maximum Speed - 45,000 ft.	mph.	4,500	4,500
Maximum Speed - 50,000 ft.	mph.	4,800	4,800
Combat Speed at 50,000 ft. - After 3 Min. Max. Thr. Accel.	mph.	4,800	4,800
At Load Factor of 1.2 g	mph.	4,500	4,500
Per Long. Accel. of .333	mph.	4,200	4,200
ktas/sec.	sec.	1.0	1.0
Maximum Rate of Climb - 35,000 ft.	ft/min.	10,000	10,000
Maximum Rate of Climb - 50,000 ft.	ft/min.	12,000	12,000
Time to Climb to 50,000 ft from brake release	sec.	2.5	2.5
Takeoff Wt.	lb.	11,500	11,500
Combat Wt.	lb.	10,500	10,500
Time to Climb to 50,000 ft. Takeoff Wt.	sec.	3.0	3.0
Time to Climb to 50,000 ft. Combat Wt.	sec.	2.5	2.5
Combat Ceiling (500 FPM R/C) - Max. Thrust	ft.	50,000	50,000
Combat Ceiling (500 FPM R/C) - Mil. Thrust	ft.	45,000	45,000
Combat Ceiling (500 FPM R/C) - Max. Thrust (1.2 g)	ft.	51,000	51,000
Landing Ground Roll (No Parabrake)	ft.	4,000	4,000
Landing Ground Roll (With Parabrake)	ft.	3,150	3,150
Stall Speed (Landing Gross Weight)	mph.	140	140
Combat Radius-Area Interceptor Mission (MIL-C-5011A)	nm.mi.	700	700

ES:
 Combat Performance is quoted with maximum power except where noted.
 Combat Gross Weight is the weight immediately prior to combat.
 88 2" rockets 48 2.75" FFAR Rockets
 (WCSB-approved data)

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IF-101 PRODUCTION SCHEDULES																																																																															
	1955				1956					1957					1958				1959				1960				1961																																																				
	1	2	3	4	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	1	2	3	4	1	2	3	4	1	2	3	4																											
F-10A	9	7	8													9	12	15	18	21	24	27	29	29																																																							
RF-101A		2														5	6	6																																																													
IF-101A Single Place MG-3 J-57	Based on 1 Jan 55 Go-ahead															1	0	1	1	0	2	2	3	3	3	4	4	5	11	14	17	19	20	20	20	8	15	19	26	35	43	55	62	66	66	66	66																																
IF-101A Two Place E-9 J-57	Based on Go-ahead															1	0	1	0	0	0	0	2	1	1	0	2	2	3	3	5	11	14	17	19	20	20	20	8	15	19	26	35	43	55	62	66	66	66	66																													
IF-101B Two Place MX-1179 w/40' Antenna J-67 Engine	X Co-ahead FCS X Co-ahead Airframe															1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	6	6	6	6	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3																
* Wing-Strength																																																																															
• Prod Release																																																																															
□ Prod Acceleration																																																																															
The above schedules assume that only the single place or the two place IF-101A will be produced.																																																																															

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30661

(U) Progress Report No. 1, PD 55-18 (LR), F-101B
(Info as of 30 June 1955)

Asst for Programming

DCS/C

8 July 1955

PROGRAM BRIEF

LA W.J. Schlausener/213h

Introduction and integration of F-101B weapon system into ADC.

PROGRAM DEFICIENCIES

1. No deficiencies are apparent at this time.

SUMMARY

- a. F-101B Project Office, WADC, informed this headquarters that the F-101B Development Engineering Inspection is tentatively scheduled for 11-12 August 1955 and the Mock-Up Board for 7-8 September 1955. Representatives will be designated to represent ADC at both these boards when tentative dates are confirmed.
- b. The Operational Plan for the F-101B is being prepared and will be published when completed. Target date is 26 July 1955.
- c. The fighter interceptor program has recently been revised to include F-101B's. This program has been approved by the various staff agencies of ADC as well as Headquarters USAF and is being published. HQ USAF recently advised that accelerated production indicates 1st deliveries of F-101B's in 2nd Quarter FY 58 instead of 1st Quarter FY 59.
- d. Appropriate troop strengths have been entered in the ADC program document.

R. S. MACHUM
Brig Gen, USAF
DCS/Comptroller

001
Chief of Staff
DCS/C
FMR
CMT
HAG
OAM

bbbb

DCS/M
ASAM
Nat Com
Instl
DCS/P
RAF

11111

DCS/C
DAM
DESTROY
L. A. TRAINOR JR.
WOJG USAF
DCS/Personnel

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522-1

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(U) Progress Report No. 3, PD 55-5 (2A), F-102
(Info as of 30 June 1955)

Asst for Programming

DCS/O

8 July 1955

LA W. J. Schlausener

PROGRAM BRIEF

Introduction and integration of F-102 weapon system into AMC.

PROGRAM DEFICIENCIES

1. No deficiencies are apparent at this time.

REMARKS

- a. The revised fighter interceptor program was approved by the AMC Command Council on 14 June and published on 24 June.
- b. This headquarters requested Headquarters USAF to amend FI 57-1 in order to obtain the entire production of initial TF-102's for our squadron conversion program instead of sharing the limited available quantity of TF-102's with Training Command.
- c. Provisioning has been accomplished to support six F-102 squadrons at six separate locations plus forty-eight TF aircraft. Percentile progress reports are being requested from AMC. Provisioning on 562 F-102's has been finalized including nose section of the TF's not previously provisioned.

H. S. MACHIN
Brig Gen, USAF
DCS/Comptroller

Chief of Staff	-1	DCS/O	-5	DCS/P	-2
DCS/M	-4	MAC	-(1)	MAF	-(1)
Instl	-(1)	CAF	-(1)	DCS/C	-2
ASST	-(1)	CAE	-(1)	MAA	-(1)
Log Fl	-(1)	PER	-(1)		

DESTROY

L. A. TRAINOR JR.
WOJG USAF
DCS/Personnel

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HEADQUARTERS
AIR DEFENSE COMMAND
Ent Air Force Base
Colorado Springs, Colorado

DCS 268 ADCHR 564

ADC PROGRAM DIRECTIVE NO. 55-5 (LONG RANGE)

6 April 1955

SUBJECT: (UNCLASSIFIED) F-102

1. Objective: To insure timely and coordinated staff action required for the introduction and integration of the F-102 weapon system into the Air Defense Command.
2. Preliminary Staff Consideration: Representatives from DCS/O, DCS/P, DCS/M, DCS/C and the Office of the Assistant for Programming met on 21 March 1955 to discuss the F-102 and to determine information and action for inclusion in this directive. Conferees are listed in Attachment No. 1.
3. Analysis of the Problem:
 - a. On 22 September 1954, the ADC Command council approved a fighter program that reflected equipping of the first ADC fighter interceptor squadron with F-102 aircraft in 1st Quarter FY 1957. This was a change from previous programs that converted the initial units two quarters earlier.
 - b. Headquarters USAF approval of this program is indicated in PE 57-1, "Equipping and Conversion Chart," January 1955.
 - c. The operational concept and operational plan for the F-102 have been published.
 - d. Based on known aircraft production schedules and USAF aircraft allocations, sufficient F-102A aircraft will be available to equip two squadrons during 1st Quarter FY 1957. The PX 57-1, "Projected Aircraft Inventory," January 1955, indicates that a few F-102 aircraft may be delivered to ADC during 4th Quarter 1956. The equipping schedule for F-102 units is listed in Attachment No. 2.
 - e. Facilities peculiar to F-102 units were first included in the FY 1951 PWP. Ready rocket storage, test and assembly buildings, including the "B" section for Falcon missiles, were authorized by Congress in 1953. At the present time, facilities are under design by district engineers. Sufficient Falcon missile facilities have been programmed for the F-102 program.
 - f. Due to an increase in length of the F-102 airframe, some alert hangars are too short to accommodate the F-102. Future hangars

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ADC PROGRAM DIRECTIVE NO. 5545 (LONG RANGE) (continued)

will be constructed to revised definitives. Headquarters USAF is determining the corrective action to be taken on hangars already constructed.

g. The first two units selected for conversion to F-102's pose problems in the facility line. The Tactical Air Command has informed this headquarters that no additional maintenance facilities can be made available for ADC use at George Air Force Base by the conversion date. Because of joint use difficulties at Portland, no new facilities have been constructed since postwar major Public Works construction began in 1951. There is no alert hangar, and hangars, ammunition storage and other operational facilities are inadequate. This headquarters requested authority to develop a new base as a substitute for Portland. No decision has yet been reached. However, Headquarters USAF has informally advised that OSAF, CAA and the Air Space Subcommittee have tentatively agreed that equitable arrangements can be made, whereby ADC can continue to operate from Portland. Because of this situation, no funds were appropriated for FY 1955 PWP items including base maintenance hangar, operational T&B parking apron, readiness building and other operational facilities. Unless utilization problems can be resolved and funds obtained for construction of FY 1955 PWP items in time to permit completion by 1st Quarter FY 1957, it will be very difficult to support the conversion to F-102's.

h. Adequate provisioning of tools and test equipment has been difficult due to frequent changes in weapon configuration. Provisioning has been monitored by ADMAC. Provisioning for spares and equipment commenced in 3rd Quarter FY 1955. However, it appears that we will be short on some spares and equipment due to the short lead time remaining.

i. Heating, cooling and loading of missiles, and air conditioning of electronic systems are problems which require further resolution.

j. A proposed T/O for F-102 units was forwarded to Headquarters USAF for approval in June 1954 and resubmitted in February 1955. Approval has not been received as yet.

k. MTD and flight simulators will be available prior to receipt of F-102 aircraft.

l. Qualitative requirements for personnel have not been fully established.

m. The F-102 will be equipped with the MG-3 or MG-10 fire control system with later models having the MX-1179 (MA-1) system with data link provisions. The training program for MG-3 and MG-10 systems has been forwarded to Headquarters USAF. Provisioning for long lead time equipment for training and MTD's has been accomplished.

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ADC PROGRAM DIRECTIVE NO. 55-5 (LONG RANGE) (continued)

n. Input to formal training in new specialties should commence in 4th Quarter FY 1955. However, this will be delayed approximately one quarter. This delay is counteracted by training that will be received by about 275 ADC personnel during Phase VI and VII testing by AFGC. Phase VI tests will begin in 4th Quarter FY 1955 and Phase VII in 2nd Quarter FY 1956.

o. Preliminary planning for ADC participation in Phase VI and Phase VII testing has been completed.

p. Budget UAL's and MEAL equipment list have been prepared.

q. Tentative Table of Equipment (TTE) has been prepared and reviewed.

4. Agreed Course of Action:

a. Planning and implementing actions will continue for the integration of F-102's into the Air Defense Command in 1st Quarter FY 1957.

5. Implementation Required (No ADC Staff Action):

a. The Assistant for Programming will:

- (1) Through publication of the ADC Program and changes thereto, supply the air defense forces with program guidance concerning the F-102.
- (2) Revise this directive as required, and publish short-range program directives for individual F-102 units approximately seven months prior to scheduled unit activations or conversions. The first short-range directive will be published in December 1955.
- (3) Monitor staff progress reports on the F-102 system and keep the command section informed as to status of required staff actions.

b. The Deputy Chief of Staff/Comptroller will:

- (1) By July 1955, include funding for F-102 units in the FY 1957 budget estimate. (ADCEA)
- (2) Monitor and revise funding information on a continuing basis. (ADCEA)

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ADC PROGRAM DIRECTIVE NO. 55-5 (LONG RANGE) (continued)

- (3) In May 1956 include funding for F-102 units in the FY 1957 financial plan. (ADCBA)
- (4) Consolidate progress reports of participating staff agencies and submit an over-all monthly report which summarizes significant progress toward, and highlights deviations from, this directive to the Assistant for Programming. Information copies of the summary report will be forwarded to each participating staff agency. (ADCMA)

c. The Deputy Chief of Staff/Operations will:

- (1) Prepare and monitor the fighter interceptor program, revising as circumstances dictate. These program and revisions will be coordinated with the various staff agencies, particularly the Director of Installations, prior to delivery to the Assistant for Programming for consolidation into the ADC program book. (ADOOT)
- (2) Monitor the procurement of the TF-102 and program the allocation of these aircraft. (ADOOT)
- (3) Insure that appropriate troop strengths are entered into the ADC program document (at the time of preparation). (ADOMO)
- (4) Obtain approval of the T/O for F-102 units. (ADOMO)
- (5) Request non-T/O space authorizations necessary to support F-102 units nine months prior to scheduled organizational changes. (ADOMO)
- (6) Establish requirement for flight simulators to be in place sixty days prior to receipt of MTD (coordinate with DCS/M). (ADOOT)
- (7) Formulate and publish questionnaires, checkout and transition directives, training directives, operational directives, tactical procedures and pilot qualification criteria. (ADOOT)
- (8) Participate in operational suitability tests to determine the adequacy of manning and organizational provisions. (ADOMO)

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ADC PROGRAM DIRECTIVE NO. 55-5 (LONG RANGE) (continued)

- (9) Take normal activation or conversion actions in accordance with short-range program directives for individual units. (ADOMO)
 - (10) Monitor Phase VI and Phase VII tests to determine suitability of the F-102 in its present configuration for air defense operations. (ADOOT)
 - (11) In view of the facilities problem, review the program as concerns the use of Portland for the conversion of the second ADC unit to F-102's. (ADOOT)
- d. The Deputy Chief of Staff/Materiel will:
- (1) Beginning 4th Quarter FY 1955, monitor award of construction contracts and make periodic field inspections during construction period. (ADMIS)
 - (2) In 2nd Quarter FY 1956 prepare an ADC detailed maintenance plan. (ADMAC)
 - (3) In 4th Quarter FY 1955 provide Budget with information for M&O construction. (ADMIS)
 - (4) In 2nd Quarter FY 1956 provide Budget with information for FY 1957 financial plan. (ADMIS)
 - (5) Forward logistics plan to air defense forces by 3rd Quarter FY 1956. (ADMAC)
 - (6) Take normal activation or conversion actions in accordance with short-range program directives for individual units. (All sections)
 - (7) Monitor Phase VI and Phase VII testing. (ADMAC)
- e. The Deputy Chief of Staff/Personnel will:
- (1) In coordination with DCS/O and DCS/M, take action to provide best qualified personnel available for participation in Phase VI and Phase VII testing. Personnel will be selected insofar as practicable from units scheduled for early conversion to F-102's. Full advantage of individual training available will be made through 90-day rotation of all but minimum key personnel.

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ADC PROGRAM DIRECTIVE NO. 55-5 (LONG RANGE) (continued)

- (2) Take normal activation or conversion actions in accordance with short-range program directives for individual units.

6. Reports:

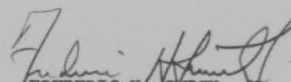
a. Each Deputy Chief of Staff or comparable staff agency named in preceding paragraphs will submit a monthly report to DCS/C (info ADHVP): Attention Directorate of Management Analysis. This report will be prepared as of 2400 hours the last day of each month, covering that month and will be delivered to DCS/C not later than 5th of each month following as of date. It will be prepared on Disposition Form (DD Form 96) as a brief narrative statement of all action taken during the period by the preparing agency toward accomplishment of this directive, and will show the current status with:

- (1) Positive action toward accomplishment.
- (2) Negative factors adversely affecting the program. The initial report is due 5 May 1955.

b. Negative reports may be submitted to Management Analysis by telephone.

2 Attachments

1. List of Conferees
2. Conversion & Equipping
Sked as of 3 Jan 55


FREDERIC H. SMITH, JR.
Major General, USAF
Vice Commander

DISTRIBUTION:

Hq USAF, DCS/D	- 5 cys	ADC
Hq EADF	- 5 cys	DCS/M - 8 cys
Hq CADF	- 5 cys	DCS/O - 8 cys
Hq WADF	- 5 cys	DCS/P - 8 cys
Hq ADC		DCS/C - 4 cys
CofS	- 1 cy	ADHVP - 11 cys

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LIST OF CONFEREES

ADHVP	Lt. Col. H. J. Mazur Lt. Col. Y. A. Pitts, Jr. Major B. E. McKenzie
ADOMO	Col. J. R. Wergin Lt. Col. A. W. Lewis
ADCMA	Mr. C. H. Franz
ADOCE	Major R. J. Streamer
ADOOT	Major R. De Littlejohn
ADMLO	Major F. R. Smith Capt. O. Brewer
ADMAC	Lt. Col. L. R. Walker
ADPRT	Lt. Col. M. S. Johnson
ADMIS	Mr. A. E. Everett
ADOPR	Lt. Col. C. J. Butcher
ADCBA	Mr. F. V. Cava

Attachment No. 1

SECRET

0095

CONVERSION AND EQUIPPING SCHEDULE
AS OF 3 JANUARY 1955

F-102

<u>Qtr</u>	<u>Sq</u>	<u>Base</u>	<u>Qtr</u>	<u>Sq</u>	<u>Base</u>
4/56	94	George	2/58	5	McGuire
1/57	497	Portland	2/58	61	Griffiss
2/57	58	Otis	2/58	324	Wurtsmith
2/57	63	Wurtsmith	2/58	83	Paine
2/57	518	George	3/58	76	Dover
3/57	327	K. I. Sawyer	3/58	95	Andrews
3/57	329	Griffiss	3/58	332	Newcastle
3/57	18	Portland	3/58	498	Bunker Hill
3/57	75	Suffolk	3/58	29	Great Falls
3/57	432	Truax	4/58	2	McGuire
3/57	64	George	4/58	47	Niagara
4/57	59	Wurtsmith	4/58	42	Kansasville
4/57	456	Truax	4/58	519	K. I. Sawyer
4/57	483	Minot	4/58	37	Burlington
4/57	482	Seymour-Johnson	4/58	93	Kirtland
4/57	98	Klamath Falls	1/59	54	Ellsworth
4/57	437	Otis	1/59	321	Walker
4/57	546	Cadillac	1/59	460	McGhee-Tyson
1/58	317	McChord	1/59	15	Davis-Monahan
1/58	65	Truax	1/59	74	Paine
1/58	413	Travis	2/59	62	Kansasville
1/58	331	Suffolk	2/59	14	Sioux City
1/58	465	McChord	3/59	85	Scott
2/58	48	Langley	4/59	318	Presque Isle
2/58	46	Dover	4/59	326	Grandview
2/58	96	Newcastle			

Attachment No. 2

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0096

Chief
 VC
 ADFO
 Asst. Dir.
 Fin. Ad.
 Lt. Col.
 and Col.
 Adm.
 Tech. Sup.
 Chief
 Staff
 Pub.
 and Sup.
 and Int. Aff.
 and Chap.
 and US
 Insp. Div.
 PA
 AD
 OASD
 R&D
 PA
 Major Gen.
 Staff
 OASD
 Col. Gen.
 and Gen.
 Asst.
 Tech. Sup.
 and Adm.
 and Sup.
 Gen. & Staff
 GS
 Gen. Sec.
 PMA
 WAF
 TAG
 CIV
 OS
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 IS
 OSD
 CCA
 C & F
 W & D
 O & C
 Ops. Anly.
 O & T
 P & E
 Man. D.
 CSW
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 Staff
 Gen. Sup. & Sec.
 Staff
 Log. Plans
 M. S. Sec.
 PCDA
 CAA
 To be Confirmed or
 Publication Form
 After use by AGC/SA
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Lt General Thomas S. Power
 Commander, Air Research and Development Command
 P. O. Box 1395
 Baltimore 3, Maryland

Dear Tommy:

With reference to your 1 April 1956 periodic information letter on developments in the field of air defense, I would like to make several comments on the information contained therein.

We had withheld a basic idea of a firm requirement for the F-3 leading edge modification pending receipt of information pertaining to modification scheduled, G. C. problems, ballast requirements, and retrofit kit availability, if required. This information has been received and a modification requirement was submitted on 10 May 1956.

The concept of employment, deployment and conversion plan by fiscal year through 1960 for the two-place interceptor version of the F-101 (F-101B) has been furnished Headquarters USAF. In general, the F-101B will be employed around the periphery of the continental United States defense system and employed as an interim base. It is our understanding that some 400 aircraft are planned for procurement.

The combat ceiling of the F-101B airplane leaves much to be desired. We have submitted our requirements for snap-up, or climbing attack capability, to Headquarters USAF for both the SA-1 series and Ding Dong rocket. It is my feeling that we should pursue vigorously all avenues of development and test which will increase the combat ceiling of F-102A/B and F-101B aircraft. As was pointed out in my letter of 14 April 1956, subject: Operational Improvements in Weapons Systems of the Continental Air Defense System, this is one of our first priority considerations. I would appreciate any additional information you have on this subject.

As a result of the presentation made by members of your staff on 6 May 1956, I feel that we have reached an agreement on the Ding Dong installations for the F-102A/B and the configuration of the F-102B. The Air Defense Command position has been forwarded you by indorsement to your letters of 5 May 1956, same subjects.

We have heard many favorable and promising reports about the Bird Dog rocket. A short time ago Headquarters USAF requested us to re-affirm our requirement for this armament. However, since our

Headquarters ADC

information is limited to the weapon itself and no information has been available on aircraft carriage, performance degradation (if any), or validated kill probabilities based on flight test, we have asked the Air Staff for more data. I would be very much interested in receiving the most recent data available within your headquarters and your recommendations on the integration of the Bird Dog weapon into our present and projected interceptors as well as augmentation force aircraft. As soon as this information is forthcoming, we shall be in a position to render a prompt decision on this matter.

Progress in the IM-99 (Bomarc) program is very encouraging. We would like to see added emphasis placed on the high performance of the Bomarc and the development of the pulse doppler seeker for low altitude operations. The Advanced Bomarc performance is needed to counter the increasing threat in the post-1960 period.

Members of your staff and the Glenn L. Martin Company presented a briefing to us on the status of the Air Defense Watador. Although not sufficiently conclusive, the information was interesting and we have indicated to Headquarters USAF that we support a continuation of this development to obtain more conclusive data. We will also support requirements for the ADWAT by other major commands whose primary or secondary mission is air defense.

The status of the Talos program is still undetermined as far as the Air Force is concerned. As of this date Secretary Wilson has not acted on the recent Joint Chiefs of Staff decision to give the Air Force full responsibility for the land based Talos program. We are basing our planning on the assumption that the Joint Chiefs of Staff decision will be approved. There is very little other than planning that can be done pending action by the Secretary. In this respect we would be very interested in your development plan for this weapon system and in any suggestions you may have for implementing this program to provide tactical units at the earliest date possible.

The Lockheed proposal for a tactical interceptor missile appears to be the only system which will closely compete with the Bomarc. I believe that we should support more than one development program in this area. I understand that Lockheed has been awarded a development study contract (L-401) to determine a feasible program for the extrapolation of the X7-B guidance test vehicle into a tactical interceptor missile. It is my feeling that we may have to rely on the interceptor missile in increasing proportion to counter the threats of the post-1960 period. The determination of the overall effectiveness of the interceptor missile as an air defense weapon is of utmost concern to us. If budgetary considerations permit, I feel that we should exploit a parallel interceptor missile program to the maximum.

Will be continued in
the following page
under the title AD-54

Prepared by
Approved
Date
Printed on Form 104

AD-54 7-53

This correspondence is classified _____ in accordance with
Par _____, AFR 205-1, 15 Dec 53, or for the reason (s) stated.

530-2

0099

Headquarters A-1

The importance of the committee's role is being made a part of the round table discussion. Colonel ... and Colonel ... will be present. It is hoped that this committee will be able to effect the full transfer of the development of the ...

The implementation of a technique to solve the ... utilization problem of the AS-10 ... the A/AW-66 ... deficiencies. With reference to ... investigations, we will ... to assist you in completing this project.

Your comments with regard to ... (A-1) ...; however, my staff has received unofficial information which indicates the existence of ... controls the data link project. ... of the airborne computer which will feed the data of the A/AW-39 into the fire control system. It is essential that this computer be available for installation of the data link A/AW-39 in retrograde into our current interceptors.

I am most anxious to receive a copy of your report ... to the ICB threat. We have ... the general operational requirements (A-1) prepared by ... detection system proposed for the ICB.

On 9 - 11 May 1955 my staff presented the A-1 report to Headquarters ... on the recommendations of the Lawlitt report. Our evaluation was ... of detail ... information indicated that, in general, the ... carried with the A-1 ... of this report. If there are any ... inconsistencies in our two reports, I will be very glad to discuss them with you.

The information contained in your report was most very helpful to my staff, and I am certain I have ... of communication. General ... is ... to ... responsibilities as ... It has ... since we have had an opportunity personally to discuss ... of mutual interest. If it meets with your approval, I would like to ...

Dear Colonel A. C.

get together at your earliest convenience, preferably here at Colorado Springs, after the arrival of General Partridge. We also avails to several very interesting briefings which will serve to bring you up to date on our most recent plans and future thinking.

Sincerely,

Richard G. Smith, Jr.
Major General, USA
Acting Commander

for L/C J. Thornton

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ADPR (30 Jun 55) 1st Ind

Hq. INQUIRY COMMAND, 1st Air Force Base, Colorado Springs, Colorado

101 Commander, Eastern Air Defense Force, Stewart Air Force Base, Newburgh, New York

1. The delivery of F-101B, two-place interceptor, will enter the ADC inventory in mid-1Y 1958 as an interim long range interceptor. This aircraft will be deployed under the concept of perimeter defense of the Continental United States and local defense of certain critical target areas. A total of 106 aircraft have been ordered and the first squadron being activated at Scripps, Vermont.

2. The performance characteristics of the F-101 are tabulated below:

Gross weight	40,600 pounds.
Maximum Speed	Each 1.49 at 35,000 feet. Each 0.95 at cruise ceiling.
Combat Ceiling	49,000 feet.
Radius of action	150 nautical miles with 2x500 gallon drop tanks. 617 nautical miles clean.
Take-off Roll	1070 feet with maximum power.
Landing Roll	3000 feet with drogue chute.
Armament	2 B61 Bombs plus 2 GRR-1, or 6 GRR-1/10 plus 32 2.00" FFAR.

3. The fire control system for the F-101B has been designated the SM-13. It will consist, generally, of an O-10 Fire Control system, modified for the two-place configuration. The features of weapon and aircraft control will be similar to those of the O-10. Certain specific characteristics of the present and electronic systems are not resolved due to development and procurement problems. Your headquarters is on the distribution list for the F-101B Operational Plan which is being written at present. This publication will contain the latest available information on the fire control system and necessary support equipments.

Not requested, not furnished?

Furnished (Date) (Initials)

As Confirmed in
"Minimum Form"
1 Apr 54, ADCSR

and by
Date

in Field No.

40, Form 11 (Rev)

558-1

This correspondence is classified _____ in accordance with
Par _____, AFR 205-1, 15 Dec 53, or for the reason (a) stated.

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Asst Prof	
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Hq BAEF RAG'R Subject: F-101B (UNCLASSIFIED)
 ADOFR (30 Jun 55) 1st Ind (Contd)

4. An F-101B squadron will require storage and check-out facilities for Ding Dong, GAR-1/1B, and 2.00" FFAR. Alert hangars and turn-around shelters will be required for all-weather operation. Since the dimensions of the F-101B are very similar to those of the F-102A, the programmed alert shelters will be adequate. You will be advised of additional operational facility requirements as the information becomes available.

BY ORDER OF THE COMMANDER:

E. E. PALMER
 Major USAF
 Asst Comd Adj

COMEBACK COPY

Not reported, as required
 R.R. Furnished 23 JUL 55
 (date)

It is Confirmed in
 Publication Form
 when see 24, ADCSM

Approved by: R T Merrill/jh
 1 Jul 55
 Telephone: 2003
 Date to Publish: 31/09

3

FORM 11 (Rev)

MIB 2X

This correspondence is classified **SECRET** in accordance with
 Per 23c, AFR 205-1, 15 Dec 53, or for the reason (s) stated.

R. B. Hughes, Col.

63186

QUALITATIVE OPERATIONAL
 REQUIREMENTS FOR THE
 INTERCEPTOR AIRCRAFT

(CLASS) Introduction

The Interceptor Section has as its primary mission to intercept and destroy all hostile aircraft which penetrate the continental United States. The present and proposed interceptors are unable to perform this mission in a satisfactory manner. It is recommended that a new type of aircraft be developed which will be capable of intercepting and destroying all hostile aircraft which penetrate the continental United States. This development should include the design and manufacture of a more effective weapon.

(CLASS) Objective

To achieve an immediate capability to supplement our present interceptor aircraft and to have a continued capability of destroying hostile enemy aircraft with one interceptor.

(CLASS) Description

a. The B-47A type aircraft, modified to incorporate the B-7 intercepting or "P" type radar system and a retracting carrier in the nose bay to house a maximum number of "FALCON" type missiles is recommended. Due to the immediate need for improved weapons in the defense of the United States it is recommended that this Qualitative Operational Requirement be placed in Category 2 as defined in AFR 89-11, 23 March 1958.

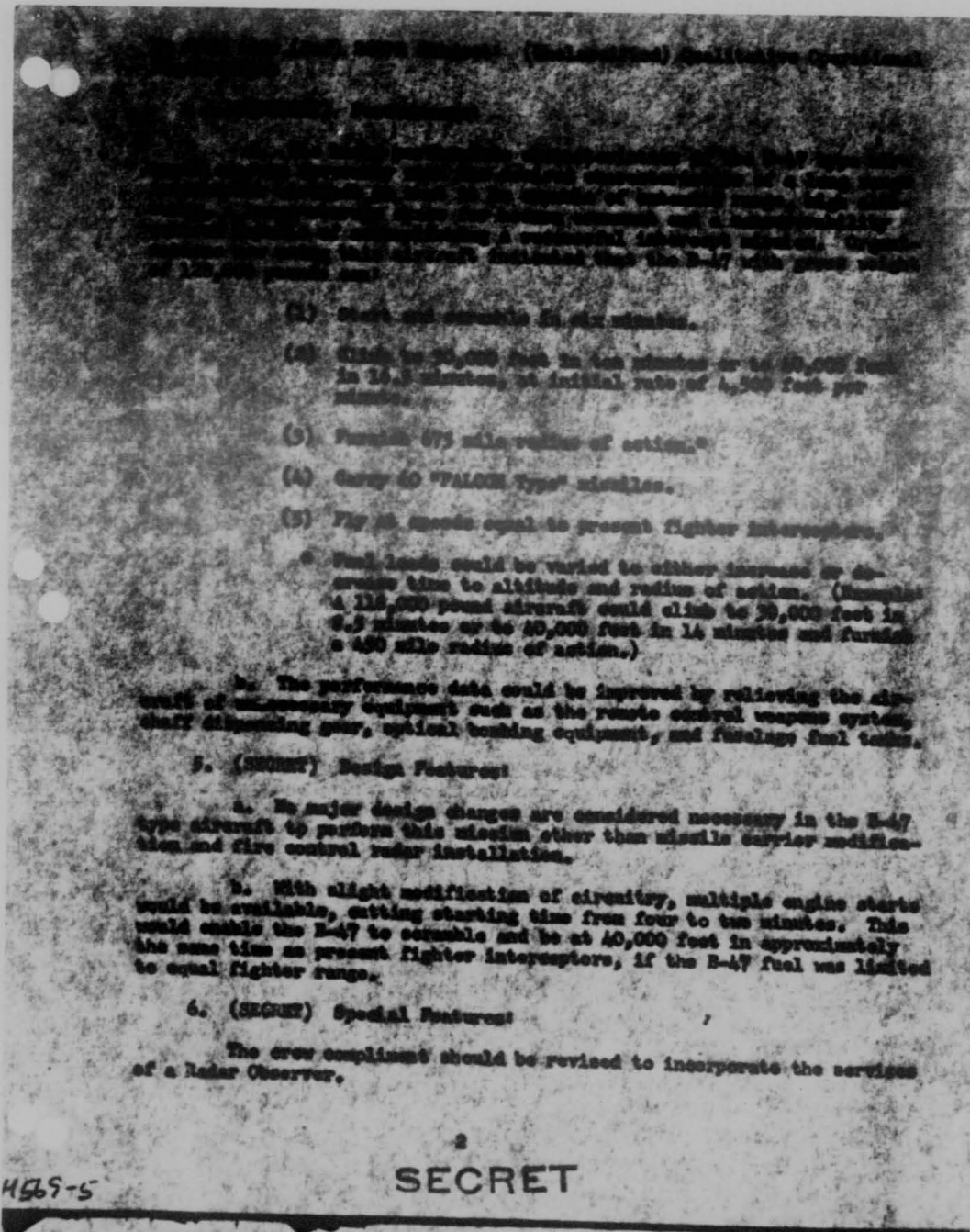
b. This aircraft, using a high powered search type radar, would be capable of a search range of 100 miles or greater and a "look-down" capability of approximately 30,000 yards. This greater search range would enable detection at long range thereby permitting dispatch beyond our limited coastal radar for coordinated operations with A-100 aircraft.

c. Aircraft could be operated at Central Air Patrol for periods but in excess of our present interceptor flight duration thereby eliminating repeated "contaminations" and congestion normally caused by runway and turn-ground procedures. In-flight refueling could be used if desired.

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656143

SECRET

5C-4042
285-2249
2808107-55



Hq 28th ADiv (Def) 280PR Subject: (Unclassified) Qualitative Operational Requirements

7. (SECRET) Proposed Basis of Issue:

These aircraft could be assigned providing one or two aircraft and crew to the now existing interceptor squadrons as augmentation units and/or complete squadrons of twelve aircraft for newly activated units. Flights of two aircraft deployed to various strategically located airfields would permit desired dispersal and still provide a powerful and effective striking force.

8. (SECRET) Methods of Meeting the Requirement:

The existing B-47 type aircraft can be obtained for modification from existing equipment levels of other commands as they are replaced by new equipment more suitable to the needs of these commands or from deliveries of new aircraft from the manufacturer.

9. (SECRET) Summary:

- a. The B-47 has been completely tested, proven, and could be made immediately available.
- b. Aircraft possess sufficient speed and altitude capabilities to successfully intercept any known Russian conventional type bomber and probably the T-37 and T-39.
- c. Aircraft could be quickly modified to incorporate modern fire control mechanisms and "FALCON Type" missiles for use under all weather conditions.
- d. The fire power of the B-47 would be as effective as ten present all weather interceptors thereby minimizing numerous scrambles. This would tend to eliminate scope congestion or over saturation against a target by friendly aircraft. Proportionately, recovery problems would be minimized due to minimum scrambles.
- e. This aircraft would provide a highly mobile effective striking force due to the small number required.
- f. Aircraft could be dispersed so that there would be one or two aircraft on any one base and would still remain a powerful attack force due to the many guided missiles aboard.
- g. Aircraft could be used as trailer aircraft and pass vital information to Direction Centers.
- h. Refueling techniques have been perfected for this type aircraft thereby providing an effective long range combat air patrol.

SECRET

Hq 26th ADiv (Def) 280FR Subject: (Unclassified) Qualitative Operational Requirements

18. (Unclassified) This correspondence is classified SECRET in accordance with the provisions of paragraph 23e, AFR 205-1, because of the information contained in paragraphs 1 through 9.

PHILIP H. GREASLEY
Colonel, USAF
Commander



669-7X

SECRET

0107

15
 Rg 28th Air Division (Defense), 280PR, Subject: (Unclassified) Qualitative Operational Requirements

WDCVC (5 May 1955)

1st Ind

26 MAY 1955

HEADQUARTERS WESTERN AIR DEFENSE FORCE, Hamilton Air Force Base, Hamilton, California

TO: Commander, Air Defense Command, Nat Air Force Base, Colorado Springs, Colorado

1. This Headquarters does not concur with the proposed method of meeting the stated requirement.

2. It is known that modification of a number of F-47s for air defense use has been the subject of a comprehensive study by Headquarters Air Defense Command. However, the present status of that study and plan is unknown. This correspondence is, therefore, forwarded for further evaluation.

3. Nonconcurrence by this Headquarters is based on the following:

a. With the existing limited depth of radar surveillance, the F-47 would not materially increase present intercept capabilities. Scramble of this type aircraft on available radar information is impractical.

b. Fuel remaining for repositioning is not considered a factor since tests have proved that this is more time consuming than multiple positioning. Operational policy advanced by air defense doctrine demands over commitment of available weapons against a suspected or known enemy, thereby reducing the need for repositioning.

c. Programming actions, retrofit of aircraft, and crew procurement and training would probably overlap the planned integration of other interceptors specifically designed for the long range mission in air defense.

d. In comparing the capabilities of the F-47 with the programmed F-101, the F-101 appears superior in all respects. With the estimated radius of action of 1000 nautical miles and speeds of mach 2.0, the F-101 aircraft will be more suitable for required air defense actions than the F-47 aircraft.

cc: Comdr, 28th Air Div (Def)
 Hamilton AFB, Hamilton,
 Calif.

CLINTON D. VINCENT
 Brigadier General, USAF
 Vice Commander

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Hq 28th Air Div (Def) 280PR subj: (U) Qualitative Operational Requirements

ADOFR (5 May 55)

2d Ind (Continued)

the number of interceptions that can be controlled simultaneously. The GSA-37 will allow each director to control six simultaneous intercepts, while the SAGE system can control 200 intercepts in any one sub-sector.

5. Headquarters USAF has approved procurement of 106 F-101B (originally designated F-101A) aircraft for the Air Defense Command. Wing strength is scheduled for August 1958. This aircraft will have a combat ceiling of approximately 50,000 feet; maximum speed at 40,000 feet of Mach 1.49; and a combat radius of action for the area intercept mission of 859 nautical miles. The F-101/J-67 or J-75 combination has a speed of Mach 2.0 and a combat ceiling of approximately 55,000 feet, and could be available approximately 1 1/2 - 2 years after the F-101B.

6. We are now in the process of formulating our requirements for an LR11-2, the follow-on to the LR11-1, for the post-1962 time period. This aircraft will incorporate all the latest advancements in the state of the art as pertains to airframe, engine, armament and fire control systems.

BY ORDER OF THE COMMANDER:

CHARLES R. BOND, JR.
Colonel, USAF
Acting DCS/Operations

COMEBACK COPY

Not requested, not furnished
Furnished 21 JUN 1955
(Date) (Initials)

SECRET

This correspondence is classified in accordance with
Per 23c AFR 205-1, 15 Dec 53, or for the reason (a) stated.

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FILE NUMBER 308.4
273

29 APR 1955

ADHCR

SUBJECT: Long Range Interceptor Competition

**TO: Chief of Staff
United States Air Force
Washington 25, D. C.**

COMEBACK COPY

Not requested, not furnished
Furnished 29 APR 1955
(Date) (Initials)
CLS
Comdr

- Colonel Kelly of your headquarters briefed me on 28 April 1955 concerning the Aircraft and Weapons Board recommendations on the LRIX program.
- On many occasions, I have emphasized to your headquarters the urgent need for an LRIX on a timely basis in the air defense inventory. Fulfillment of this requirement continues to slip year after year, and it now appears that the requirement cannot be filled until 1961. Any further slippage beyond this date will seriously hamper our ability to cope with the threat that will face us.
- I have also previously pointed out to your headquarters the necessity, as I see it, to carry out concurrent development for an LRIX with two aircraft manufacturers. Therefore, I heartily endorse a plan to procure six aircraft each from two contractors for competitive evaluation and test, and from these two contractors a winner to be selected for production.
- The proposal of the Aircraft and Weapons Board, as presented to me, to procure only design studies and mock-ups from two sources is not concurred in. Such a proposal, it appears, would cost an additional 9-10 months minimum time delay before aircraft would be operational. In addition, I seriously question the value of mock-ups and design studies solely as a sound basis for evaluation of suitability between designs of two contractors. Evaluation of an advanced all-weather interceptor, such as the LRIX,

card Evaluation
ernment
emporary
Until
ll Be Confirmed
Std Publication
ra Under par 3a,
CSM 5-3

Prepared by G. F. Smith, Major General, USAF/mk
Rep. 2234
29 Apr 55

ADC HQ FORM 11
12 Mar 52

AF - ADC, Colorado Springs, Colo.

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[Signature]

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ADHCR, Subject: Long Range Interceptor Competition (Contd)

should be based on flight test performance.

5. I urgently recommend that a go-ahead to two contractors be given to produce six aircraft each for flight evaluation.

B. W. CHIDLAW
General, USAF
Commander

2

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Asst Prog	Re: ANBC NOTED Subject: (Encl) Long Range Interceptor Competition	214 gkm
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Comd Sst Jt	TO: Deputy Chief of Staff, Development, Headquarters USAF, Washington 25, D. C.	
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1. It is not considered that any of the proposals, as evaluated by ANBC, will fill the stated requirements for weapons in the post-1960 period. An assessment of our 31 December 1955 air defense position and a discussion of U.S.S.R. development probabilities 1955-1965 are contained in Inclosure #3 added by this headquarters. None of the proposals would be adequate against the threat postulated in Inclosure #3.

2. This Command fully realizes that the demands we must make are very high. The determination of the nature of defensive weapons is dictated solely by the developments and probability of developments in the Soviet Union. The estimates of developments contained in Inclosure #3 require defensive weapons systems, the creation of which pose a serious challenge to American inventive genius, research, development, and production capability. It is felt that this challenge can be successfully met. However, if ANBC weapons systems objectives are considered impossible of achievement pertinent supporting facts should be made known as soon as possible so that other avenues of approach may be pursued.

3. Almost a year ago, 6 March 1954, in a letter addressed to the Chief of Staff, USAF, this command suggested that the Northrop Delta Scorpion proposal be procured to fulfill the need for a long range interceptor in the 1955-1960 period. Contrary to this recommendation, your headquarters directed subject competition. It is felt that another design competition to meet revised military characteristics as required of the post-1960 interceptor would be excessively time-consuming. We again suggest that a reasonable approach would be to award, immediately, competitive development contracts to selected contractors for aircraft, engines, and fire control systems. Pertinent data derived from the LRI competition should be exploited to the maximum.

4. The basic characteristics of the LRI must now stipulate adequate capability against the probable manned bomber threat and the earliest "Bvarks" development as postulated in

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 Par 22-C, APR 205-1, 15 Dec 53, or for the reason (s) stated.

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By AWC BTRM Subject: (Uncl) Long Range Interceptor Competition

Interceptor AB. In addition, the LRI must be capable of operating in accordance with the oft stated ADC concept of employment at the outer edge of enemy radar cover. This Command is willing to compromise desired characteristics as necessary to achieve the basic requirements. For example, minimum performance might be improved as: a radius of action of 400 miles, plus 1 hour loiter at 800 miles, plus 200 miles of supercruise dash, plus 5 minutes of dash. Perhaps in flight refueling will prove to be basic to adequate performance.

5. This Command concurs with the conclusion that for the 1980-1990 time period, an extended range interceptor capability can be provided only by aircraft currently under development. An interceptor version of the F-101 should be introduced into the ADC inventory to supplement the F-102 and provide extended range interceptor potential. Both these aircraft, however, are somewhat deficient in altitude capability as proposed, as compared to the 67,000 foot altitude of the F-57. Steps to improve the combat altitude capability of the F-102A and B and F-101A and B, by whatever means possible, should be considered a number one priority of the United States Air Force.

6. The following specific recommendations are submitted as a result of the ADC evaluation of the competition results.

a. Pressure an interceptor version of the F-101 for introduction into the ADC inventory.

b. Undertake immediately, with overriding priority, an improvement program for both the F-101A/B and the F-102/A/B, which will increase the effective combat altitude of these aircraft to at least 80,000 feet. Techniques and/or devices, such as the auxiliary rocket boost and the "snap-up" capability of both YALCOM and DIRM BOMB weapons should be investigated and exploited to the maximum extent practicable.

c. Award immediately competitive development contracts for long range interceptor aircraft, engine and fire control systems to selected contractors to meet the general-lead performance outlined in paragraph 4 above.

d. Delete from consideration for the ADC inventory all proposals submitted in long range interceptor competition.

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FORM 100

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FORM 100-11

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Per _____, APR 205-1, 15 Dec 53, or for the reason (X) stated.

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Hq AMDC EDTED Subject: (Uncl) Long Range Interceptor Competition

unless these proposals can be amplified into the aircraft requirement as described in paragraph 4. If this is possible, the recommendation in paragraph 6 c above is not applicable.

3 Incls
Added - 1 Incl
3. Assessment of 31
Dec 55 Def Position
and USSR Devel Prob
(1956-1965)w/2 attach-
ments

B. V. CHIDLAV
General, USAF
Commander

Info cy
Comdr AMDC

Inclosures not available for Command Adj
 file:
 Incl # 2
 2 Attachments to Incl #3

Approved by *W Powell*
 Col WH Powell, Jr/l dm
 2851
 5 Feb 55

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 Per 23 c, APR 205-1, 15 Dec 53, or for the reason (s) stated.

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(IN TURN)

Interceptor Missile Program and Its Effect Upon
Tactical Employment, Installations and Training

P&R

5 Jul 55

Lt Col J R Thornton, Jr/2133/jh

1. The Interceptor Missiles Program has progressed so rapidly during the past month that it is considered necessary for P&R to state its evaluation of the program. It should be understood that this is the "best available" information and the program can change rapidly after this writing.
2. Latest information indicates that the first tactical squadron of interceptor missiles will be integrated into the air defense system in January/March 1958. This unit will be the Talos defense unit, or the so-called "double roundhouse" Talos environment. (Discussion of the Standard Tactical Interceptor Missiles Base Environment follows in paragraph 4.) IM-99 (Bomarc) will be available in tactical squadrons in October/December 1959.
3. There will be two (?) Talos Evaluation Units (TEU); each unit will be approximately one-fourth of a Talos Defense Unit (TDU), i.e., one-eighth of a Tactical Squadron. The first of these units will be available approximately July 1957, and the second approximately two months later. Present USAF planning indicates that one TEU will be located at the White Sands Proving Ground so as to make maximum use of existing facilities, Navy "know-how" and Navy testing results to date. The second TEU will be used for Operational Suitability Testing and Unit Training of Air Defense Tactical Squadrons. The location of this second TEU is the problem at the moment; APOC would like to have this unit at Eglin and perform GST and Air Defense Unit Training. (As a matter of fact, there are unofficial rumors that APOC is prepared to present to Hq USAF a statement and plan to accept all Unit Training for ADC.) Air Defense Command would like to have this unit at the Interceptor Missile Employment Center (IMEC) if this center is available in time to accept installation for the unit. As previously stated, this unit will be available for installation approximately September 1957.
4. In a conference at Wright-Patterson Air Force Base, Ohio, on 9 June 1955, it was determined that the "Standard Tactical Base for Interceptor Missiles" is feasible. "Standardization" is defined as applying to air installations facilities and does not apply to any subsystem of the concerned weapon system. It is envisioned that such "brick and mortar" as real estate, roads, launching revetments (two Talos vs one Bomarc), commercial power, auxiliary power, security fencing, barracks, dining halls, special service installations, etc., could be made standard. This does not mean, for example, that two Talos could be removed and a Bomarc placed therein at will and without modification. It does mean that this change could be made with a minimum of installation modification and a minimum base inactive period. (This plan could apply in general to the Interceptor Missile Evaluation Unit Center.)

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SUBJECT: Interceptor Missile Program and Its Effect Upon Tactical Employment, Installations and Training (5 July 55)

5. The consensus in Headquarters USAF, ARDC and ADC is that the Air Defense Command can have the fourth or fifth Talos squadron in the Standard IN Base environment. The delay in the deployment is due to development of launchers, ground handling equipment and certain slaving modes in the Talos computer to accommodate the standard base environment. Air Defense Command is committed to accept the first three or four squadrons of Talos in the presently proposed Talos Defense Unit environment.

6. There is a plan for an interceptor missile program being coordinated in Headquarters USAF which indicates a desire on the part of the Air Staff for 15 squadrons of Talos and 40 squadrons of Bomarc in the Air Defense system. Since this is not an approved plan, this Headquarters cannot initiate programming for a program to include 55 squadrons of interceptor missiles at this time.

7. The USAF has established a requirement for the Talos to be an atomic carrier, to have terminal guidance capability, and to have a range in excess of 100 nautical miles. It is evident at this time that the initial weapons will have a lesser capability than required. The capability will most likely be either terminal guidance with HE warhead or atomic warhead with no seeker, both with a range of approximately 50 nautical miles.

CHESTER J. BUTCHER
Lt Colonel, USAF
Chief, Weapons Division
Ext 2851

Robert B. Hughes
ROBERT B. HUGHES
Colonel, USAF
Acting Director, Plans & Requirements
Ext 2216-2217

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HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND

Post Office Box 1395
Baltimore 3, Maryland

IN REPLY ADDRESS COMMUNICATION TO COMDR.
ARDC, ATTENTION FOLLOWING OFFICE SYMBOL

2 MAY 1955

RUTSD

SUBJECT: (Confidential) Air Defense MATADOR

TO: Commander
Air Defense Command
Ent Air Force Base
Colorado Springs, Colorado

1. The attached letter to Headquarters USAF recommends that ARDC be directed to proceed immediately with an ADMAT development and that, also, the necessary planning and minimum engineering for production be directed. Our recommendation, however, is so couched that it is to be clearly understood that this is not an "all out" recommendation, but one subject to reversal upon short notice based upon further information. (Secret)

2. In this program, time is an unusually potent factor inasmuch as the system proposed is patently an interim one. No time can be lost debating, therefore, if full advantage is to be taken of its potentialities. We propose to take all the necessary steps toward obtaining a tactical system, but with a constant study in progress to determine the value of such a system. The type of study now required is best performed by the Air Staff and the Air Defense Command and/or potential overseas operational commands. (Secret)

3. In view of the stated time factor, we did not coordinate our letter to Headquarters USAF with your Command, as has been our custom, as it was desired to present the problem to the Air Staff as soon as possible. We recommend that you submit your comments separately to Headquarters USAF as soon as you can conveniently do so. (Confidential)

598-3X 1 Incl
Cy ltr to Hq USAF

RESTRICTED DATA

ATOMIC ENERGY ACT - 1946
"Attached as Inclosure 1"

This document is classified *Secret*RD
in accordance with E.O. 12308

Thomas J. Vant
Commander

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Comd	
Head Mgt	
Class	General White
Dist	Page 2
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Comd Staff	
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Insp Div	three levels of component commands until such force levels, considered
PM	in the context of the over-all defense capability, are excess to
Flt Army	requirements.
PIO	
ECM/G	
Head	
Fin	
Mgt Anlys	I realize quite clearly that the satisfaction of all requirements for
Stat	the creation and maintenance of an air defense system capable of a
DCS/P	near perfect defense is highly improbable. If this headquarters, how-
Civ Pers	ever, is to adjudicate intelligently between weapons systems provided
MIL Pers	by different services, it must be informed as to the level of defense
Ann Asgmt	which is desired. We are prepared to furnish to you recommended
Off Asgmt	three levels and deployments within any given over-all allocation of
Coll & Res	resources. We are also prepared to give you our estimate as to the
Spec Act	level of defense which this allocation of resources would provide.
GM	
Pers Sv	
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DCS/I	Your message referred to ADR 54-60, the Requirements Plan sub-
CI	mitted last year by Headquarters Air Defense Command, working in a
R	collaborative status with the Army Antiaircraft Command. In that plan,
S	we stated a requirement for 83 Bomarc Squadrons, 113 Fighter-Interceptor
DCS/O	Squadrons, and 100 Battalions of NIKE missiles. This total force was
C C A	our estimated requirement for an extremely high level defense system.
C & E	Therefore, I do not understand the statement contained in your message,
M & O	this increase in area defense missiles would seem to result in decreas-
O C C	ing your requirement for the number of point defense missiles,"
Ops Anlys	particularly since the area defense missiles referred to constitute less
C A T	than 50% of the 83 squadrons we stated as a requirement. The first
P & E	Requirements Plan for the Continental Air Defense Command, covering
Wes O	the period 1960-1965, which is now under preparation, will undoubtedly
DCS/H	contain, in the absence of specific guidance as to over-all resources
AoFt	which can be allocated to the mission during this period, force levels
Elect	approximating those stated in ADR 54-60.
On Sup & Svc	
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Confirmed in

Allocation Form

per 3a, ADCOM

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58 - 2
April 11
1965

In summary, we have still not been given an over-all par for the course. We have assumed that the latest issue of the "Air Force Structure" talks us the Air Force resources planned to be available to us during the 1965-1965 period. I do not have available to me similar force projections for the Army Antiaircraft Command. Since

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General White
Page 3

I have not been told that your headquarters might be in a position to furnish me larger Air Force forces in exchange for Army NIKE forces, I find myself in a position of gladly accepting any augmentation to the Army capability, since even with 100 NIKE battalions, our over-all defensive capability is not equal to the threat.

Sincerely,

FREDERIC H. SMITH, JR.
Major General, USAF
Commander

Confirmed in
Publication Form
per 3e, ADGSM

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& Revised

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A-22-18

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ACTION: Pst

E-OF-ETS

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S E C R E T / 55295 PERSONAL FOR M/GENERAL SMITH FROM GEN WHITE.
 THIS MESSAGE REFERS TO ABC MESSAGE AADPR 3295, DTD 9 JUN 55. THIS
 MESSAGE IN THREE PARTS. PART I. BY DIRECTION OF THE SEC OF DEF.
 EFFECTIVE 7 JUN 55 THE USAF WAS DESIGNATED THE SERVICE RESPONSIBLE
 FOR LAND-BASED TALOS. THE COMPLETE TALOS PROGRAM IS BEING EXPEDITED
 TO INSURE TIMELY INTEGRATION OF IT, THE FIRST AREA DEFENSE INTERCEPTOR
 MISSILE, IN THE AIR DEFENSE SYSTEM. CONSIDERING THE COMPLEXITY OF AN
 EFFICIENT AIR DEFENSE SYSTEM, WITH NEW AND MORE EFFICIENT WEAPONS,
 IT BECOMES MORE APPARENT THAT ALL PRESENT PROGRAMS MUST BE CLOSELY
 SCRUTINIZED. THE TREND IS MORE THAT EVER A MATTER OF IMPROVED WEAPONS

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PAGE TWO R JEPHQ SS

IN A STRESSED "AREA DEFENSE" CONCEPT, THE WEAPONS AVAILABLE FOR POINT
 DEFENSE TODAY MUST BE UTILIZED TO THE FULLEST BUT CARE MUST BE TAKEN,
 FOR ECONOMY AND EFFICIENCY PURPOSES, TO BE READY TO IMMEDIATELY
 INTEGRATE INTO THE SYSTEM THE FIRST OF OUR AREA DEFENSE INTERCEPTOR
 MISSILES. TALOS WILL BE AVAILABLE TO YOUR COMMAND OPERATIONALLY IN
 FY 56. IN FY 58 BOMARC, THE USAF PRIMARY INTERCEPTOR MISSILE, WILL
 BE AVAILABLE TO YOUR COMMAND. NIKK, A POINT DEFENSE MISSILE, IS IN
 YOUR INVENTORY AT PRESENT. NIKK IS NOT A SUBSTITUTE FOR TALOS BUT UNTIL
 TALOS IS AVAILABLE, NIKK MUST BE USED. A STRONG FORCE OF OUR DEFENSE
 INTERCEPTOR MISSILES INTRODUCED INTO YOUR PROGRAM AT THE EARLIEST
 POSSIBLE DATE, WILL PROVIDE AND INCREASED AIR DEFENSE CAPABILITY
 FOR FY 58-59. CAREFUL PLANNING TO INTRODUCE A MAXIMUM OF AREA DEFENSE
 WEAPONS INTO YOUR PROGRAM SHOULD RESULT IN THE NEED FOR FEWER NUMBERS
 OF POINT DEFENSE MISSILES THAN ARE PRESENTLY ANTICIPATED. AS TALOS
 BECOMES AN ACTIVE WEAPON IN THE AIR DEFENSE SYSTEM, WE MUST UTILIZE
 IT TO THE MAXIMUM. IT WOULD BE THEN THAT ANY OVER-PROGRAMMING AND
 BUDGETING FOR POINT DEFENSE TYPE MISSILES WOULD BRING FORTH COMPLICATION
 AND CAUSE SOME EMBARRASSING QUESTIONS AS TO WHY OVER-PROGRAMMING WAS
 CONTINUED IN VIEW OF THE ABOVE INFORMATION ON AVAILABILITY OF TALOS,
 WITH THE AIR DEFENSE OF THE U. S. BEING THE DIRECT RESPONSIBILITY

0124

PAGE THREE RJEPRQ 55

OF THE USAF. IT IS IMPERATIVE THAT USAF OPERATIONAL CONCEPTS BE REFLECTED IN ALL PLANNING AND PROGRAMMING TO INSURE MAXIMUM RETURNS IN AIR DEFENSE FUNDS EXPENDED. THIS HQS, BY LETTER, 3 JUN 55, FORWARDED TO YOUR HQS THE PROPOSED COMPOSITION OF THE INTERCEPTOR MISSILE SQUADRON (TALOS). IN A SQUADRON, 4 DETACHMENTS W/60 MISSILES EACH ARE AVAILABLE. HQS PRESENTS THE AIR DEFENSE SYSTEM WITH A CAPABILITY OF COVERING A WIDE GEOGRAPHIC AREA WITH INTERCEPTOR MISSILES AT A COMPARATIVELY RAPID RATE OF FIRE. YOUR PROPOSAL TO LIMIT THE NUMBERS OF DETACHMENTS IN A SQDN TO TWO IN ORDER TO DECREASE THE TOTAL NUMBER OF MISSILES IN A SQDN IS NOT CONSIDERED TO BE VALID. THE USE OF MISSILES IN EACH DETACHMENT CAN BE DECREASED IN CERTAIN INSTANCES BUT THE AREA COVERAGE ALLOWED BY HAVING FOUR DETACHMENTS SHOULD NOT BE COMPROMISED. AS IS STATED IN YOUR MESSAGE REFERENCED ABOVE, YOUR WAR GAMING WAS SECURED ON TWO DETACHMENTS WITH 60 MISSILES PER DETACHMENT OR 120 MISSILES TOTAL PER SQDN. THE FOUR DETACHMENTS IN A SQUADRON AS PROPOSED BY THIS HQS WILL ALSO HAVE 60 MISSILES PER DETACHMENT, BUT ALSO THE COVERAGE OF FOUR LOCATIONS (A DETACHMENT AT EACH) INSTEAD OF TWO LOCATIONS. THE REASONS FOR YOUR NOT DESIRING THIS INCREASED CAPABILITY IN AREA DEFENSE WEAPONS (TWICE THE NUMBER OF LOCATIONS COVERED) IS NOT UNDERSTOOD. THIS INCREASE IN AREA DEFENSE MISSILES SEEM TO

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PAGE FOUR RJEPRQ 55

RESULT IN DECREASING YOUR REQUIREMENT FOR THE NUMBER OF POINT DEFENSE MISSILES STATED IN YOUR ADR 54-65. IF YOU FEEL THAT THE CONCEPT AND NUMBERS STATED ABOVE DO NOT MORE SATISFACTORILY MEET YOUR REQUIREMENTS, DESIRE YOU FORWARD TO THIS HQ YOUR DIFFERENCES WITH COMPLETE JUSTIFICATION TO INCLUDE: A. PROPOSED CONCEPT OF WEAPON DEPLOYMENT BRU 1961. B. RULES OF ENGAGEMENT TO INCLUDE AREA AND POINT DEFENSE WEAPONS. C. ASSUMPTIONS UTILIZED IN WAR GAMING WHICH BRINGS FORTH THE NEED FOR A LESSER NUMBER OF DETACHMENTS OF TALOS AND AN INCREASE IN POINT DEFENSE WEAPONS SUCH AS NIKE. IF YOUR HQ CONCURS IN THE CONCEPT AND NUMBERS AS STATED ABOVE AND PRESENTLY IN OUR PROPOSED CHANGES DESIRE EXPEDITIOUS RETURN OF YOUR PUBLISHED TALOS OPERATIONAL PLAN TO FACILITATE AN ACCELERATION OF BUDGETING AND PROGRAMMING FOR TALOS. PART II. BECAUSE OF THE ORGANIZATIONAL STRUCTURE NECESSARY IN AN INTERCEPTOR MISSILE SQUADRON, THE DESIGNATION "DETACHMENT" IS THE MOST LOGICAL TO BE USED, THE DESIGNATION "FLIGHT" CANNOT APPLY PURSUANT TO AFM 171-8, 1 JULY 55 AND AFR 25-27, 12 JULY 1954, PART III. CONCUR IN THE INCLUSION OF A SCHEMATIC OF A TDU IN THE PLAN. CONFIGURATION CONTAINED IN FIG 8-1 IS INCORRECT. A NEW DRAWING WILL BE FORWARDED YOUR HQS 16 JUN 55.

H
E/1638Z JUN RJEPRQ

PARAPHRASE NOT REQUIRED
SEE CRYPTO SECTION
BEFORE DECLASSIFYING.

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FILE NUMBER 304

COMER ADC

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COFS USAF WASHDC

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8 JUL 1955

(SECRET) ADOFR 3439. For AFVGC. REF MSG ADOFR 3255 HQ ADC 9 JUN 1955 and MSG 55290 HQ USAF 18 JUN 1955 personal for MAJGEN Smith from GEN White. This MSG in four parts. Part I. The RECM in above REF USAF MSG concerning four DEF for Talos SQ has been incorporated in Talos OPLAN. Part II. This HQ concurs with earliest possible introduction of Talos into our air DEF INV followed by rapid force buildup. Further concur with concept of Talos as an area DEF WPN and Nike as point DEF WPN. This concept has been the ADC POSIT relative to deployment and employment of extended range land based Talos. Part III. This HQ desires deployment of Talos in standard missile base environment at earliest possible date. Part IV. ADC will submit in the immediate future the RQR for "A" warheads for Talos missiles. This was not previously submitted with the "A" warhead RQR to JCS as the Talos at that time was not designated an AF WPN. It is believed that there will be technical problems to be solved before Talos can deliver an ~~100~~ warhead with the accuracy required to produce a ~~reliable~~ kill. *JBL*

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WIT:
B-9-5
J. R. THORNTON, Lt Colonel, USAF

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6 MAY 1955

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SUBJECT: (Unclassified) Comments on Proposed General Operational Requirement for an Interceptor Missile Weapon System

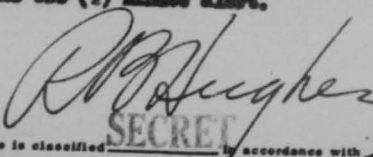

TO: Director of Requirements, DOR/D
Headquarters USAF
Washington 25, D. C.

1. The following comments are suggested for consideration in preparing the final General Operational Requirement for an Interceptor Missile Weapon System.

a. Paragraph IV.A.1. Deployment. Change the first sentence to read, "where feasible launch sites will be located at or near existing military installations for basic manpower and logistic support."

b. Paragraph IV.B.1. Logistical Support. This headquarters does not see a requirement for restocking of interceptor missiles as a result of combat losses. Procurement of interceptor missiles must be based upon the total numbers of enemy objects to be killed and the kill probability of the interceptor missile. This stockage must be "ready" for use as the enemy presents himself whether this be in a "mass front" or whether it be over an extended time. Resupply of interceptor missiles resulting from normal deterioration or modal changes should be accomplished prior to movement of the stock interceptor missile. Resupply of interceptor missile components should be as stated in paragraph IV.B.1.

c. Paragraph V. Operational Employment, and Paragraph VI.C. Limitations. This headquarters has stated a requirement for a two (?) minute alert status, not a one (1) minute alert status. There appears to be very little justification to change from a two (?) minute alert if the alert period can be "verticalized" and held on standby at one (1) minute or thirty (30) seconds prior to launch. The situation which would dictate a short time alert would be the target which suddenly appeared within the contiguous radar coverage. In this situation some time would be required to establish a track prior to the time a launch would be desired. This time requirement is estimated to be approximately two (?) minutes. The DW and ACHV systems will normally provide adequate information to exploit the two (?) minute alert.

R. W. Hughes  

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4-23130/0243

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Hq ADC ADOPT Subject: (Unclassified) Comments on Proposed General Operational Requirement for an Interceptor Missile Weapon System

d. Paragraph VII.F. Asimuth. Change last sentence to read, "...different missile courses must be possible."

e. Paragraph VII.G. Lethality. Change "desired," the last word in paragraph, to "required."

f. Paragraph VII.H. Payload. Delete entire paragraph as written and enter therein, "The weapon must be designed to carry nuclear type warhead as the primary payload." (ADC knows of no justification for high explosive type warheads in this time period. Then there is no requirement to restrict the designers with this condition.)

g. Paragraph VII.I. Countermeasure. Change last sentence to read, "...have the additional capability of interception...."

h. Add a paragraph VII.L. "Air-to-Air Identification. Identification, Interceptor to Interceptor Missile and Interceptor Missile to Interceptor must be provided."

i. Paragraph VIII.C. Compatibility with Other Air Defense Systems. This statement is too general. The degree or specific areas of compatibility are not clear.

2. There is nothing specifically stated for the Terminal Seeker system. It appears to members in this headquarters that the terminal seeker must be capable of detecting flying objects of approximately one square meter radar cross section and at ranges sufficient to assure error correction for targets traveling at speeds as great as Mach 3.5.

FOR THE COMMANDER:

WALTER W. ROBINSON
Colonel, USAF
Command Adjutant

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Telephone: *610*
Date: *15 APR 56*
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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
DIRECTORATE OF REQUIREMENTS

DRAFT OF PROPOSED GENERAL OPERATIONAL REQUIREMENT

Draft No. 1

Draft Date: 29 March 1955

GOR No. (AD-11-2-63)

TITLE (UNCLASSIFIED) GOR for an Interceptor Missile Weapon System

This Copy for Commander, Air Defense Command, Ent AFB, Colorado Springs,
Colorado

Action X Request comments be made and returned
to Directorate of Requirements not
later than 1 May 1955 by separate
correspondence.

Information _____

Note that the attached is a Draft GOR. Your comments are desired for
consideration and incorporation before this GOR is officially issued.

/s/t/ GEORGE E. PRICE
Major General, USAF
Director of Requirements
DCS/Development

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OPERATIONAL PLAN
for
INTERCEPTOR MISSILE TALOS
DEPLOYED BY DETACHMENT (TDU) IN THE AIR DEFENSE SYSTEM

Headquarters
AIR DEFENSE COMMAND
Ent Air Force Base
Colorado Springs, Colorado

20 June 1955

This Operational Plan supersedes Operational Plan for
Interceptor Missile Talos In The Air Defense System,
dated 27 April 1955.

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HEADQUARTERS
AIR DEFENSE COMMAND
ENT AIR FORCE BASE
COLORADO SPRINGS, COLORADO

ADOPR

20 June 1955

SUBJECT: (Unclassified) Operational Plan for Interceptor Missile

TO: See Distribution

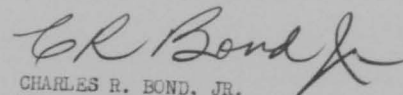
1. This Operational Plan is designed to provide information to Department of the Air Force agencies concerning the operational use of the interceptor missile Talos when deployed other than in the standard missile base environment by the Air Defense Command in the air defense of the continental United States. A study is being conducted by Headquarters ARDC to determine the degree of standardization and the preliminary design for a standard base. It is planned to deploy the Interceptor Missile Talos in the standard base environment as soon as such a base is available. A separate operational plan will be published for IM Talos when deployed in the standard base environment.

2. This document is based on Headquarters USAF "Operational Concept USAF Area Interceptor Missile (Talos)" dated 2 December 1954 and on letter AFOP-OP-D Headquarters USAF 3 June 1955, subject: Talos Operational Plan, and inclosure thereto, and is published under authority of AFR 5-47 dated 20 December 1954.

3. Data appearing in current USAF Program Documents will supersede conflicting data contained herein.

4. This document is classified SECRET in accordance with paragraph 23.c., AFR 205-1 dated 15 December 1953.

FOR THE COMMANDER:



CHARLES R. BOND, JR.
Colonel, USAF
Acting DCS/Operations

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INCLOSURES

- I. Letter Headquarters Air Defense Command, 26 November 1954,
subject: (Unclassified) Requirement for Land Based Talos
in Air Defense
- II. Schematic - Talos Detachment Site (TDU)

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1. Mission. To provide all weather surface-to-air interceptor missile units for air defense of designated areas against enemy weapons under conditions of minimum warning time and high density supersonic attack.

2. Tactics.

a. Interceptor missiles will be employed as area defense weapons for the protection of specific geographical areas such as the Northeast Heartland. The interceptor missile, Talos, will be tactically employed under this plan. (See Inclosure I).

b. Talos will be deployed by detachment into an Air Defense Command Missile Site; each site will normally have one detachment. Normally, there are four detachments in a squadron. Talos detachments will be assigned to tactical squadrons and will be under the operational control of a SAGE Direction Center (Air Defense Wing). Each detachment will be responsible for a site and its associated equipment.

c. The total number of Talos missiles per squadron has not been determined; however, each detachment of a tactical squadron will have 60 interceptor missiles in operationally ready condition at all times.

d. Any one of the operationally ready missiles will be available for launching within two minutes following receipt of an alert. Once an air battle has started, no maintenance or inspection can be accomplished at the site. The Talos system does not permit all operationally ready missiles to be launched within two minutes

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following an alert. However, each of the two launchers of a detachment can launch a missile at 30 second intervals. Thus the launchers may be used to fire a salvo of two missiles against a single target or the launchers may each fire a missile against a separate target. Normally, when nuclear warheads are used, single missiles, rather than salvos of two, will be fired.

e. The Detachment Operations Center will be capable of directing intercepts using information supplied by SAGE. As a backup capability, sufficient data to handle intercepts at reduced capability can be supplied wholly by the target tracking radars located at the missile sites. The normal operating mode will be by the use of SAGE data for the early portion of the engagement and by target tracking radar data for the remainder of the engagement prior to seeker lock-on.

f. The Air Defense Missile Squadron (Talos) will be capable of multiplex operations with each of its assigned detachments. That is, each detachment will have two target tracking-illuminating radars shared by four missile guidance transmitters. Each detachment will be capable of engaging up to four targets at a time with two engagements in their early phase programmed by SAGE data and two engagements in a later phase programmed by data supplied by the two target tracking-illuminating radars. The data from the SAGE Direction Center (Air Defense Wing) will include target track and ancillary information, target assignment, and target priorities. This use of SAGE data will be the normal mode of operation and will require status information to flow to the SAGE Direction Center. The computers in the Detachment

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Operations Center will use the data from the SAGE Direction Centers for pre-launch computations, weapon launching and initial programming of the guidance transmitters. In addition, SAGE data is used to facilitate acquiring the target with the target tracking-illuminating radar. The target tracking-illuminating radars will furnish data for programming the guidance transmitters for the remainder of the engagement to seeker lock-on and will furnish illumination of the target. The computers, associate equipment, and personnel required for the tactical operation of each detachment will be located in the Detachment Operations Center under the control of the Detachment Operations Officer.

g. The sequence of tactical operations, involving one detachment, is as follows: a number up to as many as eight targets, simultaneously, together with the associated SAGE data, will be assigned by a Wing Direction Center to an Air Defense Missile Detachment (Talos) Operations Center. A typical operation for the engagement of one of the assigned targets is as follows: the data for one target is fed into a computer controlling the launcher and missiles. A missile is automatically loaded on the launcher, and the launcher and a guidance radar at the site are trained in accordance with computed launching azimuth and elevation. The missile is launched when the predicted point of intercept comes within the range of the missile (or later if the tactical situation warrants). After booster separation, the missile, captured in the guidance transmitter beam, is programmed toward the predicted intercept point. One of the two target tracking-illuminating radars then locks on to the target. The computer switches

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from SAGE data to target tracking-illuminating radar data and furnishes guidance to the missile through the guidance transmitter for the remainder of the flight. When the missile is within seeker range of the target, the seeker is automatically activated and searches for and locks on the target. The seeker sees the target by means of reflection from the illuminating radar. When seeker lock-on is accomplished, it automatically assumes control of the missile from the guidance transmitter, and controls the missile to intercept. The foregoing sequence of operation involving a target should not imply that several targets cannot be engaged simultaneously by one Talos detachment. If a salvo of two missiles is launched against a target, each of the two launchers fires a missile and the sequence is the same as above with each missile riding the same guidance beam. Immediately after launching, the launcher reload cycle can be initiated and within 30 seconds another missile or missile salvo can be launched at a second target. With the availability of SAGE data, tracking-illuminating radar is required only during the latter portion of the missile flight. Therefore, four targets can be engaged at one time with preparations underway for the engagement of four additional targets. In the case of Talos W, which has no seeker, the missile rides the guidance transmitter beam to intercept and is detonated by command from the computer.

h. In the event that SAGE data is not available, the Detachment Operations Center can operate at reduced capability, with the Talos tracking-illuminating radar data being used for all phases of the operation from target acquisition to intercept. Surveillance data,

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from nearby Air Defense radars, can be used by the Detachment Operations Center to evaluate the raid, assign targets, and orient the tracking-illuminating radars.

3. Organization.

a. The basic tactical unit will be designated as an Air Defense Missile Squadron (Talos). The squadron will be composed of a headquarters and normally four detachments. As presently conceived, the squadron with four detachments will have a total strength of approximately 58 officers and 689 airmen.

b. A tentative table of organization for an Air Defense Missile Squadron (Talos) will be published and forwarded at a later date. The following assumptions are being used in preparation of this table:

- (1) Maintenance is of the black box, "GO" or "NO GO" type, on components and subassemblies.
- (2) Each missile detachment will have two launchers, two tracking-illuminating radars, and four guidance transmitters.
- (3) Each missile detachment will be equipped with a minimum of 60 Talos missiles.
- (4) Each missile will be visually checked each day, and the system checked in the assembly building each 30 days.
- (5) Commercial electrical power may be used until receipt of alert, at which time equipment will be switched to the integral power source.

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c. Tactical Units will be organized and activated six months prior to the date for deployment to the tactical site.

4. Training Requirements.

a. Unit.

- (1) Organizational training will be accomplished at the Air Defense Command Missile Employment Center during six months immediately following activation and preceding movement to the tactical base. (It should be noted that personnel to man the Air Defense Command Missile Employment Center must be trained and available by the activation date of the first tactical squadron. This training requirement will be submitted as soon as the Employment Center is approved.)
- (2) Annual training for the operation and maintenance personnel of these units will be accomplished at the Air Defense Command Missile Employment Center and will include launching of missiles. The specific number of missiles to be launched for training will be contained in Air Defense Command's current Talos Operations Training Plan.
- (3) In the event that the Air Defense Command Missile Employment Center is not available, an interim site will have to be provided to accommodate organizational training.

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b. Individual. When the Table of organization now being prepared for an Air Defense Missile Squadron (Talos) is approved, the Individual Training Requirements will be published and forwarded.

c. Mobile Training Units. Mobile Training unit support will be provided in phase with unit activation. Basis of MTU procurement will be established at a later date. The MTU's will provide specialized training on the missile and its accompanying ground support equipment.

d. Operational Training. Missile operating personnel will be given operational training by the use of a "System Exercising Equipment" which will be built as an integral part of the weapons system. This equipment will provide the necessary features with which intercepts may be simulated.

5. Training Lead Time.

a. Unit. Unit training will be accomplished during the six months preceding tactical deployment.

b. Individual. Maximum lead time requirements for personnel training will be in the electronics career fields where basic course graduates must be utilized and can be expected to be approximately one year. Training lead time requirements can be reduced significantly in those areas where personnel with related AFSC's can be supplied from USAF resources to support this program.

6. Operationally Ready Requirements.

a. A tactical unit will be considered operationally ready when it has:

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- (1) Sufficient personnel assigned and trained in accordance with paragraph h occupying a tactical location.
- (2) The prime equipment "on site" required to operate one Detachment of the Squadron.
- (3) Checked out all equipment cited in (2) above.
- (4) Tactical missiles available which meet the requirements of paragraphs 2.c. and 2.d.

b. A tactical unit will be deployed from the Air Defense Command Missile Employment Center to a tactical location only after such time as the unit is trained in accordance with paragraph h and the necessary prime equipment for tactical operation is on site at the tactical location.

7. Operationally Ready Dates. After a tactical unit has received its prime equipment and is located at a site which is ready for use, it is estimated that three months will be required to check out equipment and for the tactical unit to become fully operationally ready.

8. Deployment Locations.

a. The initial tactical units will be deployed to the Northeast area of the United States.

b. For specific locations and actual dates of deployment, reference should be made to current USAF Programming Documents.

9. Mobility Requirements. The concept of tactical mobility as applies to manned interceptor squadrons wherein a squadron and its equipment is expected to move from Point A to Point B is not applicable

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to the concept of Air Defense missile squadrons. Extensive air installations and permanent construction on a site are inherent in the operation of an Air Defense missile squadron. It is not envisioned that suitable, unoccupied bases will be constructed in different areas to permit a squadron and its prime mobile equipment to deploy.

10. Channels of Control and Communication.

a. The tactical unit will be situated in the Continental Air Defense Command communications network and will be employed by the Continental Air Defense Command operational ground environment.

b. Allocation of forces will be exercised by the Air Division Commander through the Air Division Combat Center where threat evaluation and battle supervision will be accomplished. Operational control of the tactical Detachments will be exercised by the Air Defense Wing Commander through the Wing Direction Center where target evaluation and commitment of forces is exercised. Target assignment will be passed to the Detachment Operations Center for assignment and control of tactical missiles.

c. Surveillance data from nearby Air Defense radar will be used at the Talos Detachment Operations Center for raid evaluation and target assignment in the event the SAGE System becomes inoperative.

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INCLOSURE I

Letter Headquarters Air Defense Command, 26 November 1954,
subject: (Unclassified) Requirement for Land Based Talos
in Air Defense

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Headquarters
AIR DEFENSE COMMAND
Ent Air Force Base
Colorado Springs, Colorado

26 November 1954

SUBJECT: (UNCLASSIFIED) Requirement for Land Based Talos in Air
Defense

TO: Director of Requirements
Headquarters USAF
Washington 25, D. C.

1. References.

a. Letter, Headquarters ADC, ADOFR 471.6, subject: (SECRET) Requirement for Weapons with Atomic Capability in the Air Defense System, dated 6 May 1953, and 1st Indorsement Headquarters USAF, AFDRQ-AD, dated 22 June 1953.

b. Teletype message, Headquarters USAF, AFDRQ-AD/F 52957, dated 28 October 1954.

2. The following requirement is submitted in accordance with Air Force Regulation 57-3, dated 28 May 1951.

3. Introduction.

a. Air Defense Command requirements previously established required the tactical deployment of fifty-three (53) squadrons of pilotless interceptors in the time period 1957 to 1960. The slippage of the F-99 (Bomarc) program, the pilotless interceptor planned and programmed for deployment in air defense, precludes the fulfillment of the established requirement. Therefore a requirement exists for an interim pilotless interceptor with a range capability of greater than fifty (50) nautical miles. Furthermore, this interim weapon should have a high performance capability as an augmentation weapon in the future pilotless interceptor program. It appears that this requirement can be met with the land based Talos with extended range.

b. It is conceivable that Talos would be deployed in the proposed F-99 Base environment, thereby minimizing special installation facilities. Talos deployment would proceed until the Bomarc Type weapon production, along with the Talos production, filled the

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Hq ADC, Subject: (Unclassified) Requirement for Land Based Talos in Air Defense

requirement for the Pilotless Interceptor program. The Talos production would be phased out at this time and the ADC inventory would be diverted into the Air Defense Command Pilotless Interceptor Training Program.

4. Objective.

a. To possess in the Air Defense Command during the period 1957 to 1960 a pilotless interceptor capability.

b. To possess in the Air Defense Command during the period 1957 to 1960 an interim pilotless interceptor pending the fulfillment of previously established requirements.

c. To enable the Air Defense Command to activate and man pilotless interceptor bases and sites which will be required for future programs.

d. To possess in the Air Defense Command a pilotless Interceptor for tactical deployment and use which, in addition to providing the required operational, maintenance and logistics training for future units, will also provide a stockpile of weapons for the pilotless interceptor training program, and for the further development and evaluation of Logistic and Operational Plans for the use of pilotless interceptors.

5. Description.

a. Nomenclature. Talos, Surface to Air Missile; Extended Range Land Based Version of the Navy Talos Program.

b. Purpose.

- (1) To provide the Air Defense Command with operational Pilotless Interceptor Units equipped with a weapons system possessing high kill probability.
- (2) To provide an interim pilotless interceptor for tactical deployment to cover the slippage of programs established to meet air defense requirements.

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Hq ADC, Subject: (Unclassified) Requirement for Land Based Talos in
Air Defense

- (3) To provide an interim weapon for deployment on pilotless interceptor bases which must be activated for phase-in of the ultimate weapons system.
 - (4) To provide a pilotless interceptor, which in addition to providing an active air defense capability with a high kill probability will:
 - (a) Have a high value in maintaining a state of unit operational readiness in air defense pilotless interceptor squadrons thus providing combat ready units for phase-in of the higher capability weapon.
 - (b) Provide a stockpile of weapons for use in the pilotless interceptor training program.
 - (c) Be used to further develop and evaluate Logistic and Operational Plans for Pilotless Interceptors.
 - (5) To provide the Air Defense Command with a pilotless interceptor capability on a 1A priority under AFR 80-11.
- c. Performance.
- (1) Operational reliability of 75% or greater and a kill probability of .50 or greater per interceptor.
 - (2) A range greater than fifty (50) nautical miles through 1957 and a range greater than seventy-five (75) nautical miles after 1957.
 - (3) A speed of 2000 feet per second or greater.
 - (4) An altitude capability of approximately 60,000 feet through 1957.
 - (5) An altitude capability greater than 60,000 feet after 1957.
- d. Design Features.

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Hq ADC, Subject: (Unclassified) Requirement for Land Based Talos in
Air Defense

- (1) The Talos weapon as presently designed but incorporating the necessary engineering changes required to provide for increased ranges.
- (2) The necessary improvements in mid-course guidance to provide the accuracy required to provide a kill potential greater than .50 per interceptor.
- (3) A semiactive radar seeker for Talos equipped with a standard warhead.
- (4) Capable of being equipped with an atomic warhead.
- (5) Capable of being launched from the site and reventments to be used by the ultimate F-99 (Bomarc) Base installation, with a minimum of engineering changes required for phase-in of the F-99 (Bomarc).

e. Special Features.

- (1) The Talos must be compatible with the F-99 Base installations.
- (2) The Talos weapon system must be compatible with the air defense ground electronic environment in use during the time period of the weapons deployment.

f. Proposed Basis of Issue. One hundred twenty (120) Talos per squadron in up to fifty-three (53) squadrons (this quantity requirement is dependent upon the deployment of the F-99 and/or the L-253 toward the required activation of fifty-three (53) squadrons of pilotless interceptors.)

g. Method of Meeting the Requirement. It is recommended that the land based Talos with extended range be given a top priority for development, testing and production.

6. The land based Talos with extended range will provide the Air Defense system with an early capability at high altitudes and at extended ranges which cannot be obtained with other weapons. It will provide Pilotless Interceptor capability in the air defense system regardless of the programs of other pilotless interceptor programs. The Talos,

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Hq ADC, Subject: (Unclassified) Requirement for Land Based Talos in
Air Defense

when developed to be employed in the Bomarc Base environment, will
provide a weapon for the extensive Air Defense Command Pilotless
Interceptor Program requirement. Therefore this headquarters requests
that a high priority be established to develop Talos with extended range
for first unit deployment in 1957.

Info cy
Commander, Air Research
and Development Command

/s/t/ FREDERIC H. SMITH, JR.
Major General USAF
Vice Commander

Deputy Chief of Staff
for Guided Missiles,
Headquarters USAF

Director of Research
and Development, Head-
quarters USAF

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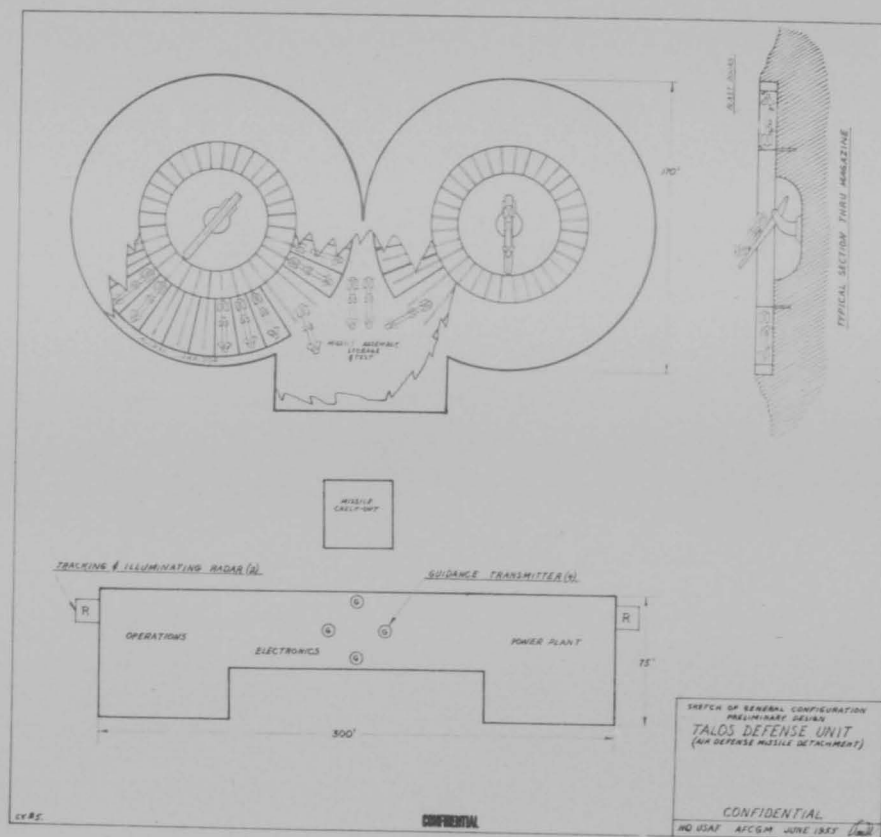
INCLOSURE II

Schematic - Talos Detachment Site (TDS)

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IM Presentation Summary

DCS/P
ATTN: Col Horton

DCS/O

13 Jul 55
Maj J F Hughes/2133/jh

Forwarded herewith for your information is a summary of the Interceptor
Missile presentation by P&R to the AD Command Council at 1315 hours 8 July 1955.

1 Incl
As stated

CHARLES R. BOND, JR.
Colonel, USAF
Acting DCS/Operations
Ext 2321-2322

Unclassified

2
INTERCEPTOR MISSILE BRIEFING

I. INTRODUCTION.

A. The objective of the briefing is to present:

1. Background and present status of ADC IM Program.
2. ADC concept of employment and deployment of weapons.
3. ADC IM Requirements.
4. Problem areas in the IM Program.
5. Recommendations.

B. The IM's to be covered in the briefing, their estimated tactical availability dates and a brief description of each are:

1. Talos (early 1958).
2. Bomarc.
 - a. Initial (mid-1959).
 - b. Improved (mid-1961).
3. L-401 (same as Bomarc).
4. LRIMX (1963).

C. IM Guidance Systems.

1. All IM's have 3 stages of guidance.
 - a. Initial - preset.
 - b. Mid-course.
 - (1) Command broadcast (Bomarc, L-401, LRIMX).
 - (2) Command beam riding (Talos).
 - c. Terminal.
 - (1) Interferometer.

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II. BACKGROUND AND PRESENT STATUS OF ADC IM PROGRAM.

A. Bumblebee Project.

1. Initiated 1945 by USN.
2. Objectives: to develop a radar-guided, ramjet supersonic SAM for fleet defense.
3. Talos one of the weapons systems developed.
4. Talos evaluation unit to be available in mid-1954.

B. Talos Land Based System (50 NM range version).

1. Proposed early in 1953.
2. ADC submitted a requirement to Headquarters USAF, for Talos.
3. Requirement not met due to no firm decision on service responsibility for employment of GM's.
4. ADC 54-60 Requirements Plan reflected Army requirement for Nike and/or Talos.

C. Talos extended range land based system (75-100 NM range version).

1. Proposed in late 1954 by APL and McDonnell Aircraft Company.
2. Evaluated as technically feasible by Headquarters ARDC.
3. ADC submitted a requirement in November 1954.
4. Land based system to be developed as a tri-service effort with the Army initially responsible for general administration of the program.
5. On 7 June 1955 responsibility for financing and general administration of Talos land based program transferred by DOD from Army to Air Force.
6. Programmed availability of Talos January 1958.
7. First tactical units deployed (approximately 3 squadrons) will be TDU (round house) type.

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8. ADC desires standard base Talos deployment as soon as possible.
 9. Early availability makes Talos attractive.
 10. Required ground electronic environment at each site makes Talos not attractive.
- D. GAPA Program - Boeing Airplane Company.
1. Initiated during WW II.
 2. Short range SAM.
 3. Approximately 100 test vehicles flown.
 4. In 1949 AF requested Boeing to develop a complete weapons system.
- E. Project Wizard - Willow Run Research Center (U of M).
1. Initiated 1946.
 2. Defense against V-2 type threat objective of program.
 3. In 1949 emphasis shifted to defense against air breathing threat.
- F. Marriage of GAPA and Wizard.
1. Results obtained in the GAPA Program and Project Wizard were combined and the Bomarc Weapons System resulted.
 2. A joint study on the above was published in mid-1950.
- G. The availability dates forecast were:
1. Initial Bomarc 1956.
 2. Improved Bomarc 1958.
- H. The ADC 54-60 Requirements Plan reflected the following requirements for weapons:

	<u>1954</u>	<u>1955</u>	<u>1956</u>	<u>1957</u>	<u>1958</u>	<u>1959</u>	<u>1960</u>
Area Defense:							
LRI Sq						8	29
MRI Sq	54	60	65	68	58	57	48
IM Sq				1	10	30	53
Total Area Def Sq	54	60	65	69	68	95	130
Point Defense:							
Guns Btn	54	40	39	4	0	0	0
GM's Btn	11	31	61	96	100	100	100
Total Point Def	65	71	100	100	100	100	100

I. Present Programs:

	<u>1958</u>	<u>1959</u>
Talos	3	5
Bomarc		1
Total	3	6

J. Slippage of Bomarc in late 1954.

1. Forecast availability date slipped:

	<u>From</u>	<u>To</u>
Initial Bomarc	1956	1959
Improved Bomarc	1958	1961

K. L-401.

1. Lockheed proposal for tactical weapon based on X-7 series of test vehicles.
2. ADC recommended to Headquarters USAF development of L-401 when Bomarc slipped.

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3. L-401 is to meet the same requirements as Bomarc.
4. Lockheed now has a contract for a study on the X-7B development as a weapons system.
5. Availability date of L-401, if contract let for weapons system development, expected to be same as for Bomarc.

L. Standard IM Base Requirement.

1. 57-3 Requirement submitted in December 1954.
 - a. To permit phasing in of advanced IM's.
 - b. To permit redeployment of IM's.
 - c. Decrease cost of IM program.
2. ARDC evaluated the standard IM base as technically feasible in June 1955 and a study contract has been let to determine the degree of standardization and the general base configuration.
3. A standard IM Base is defined as an IM base, including launching sites, which has standardized air installations facilities suitable for accomodating all IM's expected to be deployed by ADC. Standardization does not apply to any subsystem of the weapons system.
4. Possible standard items.
 - a. Real estate.
 - b. Internal-access and perimeter roads.
 - c. Fueling and defueling shelter.
 - d. Commercial power facilities.
 - e. Emergency power facilities.
 - f. Internal communications lines.

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- g. Commercial communications lines.
 - h. Water supply.
 - i. Sewage disposal facilities.
 - j. Administration and guard buildings.
 - k. Parking Area.
 - l. Security fencing and flood lighting.
 - m. All support base facilities.
- 5. A schematic of a Standard Base was shown and described.
 - 6. A schematic of a Standard Site was shown and described.
 - 7. A schematic of a Standard Revetment was shown and described.
- M. ADC Missile Employment Center.

- 1. Required for:
 - a. Initial AD Missile Squadron unit training.
 - b. Annual training of AD Missile Squadrons.
- 2. Required by mid-CY 57 for Talos training.

III. ADC CONCEPT OF EMPLOYMENT AND DEPLOYMENT OF WEAPONS.

- A. Threat development probabilities chart was shown which depicted the growing capabilities of the threat.
- B. Family of weapons chart was shown depicting the following weapons.
 - 1. LRI
 - 2. MRI.
 - 3. LRM.
 - 4. SRM.
- C. Employment concept chart depicting Defense in Depth utilizing the above weapons was shown.

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D. Factors considered in determining target priority - not listed
in order of priority.

1. Population of city or area.
2. Industrial capability of city or area.
3. Transportation Centers.
4. Government Centers.
5. Retaliatory Force Bases.
6. Estimated enemy force allocation.

E. The composition of the defensive force is dictated by:

1. The areas to be defended.
2. The threat.
3. Industrial capability.
4. Economic factors.
5. Urgency time-wise to attain a defensive level.

F. ADC Defensive Goal.

1. ADC force requirements appearing in 54-60 plan were based on the above.
2. Deployment of forces was determined by extensive war gaming.
3. Requirement for 53 IM Squadrons by end CY 1960 part of this force requirement - it is still a requirement.
4. The above force requirement and planned deployment is subject to continuous evaluation.

G. Organization of AD Missile Squadrons.

1. Flight size (number of IM) originally based on capacity of initial Bomarc computer.
2. Four such flights made a convenient unit administrative and logistic-wise.

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3. AD Missile Squadron weapon composition per flight.
 - a. 30 IM per flight.
 - b. 28 launching revetments.
 - c. 25 operationally ready missiles.
 - d. 24 expected to go when button pushed.
4. AD Missile Squadron deployment based on the above.
 - a. Proposed Talos deployment, 20 sites, in northeast area.
 (Map with proposed locations shown.)
 - b. Proposed site locations based on those included in 54-60 Requirements Plan.
 - c. Plan envisioned deploying one unit (Detachment for TDU, Flight for standard base installation) in order of location priority until each of the 20 locations has one Talos unit, thus getting initial area coverage. Then add a second unit to each location, than a third and a fourth, all Bomarc units. End result would be a four unit squadron at each location; 3 units Bomarc and one unit Talos.

IV. ADC IM Requirements.

- A. Present through 1957.
 1. Speed: Mach 2.0 - 2.5.
 2. Altitude: up to 60,000 feet.
 3. Range: 100 - 125 nautical miles.
 4. Seeker lock-ons: 10,000 - 60,000 feet altitude with retrofit for 0 - 60,000 feet altitude.
 5. Warhead: HE or nuclear.
- B. 1958 through 1962.
 1. Speed: 2.5 - 3.0.

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2. Altitude: up to 80,000 feet.
3. Range: 250 - 300 nautical miles.
4. Seeker lock-ons: 0 - 80,000 feet altitude at 20 NM range.
5. Warhead: Nuclear (primary).

C. Post-1962.

1. Speed: Mach 4.0 - 4.5.
2. Altitude: up to 100,000 feet.
3. Range: 300 nautical miles.
4. Seeker lock-ons: 0 - 100,000 feet altitude at 25 NM range.
5. Warhead: Nuclear (primary).

D. Meeting present schedules will still put ADC one complete time period behind the threat. (Present schedule listed in Part IB.)

E. IM General Requirements.

1. Operate from the Standard Base.
2. Long ready to launch life.
3. Quick reaction time.
4. Compatible with ADC Ground Electronic Environment.
5. Mid-course guidance highly invulnerable to ECM.
6. Go-no-go type checkout equipment.

F. IM Seeker Requirements for Increased Capability.

1. Search and lock-on dependability factor approaching 1.
2. Minute target discrimination.
3. Moving target discrimination (Doppler).
4. Long lock-on range.
5. Air-to-air IFF.
6. Capability to home on ECM.
7. Augmentation IR seeker.

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G. Weapon Kill Requirement for IM's.

1. Nuclear warhead.
2. Refined terminal guidance.

V. PROBLEM AREAS.

A. General.

1. Slippage of IM Programs.
2. Initial IM Deployment Dates vs. Primary IM Deployment Dates.
 - a. Talos slippage would put it in Bomarc availability time period.
3. Lack of sufficient programming data.
4. SAGE.

B. Talos.

1. Lack of central supervision and coordination at all levels.
2. Uncertainty of tactical configuration and operational availability date.
3. Design characteristics of TDU not firm.
4. Lack of definite information on availability of various Talos types.
5. Lack of information on Talos "X" program.
 - a. Talos "X" is Talos with nuclear warhead and seeker.
6. Firm information not available on kill probability re weapon and carrier kill of various Talos types.

C. Bomarc.

1. Not enough emphasis placed on improved Bomarc program.
2. Requirements for terminal seeker capability not being met.
IFF, low altitude, ECM, IR augmentation, increased detection and lock-on range reliability.

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VI. SUMMARY.

- A. IM availability dates do not meet ADC requirements.
- B. Above dates still uncertain.
- C. Critical data not available re: design configuration, capabilities, environment support on Talos.
- D. Number of programmed IM units does not meet ADC requirements.
- E. Standard IM base provides for logical economic and systematic IM deployment.
- F. ADC future planning relies heavily on improved Bomarc and LRIMX.

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VII. RECOMMENDATIONS.

- A. It is recommended that immediate action be taken to:
1. Approve the deployment plan covered in Part III G4.
 2. Establish ADC project offices for Talos and for Bomarc.
 3. Request Headquarters USAF/ARDC furnish evaluated data on IM development testing and tactical availability for proper ADC planning and programming.
 4. Request Headquarters USAF/ARDC expedite development of Talos for maximum tactical deployment flexibility permitting phase-in of Bomarc and LRIMX.
 5. Request Headquarters USAF/ARDC expedite development of improved Bomarc and LRIMX.

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The ADC Council took the following action on the above recommendations:

1. Recommendation #1: Proposed IM Deployment.
 - a. Concept of deployment, Talos by Detachment and Bomarc by Flight, approved. Specific locations disapproved as presented.
 - b. Entire ADC weapons deployment to be re-examined in relation to AA deployment.
2. Recommendation #2: ADC Project Offices for Talos and for Bomarc.
 - a. Approved.
 - b. Action to be taken immediately to secure position authorizations and to select qualified personnel to fill positions.
3. Recommendations #3 through #5 inclusive: Action to be requested of Hq USAF/ARDC.
 - a. To be considered as routine staff actions to be taken as necessary.

3: 14X

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DOCUMENT NO. 283

THIS DOCUMENT MAY BE FOUND
IN VOLUME 9 OF THE SUPPORTING
DOCUMENTS TO THIS HISTORY.

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON 25, D. C.

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27 JUN 1955

AFDRD-AD

SUBJECT: (U) Requirement for Standard Interceptor Missile Base in the
Air Defense Command

TO: Commander
Air Defense Command
Ent Air Force Base
Colorado Springs, Colorado

1. A copy of letter from Headquarters Air Research and Development
Command, subject as above, dated 31 May 1955 is inclosed herewith for your
information.

2. This Headquarters recognizes the importance of standardizing, to
the maximum extent practicable, interceptor missile installations and
facilities. A study contract is now being negotiated by ARDC to consider
all aspects of this problem. In view of the time factor involved in
developing standard facilities, and the early operational date specified
for the Talos Land Based System, it is evident that a standard base
concept cannot be applied to the early Talos installations.

BY ORDER OF THE CHIEF OF STAFF:

Handwritten signature of Robert L. Johnston in cursive.

ROBERT L. JOHNSTON
Colonel, USAF
Asst Director of Research & Development
Office, Deputy Chief of Staff, Development

1 Incl.
Cy ltr fr ARDC,
subj as above,
dtd 31 May 1955

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RTED

MAY 01 1955

SUBJECT: (Unclassified) Requirement for Standard Interceptor Missile Base in the Air Defense Command

TO: Director of Research and Development
Headquarters, United States Air Force
Washington 25, D. C.

1. Reference is made to the following correspondence:
 - a. Basic letter from ADC to your Headquarters, subject as above, dated 28 December 1954 and interchanges thereto, between your respective Headquarters, dated 21 February 1955, 15 March 1955, and 28 April 1955, respectively.
 - b. Letter from your Headquarters to this Command, subject as above, dated 7 March 1955 and interim reply thereto dated 21 March 1955. (Unclassified)
2. Initially it was hoped that the required study could be conducted within ARDC at WADC. This was the basis for the relatively optimistic informal estimate of 120 days for its completion. Preliminary investigation now indicates that the problems, connected with the determination of the various parameters involved in the operation of BOMARC, TALOS, and/or other allied interceptor missiles, are greater than at first anticipated. It is now considered that a study of this nature and magnitude can be accomplished more efficiently by an impartial investigator such as a qualified, independent, consulting engineering firm. (Confidential)
3. Funds will be made available immediately to initiate such a study, and it is anticipated that preliminary results can be made available within approximately six months from date of contract. (Unclassified)

FOR THE COMMANDER:

Signed

Major General
Deputy Commander/Technical Operations

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From: Chief, Bureau of Ordnance

To: Distribution List

Subj: Conference on Competability of Talos Land System with SAGE

1. The Bureau of Ordnance has the technical responsibility of developing the Talos Land Defense Unit. One of the most important criteria of this problem is the ability of the Talos Land System to make maximum use of SAGE facilities. In fact the kill power of the Talos System can be materially increased by judicious use of fire-power coordination from SAGE to the Talos System.

2. In order to obtain operational and command philosophy of what is needed between SAGE and TDU the Bureau of Ordnance will hold a conference in Room 0423, Main Navy, at 0900 on Wednesday, 25 May. The following representation is invited:

SPL - 3	SAGE - 3	Army Staff - 2
PGA - 4	ANDC - 1	Air Staff - 2
RSE - 1	ADC - 1	COMD - 2
	OCG - 1	

Clearances should be sent to Bureau of Ordnance (Kdb). Secret clearance is required.

3. Topics to be discussed are found in paragraph 3.1.6.2 of NAVORD 83-6720 (Ordnance Specification Talos Land Based System). Particularly, information is desired on:

- a. Data links to and from SAGE and TDU.
- b. A commitment on acceptance of responsibility for fire-power coordination by SAGE to Talos.

4. It is desired to start the conference with brief over-all presentations of SAGE and the Talos Land System. Each of these presentations should be limited to approximately 30 minutes.

F. S. WITHERINGTON

Robert L. Taylor

Approved: _____
Special Agent in Charge

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FILE NUMBER 7-26.5

ADCFR

10 MAY 1955

SUBJECT: (Unclassified) Tentative Interceptor Missile Deployment Plan

TO: ADC Liaison Office
Lincoln Laboratory
ATTN: Colonel Edwin F. Carey, Jr.
P. O. Box 73
Lexington 73, Massachusetts

1. Attached is the Tentative Interceptor Missile Deployment Requirements Plan. It should be noted that this is an unofficial plan which will not be a firm position until the present weapons requirements plan has been war-gamed.
2. The first 5 squadrons of Talos (on 10 bases) and the first 2 squadrons of Bomarc (on 4 bases) reflect the total USAF approved program for interceptor missiles. Headquarters USAF has indicated that ADC would receive approximately 17 squadrons by 1961.
3. There has been no firm date announced for completion of the COMAD Requirements Plan. You will be informed when the weapons requirement plan has been approved by this headquarters.

BY ORDER OF THE COMMANDER:

1 Incl
Tentative Interceptor
Missile Deployment
Requirements Plan

RECTOR C. DACHS
Captain, USAF
Asst. Command Adj

COMEBACK COPY

Not requested, not furnished
Furnished 10 MAY 1955
(Date) (Initials)

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This correspondence is classified _____ in accordance with
Par _____, AFR 205-1, 15 Dec 53, or for the reason (s) stated.

TENTATIVE INTERCEPTOR MISSILE DEPLOYMENT REQUIREMENTS PLAN

(Not Approved by Headquarters Air Defense Command)

	<u>1/2 Squadron</u>	<u>Full Squadron</u>	<u>Convert To</u>
McGuire AFB, N. J.	*3-58 T	2-60 T	2-61 B
Andrews AFB, Md.	3-58 T	*2-60 T	3-61 B
Mitchel AFB, N. Y.	*4-58 T	1-60 T	2-62 B
Suffolk Co. AFB, N. Y.	4-58 T	*1-60 T	3-62 B
Dover Airport, Del.	*2-59 T	1-60 T	1-62 B
Chincoteague NAS, N. J.	2-59 T	*1-60 T	4-61 B
Montauk AF Stat., N. Y.	*3-59 T	3-60 T	4-61 B
Newport N. Base, R. I.	3-59 T	*3-60 T	1-62 B
Wurtsmith AFB, Mich.	*4-59 T	2-60 T	3-61 B
Hanscom AFB, Mass.	4-59 T	*2-60 T	2-62 B
Ft. Miles, Cape Henlopen, Del.	*4-59 B	3-60 B	
Ontario AFB, Calif.	*4-59 L	3-60 L	
New London N. Sub. Stat., Conn.	4-59 B	*3-60 B	
Hamilton AFB, Calif.	4-59 L	*3-60 L	
Langley AFB, Va.	*1-60 B	4-60 B	
Paine AFB, Wash.	*1-60 L	4-60 L	
Ft. Hamilton, N. Y.	1-60 B	*4-60 B	
Camp Pendleton, Calif.	1-60 L	*4-60 L	
Ft. Dearborn, N. H.	*1-60 B	4-60 B	
Ft. Ord, Calif.	*1-60 L	4-60 L	
New Castle Airport, Del.	1-60 B	*4-60 B	
Naval Air Station, Wash.	1-60 L	*4-60 L	

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Larimo AF Stat., N. J.	*2-60 B	1-61 B	
George AFB, Calif.	*2-60 L	1-61 L	
North Truro AF Stat., Mass.	2-60 B	*1-61 B	
Travis AFB, Calif.	2-60 L	*1-61 L	
Baldwin N. Base, N. Y.	*2-60 B	2-61 B	
Nash Bay AF Stat., Wash.	*2-60 L	2-61 L	
Ft. Monmouth, Red Bank, N. J.	2-60 B	*2-61 B	
March AF Base, Calif.	2-60 L	*2-61 L	
Newark Airport, N. J.		3-60 T	3-62 B
Aberdeen P. O., Md.		4-60 T	4-62 B
New Haven Airport, Conn.		4-60 T	4-62 B
Glenview NAS, Ill.		1-61 T	1-62 L
Niagara Falls AF Stat., N. Y.		1-61 T	1-63 B
Selfridge AFB, Mich.		2-61 T	1-62 L
Gary Airport, Ind.		2-61 T	2-62 L
Bishop Airport, Flint, Mich.		2-61 L	
South Bend Airport, Ind.		2-61 T	2-62 L
Port Erie, Penna.		3-61 T	1-63 B
Truax AFB, Wis.		3-61 L	
Gov. Mitchell Airport, Milwaukee, Wis.		3-61 T	3-62 L
Greater Pittsburgh Airport, Penna.		3-61 T	2-63 B
Muskegon Airport, Mich.		3-61 L	
Joliet Arsenal, Ill.		3-61 T	4-62 L
Ft. Wayne Airport, Ind.		3-61 T	3-62 L
Toledo Airport, Ohio		4-61 L	
Alamoso Airport, Mich.		4-61 T	4-62 L

Wright-Patterson AFB, Ohio	4-61 T	1-63 L
Rock Island Airport, Ill.	4-61 L	
Akron Airport, Ohio	4-61 T	2-63 B
Lockbourne AFB, Ohio	4-61 T	1-63 L
Chanute AF Base, Ill.	4-61 T	2-63 L

Key:

- T - Talos
- B - F-99 (Bomarc)
- L - L-253 (Lockheed)
- * - Squadron Headquarters for split squadrons

Hq ADC, ADCMD, Subj: Proposed Manning Authorizations for Air Defense Missile Squadron (Talos)

b. The squadron headquarters will exercise Command, administrative and staff supervision over assigned detachments. Operational control over the detachments will be exercised by the appropriate Air Defense Wing (SAGE). This change in the Operational Plan has required the placement of operational functions within the respective detachments. Consequently, manning of the squadron headquarters is limited to Command, Intelligence, Unit Training, and certain Administrative type functions.

c. The detachments must be provided manning for administrative and logistical functions, since they may be located a considerable distance from the parent squadron. In this connection, it is expected that a large number of the detachments will be required to operate a small station along the lines of many of the Aircraft Control and Warning sites.

d. Maintenance is black box, "Go" or "No Go" type on components and sub-assemblies. This concept results in the placement of maintenance activities at detachment level and in a considerable reduction in the total maintenance personnel requirement, since maintenance of the black boxes will not be done within the squadron.

e. Missile Operations manning requirements within the detachments are based on a requirement for eight (8) battle positions (1 Intercept Controller AFSC 1644; and 7 ACMW Operator-Technicians, AFSC 273-0) to be manned constantly. This results in the requirement for 6 officers and 37 airmen (based on: a 5 day week; an average of 140 man-hours allotted to primary duty assignment per week; and 5.2 persons per position). The computers, associated equipment, and personnel required for the tactical operation of each detachment will be located in the Detachment Operations Center under the control of the Detachment Operations Officer.

f. Radar maintenance requirements for a detachment are based upon maintenance of two (2) launchers, four (4) guidance transmitters, and two (2) target tracking-illuminating radars. In addition, each missile is equipped with a seeker radar which is activated when the missile is within seeker range of the target.

g. Each detachment will be equipped with a minimum of sixty (60) operationally ready Talos missiles at all times.

h. Each missile will be visually checked each day, and the system checked in the assembly building each 30 days.

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Hq ADB, ADONS, Subj: Proposed Manning Authorizations for Air Defense Missile Squadron (Talos)

i. Commercial electrical power may be used until receipt of alert, at which time equipment will be switched to the integral power source.

j. Unit Supply Personnel are included in the detachment manning to provide for receipt, unloading, storage and issue of supplies and equipment.

k. Manning requirements for Post Service, Air Police, installations, recreation, information services, medical, and other functional areas have been tailored along the manning yardsticks and standards established for aircraft control and warning sites.

4. Experience in actual operations undoubtedly will point out areas where these manning estimates and requirements will require revision. In the meantime, however, the attached document reflects estimated requirements based upon current information available.

5. The nomenclature employed for these units is "Air Defense Missile Squadron (Talos)" or "Air Defense Missile Detachment (Talos)" in accordance with instructions contained in your message AFOP-OP-8 43901, dated 22 June 1955.

6. It is recommended that proposed manning for an Air Defense Missile Squadron (Talos) and an Air Defense Missile Detachment (Talos) be included as a part of the basic Talos Operational Plan.

FOR THE COMMANDER:

1 Encl:
Proposed T/O

C. F. HUMPHREYS
Major, USAF
Asst Command Adj

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TABLE OF ORGANIZATION
NO. 1 - (Proposed)DEPARTMENT OF THE AIR FORCE
WASHINGTON 25, D. C.

AIR DEFENSE MISSILE SQUADRON (TALOS)

(Effective only upon specific authorization by the Department
of the Air Force)PART I - GENERAL1. Function:

- a. To maintain a state of readiness for and execute assigned surface to air interceptor missile missions.
- b. To provide command and staff supervision (except operational control) over assigned detachments.

2. Assignment: To an Air Division (defense), Air Defense Wing, or Air Defense Group as applicable. Normally, four (4) Air Defense Missile Detachments (Talos) will be assigned to an Air Defense Missile Squadron (Talos). Operational control of the Detachments will normally be exercised by appropriate Semi-Automatic Ground Environment (SAGE) Direction Centers.

3. Capabilities:

- a. The Air Defense Missile Squadron (Talos) is capable of performing the above functions. The squadron will be superimposed upon one of its Detachments for such maintenance, supply, and services as are not provided for in Part II of this table.
- b. Performing continuous Air Defense alert mission for protection of specific geographical areas assigned.
- c. Launching and controlling the Air Defense missiles (Talos) to the target.
- d. Each detachment will be responsible for its assigned operational site and its associated equipment.
- e. Each detachment of an Air Defense Missile Squadron (Talos) will maintain not less than sixty (60) missiles (Talos) in operationally ready condition at all times.
- f. Maintenance of the missiles will be black box "Go" or "No Go" type on components and sub-assemblies.
- g. The cellular authorizations of Part II provide for capabilities as follows:

- (1) Part II. Squadron Headquarters, Air Defense Missile Squadron (Talos).

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T/O No. 1 (Proposed) Cont'd.

(2) Part IIA. Air Defense Missile Detachment (Talos).

4. Designation: As authorized by the Department of the Air Force.

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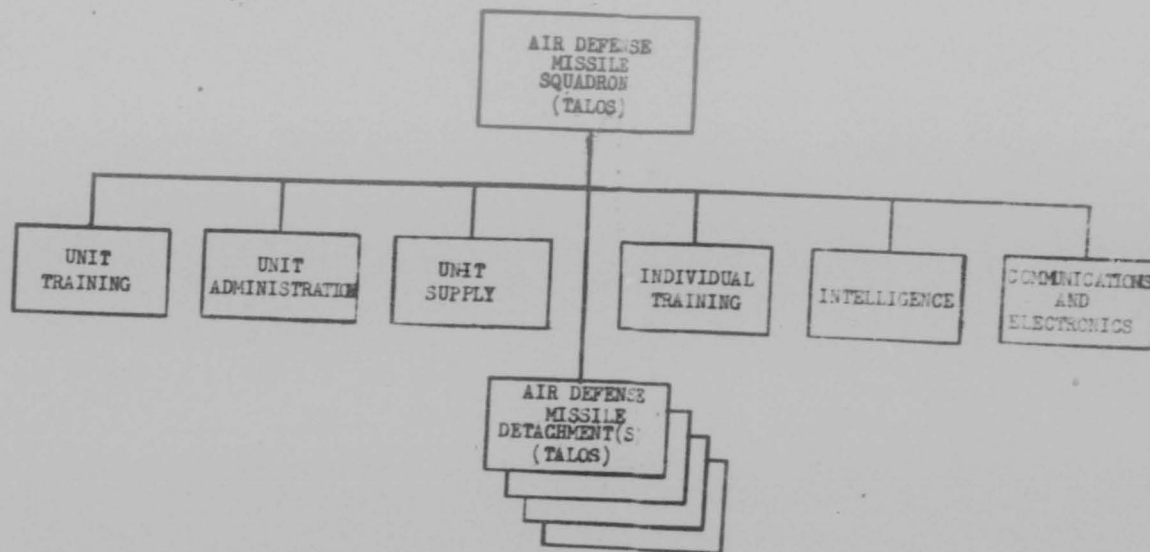
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ORGANIZATION CHART, AIR DEFENSE MISSILE SQUADRON (TALOS)



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577-7

A		C ORGANIZATION															E		
SECTION		B	C	D													E		
CODE	LINE NO.	TITLE	AFSC	TOTAL OFF	TOTAL AMN	COL	LT COL	MAJ	CAPT	LT	W/O	W/SGT	T/SGT	S/SGT	A/1	A/2	A/3	TOTAL CIV	GR
PART II																			
QUALIFICATION SECTION																			
SQUADRON HEADQUARTERS																			
01000	1	COMMAND		1	2		1							1				1	
	2	Commander	* 0066A	1			1												
	3	Vehicle Operator	60350		1														
	4	First Sergeant	73170		1									1					
03000	1	UNIT ADMINISTRATION		1	4				1					1	1	1	1		
	2	Adjutant	7324	1					1										
	3	Apprentice Clerk	70230		1														
	4	Clerk	70250		1														
	5	Classification Spec	73250		1										1				
	6	Personnel Tec	73270		1									1					
04000	1	UNIT SUPPLY			1														
	2	Organizational Supply Spec	64151		1														
11400	1	INDIVIDUAL TRAINING		1	2						1			1	1				
	2	Educational Specialist	7524		1					1									
	3	Education Technician	75270		2									1	1				
29000	1	INTELLIGENCE			2									1	1				
	2	Intelligence Operations Tec	20470		2									1	1				
81021	1	GUIDED MISSILES AND PILOTLESS AIRCRAFT OPERATION TRAINING		2	1				1										
	2	Training Coordinator	3264		1				1										

* Should be AFS for Air Commander, (Non Flying) additionally qualified in AFS 3264

A		B	C		D										E			
SECTION	LINE NO	TITLE	AFSC	TOTAL AMN	COL	LT COL	MAJ	CAPT	LT	WFO	MSGT	T/SST	S/SST	A/1	A/2	A/3	TOTAL CIV	OR
(Cont'd)																		
	3	Guidance and Con Sys Supt	31000	1						1								
	4	Clerk	70250	1									1					
	1	COMMUNICATIONS AND ELECTRONICS		1			1						1					
	2	Comm & Electronics Staff Officer	3016	1			1											
	3	Clerk	70250	1									1					
	1	RECAPITULATION																
	2	Officers		6		1	2	1	1	1								
	3	Airmen		13							3	3	4	2	1			
	4	Aggregate		19														

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A		B	C ORGANIZATION													D		E	
SYMBOL	LINE NO.	TITLE	AFSC	J/TAL OFF	TOTAL AMN	COL	LT COL	MAJ	CAPT	LT	W/O	M/SGT	T/SGT	S/SGT	A/1	A/2	A/3	TOTAL CIV	GR
PART IIA																			
AIR DEFENSE MISSILE																			
DETACHMENT (TALOS).																			
QUALIFICATION SECTION																			
ADD THE FOLLOWING:																			
01000	1	COMMAND		1				1											
	2	Detachment Commander	3264	1				1											
03000	1	UNIT ADMINISTRATION		1	4					1			1	1	1	1			
	2	Administrative Officer	7024	1						1									
	3	App Clerk	70230		1														
	4	Clerk	70250		1										1				
	5	Classification Spec	73250		1									1					
	6	Personnel Tec	73270		1								1						
04000	1	UNIT SUPPLY		1	10					1		1	2	2	2	3			
	2	Supply Officer	6424	1						1									
	3	App Organizational Supply Spec	64131		3											3			
	4	Organizational Supply Spec	64151		2										1	1			
	5	Supply Records Spec	64152		1										1				
	6	Organizational Supply Supv.	64173		2							1	1						
	7	Warehousing Supv	64171		1								1						
	8	Petroleum Supply Spec	64350		1											1			
12400	1	RECREATION			1											1			
	2	Recreation Spec	74151		1											1			

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ORGANIZATION																		
A SECTION		B TITLE	C			D										E		
CODE	UNIT NO.		AFSC	TOTAL OFF	TOTAL AMN	COL	LT COL	MAJ	CAPT	LT	W/O	WSGT	T/SGT	S/SGT	A/1	A/2	A/3	TOTAL CIV
36300	1	DINING HALL			8									1	3	2	2	
	2	App Cook	52230		2												2	
	3	Cook	52250		5									3	2			
	4	Food Svc Supv	52270		1								1					
36400	1	BAKERY			1												1	
	2	Baker	52150		1												1	
39000	1	INSTALLATIONS			21								1	1	5	9	3	2
	2	App Woodworker	55230		1												1	
	3	Woodworker	55250		1												1	
	4	Bldg Crafts Supv	55270		1							1						
	5	Utilities Helper	56010		2													2
	6	Electrician	56150		1												1	
	7	App Plumber	56430		1													1
	8	Plumber	56450		2									1	1			
	9	App Heating Specl	56530		1												1	
	10	Heating Specl	56550		4									1	3			
	11	Refrigeration Specl	56650		2									1	1			
	12	Refrigeration Supv	56670		1								1					
	13	Electric Power Production Oper	56750		2									1	1			
	14	Firefighter	57150		2									1	1			
50100	1	SECURITY			15									1	3	5	6	
	2	App Air Policeman	77130		6												6	
	3	Air Policeman	77150		8									3	5			
	4	Air Police Supv	77170		1								1					
53000	1	INFORMATION SERVICES			2										1	1		
	2	Information Specl	72150		2									1	1			

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SECTION		ORGANIZATION																
CODE	LINE NO.	TITLE	AFSC	TOTAL OFF	TOTAL AMN	COL	LT COL	MAJ	CAPT	LT	W/O	MSGT	T/SGT	S/SGT	A/1	A/2	A/3	TOTAL CIV
54000	1	MEDICAL			2													
	2	Medical Service Spec	90250	1								1			1			
	3	Medical Service Tec	90270	1								1						
81010	1	GUIDED MISSILE AND PILOTLESS AIRCRAFT MAINTENANCE		3	22			1	2			2	5	8	5	2		
	2	Pilotless Aircraft Officer	3264	2				1	1									
	3	Missile Guidance Systems Officer	3224	1					1									
	4	App Guidance Sys Mech	31130		1													1
	5	Guidance Sys Mech	31150		3									2	1			
	6	Guidance Sys Tec	31170		3							1	2					
	7	App Control Sys Mech	31230		1													1
	8	Control Sys Mech	31250		3									2	1			
	9	Control Sys Tec	31270		3							1	2					
	10	Jet Engine Mech	43250		3										2	1		
	11	Jet Engine Tec	43270		1									1				
	12	Munitions Spec	46150		4										2	2		
81020	1	GUIDED MISSILE AND PILOTLESS AIRCRAFT OPERATION		6	37			1	2	3		5	7	9	11	5		
	2	Intercept Controller	1644	6				1	2	3								
	3	App ACW Operator	27330		5													5
	4	ACW Operator	27350		20									9	11			
	5	ACW Supv	27370		12							5	7					
84020	1	COMMUNICATIONS AND ELECTRONICS OPERATIONS			6										1	3	2	
	2	App Comm Center Spec	29130		2													2
	3	Comm Center Spec	29150		4										1	3		

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A		B ORGANIZATION													C		D										E
FUNCTION	UNIT NO.	TITLE	AFSC	JTAL OFF	TOTAL ANN	COL	LT COL	MAJ	CAPT	LT	S/O	M/SGT	T/SGT	S/SGT	A/1	A/2	A/3	TOTAL CIV	0								
84110	1	TELEPHONE MAINTENANCE			2																						
	2	App Central Office Eqp Spec	36230		1										1												
	3	Central Office Eqp Spec	36250		1																						
84210	1	TELETYPE MAINTENANCE			1																						
	2	Comm Machine Repairmen	36350		1																						
84320	1	CRYPTOGRAPH OPERATION			2																						
	2	Cryptographic Operator	29250		2																						
84510	1	RADAR MAINTENANCE			1	15																					
	2	Ground Electronics Officer	3044	1					1			1	3	5	4	2											
	3	App ACW Radar Repairmen	30332		2				1																		
	4	ACW Radar Repairmen	30352		9																						
	5	ACW Radar Maint Tec	30372		4							1	3														
92510	1	MOTOR VEHICLE MAINTENANCE			8																						
	2	App Automotive Repairman	47131		2									1	2	3	2										
	3	Automotive Repairman	47151		5																						
	4	Vehicle Maint Tec	47170		1										2	3											
92520	1	MOTOR VEHICLE OPERATION			12																						
	2	App Veh Operator	60330		4									1	3	4	4										
	3	Vehicle Operator	60350		7																						
	4	Motor Transp Supv	60370		1										3	4											
99050	1	RECAPITULATION																									
	2	Officers			13				3	5	5																
	3	Airmen			169																						
	4	Aggregate			182										11	23	45	55	33	2							

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APPENDIX A

MISSILE UNIT TRAINING PROGRAM1. Problem:

a. The integration of interceptor missiles (such as Talos and Buzarc) into the ADC weapons inventory will pose numerous problems. Maximum combat effectiveness is predicated on proficient operational and maintenance personnel. To establish high proficiency levels, these personnel must be indoctrinated in the latest and most effective employment procedures and be provided with the opportunity to exercise these techniques.

b. It is anticipated that a Talos squadron will contain approximately 320 airmen and 60 officers, subdivided into four flights. Each flight will have 30 missiles and 28 launching revetments. Normally, 25 of these missiles will be in an operational condition; the rest will be undergoing maintenance. Each Talos flight unit will have at its disposal, in addition to the 28 launching revetments, one or more of each of the following radars: Mid-course guidance, missile tracking, target tracking and illuminating. The combat effectiveness of this squadron is dependent upon proper operation of these equipments, the missile itself, and the ability of responsible officers to employ the weapon effectively in the existing tactical situation. In general, the combat capability of a Talos squadron is dependent upon three basic factors:

- (1) The capabilities of the weapon system.
- (2) The ability of maintenance personnel to keep the system in a combat ready condition.
- (3) The ability of operations personnel to employ the system in the most effective manner.

2. The Need for In-Service Improvement of the System. No weapon system to date has reached tactical units in its ultimate configuration. Modifications have always been necessary to improve the maintainability, operability, or capability of the system. Maintenance and employment techniques developed under field conditions have in many cases proven better than those developed in laboratories. Component failure rates have indicated necessary improvement in reliability. These factors emphasize the need for a specialized activity at field level, composed of personnel with the necessary technical background to research these fields. A similar group assigned to the Weapons Employment Center at Yuma has proven the value of such an activity. A group of this type provides the best source of valid information for over-all improvement of the system itself.

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3. Maintenance. The most highly developed weapons system is of little value if it cannot be maintained by available personnel. Maintenance personnel must be intimately acquainted with the techniques and procedures necessary to keep the entire system aligned, calibrated, and in an operational condition. If a means is provided for the maintenance personnel to exercise these techniques repeatedly, their capability is further enhanced. Firing weapons at realistic targets provides a means of checking their ability to maintain the entire system in a proper operational condition. If a miss can be attributed to faulty maintenance, proper corrective measures can be taken to eliminate this weak link in the system.

4. Operation. The high degree of automatization of interceptor-missile systems has resulted in a reduction in responsibility of operations personnel; however, it is still necessary to monitor and occasionally make manual corrections to the flight of the missile. The degree of skill necessary to perform this function properly can only be gained through experience accumulated in actual firing.

5. Reliability. A missile, due to its complexity, has inherently a certain degree of unreliability. A large proportion of this can be attributed to the effect of its combat environment on the various components. The stresses imposed by lateral and longitudinal acceleration forces, adverse weather, and high altitude conditions can cause component failures. These types of failures can only be detected (for subsequent correction) by actually firing missiles and subjecting them to their combat environment. Such a program could indicate that an improvement in quality control by the manufacturer is necessary as well as point out excessively high component failure rates for improvement in over-all missile reliability.

6. Functional Requirements of Training Facility. Consideration of the aforementioned factors leads to the conclusion that a facility must be established to permit complete interceptor-missile squadrons to assemble, maintain, and fire weapons at realistic targets. Such a base would fulfill three basic requirements of this command:

- a. It would permit the improvement and evaluation of the combat proficiency of every interceptor-missile squadron.
- b. It would permit evaluation of missile reliability factors for subsequent improvement.
- c. It would permit the development and standardization of tactics, techniques, procedures, and modifications to improve system maintainability, operability, and/or capability.

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7. Initial Training Period. The initial integration of a new weapon into the air defense system is a critical period. For the first twelve to eighteen months, experience will gradually be accumulated and familiarity acquired. The first units activated will be faced by numerous problems to which no solution will have been found. Therefore, training periods for these units should be extended for as long as practical within the limitations imposed by available facilities. Accumulated experience can be passed on to units activated later to permit a gradual decrease in the length of the training period.

8. Periodic Training. To maintain, and perhaps improve upon, the acquired unit combat proficiency, periodic training must be conducted. Our present fighter-interceptor squadrons are programmed to receive unit training once a year. The advanced level of automation associated with Talos and Bomarc might appear to lend support to extending the interval between training periods for missile squadrons. However, this headquarters anticipates that current high personnel turnover rates will be extended to the time period in question. This personnel instability will necessitate annual unit training as with interceptor units.

9. Missile Quantities. The above considerations indicate that initial training periods must be of greater duration than re-training periods. It is felt at the present time that three weeks should be sufficient for re-training. The difference in the training period duration will also necessitate a proportional variation in the number of missiles to be launched by a unit. For an initial training period of three months, not less than two missiles should be launched per flight per month. Irrespective of the length of the training or re-training period, not less than four missiles should be fired by each flight. This quantity should permit sufficient repetition of assembly, checkout, maintenance, and operational procedures to improve significantly the combat capability of a tactical unit. The expense involved in firing a greater number of missiles does not at this time appear justified.

10. Targets. Targets utilized for missile firing must simulate the aerial threat for the associated time period. Since towed targets are not considered feasible for such a weapon, drones appear to be the only solution. The target drone must simulate the radar reflectivity of probable targets. It should be capable of flying at 60,000 feet altitude at a speed of 1.5 mach for a period of about thirty minutes. It should be recoverable over either land or sea. It should contain a proximity scorer with a spherical scoring pattern capable of transmitting measured miss distance information to a ground receiver for recording and evaluation.

11. Realistic Training Environment.

a. For unit training, tactical environment should be duplicated at the training facility insofar as practical. Talos will require a GCI

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site to pass target position and track down to the squadron. The squadron will then alert a flight and assign it a target. At the appropriate time the flight unit will launch a designated missile at the target. All the facilities necessary for following this sequence of operations should be available at the proposed installation.

b. In the case of Bomarc, target data, fed into the Air Defense Direction Center computing equipment, will be processed and launch instructions sent to one or more missiles by land line. After the missile is launched, the ADEC system will interrogate the transponder in the missile for position data. This data will then be fed into the computers for computing guidance information which is transmitted to the missile. The proposed training facility must therefore have sufficient equipment to accomplish the above operations.

12. Unit Training Concept. Because unit training is desired, a high percentage of the operational and maintenance elements of an entire squadron should train simultaneously. This would probably necessitate taking the entire squadron off combat status for the training period. It is felt that there are fewer evils associated with this type program than attempting to send half a squadron or two flights simultaneously. This sort of divided effort would negate many of the advantages accrued from the unit training concept.

13. Training Facilities.

a. The need for a realistic training environment for a missile squadron has been stated previously. For complete realism, this would necessitate the construction of four complete standard flight launching installations (28 launching revetments per flight) for each squadron in training. The expense and extent of such a construction program would not be justified, considering the fact that only four missiles will be launched by each flight during the training period. It is conceivable that some training could be derived from a single launching revetment. All four missiles could be launched from this single revetment; however, there are obvious disadvantages to such a proposal. The squadron is not placed in a realistic environment; maintenance personnel who normally are responsible for keeping 28 missiles combat ready would be responsible for only one.

b. It becomes apparent that some sort of compromise must be made. If seven missile launching revetments are available for each flight, they could be required to keep all seven missiles in a combat ready condition at all times. When a target is made available, one missile would be launched, but the maintenance crew would not know which one until actual

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firing took place. In this way their ability to keep missiles ready to fire can be measured. Another advantage accrues to providing each flight with seven missile launching revetments, in that an entire squadron can be trained on a standard single flight launching installation. The standard installation would have to be modified to include the four flight control facilities as indicated in Appendix B.

14. Development Phases. The training program should be developed in four phases consonant with the facility development phases outlined in Appendix B. These phases will correspond to our proposed missile unit activation schedule and will be as follows:

a. Phase I. The facility should be activated approximately six months prior to the activation date of the first Talos squadron. This six-month period would be utilized for operational suitability and functional testing of Talos simultaneously and in conjunction with the initial unit training. The slow initial rate of squadron activations will permit initial training periods of three months' duration. Each flight of the squadron in training should launch two missiles per month. A total of eight missiles per month would be expended during Phase I.

b. Phase II. Fifteen months after the initial unit activation of the first Talos unit, facilities will be necessary for simultaneous training of two Talos squadrons, one Bomarc squadron, and one L-253 squadron. The initial training periods for the first Bomarc squadron and the first L-253 squadron will be of three months' duration. Subsequent Bomarc and L-253 squadrons will be limited to a six-week initial training period. Initial training periods of Talos squadrons activated during Phase II will also be six weeks. Talos squadron re-training will be of three weeks' duration.

c. Phase III. After approximately thirty-four months of operations, facilities for simultaneous training of four missile squadrons (to be comprised of two Talos squadrons and/or two Bomarc squadrons and/or two L-253 squadrons) must be available. This will necessitate two launching sites for each type missile squadron.

d. Phase IV. Beginning about Fiscal Year 1962, all initial training of activated units will be completed. During this phase operations will be limited to conversion training and re-training, each of which will require a three-week period.

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APPENDIX B
ORGANIZATION AND FACILITY REQUIREMENTS

1. Proposed Organization.

AIR DEFENSE WING
(Missiles)
24 - 75 - 41*

AIR DEF GROUP
(Missiles)
6 - 25 - 0

INVENTORY
6 - 30 - 3

AIR BASE GROUP
3 - 16 - 1

TRONC SQUADRON
25 - 253 - 0

AIR DEF SQUADRON
(Missiles)
18 - 175 - 0

AIR BASE SQ
4 - 143 - 3

FLD MAINT SQ
7 - 104 - 50

SUPPLY SQ
9 - 121 - 50

*Figures represent Officers, Airmen, and Civilians, respectively.

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Total manning for the AIM Missile Unit Training Base: 100 officers, 974 airmen, and 148 civilians. This organizational manning provides the capability of supporting and training four interceptor missile squadrons concurrently (53 per year), to include guidance, control and propulsion systems, munitions handling, missile launching, installation and radar maintenance.

2. Proposed Base Specifications.

a. Launching Area. An area to accommodate six of the proposed standard interceptor missile flight launching sites, each modified to train an interceptor missile squadron of four flights (Figures 1 and 2). The dimensions of each site will be at least 2000' by 1200' with clear access to the firing range and separated from other sites by at least 1000'. The complete site area will be fenced and floodlighted, the same as the standard installation. Electrical power, heating and ventilation, water, sewerage, access roads, and land line communication facilities will be required. In addition, each Falcon squadron training site will require four flight guidance facilities.

b. Base Support Area. Housing to accommodate 200 temporary duty officers and 1000 temporary duty airmen will be required. In addition, housing will be required for the 100 permanent party officers and 1000 permanent party airmen. Construction of dependent housing is essential, due to the remoteness of the site. Missile, fuel, and munition storage facilities, missile assembly, checkout and maintenance buildings for each type missile, and squadron operation, administration, and classroom buildings will be required. Other essential support structures include an infirmary, supply warehouses, motor pool and associated repair shops, recreational facilities, administration buildings, and base shops. Construction of a detection radar site and SAGE or Bomarc computation facilities are also required.

c. Airfield Installation.

- (1) The airfield should be capable of handling C-124 type aircraft. This facility is to house and service a drone squadron composed of the following equipment:
 - (a) Three Q-2 launching aircraft.
 - (b) Twenty Q-2 drones in ready condition.
 - (c) Twenty Q-2 drones in storage. (Based on 0.5 attrition rate, this is a two weeks' supply in storage.) Field level maintenance on drone airframe and engines will be accomplished by the drone squadron.
- (2) An air-sea rescue unit is required, since drone launch aircraft will operate over water. This service may be

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rendered by the programmed unit at Buckingham or some other facility.

- (3) The drone recovery unit is required and should consist of three surface vessels capable of remaining 300 miles offshore for 12 hours with the capability to recover four drones. The necessary deck and repair facility should be located as close to the airfield as possible.

d. Firing Range-Controlled Firing Area. The range must encompass the launching sites with boundaries radiating at an angle of 60° from the launching site for a distance of 300 miles and to unlimited altitudes. (Figure 3)

3. At the beginning of Phase I of the program for the development of the base (January 58-March 59), the following facilities must be available:

- a. One complete (Talos) launching site with the associated support facilities.
- b. Housing to accommodate one temporary duty squadron, 75 permanent party officers, and 750 permanent party airmen.
- c. Supply warehouses.
- d. Motor pool.
- e. Recreation facilities.
- f. Administration buildings.
- g. ABDC and detection radar site and equipment.
- h. Two G-2 drone launching aircraft with capability of launching ten drones per month.
 - i. Drone recovery unit.
 - j. Air-sea rescue unit.
 - k. Firing area 150-mile radius.

4. At the beginning of Phase II (April 59-September 60), the additional facilities listed below are required.

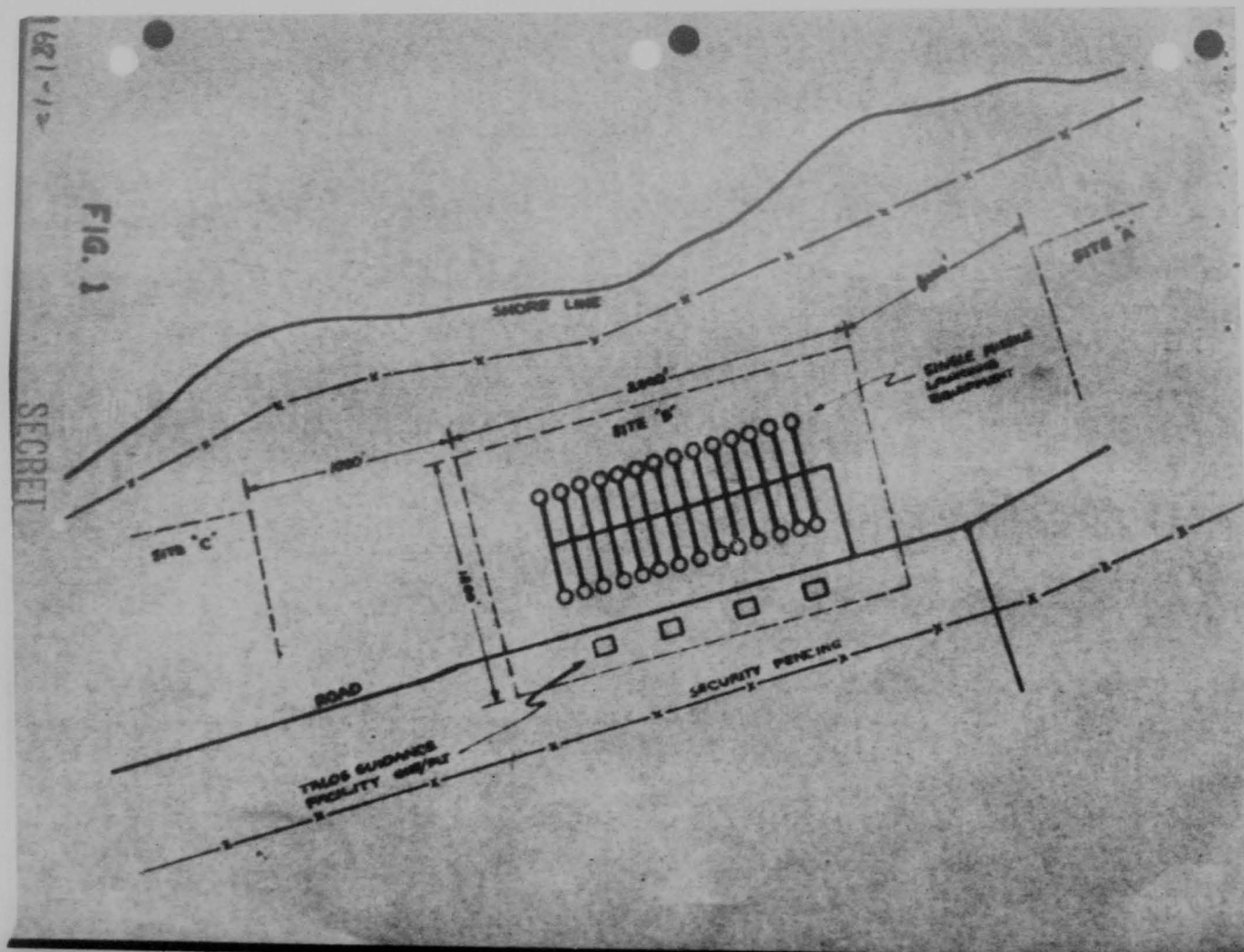
- a. One additional Talos launching site.
- b. One Bomarc launching site and associated support facilities.
- c. One L-253 launching site and associated support facilities.

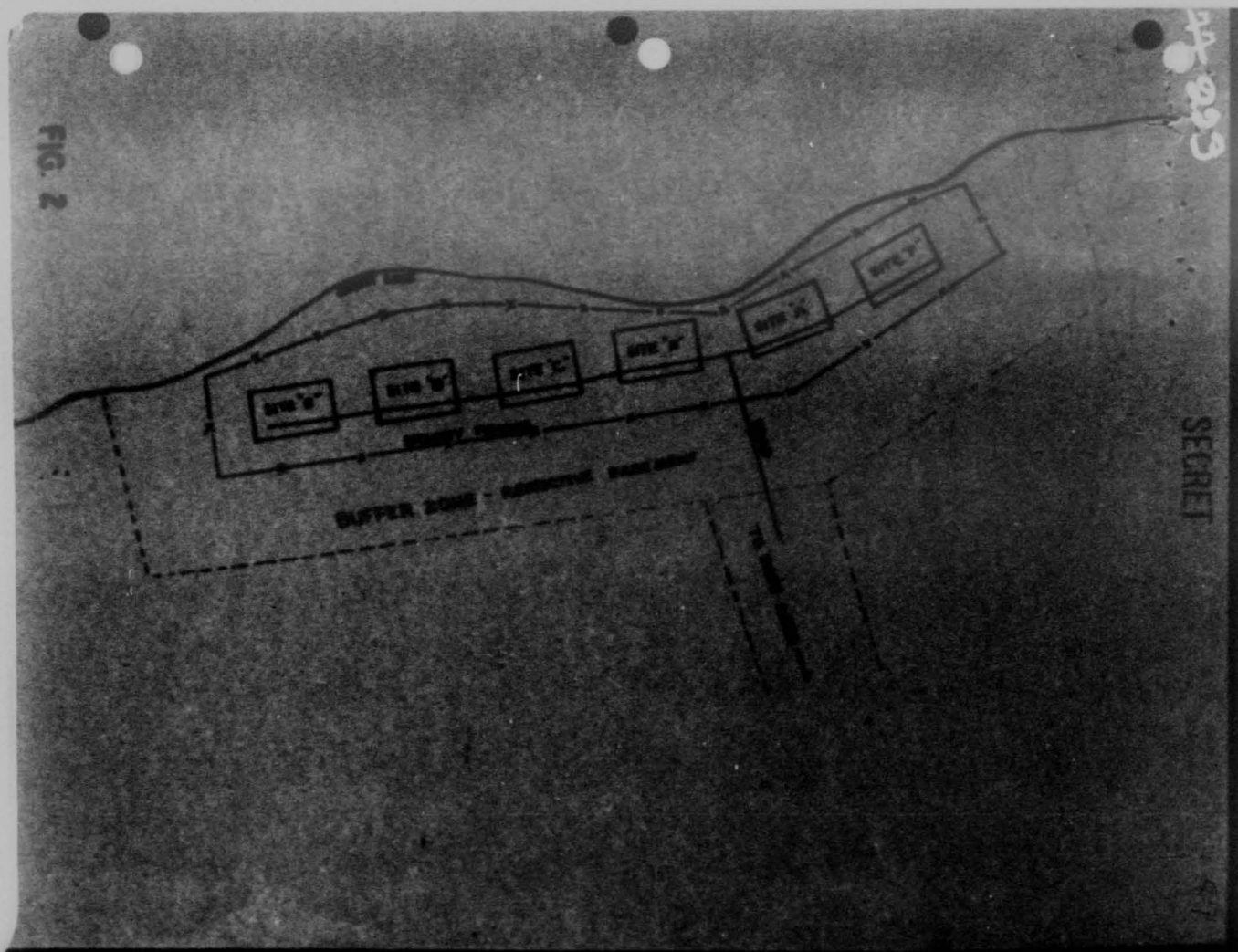
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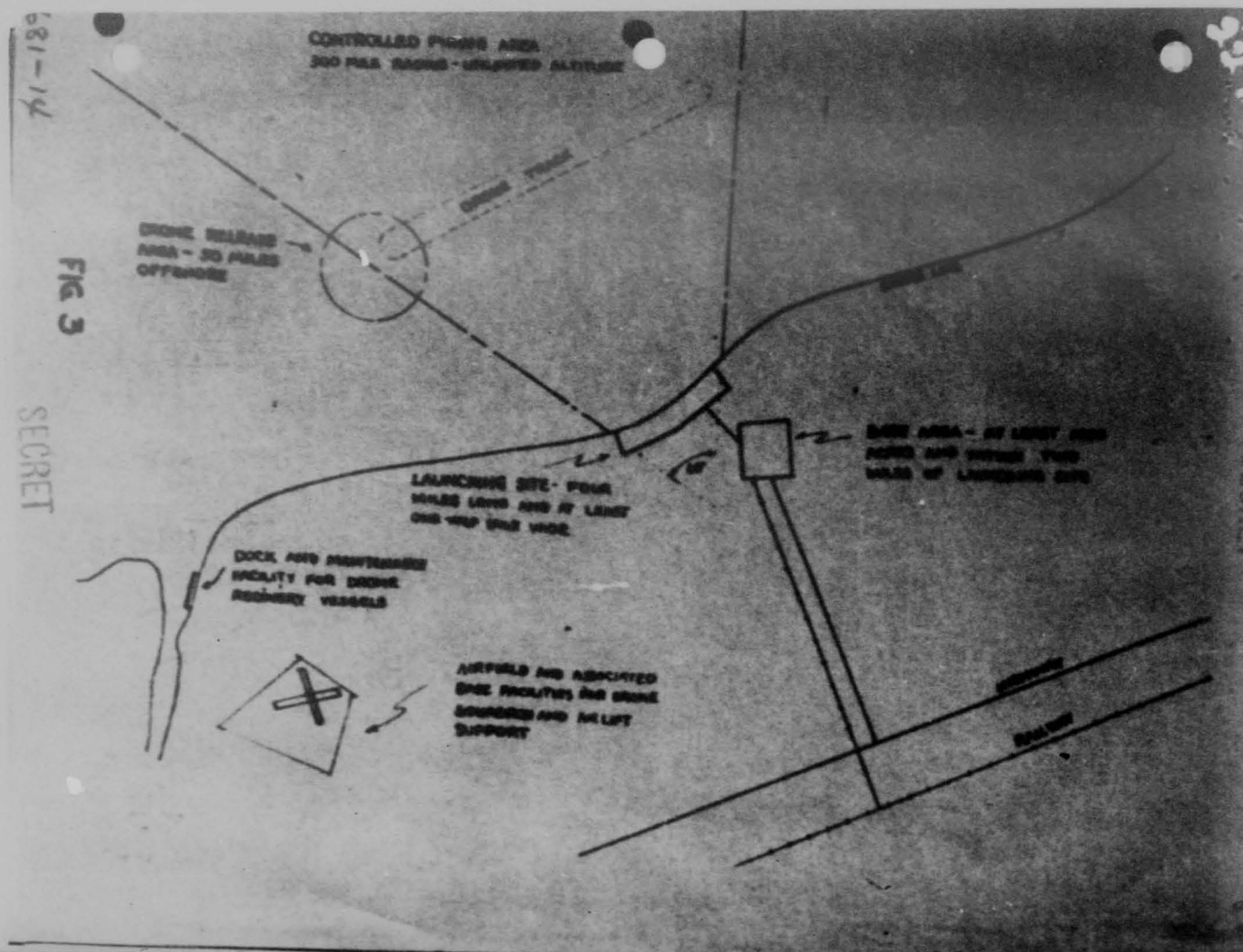
- d. Complete housing facilities.
 - e. IM-99 and L-253 direction facilities.
 - f. Complete drone squadron.
 - g. Firing area - 300 miles' radius.
5. The base and all launching sites must be complete at the beginning of Phase III (October 60).

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APPENDIX D

~~REFERENCES~~

- 81
- a. Letter, ADOFR, dated 25 May 1954, Subject: Requirement for Pilotless Interceptor Unit Training, addressed to Director of Requirements, Headquarters USAF.
 - b. Letter, ADOFR, dated 28 January 1955, Subject: Requirement for an Interceptor Missile Unit Training Base for Air Defense Command, addressed to Director of Requirements, Headquarters USAF.
 - c. Letter, AFHQC, Headquarters USAF, dated 4 June 1954, Subject: Siting of the Air Defense Guided Missile Operational Suitability Test.
 - d. Letter, ADOFR, dated 26 November 1954, Subject: Requirement for Land Based Talos in Air Defense, addressed to Director of Requirements, Headquarters USAF.
 - e. Letter, ADOFR, dated 28 December 1954, Subject: Requirement for Standard Interceptor Missile Base in Air Defense Command, addressed to Director of Requirements, Headquarters USAF.
 - f. Publication titled: Talos in the Air Defense of the United States, by the Applied Physics Laboratory of Johns Hopkins University, dated April 1953.
 - g. Publication titled, ROMMS Defense System Description, by the Boeing Airplane Company, dated January 1953.
 - h. Publication titled, F-49 Weapons System, by Boeing Airplane Company, dated December 1953.

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8 JUN 1955

(SECRET) ADOPR 3255. For AFOOP-OP-D. REF LTR AFOOP-OP-D HQ USAF 3 JUN 1955 SUBJ Talos OPLAN with one INCL "Proposed Revision to the Talos OPLAN." This HQ is in general agreement on your RECM changes to Talos OPLAN but FOL points were raised during staff review of INCL. REQ INFO on these points be FURN this HQ ATTN ADOPR. Due to time ELM REQ INFO be initially FURN via FONECON to LTCOL J. R. Thornton or MAJ J. F. Hughes, WFN DIV, extension 2133, with MSG reply ASAP thereafter. Remainder this MSG in three parts. Part I. Reason for use of term "detachment" to DSG SQ subunits (so called TDU) is not clear. REQ INFO on why this term was selected. It is questioned because detachment PERS, while separated from LOC of SQ HQ for duty, will normally be housed, administered, et cetera at LOC of SQ HQ which will be on existing MIL INSTL whenever possible. Exceptions to this PLCY are not expected to be numerous. Part II. This HQ believes the NR of operational segments (TDU type) of a SQ, presently designated "detachments," should be normally limited to two rather than

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J. F. HUGHES, Major USAF

ADOPR

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RECTOR C. DACUS
Colonel USAF

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four as proposed in REF INCL. Reasons are (1) present deployment of IM SQ is based on 120 interceptor missiles per SQ, (2) these LOC, with 120 IM per SQ, resulted from numerous war gaming exercises conducted by this HQ, (3) war gaming exercises were based on 250 nautical miles IM range. Any shorter range would tend to decrease rather than increase NR of IM per SQ at any one LOC since decreased range would permit engagement of less TGT. REQ your HQ AMTR IM Talos SQ normally being composed of two segments of type presently designated "detachments." Part III. Advise whether your HQ desires schematic drawing of so called Talos DEF Unit (TDU) to be included in revised OPLAN. If ANS is yes, will AF accept general configuration contained in FIG 8-1, QTR Technical REPT NR 1, DEW of Talos Land Based SYS, JAN through MAR 1955, PREP by RCA and AM and F company for IEPT of Navy.

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FILE NUMBER 304

Use of Non-Active Duty AF Reserve and/or Air
National Guard Personnel at Interceptor Missile Sites

DCE/P

DCE/O

5 May 1955

Lt Col JR Thomson/2133/ra

1. Reference paragraph is, Comment #2.

a. Possibility No. 2b.

- (1) This alternative does not accomplish the purpose envisioned when Comment #2 was written; that is to provide "H-Day" training prior to "H-Day" assignment. The nature of the interceptor missile mission dictates that it must be ready to go at all times. Every missile which ADC will have must be ready to fire when the attack occurs. "H-Day" assignees will then be available for assignment to the "H-Day" unit.
- (2) This possibility is outside the scope of the intent in Comment #2. It is understood that the use of technical representatives and civil service personnel is a USAF study being accomplished by the Human Resources Engineers, ARDC.

b. Possibility No. 2d.

- (1) Manning of a guided missile unit (except for a very few operational personnel who merely monitor during battle) is primarily a pre-"H-Day" activity, whereas an AAA gun battalion requires very little manning prior to "H-Day." There is nothing to be gained by having active reserve or active national guard units to man air defense missile squadrons. In fact, when the high degree of training required for GM specialists is considered, it would appear that this training should be given to regular Air Force personnel only.

2. It is foreseen that large numbers of guard (air police) personnel, installations (hammer and saw) personnel, housekeeping (clerks, cooks, orderlies, etc.) personnel, Personnel Services, etc., will be required in the air defense missile base unit. It is some of these positions which might be filled by "H-Day" trainees, not those in the missile maintenance section nor the operations section. An alternative such as this is not mentioned in Comment #2. Some of the points to be considered are:

- a. Can "H-Day" assignees be assigned this type of duty?
- b. Can the assignees be depended upon for scheduled duty?

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Use of Non-Active Duty AF Reserve and/or Air
National Guard Personnel at Interceptor Missile Sites

DCS/T

DCS/O

5 May 1955

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(Continued)

- c. To what extent can non-active duty be interspersed with active duty personnel to accomplish productive service while receiving training?
- d. What jobs in an interceptor missile base's activities can "M-Day" trainees do effectively?

KENNETH F. BEROQUIST
Major General, USAF
DCS/Operations

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(Uncl) Use of Non-Active Duty AF Reserve and/or
Air National Guard Personnel at Interceptor Missile Sites
5 Apr 55

DCS/P

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DCS/O

Lt Col R. L. COLE/2703

1. a. Reference Par 7, Comment No. 1, ARAACOM is utilizing National Guard AAA battalions to man gun batteries. Each battalion has either an "on-site" or "D-Day mission." As a regular AAA unit is converted to missiles, the old gun site is turned over to a Guard battalion. Twelve regulars are left at the site for 90 days to train the Guard unit which consists of about 65 men (about 65% of regular TO&E battalion). Fifteen members of the Guard unit are appointed to Federal civil service status and constitute a caretaker team. They are full-time, Federal employees who generally live on the site. "On-call" rosters are maintained on a 24-hour basis. The site is tied into an OOC and ADDC.

b. The National Guard battalions are "minute-man" troops under State control. It has been necessary to work out joint agreements with each State in order to permit operational control by the regular army on D-Day. Special authority to inspect and test Special Security Forces sites, etc., must be obtained from the State.

c. The National Guard AAA battalion program is in three phases:

- (1) To bring unit training up to "Special Security Forces" standards.
- (2) To integrate State units into the Air Defense system once they are on-site and Special Security Forces trained.
- (3) To develop procedures for federalizing the National Guard units. (Each Continental Army has a plan for this.)

d. No Army Reserve units are presently being utilized in this program.

e. No National Guard AAA battalions are manning missile sites at present but may eventually do so.

2. Possible courses of action are:

a. To man missile sites entirely with active duty personnel.

b. To man sites with active duty operating personnel and civil service administrative personnel

c. To man sites with ANG or Reserve units, a team from which is on extended active duty at all times, as presently being done under the "Air Defense Augmentation Plan," with which O&T is fully familiar.

d. To organize Air Force Reserve combat units to perform all the required functions, operating and administrative, on the Army Plan outlined in Par 1 above.

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Subject: (Uncl) Use of Non-Active Duty AF Reserve and/or Air National Guard Personnel at Interceptor Missile Sites (Cont'd)

3. a. In view of the control of Air Guard units by the States, it might be preferable to establish Air Reserve units (Missile), or similar. Reserve units would be directly under U. S. Air Force control.
- b. There is no reason to believe that the comparable parts of the Air National Guard and the Air Force Reserve could not be trained and developed on an equally effective basis, provided each had the same or comparable facilities and equipment.
- c. The ADC plan to locate launching sites in and adjacent to populated areas would be compatible with the availability of Air Reservists and Reserve facilities.
- d. Continental Air Command is already organized and manned to perform the mission of organizing, manning, administering and mobilizing Reserve units. Said command could be responsible for the administration and training of any Air Reserve Missile units, subject to ADC training standards.
- e. The proposed use of inactive reservists is not known to be in conflict with existing policies and on the contrary would constitute a desirable use of such personnel in an important, well-defined M-Day mission.
- f. The advantages listed in Par 3, Comment No. 1, appear to be valid.
- g. This subject should probably be informally discussed with the Reserve Activities Group in Headquarters, USAF, and/or Headquarters, ConAC, prior to submitting formal requirements or recommendations.
4. a. Possibility No. 2(b) appears to be the best initially, with eventual change to Possibility No. 2(d).

JOHN C. HORTON
Colonel, USAF
DCS/Personnel
Ext 2246/2249

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(Mail) Use of Non-Active Duty AF Reserve and/or Air National Guard Personnel at Strategic Missile Sites
 REF: AFM 1-1.1
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1. It is suggested that a study be conducted to determine the feasibility of using non-active duty AF Reserve and/or Air National Guard personnel to perform certain strategic missile site functions in support of the AFM 1-1.1. The AFM 1-1.1 provides for the assignment of Reserve and National Guard personnel to certain strategic missile sites. It will be in a ready condition to be called upon in the event of an emergency. The study should be conducted in order to determine if such personnel can be used to perform the functions of the AFM 1-1.1. The study should be conducted in order to determine if such personnel can be used to perform the functions of the AFM 1-1.1. The study should be conducted in order to determine if such personnel can be used to perform the functions of the AFM 1-1.1. The study should be conducted in order to determine if such personnel can be used to perform the functions of the AFM 1-1.1.

2. The day-to-day tasks to be performed at the launching sites are of two general types - operational and administrative. The operational tasks are those directly concerned with the launch, and the administrative tasks are those which cover such areas as inventory and maintenance of the missile, its associated ground and launching equipment, and the ground electronic system. The administrative tasks are those concerned with the general functioning of the site, such as routing, filing, correspondence, etc. The operational tasks may be performed by qualified personnel of the regular AF Reserve and/or Reserve personnel in support of the AFM 1-1.1. It may prove possible, however, to have the administrative functions performed by non-active duty AF Reserve and/or Air National Guard personnel. (The guard or Air Police status of the security function is an area in which the use of these personnel may prove very practical.) It is along these lines that we suggest a study be made.

- 3. Several advantages appear to be offered if this concept proves feasible:
 - a. The Air Force active duty manpower requirements for these sites will be lowered.
 - b. The non-active duty reserve and National Guard personnel will be afforded an increased opportunity to receive training and to earn the benefits, i.e., promotion, retirement, etc., commensurate therewith.

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These sites named in part
Air Force.

It is important that the study identify the areas where these personnel
might be most likely operating the operational effectiveness of the tactical
units.

It is not considered that these personnel will be assigned on a surface
on boats, based on Air Defense Battle Position (ADBP). It is not an other reason
than the fact that they will be required in their civilian capacities. The
training requirement would be one of the many factors to be considered in the
study.

If the conclusions reached as a result of this study indicate that this
concept is sound, then it may also be applicable to other air defense support
systems based on sites.

I UNDERSTAND THAT ARACOM HAS HAD SOME EXPERIENCE
IN THIS; SUGGEST SEEKING THEIR ADVICE.

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AIR DEFENSE COMMAND COUNCIL MEETING REPORT

I. Subject considered: INTERCEPTOR MISSILE PROGRAM

1. A meeting of the Air Defense Command Council was held at 1315 hours, 8 July 1955, in the Commander's Conference Room (#10), Building 1.

2. The following members were present:

Major General Frederic E. Smith, Jr. (Chairman)
 Major General George P. Smith, Chief of Staff
 Major General Marshall S. Roth, DCS/Interiel
 Brigadier General Robert S. Macrum, DCS/Comptroller
 Colonel Charles R. Bond, Jr., representing DCS/Operations
 Colonel D. B. Hahn, representing Inspector General
 Colonel John C. Horton, representing DCS/Personnel
 Colonel Charles A. Miller, representing DCS/Intelligence

The following interested persons were present:

Colonel William H. Clark, DCS/P
 Colonel Herschel H. Green, O&T
 Colonel Oscar T. Halley, Project Group for SAGE
 Colonel R. B. Hughes, P&R
 Colonel James F. Kirkendall, P&R
 Colonel B. I. Mayo, Jr., O&T
 Colonel J. R. Wergin, M&O
 Mr. Philip S. Ball, Jr., Operations Analysis
 Mr. W. A. Riley, Jr., Assistant for Programming
 Lieutenant Colonel Sidney C. Bruce, P&R
 Lieutenant Colonel C. J. Butcher, P&R
 Lieutenant Colonel J. R. Thornton, Jr., P&R
 Major P. W. Brownfield, Project Group for SAGE
 Major J. F. Hughes, P&R

II. This report contains the highlights of the presentation on the interceptor missile program made to the Air Defense Command Council by Lieutenant Colonel C. J. Butcher, P&R.

1. The objective of the briefing was to present this background and present status of the ADC interceptor missile program; the ADC concept of employment and deployment of weapons; ADC interceptor missile requirements; problem areas in the interceptor missile requirements; problem areas in the interceptor missile program, and, finally, to present to the council and receive from it approval of the recommendations presented and/or council recommendations for course of action required.

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a. The briefing on the interceptor missile program covers the Talos, Bomarc, L-401 and IRMX. A brief description of each missile was given; also their estimated tactical availability dates.

b. The IM Guidance Systems were explained. All IM's have 3 stages of guidance - initial, mid-course, and terminal.

2. Background and present status of ADC IM Program.

a. The background of the Talos missile was given, starting with its initiation and development to its present status.

b. On 7 June 1955, responsibility for financing and general administration of the Talos land based program was transferred by the Department of Defense from the Army to the Air Force. The programmed availability of Talos is January 1958. The first units of Talos defense will be EDU (roundhouse) type. There will be 30 missiles in each "doughnut." After one missile has been fired, the others will be launched automatically. ADC desires standard base Talos deployment as soon as possible. Early availability makes Talos attractive. Required ground electronic environment at each site makes Talos unattractive.

c. Bomarc background was given, beginning with the GAPA Program and Project Wizard, their combination, and the resulting Bomarc Weapons System. Availability dates forecast were: Initial Bomarc: 1956; Improved Bomarc: 1958.

d. The requirements for weapons as reflected by the ADC 54-50 Requirements Plan were presented.

e. Because of slippage of Bomarc in late 1954, the making of a tactical weapon of the X-7 series was undertaken and ADC recommended to Headquarters USAF development of L-401. Availability date of L-401 expected to be same as for Bomarc.

f. Standard IM base requirement was next presented. A standard IM base was defined as an IM base, including launching sites, which has standardized air installations facilities suitable to accommodate all IM's which ADC expects to deploy, standardization not applying to any subsystem of the weapons system.

g. Possible standard items for IM base were enumerated.

h. Schematics of a Standard Base, Site and Revetment were shown and described.

i. ADC Missile Employment Center required by mid-calendar year 1957 for Talos training.

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3. ADC concept of employment and deployment of weapons was covered briefly as follows:

- a. Chart showing threat development probabilities.
- b. Chart showing family of weapons.
- c. Chart depicting defense in depth, using weapons shown in preceding chart.
- d. Target priority factors.
- e. Defense force composition.
- f. ADC defensive goal. Requirement for 53 IM Squadrons by end of CY 1960 is part of force requirement; is still a requirement. The force requirement and planned deployment is subject to continuous evaluation.
- g. Organization of AD Missile Squadrons.
 - (1) Flight size (number of IM) originally based on capacity of initial Bomarc computer.
 - (2) Four such flights make a convenient unit, administrative and logistic-wise.
- h. AD Missile Squadron weapon composition per flight.
- i. AD Missile Squadron deployment:
 - (1) Proposed Talos deployment, 20 sites, in northeast area. (Map with proposed locations shown)
 - (2) Proposed site locations based on those included in 54-60 Requirements Plan.
 - (3) Plan envisioned deploying one unit (Detachment for TDY. Flight for standard base installation) in order of location priority until each of the 20 locations has one Talos unit, thus getting initial area coverage. Then add a second unit to each location, then a third and a fourth, all Bomarc units. End result would be a four unit squadron at each location; 3 units Bomarc and one unit Talos.
4. ADC IM Requirements, present through 1957, 1958 through 1962, and post-1962, were presented.
 - a. Present schedules will still put ADC one complete time period behind the threat. (Estimated tactical available dates presented as follows:

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- (1) Talos (early 1958)
- (2) Bomarc: a. Initial (mid-1959)
b. Improved (mid-1961)
- (3) L-401: (same as Bomarc)
- (4) LRDX (1963)

- b. IM general requirements were explained.
- c. IM seeker requirements for increased capability were presented.
- d. Weapon kill requirements for IM's were covered.

5. Problem Areas.

Problem areas in general, then with regard to Talos and Bomarc were covered.

6. In summary, Colonel Butcher covered the following points:
 - a. IM availability dates do not meet ADC requirements.
 - b. Above dates still uncertain.
 - c. Critical data not available regarding design configuration, capabilities, environment support on Talos.
 - d. Number of programmed IM units does not meet ADC requirements.
 - e. Standard IM base provides for logical economic and systematic IM deployment.
 - f. ADC future planning relies heavily on improved Bomarc and LRDX.
7. Recommendations. Colonel Butcher requested Council approval on the following:
 - a. Approve the deployment plan.
 - b. Establish ADC project offices for Talos and for Bomarc.
 - c. Request Headquarters USAF/ARDC furnish evaluated data on IM development testing and tactical availability for proper ADC planning and programming.

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d. Request Headquarters USAF/ARDC expedite development of Talos for maximum tactical deployment flexibility permitting phase-in of Bomarc and LRDM.

e. Request Headquarters USAF/ARDC expedite development of Improved Bomarc and LRDM.

8. Council Action.

a. Council approved the concept of deployment, Talos by Detachment and Bomarc by Flight. The specific locations as presented were disapproved. Council requested the entire ADC weapons deployment be re-examined in relation to AA deployment. (Use figure of 75 miles when working on new deployment.)

b. The recommendation to establish ADC project offices for Talos and Bomarc was approved. Council recommended action be taken immediately to secure position authorizations and to select two qualified officers for these positions.

c. Recommendations c, d, and e were considered as routine staff action to be taken as necessary.

9. The presentation to the Council on the Interceptor Missile Program was completed at 1610 hours. Presentation on "Problems Relative to Ding Dong" followed. Report on this presentation will be made separately.

FREDERIC H. SMITH, Jr.
Major General, USAF
Commander
(Chairman, AD Command Council)

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON 25, D. C.



AFMFP-S

SUBJECT: (UNCL) Logistic Concept, IM-99 (BOMARC) Weapon System

TO: Commander
Air Defense Command
Ent Air Force Base
Colorado Springs, Colorado

1. Forwarded for your information and/or action is (UNCL) Logistic Concept - IM-99 (BOMARC) Weapon System, dated 1 March 1955, in accordance with AFR 5-47 dated 20 December 1954.
2. Addressees will take appropriate action in accordance with applicable portions of aforementioned AFR 5-47.

BY ORDER OF THE CHIEF OF STAFF:

1 Incl
IM-99 Log Concept,
5 copies
Cys Nos. 65, 66, 67, 68, 69

Edward W. Moore
EDWARD W. MOORE
Colonel, USAF
Deputy Asstt for Log. Plans
Office, DCS, Materiel.

"If inclosures are withdrawn or not attached, the classification of this correspondence will be downgraded to UNCLASSIFIED in accordance with paragraph 25e, AFR 205-1."

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(U) HQ USAF LOGISTICS CONCEPT - IM-99 (BOMARC) WEAPON SYSTEMI. (Uncl) REFERENCES:

- A. AFR 5-47.
- B. Operational Concept for F-99 (BOMARC), Revised Hq USAF, dated 4 October 1954.
- C. Development Plan for System No. 200A, dated 15 Oct 1953, or subsequent development plans.
- D. Letter this headquarters, subject, "USAF Logistic Objectives," dated 6 July 1953.
- E. Supplementary Guidance - see bibliography.

II. (Uncl) PURPOSE: To establish logistic guidance for the development of logistic plans for the support of the IM-99 weapon system. This concept will not concern itself with logistic considerations common to all weapon systems or to functions with which no deviation from standard procedures is contemplated. Rather, it will concern itself for the most part with those requirements, techniques, and procedures which may deviate from normal support or pose peculiar problems due either to the inherent characteristics of the weapon system or its probable techniques of employment.

III. (Uncl) SCOPE: This concept applies to all USAF activities involved in the support or operation of the IM-99 weapon system. However, data appearing in current USAF Program Documents will supersede conflicting data contained herein.

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IM-99

IV. (Secret) GENERAL:

A. The IM-99 (BOMARC) is an interceptor missile designed for the interception and destruction of enemy aircraft and missiles. It is designed to operate at altitudes up to 80,000 feet, at ranges up to 250 miles from launch point, and at a speed of Mach 2.7.

1. (Secret) Insofar as is presently programmed, the IM-99 (BOMARC) weapon system will be deployed only within the continental limits of the United States. This concept will concern itself with this area. However, as with every other successful weapon, there exists the possibility that the IM-99 will be required in overseas areas at later dates. Cognizance should be taken of this fact, but implementing actions should not be taken until appropriate programming documents so indicate.

2. (Secret) The IM-99 (BOMARC) is presently planned to carry a HE warhead of approximately 300 lbs or larger, to be detonated by a proximity firing mechanism. However, a requirement for a higher yield warhead exists and will be met through programmed development. Therefore, preliminary logistic planning must be sufficiently flexible to accommodate this requirement with minimum dislocation.

3. (Uncl) Details of the characteristics of the IM-99 weapon system and its techniques of employment are enunciated in the operational concept referenced in paragraph I,B, above.

B. (Secret) The IM-99 weapon characteristics and techniques of employment most significant as regards logistic support considerations appear to be as follows:

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IM-99

1. (Secret) Weapon Characteristics:

a. The IM-99 weapon system is functionally integrated into and the weapon will be controlled by the Air Defense Semi-Automatic Ground Environment (SAGE).

b. The IM-99 is a complex weapon requiring correspondingly complex ground control electronic devices to effect its assignment, launch, and flight control.

c. The IM-99 weapon system requires facilities for handling, maintaining, servicing, and launching which will be relatively complex and costly in comparison with piloted aircraft and by nature of the operation will be rather widely dispersed even within squadrons and flights.

2. (Secret) Techniques of Employment:

a. The basic administrative IM-99 unit is designated as an "Interceptor Missile Squadron." It will be composed of from one (1) to four (4) launch sites (designated as flights).

b. Each launch site will contain twenty-eight (28) launching revetments. Other required site facilities include roads, fueling and defueling shelters, emergency power and air compressor buildings, administrative and security buildings, parking space, etc. An estimated seventy (70) acres will be required for each of these sites. Dependent on location, climate, terrain, etc., this acreage may be in separated areas rather than in one single land parcel. Also, the range of the IM-99 will permit a wide selection of sites within a large area without affecting defensive potential.

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IM-99

c. For economy and efficiency, IM-99 squadron headquarters should be located at or near existing or planned military installations. Support facilities of these installations should be used wherever possible. Squadron flights should be located within approximately 30 minutes of heavy vehicular travel time from squadron headquarters. Access roads may utilize portions of public highways but heavily travelled and/or congested areas should be avoided.

d. IM-99 allocation per site has been determined at thirty (30). Twenty-five of these will be operationally ready at all times and will be capable of being launched within two minutes after alert. To support these twenty-five (25) operationally ready weapons, five (5) other IM-99's per site will be required to provide for inspection and maintenance cycling.

e. The IM-99 will be integrated into geographical target areas in increments, probably by first completing single flights per squadron. However, where operational considerations dictate, heavy manning in certain critical geographical areas, at least early in the deployment program, may be expected.

f. No storage quantity of IM-99's is planned prior to end FY 1962, since all production will be allocated to squadron stocks. Therefore, no resupply of complete IM-99's will be required, or available.

C. (Secret) In view of the operational considerations enumerated above, certain logistical implications not normally encountered, or those whose magnitude alone warrant cognizance, or both, become apparent. These are discussed as follows:

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1. The Air Defense System is operationally controlled and logistically supported by the ADC and the AMC, respectively. The IM-99 support system, regardless of its final form, should be designed and implemented in such a manner as to be compatible with and responsive to the Air Defense support system, even though it may conceivably vary from it in many respects. Also, by the time the IM-99 support system is planned and implemented, the Air Defense support system itself may have undergone considerable change. For these reasons, planning must not be restricted to the application of existing parameters. It must be projected into the future insofar as possible. At the same time, it must be kept flexible to provide for correction of errors to be expected of such projection.
2. The deployment of this weapon within the ZI will provide logistic advantages in terms of reduced support distances and decreased vulnerability of support lines.
3. Since the IM-99 is primarily an area defense weapon, its deployment location(s) will usually be in the area of large industrial complexes and/or population centers. The source of supply of various commercial utilities, transportation and services, as well as civilian manpower may thereby be available. However, this condition may not prevail or be uniform at or near all deployment locations. Therefore, the over-all support system must be flexible. It must provide support commanders at all echelons sufficient independence of organization, procedure and action to take best advantage of local conditions. The use of cellular type support organizations, tailored for specific areas, should be carefully considered.

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IM-99

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4. As the IM-99 weapon system proves operationally successful, the magnitude of the program will increase and it can be expected to be large. The accompanying support effort will be correspondingly large and it will be expensive. This effort must be efficiently managed. The management effort involved may also require change, improvement and/or expansion. Without rigid support system control and rapid response, adequate IM-99 support will be impossible. Therefore, if new management organizations and/or techniques are determined to be required, their development, test, and application should be undertaken at the earliest practicable date.
5. Within specific geographic or even local areas, the IM-99 weapon system operational pattern may assume different sizes and shapes. It may vary from a one (1) flight squadron to a complex of several squadrons each with a full complement of four (4) flights. Even within the smallest squadron element (the flight), the density of operation is not heavy due to the inherent dispersion of the operation. This operational dispersion, then, will dictate transport, ground support equipment, and communications requirements heavier than those heretofore encountered with more conventional weapon systems. In this area, the use of heavy lift helicopters and/or convertiplanes for operational and logistic flexibility must be carefully explored.
6. Stated operational requirements emphasize the following:
- a. Continuing and short alert status for the greater percentage of operational stock.
 - b. Capability to launch the greater percentage of operational stock within a limited period of time.

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IM-99

c. System compatibility (with manned interceptors and anti-aircraft systems), reliability, and a large degree of automaticity.

7. These same factors establish the following support implications:

a. Pre D-day support requirements may be significantly greater than those of current aircraft weapon systems and they must be constantly met to maintain operational readiness. They will also be greater than that of other guided missile systems whose readiness status is not equally as critical.

b. Mission success is more dependent on ground support and control than manned aircraft systems. For example, lack of a port in a critical area of ground guidance, communications or control could conceivably cancel all missions of a whole unit of IM-99 missiles until corrected. Duplication and back-up for increased safety factors may be more expensive than for manned aircraft systems.

c. In addition to day-to-day constant readiness support provisions, provision must be made for unit self sufficiency to maintain continuing readiness in the event support is interrupted before weapon expenditure has been completed.

d. In the event of attack and expenditure of weapons, post D-day over-all support requirements will be lessened and will shift emphasis to those of an emergency nature.

e. Although the problem should not exist before FY 1962, planning provisions should be made for redistribution of squadron stocks and other equipment, between geographical areas within the ZI, in the event an emergency should so dictate.

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IM-99

8. Production build-up and unit manning and equipping can be assumed to be gradual and incremental. Therefore, a significant learning period will be automatically provided during which operating experience may be gained and new support techniques developed and tested. Again, if flexibility is maintained and control judiciously exercised, an ultimate support system may be logically evolved without loss of operational capability. This appears infinitely more desirable than the commitment to a support system which may be incompatible to the over-all ADC system or which may become outmoded before the completion of weapon integration.

D. (Uncl) Planning action should not be restricted to existing directives, regulations, policies, and procedures, but should be directed in such manner as to provide dynamic and flexible support for the IM-99 weapon system. Required actions and procedures deviating from existing policies and procedures should be clearly indicated and implications noted in the IM-99 Logistic Support Plan. These deviations will be approved or disapproved by Hq USAF prior to or upon review of the proposed logistic plan.

E. (Uncl) Procedures developed in the logistic plan will incorporate applicable portions of the USAF Long Range Logistic Objectives to the greatest extent possible. Additional guidance is indicated in the attached bibliography.

F. (Uncl) Deployment, activation and equipping dates, utilization rates, etc., will be reflected in appropriate programming documents published in accordance with APM 150-3.

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IM-99

V. (Uncl) PROCUREMENT:

A. (Uncl) The IM-99 is being procured on a slow build-up concept with a very low production rate during the completion of the research and development program in order to incorporate required engineering and configuration changes prior to committing the missile to quantity production. The slow build-up concept also permits production schedule stretch-out if serious deficiencies develop in the program.

B. (Uncl) All X and Y model interceptor missiles produced will be used in an intensive test program to expedite engineering changes to correct deficiencies revealed by the various test agencies.

C. (Uncl) Procurement programs must assure that spares, ground support, test equipment and training equipment are available for testing concurrently with the missile test program and providing support of using agencies.

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IM-99

VI. (Secret) SUPPLY: Supply support of the IM-99 weapon system will be accomplished through the most advanced methods possible in accordance with the Long Range Logistics Objectives.

A. (Uncl) Provisioning:

1. Provisioning of initial spares will be in accordance with AFR 65-80 pending development and approval of policy and procedures for implementing the long-range objectives.
2. Quantity production of stock and depot overhaul items with short lead times will be delayed until later in the IM-99 weapon system production period, in order to obtain as much usage experience as possible. This type provisioning will result in more accurate determination of requirements, reduction of modification workload on stock items and a reduction of TOC: This is in consonance with the present Air Force policy of slow build-up of aircraft and missile production rates. Provisioning of long lead time items will be accomplished as early as possible, commensurate with the projected delivery of aircraft.
3. It is essential that development activities maintain close liaison with AMC supply activities relative to progress in test, ground handling, and special support equipment development in order to permit systematic programming and procurement. Sufficient lead time for concurrent delivery of this equipment with production missiles is essential to equip the complete weapon system.
4. Determination of the cost category of each item will be accomplished at the earliest practicable date after production is authorized. Appropriate management controls will be established for each category.

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B. (Uncl) Distribution:

1. In the pre D-day period, IM-99's and supporting equipment will flow mainly from production line to operational unit, with additional flow of reparable and repaired items building up at the same time.

2. Until such time as each successive unit is fully equipped and operational, carefully scheduled and controlled flow, rather than distribution speed, is the prime requirement. On the other hand, after this period and when unit self sufficiency has been achieved, pipeline quantity reduction is essential. Reference par IV,C,7, above, pipeline materials will neither be available to the unit nor will they be required in the post D-day period. Any pre D-day pipeline material reduction will constitute a net saving.

3. Procedures will be established to properly control and distribute the different cost category and high-value items.

C. (Secret) Storage:

1. Reference par IV,B,2,f, above, there will be no back-up of IM-99's before FY 1962; hence no depot storage requirements will exist for assembled IM-99's or major components thereof.

2. Reference par IV,C,4 and 7, storage requirements for components, spares, handling equipment, etc., at or near the operating unit or present base, will be heavy due to operational requirements of self sufficiency, constant readiness and the over-all magnitude of effort. Conversely, depot and/or factory storage will be more a function of the pre D-day repaired - reparable cycle than wartime utilization factors.

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D. (Uncl) Evacuation: Consistent with the requirement for maintaining minimum stocks at all levels once full equipping has been accomplished, maximum speed and efficiency will be employed in the evacuation of reparable assets to overhaul activities.

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IM-99VII. (Conf) TRANSPORTATION:

A. (Uncl) Packaging and Materials Handling:

1. Reference par IV,B,2,d, above, IM-99 weapons will require no storage package at the operational unit. Here they will either be in the ready status (in which case protected by launch shelters), or undergoing inspection or maintenance (again in a sheltered facility). Since no IM-99's are contemplated for depot or back-up storage, there will be no requirement for a depot storage package.

2. No unusual storage requirements for components of the missile or of the system can be presently forecasted. Certain parallels and experience factors should be available from AC&W units, earlier missile squadrons and certain other types of communication units, etc.

3. Since storage considerations impose no peculiar packaging requirements, it follows that method(s) of transport and handling will largely determine the method(s) of packaging. Several packaging possibilities or alternatives exist, which vary from complete packaging to no package at all. The exact determination appears to be a function of both the method of transport from factory to unit, and transport and handling within the operational unit. These are discussed generally as follows:

a. Air transport for initial delivery of IM-99's from the factory to the unit appears feasible and desirable for several reasons. First, initial delivery effort will be largely, if not entirely, pre D-day when airlift should not be critical. Second, probable production rates and total numbers involved indicate an acceptable airlift requirement extending over the entire production period. Again, aircraft availability

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should not pose a problem. Third, and most important, air transport will lower packaging costs and additionally will provide technical advantages in terms of delivery of factory assembled missiles to the operational unit. Lastly, air transport need not necessarily be confined to commercial or even cargo-type aircraft. Consideration should be given to the external carry of IM-99's on second line, bailment, R&D aircraft, etc.

b. Within the operational unit, specifically to and from the maintenance, assembly and check-out buildings and the individual launch pads, handling will be of the complete or nearly complete weapon. It follows that this same method would be available to handle IM-99's between the manufacturing facility and the air transport terminal in a comparable assembled condition.

c. Within the operational unit, transport by a towed or self propelled dolly-type carrier has been generally accepted. However, the possible advantages and feasibility of developing and using a heavy lift helicopter-type vehicle to accomplish transport and handling within the unit, and between adjacent units, should be examined. A requirement for this type of air vehicle may exist for other ADC elements as well, i.e., TALOS units, AC&W sites, etc.

4. Although special materials and fuels handling problems may develop at a future date, no insurmountable problems are now foreseen.

B. (Conf) Air and Surface Transportation. In consonance with USAF Long Range Logistic Objectives, direct airlift resupply from prime ZI depots and/or manufacturer to using units and activities is contemplated. For planning purposes, the fastest and most suitable transportation

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(air or surface), consistent with military requirements and over-all economy, will be provided for the logistic support of this weapon.

1. Air Transportation. Consistent with the foregoing, airlift will be used for the movement of:

- a. IM-99's from factory(s) to airhead(s) nearest operational unit(s).
- b. Critical (high-dollar value, short supply, etc.) aircraft spare parts, components, and supporting equipment from manufacturing facility or prime depot to using activity.
- c. Priority requisitioned items.
- d. Critical reparable assets to overhaul activities.

2. Surface transportation. It is anticipated that surface transportation will be utilized for:

- a. Movement of those items which are not air transportable and those items which are not critical and/or may be uneconomical to airlift.
- b. Routine resupply.
- c. Evacuation of noncritical reparable and excesses.

3. a. Total tonnage and cubage requirements for airlift resupply support of this weapon system to include all weapon components, spare parts, and accessory equipment, will be determined by Hq AMC for both peace and war, and will be included as part of the logistic plan.

b. Airlift requirements for unit movement will also be computed by AMC to the extent required by the IM-99 Operational Plan(s).

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IM-99VIII. (Uncl) MAINTENANCE:

A. Maintenance support for the IM-99 weapon system will conform, in general, to the policies, objectives, and responsibilities contained in AFR 66-1, 66-17 and other directives pertinent to the function of maintenance. However, it must be borne in mind that the philosophy contained in current directives may not be applicable for the entire time period in which this weapon is to be employed. Special cognizance then should be taken of paragraph IV above, as a framework for maintenance as well as other logistics planning.

B. Within the above framework, the following maintenance ground rules will apply:

1. Organizational maintenance will be performed by the using organization within its capabilities. Depending upon the assembly status of the weapon when delivered to the unit and that which will be required in cyclic maintenance, etc., the using organization will have disassembly, assembly and check-out responsibility and capability. Full advantage will be taken of basic design which permits replacement of defective components and subassemblies in the field. Careful screening of reparable components will be accomplished by the using organization to prevent needless return of components to depot level for repairs which can be accomplished at unit level.

2. Field-level maintenance facilities for the maintenance of IM-99 peculiar components is not now contemplated; however, full advantage may be taken of existing field level support facilities providing they can absorb this workload within their authorized resources. The AMC, in

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conjunction with the using command, will determine which repairs normally accomplished at the field maintenance level, will be absorbed at organizational and depot levels of maintenance.

3. Common items of equipment and components not peculiar to the M-99 weapon system will be maintained through established organizational, field, and depot levels of maintenance.

4. The degree of use of contractor facilities for the performance of depot maintenance, for both common and peculiar items of equipment and components will be determined by AMC in consonance with AFR 66-17.

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VI. (Uncl) SUPPORT EQUIPMENT: No unusual quantitative or qualitative support equipment requirements can now be foreseen except those which have been generally referred to in the foregoing sections of this document.

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X. (Uncl) COMMUNICATIONS AND ELECTRONICS:

A. As the operation of the weapon system indicates, communications and electronics will be the controlling factors. Although it can be assumed that a high percentage of the communications and electronic equipment will be standard Air Force or commercial items, used singly or in various combinations, many peculiar items will be required. Most of these will not become firm until later in the R&D program. For this reason, specific inquiries should be directed to the AMC Weapon System Project Office.

B. In order that obsolescent items may be kept to a minimum, particular attention should be devoted to C/E equipment coming into the system for the first time, and the designation of obsolescent equipment being displaced.

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 B4-99 SQ locations correct as of 16 May 55. These locations are given for
 preliminary planning purposes only, and do not INDC official locations
 programmed by CHUR ADC.

1. McGuire AFB, Trenton, N. J.
2. Suffolk AFB, L. I.
3. Andrews AFB, Wash, D. C.
4. Otis AFB, Falmouth, MASS
5. Mitchell AFB, N. Y.
6. Dover AFB, Delaware
7. Onward AFB, CALIF
8. Hamilton AFB, CALIF
9. Paine AFB, Everett, WASH
10. New Castle AFB, Delaware
11. Langley AFB, VA

Will be Continued in
 1st Publication Form
 Under no. 42C38

Prepared by
 Title

D C HARDACKER/gk

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Int Pers	
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12. Palmarco AFB, N. Y.
13. Aberdeen Proving Grounds, Baltimore
14. Hanscom AFB, Bedford, Mass.
15. Chincoteague Naval AS., N. Y.
16. Camp Pendleton, Oceanside, CALIF
17. Fort Ord, Monterey, CALIF
18. George AFB, Victorville, CALIF
19. Neah Bay AFB, WASH
20. Travis AFB, Clearfield, CALIF
21. Haselle AFB, WASH
22. Fort Monmouth, Red Bank, N J
23. Newport Naval Base, R.I.
24. Montauk Point AFB, L. I.
25. New London Submarine Base, CONN

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Signature

Date

Approved by: D C HARDACKER/gk

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- 26. North Truro AFB, MASS
- 27. Baldwin Naval Base, L. I.
- 28. Fort Miles, Cape Henlopen, Delaware
- 29. Fort Dearborn, Portsmouth, N. H.
- 30. March AFB, Riverside, CALIF
- 31. Fort Hamilton, Brooklyn, N. Y.
- 32. New Haven Airport, CONN
- 33. Glenview NAS, Glenview, ILL.
- 34. Selfridge AFB, Mount Clemens, MICH
- 35. Kellogg Airport, Kalamazoo, MICH
- 36. Niagara Falls AFB, N. Y.
- 37. Akron Airport, Ohio
- 38. Greater Pit Airport, Pittsburgh, PA.
- 39. Lockbourne AFB, Columbus, Ohio

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- 40. Chanute AFB, Champaign, Ill.
- 41. Truxex AFB, Madison, WIS
- 42. Muskegon Airport, Muskegon, MICH
- 43. Fort Erie Airport, Erie, PA
- 44. Toledo Airport, Toledo, Ohio
- 45. Patterson AFB, Dayton, Ohio
- 46. Bendix Airport, South Bend, Ind
- 47. Bishop Airport, Flint, MICH
- 48. Joliet Arsenal, Joliet, ILL
- 49. Quad-City Airport, Rock Island, ILL
- 50. General Mitchell Airport, WIS
- 51. Gary Airport, Gary, IND.
- 52. Dear Airport, Fort Wayne, IND
- 53. Newark, N. J.

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PLE NUMBER 274.

WADC WGSMB Subject: (U) Transmittal of Development Plan No. 200A for the IM-99 System, Contract AF 33(038)-19589

ADOPR (2 May 55) 1st Ind

HQ AIR DEFENSE COMMAND, Ent Air Force Base, Colorado Springs, Colorado

TO: Commander, Wright Air Development Center, Wright-Patterson Air Force Base, Ohio

The following recommendations and/or comments on Development Plan No. 200A for the (Unclassified Title) Long Range Defensive Pilotless Interceptor System (Bomarc IM-99) are forwarded as requested in the basic letter.

a. Reference item 29, ARDC Form 102, pages h and hh of the Development Plan. Correct the name of the ADC coordinator from L. R. Thornton, Lt Col, USAF, to J. R. Thornton, Jr., Lt Col, USAF.

b. Reference Tab 1, Part I, paragraph 6a. It is recommended that the following phrase be added to the first sentence, "and automatic monitoring of the missile."

c. Reference Tab 1, Part I, paragraph 6a. It is recommended that the second sentence be changed to read, "These revetments may be installed on or in the vicinity of existing military installations to minimize real estate requirements and to allow for common use of the installations facilities (i.e., Hospital, Chapel, Commissary, Post exchange, Special Services, etc.)."

d. Reference Tab 1, Part I, paragraph C 10. To exploit the capabilities of the IM-99A to the fullest and to meet the operational requirements of this Command, the IM-99A must be capable of operating as an integral part of the ADC SAGE system in much the same manner as the manned interceptors. No SAGE equipment will be available at AFMTC in the time period required for testing the IM-99A and SAGE tie-in. Therefore, it is requested that the development plan be changed to state that the Bomarc guidance system will be installed in a manned interceptor and tested for compatibility with the SAGE System in the experimental SAGE Subsector (XB-1). Such testing can begin mid calendar year 1956.

e. Reference Tab 1, Part II, paragraph D. The second sentence of this paragraph implies that the atomic warhead is carried in lieu of the ramjet fuel. It is recommended that this sentence be changed to read, "....interchangeably with a portion of the ramjet fuel...." Ramjet fuel will be interchangeable with the high explosive warhead when an atomic warhead is installed.

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Subject: Gen Power's Reply to Gen Chidlaw's Letter of 21 February 1955
 To: Vice Commander From: DCS/O Date: 4 May 1955
 Commander Comment No. 1
 (In Turn)

1. Attached hereto (Tab B) is the ARDC reply to our letter of 21 February 1955 (Tab A) requesting answers to these specific questions:

- "(1) Can manned aircraft be designed inclusive with engines, armament and fire control systems, which will combat vehicles moving at speeds up to Mach 3.7 and altitudes of 80,000 feet?
- "(2) Can interceptor missiles be designed to accomplish this same task?
- "(3) If it is true, that manned interceptors cannot be successfully designed to accomplish this task in the time necessary for their use, then where do our prospects lie in our effort to combat the total gamut of air-breathing targets?"

2. ARDC has not answered the questions posed. It appears that they do not now have this information available. Without this data we will be limited in determining our requirements for the 1960-65 time period. We will continue to use the best information available to this Command. We may be put into a position of defending these requirements in the face of counter-arguments, primarily based on technical and production availability considerations, from Headquarters USAF and ARDC sources after publication of our COMAD 55-55 Plan.

3. We wish to comment on four items:

a. ARDC indicates that they have been considering these problems and have initiated studies to determine solutions therefor.

- (1) The manned and unmanned interceptor programs have been oriented toward the destruction of the manned bomber threat. This reply is the first acknowledgment on the part of ARDC that a NAVIHO cruise-type missile threat might exist. We feel that they endorse our position on the cruise-type missile threat and are taking action to re-orient objectives of future development air defense weapon systems.
- (2) Developments which show promise in this area are the XF-103 and advanced BOMARC. If positive action is taken to orient performance, fire control and armament of these weapon systems toward this task,

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Subject: Gen Power's Reply to Gen Chidlaw's Letter of 21 February 1955
(Continued)

they may do the job. The Directorate of Requirements, Headquarters USAF, has indicated informally that, in past years, the defense of the XF-103 in the R&D program has been extremely difficult. We have and will continue to reiterate our urgent need for a weapon system of this performance as a successor to the F-102B.

b. ARDC indicates that we must be prepared to accept a variety of both manned and unmanned interceptors in order to combat the total gamut of air-breathing targets successfully. We believe that the force requirements and attendant cost in manpower and resources for a weapons family composed of many more weapon types than we now have are out of the question. We must attempt to restrict this number to a minimum since each weapon must be deployed in quantities to provide an acceptable level of defense.

c. ARDC further states that expressed performance requirements should be realistic, yet fully tax our research and development capability. It is our feeling that the ARDC connotation of a realistic requirement is an achievable one. If this premise is valid, these realizable objectives must be made known before hardware requirements can be definitized. While this assessment is an important consideration, we will continue to base our requirements primarily on an appreciation of the threat.

d. There appears to be an increasing trend to rely upon industry for stimulus in our future thinking and design of weapon systems. The present procedure is to wait for the publication of GCRs for specific weapon systems before we begin to assess the "state of the art." It is felt that ARDC is becoming more aware of this and will take appropriate action.

4. It is recommended that no further action be taken at this time on General Sessums' letter.

KENNETH P. BERGQUIST
Major General, USAF
DCS/Operations

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NUMBER 308

21 FEB 1955

Lt General Thomas S. Power
Commander
Air Research and Development Command
Baltimore 1, Maryland

Dear Tommy:

I have inclosed an information copy of correspondence between this command and the Director of Requirements, Headquarters USAF, as being of significant interest to you.

As you are aware, we have been endeavoring for a long time to get a family of weapons in the Air Defense System which will cope with the probable threat in any given time period. I note that in proposing our General Operational Requirements for Weapon Systems for the 1950-55 time period, we are met on every hand by statements to the effect that we are overtaxing our research, development and production capacity; that, in fact, the military characteristics we believe to be required cannot be met.

It is my conviction that we must credit the Russian with the same capability and intent as ourselves to produce cruising missiles such as "Navaho." If this premise is accepted, it then follows that the weapons employed primarily in air defense must have the capability to defend against such hostile targets.

Specifically, my questions are:

(1) Can manned aircraft be designed inclusive with engines, armament and fire control systems, which will combat vehicles moving at speeds up to Mach 3.7 and altitudes of 88,000 feet?

(2) Can interceptor missiles be designed to accomplish this same task?

(3) If it is true, as stated by some experts, that manned interceptors cannot be successfully designed to accomplish this task in the time necessary for their use, then where do our prospects lie?

Not requested, not furnished

Furnished 2/16/55 (Date) (Initials)

Note--Ltr retyped in Vice Commander's Office

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 Form 11
 16 Feb 1955

This correspondence is classified _____ in accordance with
 Para 2.2, AFM 209-1, 26 Jul 53, or for the reason (a) stated, _____

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- GAA

**1st Gen Power:
Page 2**

in our effort to combat the total gamut of air-breathing targets?

The immediate answers to these questions are of the utmost importance to me. We are in the process of planning our next development cycle of weapons for the period 1960-65. This may seem to be somewhat in the future, but as you are well aware, the long lead times involved in the development and procurement of weapons dictate that we lay basic and concrete plans now. My staff must have the benefit of your experience and thinking in laying out the qualitative and quantitative requirements for these weapon systems, in planning the tactics their employment and in evolving the principles of their deployment.

Sincerely,

B. W. CHIDLAW
General, USAF
Commander

**1 Incl
Cy Ltr, Hq ADC
ADOPR, Subj: (U)
Proposed GOR for
Medium Range Inter-
ceptor, 27 Jan 56**

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FORM NUMBER 308.5

297

SUBJECT: (Und.) General Operational Requirement for a Ballistic Missile Detection Support System

TO: Director of Requirements Headquarters, USAF Washington 25, D. C.

- Reference draft copy G.O.R. No. AD-3a, subject same as above, 21 February 1955.
- This headquarters concurs in general with the Draft G.O.R. for a Ballistic Missile Detection Support System. However, the statement made in section II, Operational Mission, reference 12 to 20 minutes being sufficient for the major portion of SAC's aircraft to become airborne is doubtful unless SAC aircraft are on alert similar to ADC interceptors.
- Request we be provided copies of the official G.O.R when it is issued.

FOR THE COMMANDER:

RECTOR C. DACUS
 Capt. USAF
 (Signature)

not furnished, not furnished,
 10
 (Date) (Initials)

Will be Confirmed in
 Std Publication Form
 Under par 3a, ADCOM
 5-3
 Prepared by NAVY/Crispen
 Telephone 2981
 Date 17 Mar 55

SECRET

This correspondence is classified in accordance with
 Par 3.1, APR 205-1, (REF ID: A61 53), or for the reason (s) stated.

Crispen, A
 SIGNATURE

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I. PURPOSE

The purpose of this document is to establish a program for the procurement and distribution of radar equipment to the United States. It is intended to provide a comprehensive plan for the procurement and distribution of radar equipment to the United States. This plan is intended to provide a comprehensive plan for the procurement and distribution of radar equipment to the United States. This plan is intended to provide a comprehensive plan for the procurement and distribution of radar equipment to the United States.

II. SCOPE

This document covers the procurement and distribution of radar equipment to the United States. It covers the procurement and distribution of radar equipment to the United States. It covers the procurement and distribution of radar equipment to the United States.

III. REFERENCES

These will be included in the final report to be published in the near future. References are to be published in the near future. References are to be published in the near future.

IV. DEFINITIONS

Definitions for this program will be included in the final report and along the East and West Coasts of the U. S.

V. ORGANIZATION

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History

January - June 1955

Volume VIII
SUPPORTING DOCUMENTS
Docs. No. 441 - 497

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WASHINGTON, D.C.

**RC-121 STANDARDIZATION
MANUAL**

MAY 1955

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AIR DEFENSE COMMAND

3-25-88-9

ENT AIR FORCE BASE (700)
DPS, Ogden, Utah

RSI Cont No
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ADC Manual)
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ADCM 66-5
Headquarters Air Defense Command
Ent AFB, Colorado Springs, Colorado
1 April 1955

FOREWORD

1. **Purpose.** This Wing Maintenance Manual provides a complete text for commanders and maintenance personnel which will insure a uniform understanding of the organization, functions, and management of the wing maintenance organization. It is intended that this Manual provide the detailed information essential to permit AEW&C wings to establish a standardized system of maintenance and to illustrate how the principles of management may be applied to obtain maximum efficiency and quality. It is basically written to portray operation of a tenant wing on a base in the Zone of Interior.

2. **Scope.** This Manual applies to all AEW&C wings of the Air Defense Command.

3. **Responsibility.** a. Commanders of all AEW&C wings are responsible for implementing and monitoring the procedures outlined herein. This Manual has been designed to generally fit the operational requirements of all AEW&C wings. Minor deviations to fit local requirements may be authorized, in writing, by the wing commander. However, approval for major deviation from the prescribed organization will be obtained from Hq Air Defense Command.

b. All commanders are responsible for controlling the issue of copies of this Manual. This control must insure that individuals furnished copies because of duty assignment leave them with their successors upon change of duty assignment or transfer. Copies will not be classified as "personal property." In addition, the control must insure that changes to the Manual are furnished to, and currently posted by, individuals possessing copies of this Manual.

4. **Changes to Manual.** Recommendations for improvement, additional data to be included, or changes in content are encouraged from all units and individuals and will be submitted, through channels, to Headquarters, Air Defense Command, Attention: Deputy Chief of Staff for Materiel.

BY ORDER OF THE COMMANDER:

GEORGE F. SMITH
Major General, USAF
Chief of Staff

OFFICIAL:

WALTER W. ROBINSON
Colonel, USAF
Command Adjutant

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CHAPTER 1

INTRODUCTION

1. The initiation of the AEW&C program into the United States Air Force has resulted in the development of a large aircraft with extremely complex equipment. Maintenance on a systematic, planned basis is required to support this weapon with its programmed high utilization rate. Advancements in the field of maintenance management have been made to permit implementation of a planned, systematic concept of maintenance. It is recognized that the days of the "one man know it all" system has passed and personnel must now be teamed and specialized in the maintenance of specific systems and components. However, the requirement for a crew chief to be assigned to, be responsible for, and have "pride of ownership" in one specific aircraft still exists. This assigned crew chief will insure that the specialized aircraft maintenance is a coordinated effort to provide the weapon as required for accomplishment of the AEW&C mission.

2. A standardized system of maintenance for large aircraft with complex systems has been developed in recent years. This system resulted from the recognition that specialists are required to maintain the complex electronics systems in the aircraft. The AEW&C aircraft has the most complex electronics systems of any aircraft in the Air Force today. The application of a standardized system of maintenance to the growing AEW&C program is mandatory to provide wing management personnel with procedures for planning, scheduling, controlling and producing effective maintenance.

3. The following basic objectives for a wing maintenance organization must be compatible with the operational mission to insure that maximum support is provided:

a. To provide, support, and enforce a definitive and standardized maintenance engineering system for all AEW&C wings which will provide the highest quality maintenance at the proper time and in the required quantity.

b. To insure effective, efficient, and economical use of skill, manpower, facilities, equipment, and supplies. The above objectives are not listed in the order of their importance.

4. The integration of an organizational structure and its functions into a

system to accomplish these objectives requires that periodic inspections and similar maintenance be accomplished on a schedule by the support squadrons. The pooling of wing resources for accomplishment of periodic inspections and similar type maintenance is desirable to achieve maximum efficiency.

5. The wing maintenance engineering system prescribed in this Manual is based on four primary functions; namely, PLANNING, SCHEDULING, CONTROLLING, and PRODUCING. All are of equal importance and are dependent upon each other if a strong, balanced effort is to be maintained.

6. Planning, the first function, is accomplished by the AEW&C wing commander, director of materiel, director of operations, chief of maintenance, air base group commander, and base supply officer. This level must clearly establish a program that balances mission with maintenance capability and supply support availability. This centralized wing planning group must analyze the flying program, identify and classify the extent and effect of limiting factors, determine needed maintenance requirements, determine the capability to meet the flying commitment, and establish an aircraft utilization program to insure that balance is maintained.

7. Scheduling, the second function, is necessary to permit maintenance to operate at a fairly constant level, with balanced activity of personnel and facilities to prevent a recurring cycle of peak loads alternating with periods of recovery and incomplete utilization. This can only be obtained by recognition of the mandatory planning factor that all of the aircraft and equipment in the wing inventory are not available all of the time. A certain percentage of the aircraft will be out of commission for scheduled maintenance and inspection, and a certain percentage will be rotated through the depots for the time phased scheduled maintenance program.

8. Controlling, the third function, is accomplished by the chief of maintenance, the standardization team, and the maintenance control and quality control units. This level must insure that maintenance of the highest quality is available at the proper time and in the required quantity. This centralized controlling group, by knowledge of maintenance workload pro-

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vided by planning and scheduling, will direct managerial supervision over production and quality control through cognizance of the capabilities of personnel to perform their assigned duties.

9. The controlling of maintenance assets to insure that the efforts of all maintenance activities are coordinated to achieve the maintenance objective is divided into three operating units. The first is MAINTENANCE CONTROL. Based on the determined workload, this unit must establish priorities, schedule jobs, aircraft, and equipment movements; control and dispatch specialists; and monitor job status and progress based on the determined workload.

a. It is essential that work be planned. Every effort must be made to select aircraft and equipment as far in advance as possible so predictable work (special inspections, accessories, and equipment requiring replacement, electronic testing, etc.) can be accomplished and allowances for unpredictable maintenance calculated. The unpredicted maintenance can be integrated with the regular periodic inspection into a planned maintenance operation.

b. Data relative to maintenance status and capability must be available and accurate to permit proper job planning, scheduling, and controlling for production. Therefore, it is mandatory that a centralized component prepare and analyze statistical data, maintain aircraft and systems records, monitor TO compliance status. To insure that equipment and facilities are properly used, it is necessary that equipment job time be analyzed, equipment and space allocations assigned, and maintenance transportation controlled.

c. Monitorship of materiel requirements at the controlling level must be established to anticipate and eliminate conditions that could adversely affect the effectiveness of the maintenance organization. This functional component will monitor the validity of shop and bench stock levels, verify and maintain AOC/AFNE status, monitor the requisition and distribution of TOC kits, insure timely delivery of supplies, and maintain continual liaison with base supply.

10. The second operating unit of control is QUALITY CONTROL. The function of this unit is to gauge the quality of production. Quality control is a management tool through which substandard maintenance can be isolated, cause factors of unacceptability found and eliminat-

ed, and a maintenance quality standard maintained. In addition to the normal progressive inspection of maintenance performed by specific supervisors, quality inspectors at unpredicted times during the job progression will examine the work performed. This examination will be guided by prepared forms, which, on a sampling basis, lists the items to be scrutinized. A quality rating is determined by analyzing the detected system discrepancies which are categorically valued as safety of flight, major and minor items.

11. The third operating unit of control is TRAINING CONTROL. It has become increasingly obvious that the requirement exists for complete control and management of local training. The required skill level for the AEW&C program can not be furnished from the USAF formal training program, and the constant turnover of personnel tends to keep the skill levels low. Accordingly, a maintenance training control unit must be established as an integral part of the wing maintenance element.

a. Essentially, maintenance training control is responsible for keeping proficiency as high as possible. As formal training decreases, the demands for on-the-job and local formal training will increase more than proportionately. Therefore, it is imperative that these training resources be judiciously used. Maintenance training control must establish and maintain skill inventories, compute training requirements, develop and schedule training programs, recommend formal training quotas, maintain training records, and evaluate proficiency.

12. PRODUCING, the fourth function, is accomplished by the periodic maintenance squadron and the electronic maintenance squadron on a cooperative basis and serves as the physical instrument for accomplishment of maintenance operations. These squadrons carry out the planned sequence of periodic inspection operations through the use of detailed work sheets or cards. This permits the appropriate mechanic to do a prescribed job in a given area at a specific time. It is essential that each producing activity plan the use of resources, accomplish scheduled maintenance, regulate job and area assignments, report and accomplish unscheduled maintenance, repair or evacuate repairable items, apply quality standards, accurately report manhour expenditures, and insure maintenance and supply discipline.

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CHAPTER 2
ORGANIZATION

SECTION I - GENERAL

1. The objective of this chapter is to provide the knowledge and understanding essential to the organization and management of the AEW&C maintenance organizations. This will be accomplished by presenting the proven practices of management and by showing how they may be applied to your function.

2. You will not become an efficient maintenance supervisor by reading this Manual or any other publication. You can, however, learn to be a good maintenance supervisor by studying and practicing the principles on which this chapter is based. The principles of management are proven, but to make the most of them you must adapt your leadership techniques and managerial ability to your own particular problems.

3. This chapter will provide you with a guide for the correct organization and operation of your function in the maintenance organization. It is primarily concerned with the application of sound management principles and contains few technical details. Every effort has been made to produce a guide which is easy to read, is interesting and easily understood, and can be correctly interpreted.

4. The organization charts contained in this Manual are called "shadow charts." The shading is used only for presentation -- to draw the visual connection between a particular block on the chart and its functional description. The shadow must not be interpreted as an indication of the span of control or supervisory spread of any unit.

5. Each section of Chapter 2 concerns one unit of the AEW&C maintenance organization. Insofar as practicable, each unit is covered in complete detail from the organizational and management aspects. Each section is divided into five major parts in order to simplify and standardize presentation. The five parts are:

a. **Function.** A concise description of the general function of the designated unit.

b. **Responsibility and Authority.** The authority of the unit and a definitive listing of its responsibilities.

c. **Personnel.** Pertinent remarks concerning personnel assignments and utilization within the unit.

d. **Relationships.** A brief outline of the primary relationships which the unit must maintain.

e. **General Narrative.** A descriptive and detailed explanation of the organization and operation of the unit with basic emphasis on the application of management principles. This part contains a detailed development to portray how the unit fulfills its assigned responsibilities.

6. Chapter 3 of this Manual contains, in narrative form, a general discussion of maintenance management, and a management check list which will be of value to all supervisors. Each supervisor should read and thoroughly understand at least that section of Chapter 2 covering his particular function of maintenance and Chapter 3 of this Manual. Also, it is recommended that all supervisory personnel study AFM 35-15, "Air Force Leadership."

7. At wing level, this organization actually does not change basic responsibilities. This organization, and allied manning documents, merely establish a capability by staffing the director of materiel's office to aid the assumption of already existing responsibilities for the control and coordination of maintenance. To obtain adequate control and coordination it was found necessary to centralize quality control and maintenance control. We have established two new organizations for centralized control of (1) periodic aircraft inspection and maintenance, and flight line maintenance, and (2) electronics inspection and maintenance.

8. Many persons have interpreted this specialization of maintenance to mean that all authority is vested in the chief of maintenance. This is not correct and is a major management failing to guard against. Authority must be decentralized to the maximum consistent with assigned responsibilities. We cannot have an organization whose every action is dependent upon the direction of one individual. Each unit supervisor must be permitted to operate his own activity consistent with the priorities and policies established by the chief of maintenance. Many personnel affected by the new organization may have a feeling that their authority is being usurped. This is not the case but some interpretations placed on the organization may make it seem so. It is the purpose

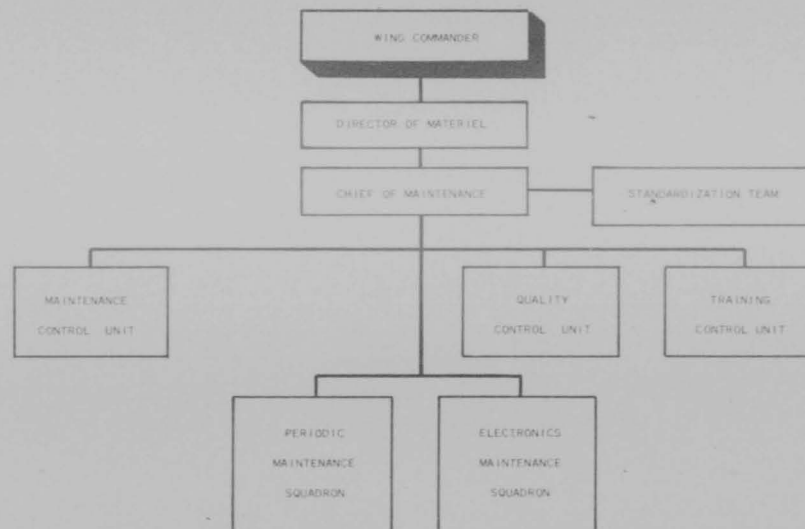
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of this chapter to outline the organization and explain what has to be done, how to do it, and why it is being done. Specialized maintenance is a proven system of getting the job done quickly, efficiently,

and at minimum cost. Team-work is essential. If every man will cooperate and enthusiastically perform his duties, this maintenance organization will progress to the mutual benefit of all concerned.

SECTION II
WING MAINTENANCE
FUNCTIONAL CHART



1. **Function.** Through the director of materiel, the wing commander will direct the organization, manning, and functioning of all maintenance activities in a manner which will insure proper balance between operational requirements and maintenance capabilities.

2. **Responsibility and Authority.** The wing commander is responsible to the air division or air defense force commander for establishing the maintenance organization outlined in this Manual, for directing the maintenance activities, and coordinating the operational and support functions of the wing, in a manner which will provide safe, dependable, mission-ready aircraft and equipment in the required quantity.

3. **Relationships.** a. **General.** The responsibilities of the wing commander demand that close relationships be established and maintained with higher headquarters, subordinate commanders, and the wing staff. Without this relationship, the perspective of the commander is limited and poor decisions will result from the lack of understanding and acknowledgement of mutual problems.

b. **Higher Headquarters.** The commander will insure operational and readiness capability of the wing by maintaining high quality standards for maintenance and by coordination of the efforts of wing support elements to produce the number of mission-ready aircraft, vehicles, and equipment required to accomplish the wing mission.

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c. **Wing Director of Materiel.** The wing commander will assign the responsibility for the direction and coordination of the wing maintenance organization to the director of materiel and will utilize this directorate in all matters pertaining to these functions.

4. **General Narrative.** a. The wing commander has final responsibility for all activities and functions of the wing. Insofar as maintenance is concerned, the wing commander must delegate the operational responsibility to his director of materiel who, in turn, must delegate it to the chief of maintenance. This delegation of responsibility in no way lessens the responsibility of the wing commander, nor does it lessen the necessity for him to retain a close relationship with the maintenance activities of the wing.

b. It is important that the wing commander direct the establishment of a maintenance organization in accordance with this Manual. To insure effective and efficient operation of his maintenance organization, he must comply with the organizational structure and insure that all affected squadron commanders are aware of their maintenance responsibilities and their position with relation to the chief of maintenance. The efficiency of the maintenance organization is proportional to the support given it by the wing commander. Minor variations from this Manual, which do not violate or compromise its concepts, may be authorized in writing by the wing commander.

c. The wing commander must continually survey his organization to insure retention of the balance that must exist between maintenance capability and operational requirements. An over-balanced condition favoring either maintenance or operation will gradually and surely result in a loss of wing effectiveness. Some indications of a falling balance are: (1) aircraft available but not flown (2) aircraft, or equipment not available as scheduled (3) excessive overtime by maintenance personnel; etc. The organizational balance may be destroyed by excessive requirements placed on either maintenance or operation and the wing commander must correlate his activities so that this condition does not occur.

d. In conjunction with the retention of the maintenance-operation balance, the wing commander must insure that the maintenance organization is adequately supported by all other activities of the wing. Supply and transportation support

must be provided as required by maintenance. Maintenance personnel must be used in essential maintenance tasks and skilled technicians should not be diverted to stock chasing, vehicle driving, or similar duties. Where possible, supplies should be delivered by supply to the aircraft, shop, or dock, and vehicles should be driven by regularly assigned drivers. Other supporting activities must be required to provide support to maintenance activities in accordance with current plans, schedules, and requirements.

e. The wing commander should be aware of the quality of maintenance required and accomplished by the wing. Caution must be exercised to prevent the establishment of quality standards of such magnitude that maintenance requirements cannot be met without excessive overtime. This does not mean that mediocre maintenance will be accepted in order to preserve a normal duty day. However, quantity and quality will suffer when personnel are overworked. Long periods of continued overtime are normally unnecessary and should be analyzed carefully to determine and correct the cause. Frequently it will be found that the urgency was not factual, the job exceeded the requirement, or some similar easily corrected reason was the cause for overtime.

f. Within each wing the commander will establish an aircraft scheduling committee consisting of himself, the director of materiel, director of operations, and chief of maintenance. The committee will meet at the call of the commander once each month to establish a broad standing pattern of aircraft utilization. This may consist of a plan to fly a fairly constant number of aircraft each day, or some variation thereof. The committee will establish the flying requirements of the wing but will not select the actual aircraft to be flown. Aircraft selection to meet the established requirement will be accomplished by the maintenance control unit. The pattern established must provide the wing with the aircraft necessary to meet all training and readiness requirements and, also, permit maintenance to operate at a fairly constant level with balanced activity of personnel and facilities.

g. The commander will conduct the aircraft scheduling meeting in a manner which will insure that the operational requirements and maintenance capabilities are in consonance. The director of operations should present his requirements, specifying exactly what the status of each aircraft should be (i.e. what equipment

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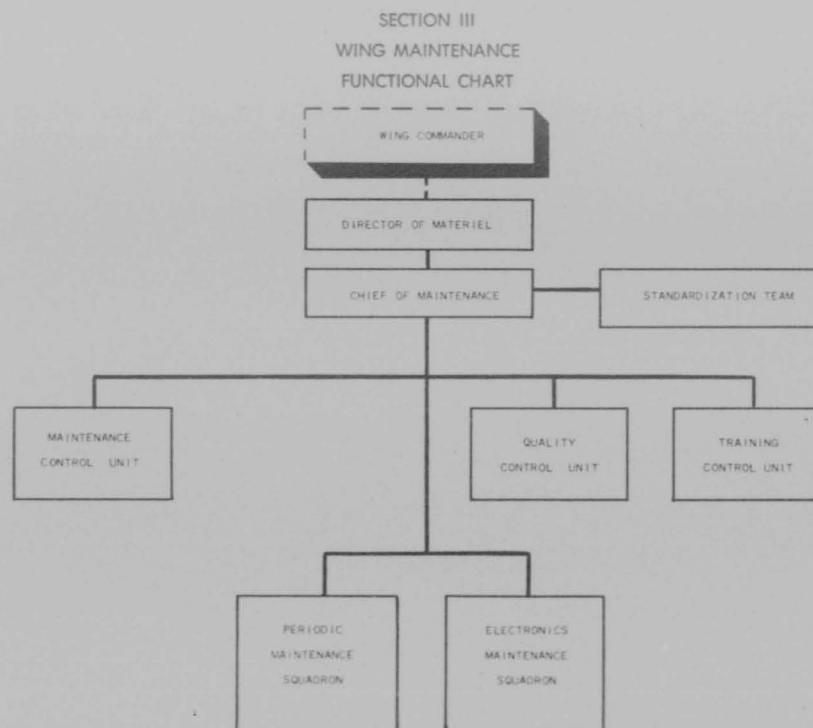
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must be operational, etc.). These requirements must be based upon training needs and ordered missions known at the time of the meeting. The director of materiel and chief of maintenance will give specific indication of capability to meet the requirements.

h. It must be emphasized that aircraft scheduling cannot be accomplished on the basis of 100% of the authorization or 100% of the wing inventory. Rather, consideration must be given to those aircraft lost from the wing to time-phase reconditioning, periodic maintenance, etc. Insofar as practicable, scheduling by the wing scheduling committee should be restricted to flying-hour requirements with actual aircraft selection and scheduling accomplished by the maintenance control

unit on the basis of the hour requirements agreed upon.

i. Equipment scheduling need not be accomplished at the same level as aircraft scheduling. However, the wing commander must insure, by his actions and directives, that equipment maintenance scheduling is accomplished by the maintenance activity and complied with by all using activities. Since the actual utilization assignment of the vehicles will be made by the air base group, sufficient coordination must take place between that group and the maintenance activity to insure adherence to established maintenance schedules. When a vehicle is due for periodic maintenance, or repair, it must be released by the using activity in sufficient time to meet the schedule.



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1. **Function.** The director of materiel will direct and coordinate all functions of the maintenance organization for the wing commander. He will establish policy, analyze statistical data, and plan implementing procedures to insure maximum efficiency and mission effectiveness of the wing. His office will interpret and implement the policy of higher authority and advise the wing commander in all materiel matters.

2. **Responsibility and Authority.** The director of materiel is responsible to the wing commander for insuring efficient accomplishment of the assigned maintenance functions. The authority necessary to carry out the maintenance function will be delegated to him by the wing commander. This authority will be delegated to subordinates assigned responsibility for specific phases of the maintenance function.

3. **Relationships.** a. **General.** Complete dissemination and coordination of information is essential to cooperation and understanding among the organizations accomplishing specific phases of the maintenance function. It is essential that the director of materiel require frequent meetings of key personnel to stress the importance of active cooperation and coordination of functions and to discuss matters of interest to all.

b. **Wing Commander.** The director of materiel is responsible to the wing commander for the accomplishment of the maintenance function, for coordination of all maintenance activities in a manner which will satisfy the operational requirements of the wing, and for keeping him advised of the status and capability of the maintenance organization.

c. **Director of Operations.** The director of materiel will actively participate in the establishment of a policy whereby the operational requirements of the wing are planned, scheduled, and coordinated with the operations, supply, and maintenance functions. He must insure that the director of operations has current information relative to the capabilities of maintenance, and that operations planning is in consonance with that maintenance capability.

d. **Director of Personnel.** He must insure that the director of personnel has current information relative to the assignment of and requirement for maintenance personnel.

e. **Air Base Group Commander.** The director of materiel will coordinate

with the air base group commander relative to the support required and received from the air base group.

f. **Chief of Maintenance.** He will utilize the chief of maintenance as the wing staff maintenance officer, consult him on all maintenance problems, and insure that he complies with the policies and requirements of higher authority. The director of materiel will permit the chief of maintenance to manage the maintenance organization consistent with established command policies and requirements.

g. **Base Supply Officer.** The director of materiel will coordinate with the base supply officer to insure an effective supply which adequately supports the wing maintenance organization.

h. **Contractor Technicians.** He will coordinate the activities of assigned contractor technicians to insure full use of their skills and will monitor their availability and efficiency and insure compliance with pertinent directives.

4. **General Narrative.** a. The director of materiel functions as the directional head of the wing maintenance organization. He will require the establishment and staffing of a maintenance organization in compliance with this Manual and any deviations authorized by the wing commander. He will assign to the chief of maintenance the responsibility for the supervision and management of the maintenance organization and delegate him authority commensurate with that responsibility.

b. The director of materiel is charged with the responsibility for the direction and coordination of all phases of maintenance within the wing. It is not expected that he will concern himself with the minute details of operation or the solution of minor problems. Insofar as possible, he should permit his maintenance staff officer, the chief of maintenance, to run the show. He must, however, remain aware of the general status of the maintenance organization and its major problems. His participation in maintenance should be proportionately the same as the wing commander's participation in materiel.

c. This wing maintenance organization provides the director of materiel with a well-staffed maintenance organization. The chief of maintenance is his staff maintenance officer. There is no justification for the establishment of a duplicate function of an additional staff maintenance officer.

d. The maintenance staff must be

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assigned the responsibilities for aircraft and equipment maintenance. Insofar as practicable, the maintenance organization should process all maintenance correspondence and reports, receiving only staff coordination from the director of materiel. It is extremely important that the director of materiel insure that the chief of maintenance complies with and enforces the policies and requirements established by the wing commander or higher authority. For this reason, it is essential that he approve maintenance SOPs or directives prior to publication, eliminating duplications or conflicting instructions.

e. The director of materiel must act as the balance wheel of the maintenance organization. He must listen to and pass upon the major conflicts or disagreements which arise between the chief of maintenance and the various squadron commanders. He must attempt to solve these problems to the satisfaction of all concerned. He must insure that the maintenance organization is held firm and that the chief of maintenance follows the chain of command; i.e., the chief of maintenance reports to the director of materiel and not to the wing commander. The chief of maintenance should confer with the wing commander only with the knowledge of the director of materiel. Arrangements other than this will break down the organizational structure and destroy the control established by the director of materiel.

f. The director of materiel must insure that he coordinates establishment of the wing aircraft operational requirements

so that adequate materiel support may be provided. He must require that the chief of maintenance keep him informed of maintenance capabilities so that he may, in turn, inform and advise the wing commander and director of operations. Similarly, he must insure that aircraft operations planning is in consonance with the materiel capabilities. In this connection he must assist the wing commander in maintaining balance between operations and maintenance so that maximum wing effectiveness is realized. Similar coordination and action is required to insure compliance with maintenance schedules for vehicles and equipment.

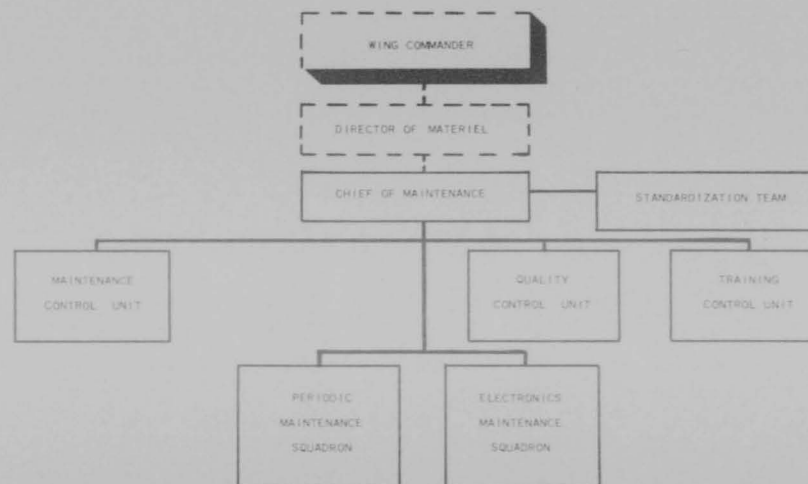
g. As the wing materiel officer, the director of materiel must coordinate the materiel needs of the maintenance organization with the materiel activities of the air base group (supply, etc.). He must obtain support in harmony with maintenance requirements. In this function he will be required to maintain close relationships with the air base group materiel officer and the base supply officer.

h. One staff officer from the directorate of materiel will be appointed on wing orders as the wing aircraft distribution officer. As such, this officer will be responsible for compliance with all pertinent directives regarding aircraft distribution. He will closely coordinate all aircraft distribution activity with the chief of maintenance and all affected maintenance activities. He must insure a careful and deliberate execution of the aircraft distribution function.

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SECTION IV
WING MAINTENANCE
FUNCTIONAL CHART



1. **Function.** The chief of maintenance will supervise and manage the entire maintenance effort of the wing and advise the director of materiel in all pertinent matters. He will provide direction and guidance for all maintenance activities and interpret and implement maintenance policies of higher authority.

2. **Responsibilities and Authority.**

a. The chief of maintenance is responsible to the director of materiel for supervising and managing the wing maintenance organization to insure quality maintenance and availability of the maximum number of mission-ready aircraft and equipment. He will be delegated authority commensurate with his responsibilities.

b. The chief of maintenance will:

(1) Plan and direct the over-all conduct of flight line, periodic, electronics, and equipment maintenance to obtain the maximum number of mission-ready aircraft and equipment.

(2) Issue and implement sound maintenance policies and procedures for effective operation of the wing maintenance organization.

(3) Effectively use the standardization team in establishing maintenance standards for the wing and in the improvement of the wing maintenance organization.

(4) Coordinate with the director of operations in the establishment of aircraft operational requirements.

(5) Schedule and control all maintenance and repair on a planned basis which will insure maximum availability of safe, mission-ready aircraft and equipment.

(6) Maintain records to provide current information essential to the planning and management of the maintenance organization.

(7) Establish an effective system of specialist dispatch for electronics and periodic maintenance squadron specialists to insure prompt dispatch and efficient utilization.

(8) Determine the adequacy of support to all phases of aircraft, electronic, and equipment maintenance.

(9) Insure appropriate maintenance support of the wing training aids.

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(10) Establish a vigorous and continuing program for the timely submission of unsatisfactory reports.

(11) Schedule, and monitor all technical order compliances.

(12) Direct the conduct of quality inspections and flight tests and insure positive action to correct and prevent recurrence of irregularities noted.

(13) Coordinate with supply activities to insure availability of parts and materials when and where required.

(14) Control and cannibalization of aircraft and equipment.

3. **Personnel.** a. The chief of maintenance will monitor the availability and utilization of all maintenance personnel. In addition, he will coordinate the establishment and application of maintenance training programs.

b. He will make recommendations to the director of personnel with respect to:

(1) Priority of maintenance personnel assignments.

(2) Reassignment of maintenance personnel to maintain an equitable distribution of skills and experience.

(3) Requirement for the fulfillment of quotas for maintenance training, local and off-base.

(4) Staffing the maintenance, materiel, quality, and training control units with the best qualified personnel for the jobs.

4. Relationships.

a. **Director of Materiel.** He is responsible to the director of materiel for the successful supervision and management of wing maintenance activities.

b. **Director of Operations.** The chief of maintenance will coordinate operational planning and advise the director of operations of maintenance capabilities to meet operational requirements.

c. **Director of Personnel.** The chief of maintenance will advise and assist the director of personnel in matters pertaining to maintenance personnel.

d. **Squadron Commanders. (Periodic and Electronics Maintenance.)** He will establish and maintain direct and close contact with the squadron commanders in the direction of maintenance accomplishment; encourage command support for correction of inspection discrepancies; insure that the squadrons actively cooperate in mutual assistance and in the

solution of maintenance problems.

e. **Standardization Team.** The chief of maintenance will use the standardization team to establish maintenance standards for the wing and to investigate and determine the cause of sub-standard maintenance. He will use the team as technical advisers, instructors, and demonstrators of quality maintenance.

f. **Quality Control Unit.** He will provide maximum support to the quality control unit to insure that adequate emphasis is placed on correction of discrepancies discovered. The chief of maintenance will use this unit as the "eyes and ears" of maintenance and supply support, and encourage its activities. He must carefully monitor reported major discrepancies or sub-standard quality to ascertain areas of weakness and the need for further investigation by the standardization team.

g. **Maintenance Control Unit.** He will insure that the maintenance control unit schedules, directs, and controls the performance of all maintenance, consistent with existing policy. This activity will be required to analyze maintenance reports and statistics, man-hour information, etc; advise and recommend corrective action; and through the materiel control branch insure that all maintenance activities receive necessary supply support. The chief of maintenance will emphasize to all maintenance activities that the maintenance control unit is the nerve center and will operate as the brain of the wing maintenance organization.

h. **Training Control Unit.** He will coordinate with this unit in the establishment and use of maintenance training programs and facilities for increasing technical proficiency and for providing career progression within the maintenance field.

i. **Contractor Technicians.** The chief of maintenance will insure full utilization of contractor technicians in their authorized consultant, advisory, or instructor capacities. He will establish, in coordination with the director of materiel, correct assignments of contractor technicians and review the activities and reports of each to determine utilization and actual requirements.

j. **Base Supply Officer.** He will maintain, in conjunction with the materiel control branch, close relationship with the base supply officer to coordinate maintenance equipment and materiel requirements and insure that maintenance activities comply fully with the procedures and

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policies of the base supply activity.

k. **Other Activities of the Air Base.** The chief of maintenance must maintain close relationships with other air base support activities (motor vehicle squadron, etc.) to coordinate maintenance support requirements, and insure compliance with established base policies and directives.

5. **General Narrative.** a. The chief of maintenance is the executive manager of the wing maintenance organization. He must be highly qualified in leadership, management, and organization. Because this is the top active management position of the maintenance organization, the application of leadership and management principles must be paramount here if it is to be required of other maintenance supervisors.

b. One of the more important functions of the chief of maintenance is the establishment and maintenance of close relationships with the squadron commanders. He should establish personal contacts with these commanders to keep them entirely familiar with the maintenance operation. It is not intended, under this maintenance concept, that the chief of maintenance assume or usurp any command responsibilities, nor is it intended that he or the Director of Materiel be an intermediate commander between the squadron and the wing commanders.

c. All squadron commanders concerned with maintaining wing equipment are responsible to the wing commander. However, because of the complexity and scope of the maintenance activity, the wing commander has delegated the necessary authority to the chief of maintenance to direct and supervise the over-all maintenance activity of the wing. If a support squadron commander cannot resolve a maintenance difficulty with the chief of maintenance, or the director of materiel, it is only logical and proper that the matter be referred to the wing commander for decision.

d. The maintenance officer of the squadron is actually responsible to and works for the squadron commander. However, for expediency and to balance the maintenance effort throughout the wing, the chief of maintenance or the maintenance control officer will normally transmit directives and instructions directly to the maintenance officer. It is the squadron commander's prerogative to insist that he personally sanction all maintenance control actions within his squadron, but to do so would be impracticable. The most ef-

ficient operation is achieved when the maintenance control unit is permitted to deal directly with the squadron maintenance officers on routine matters while the chief of maintenance and squadron commanders work together on major items and the over-all phases of maintenance without becoming submerged in the details.

e. The chief of maintenance must function strictly as an executive. It is particularly important that personnel selected to fill the staff and supervisory position in the maintenance organization be the best qualified personnel available for those positions. He must decentralize authority to the maximum and have dependable assistants with whom he can entrust authority and who will assume responsibility.

f. Responsibility must be clearly defined and assigned to specific functions of the organization. It is a responsibility of the chief of maintenance to ascertain through frequent personal interviews that key supervisors have a complete and thorough knowledge of the organization and their responsibilities, duties, and authority. He must be helpful and emphasize this attitude by the definite acts of assistance.

g. Planning and scheduling of the over-all maintenance function at this level of maintenance management is vital. Every action and decision must be based on a careful analysis of facts. For this reason, a sound administrative system is required to gather and correlate the information essential for effective planning and management. Factual data relative to utilization, availability, and status of manpower, equipment, and materials must be joined together and studied before a plan or schedule is established. It must be understood that the efficiency of this concept of maintenance depends upon:

- (1) Centralized Control.
- (2) Decentralized Authority.
- (3) Clear Delineation of Responsibility.

h. The chief of maintenance will supervise the maintenance control unit and require that unit to issue and implement sound maintenance policies and procedures for the effective operation of the maintenance organizations. The chief of maintenance will authenticate all Maintenance Information Letters (MILs) or local maintenance directives under command line of the wing commander.

i. To provide the chief of maintenance with the administrative machinery necessary to direct and control mainten-

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ance, the following units have been established within the maintenance organization:

- (1) Standardization Team.
- (2) Maintenance Control Unit.
- (3) Quality Control Unit.
- (4) Training Control Unit.

j. The control function, comprising the above units, must be organized as a compact unit strategically located with relation to the other units of the maintenance organization. **They must be provided with an adequate communications and transportation system to insure the rapid transmission of maintenance data control of work in progress, and movement of personnel.** Effective control of maintenance requires a constant flow of data from the operating units to the control function in order that a cooperative plan of action may be developed and promptly executed on a scheduled basis.

k. The chief of maintenance must be constantly alert to the balance of work within the maintenance organization. The chief of maintenance must continually monitor and observe maintenance activity to insure that the status of maintenance in progress is in accordance with the maintenance plan. Immediate action will be taken to forestall or correct any unbalanced situation.

l. The planning and directing responsibility of the chief of maintenance will be accomplished through full use of the maintenance control, quality control, and training control units. The chief of maintenance will provide the maintenance control unit with the basic wing requirements as developed from coordination and scheduling meetings with the director of operations and other staff agencies. The maintenance control unit will develop and implement the detailed planning and scheduling of maintenance necessary to meet the established schedules and will direct and control the wing maintenance activities to insure fulfillment of wing requirements.

m. The chief of maintenance will require the maintenance control unit to review all maintenance inspection and flight test reports, and all corrective action indorsements, to ascertain the quality of maintenance accomplished, the airworthiness of assigned aircraft, serviceability of vehicles and equipment, the adequacy of corrective action, and to determine the areas of weakness within the maintenance organization. Positive action will be taken to eliminate the causes of recurring dis-

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crepancies, to correct the areas of weakness, to improve the quality of maintenance, and to increase the mission capability of the wing. It is important that the chief of maintenance obtain the active cooperation and participation of the squadron commanders in the correction of inspection discrepancies and the elimination of causes for substandard maintenance quality. Frequent personal contacts with the squadron commanders relative to the quality control unit should produce for him considerable information as to the effective value of the inspection reports, adequacy of inspection coverage, assistance rendered by the unit, and other pertinent factors. He must insure that this unit operates in a manner which will receive the enthusiastic support of the commanders and all maintenance personnel and which will instill a true sense of quality discipline in all personnel.

n. To assist in developing acceptable maintenance standards, and to provide a technical advisory unit, the chief of maintenance is provided with a standardization team. He should utilize this team to investigate areas of maintenance deficiency and/or substandard quality to determine the cause and recommend corrective action. He must require that, in the course of investigation, the team instruct and actually demonstrate, by performance, high quality maintenance. The team will be composed of highly qualified personnel, skilled in their career fields. The chief of maintenance should frequently assemble the team for a discussion of the maintenance organization and its problems and encourage their participation in the solution of those problems, both technical and managerial. He must encourage the team to recommend changes in procedures which will increase the effectiveness of the maintenance organization.

o. Correct utilization of the standardization team will constitute fulfillment of one phase of his responsibility for maintenance training. In addition, he will require the training control unit to establish a program which will insure that all maintenance personnel receive the training required to maintain technical proficiency, to progress through their career field, and to advance in grade and responsibility. He must coordinate such programs and insure full use of existing base facilities including MTDs, contractor technicians, and base schools. The wing must continue the effective training of assigned personnel to sustain over-all combat potential. **Primary emphasis will be giv-**

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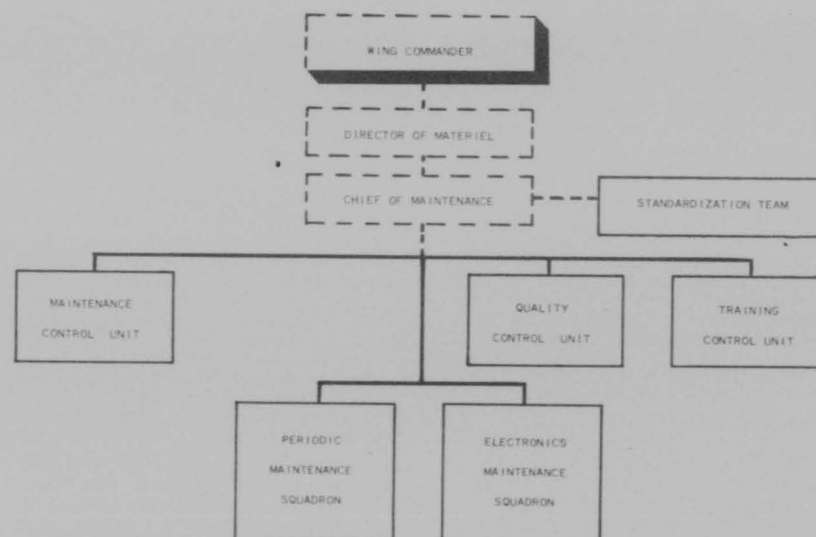
en to training in areas of deficiency rather than general over-all training. These areas may be determined by various means including, but not limited to, written evaluation tests, standardization team interviews, etc.

p. The chief of maintenance, as the wing staff maintenance officer, will insure that assigned contractor technicians are fully and properly utilized in accordance with current directives. To insure correct utilization, the chief of maintenance must establish a definite office area for the contractor technicians and be aware of their availability at all times. He should know each assigned contractor technician personally and utilize his ability to the maximum in the maintenance training program. Particular attention will be given the actual requirements of the wing. Action will be taken to effect reassignment when the need for any or all contractor

technician assistance no longer exists.

q. Supply discipline must be practiced and enforced by the chief of maintenance. He must insist upon full utilization of all materiel and insure maximum exploitation of shop capabilities to augment the supply system by effective reparable processing. Insofar as practicable, he will require the bench check of items prior to their classification as reparable. In this connection, he will also designate, through the appropriate maintenance officer, selected personnel who will be the only personnel authorized to sign condition tags, including reparable tags. Copies of all such authorization lists will be furnished the base supply officer, materiel control, and quality control. The economical operation of the maintenance organization will depend to a great extent upon the supply discipline attitude instilled by the chief of maintenance.

SECTION V
WING MAINTENANCE
FUNCTIONAL CHART



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1. **Function.** To determine, and recommend to the chief of maintenance, acceptable and equitable maintenance standards to assist in improving the quality of maintenance accomplished within the wing. The team will investigate areas of maintenance deficiency and report findings and corrective recommendations to the chief of maintenance. It will demonstrate the performance of quality aircraft maintenance where necessary and appropriate.

2. **Responsibility and Authority.** a. The standardization team is responsible to the chief of maintenance and must be delegated authority to establish maintenance quality standards for the wing.

b. The standardization team will:

(1) Determine, and recommend to the chief of maintenance, acceptable maintenance standards for the wing.

(2) Indoctrinate maintenance personnel in the established maintenance standards and their individual and collective responsibilities in equaling or surpassing those standards.

(3) Advise the chief of maintenance of the areas of deficiency, lack of proficiency, etc., and recommend corrective action to include improvement in maintenance methods, policies, and procedures.

(4) Insure that all maintenance personnel are familiar with current appropriate technical publications affecting wing assigned aircraft, vehicles, and equipment.

3. **Personnel.** The team will be manned with the best qualified personnel available under current tables of organization. Personnel appointed to the standardization team will not be assigned additional duties which require their absence from the team. Commanders are responsible for insuring that personnel appointed to the team serve for the maximum period of time commensurate with local conditions (such as stability of personnel) and the efficiency and effectiveness of the standardization program.

4. **Relationships.** a. **General.** Essentially, the standardization team is to serve as adviser and demonstrator of quality maintenance to all maintenance personnel. Therefore, the relationship existing between the team and other activities of the maintenance organization is extremely important to the success of the program.

b. **Wing Commander.** The standardization team must have the support of the wing commander and his staff in or-

der for its value to be fully realized. Its investigations and recommendations must be fair, impartial, and accurate so that the wing maintenance organization is effectively improved.

c. **Chief of Maintenance.** The standardization team is assigned to the wing headquarters and will function as a unit under the direct supervision of the chief of maintenance. The team will serve as technical adviser to the chief of maintenance. Accordingly, the team must weigh its recommendations carefully to insure that procedures are sound prior to submission to the chief of maintenance. The team is potentially one of the most effective tools available to the chief of maintenance; however, it must be fully utilized in order for its effect to be profitably realized in the maintenance organization.

d. **Quality Control Unit.** The team must work closely with the quality control unit in order to be aware, through discrepancy write-ups, of the maintenance quality failings and areas of maintenance deficiencies of the wing. Close coordination is required to insure joint understanding and interpretation of technical requirements and established maintenance standards.

e. **Training Control Unit.** The close connection between training and standardization dictates the requirement for a harmonious, cooperative relationship between the team and the training control unit.

f. **All Maintenance Activities.** Close contact must be established and maintained with all maintenance activities to insure understanding of the purpose and goal of the team. This relationship is extremely important because of the advisory responsibilities of the team. It is essential that the maintenance personnel to whom it demonstrates quality maintenance, or to whom it advises, accept the assistance in the manner in which it is intended to be received. Acceptance of and adherence to the established standards should be voluntary, and the use of directive authority limited, if the relationship is correctly established.

g. **Wing Abort Board.** The team must study the reports of the wing abort board to determine maintenance causes for aborts and corrective action required to prevent recurrence.

5. **General Narrative.** a. The primary purpose of the standardization team is to assist in increasing the quality of maintenance accomplished within the wing. The program must be aimed at assisting maintenance personnel in quality

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improvement by actual demonstration of quality maintenance methods and procedures. Therefore, it is extremely important that only highly qualified personnel, capable of quality maintenance demonstration, be appointed to the team. Each appointee must be highly skilled in his specialty and aware of the most effective and efficient maintenance procedures. The program must be given the necessary emphasis by all command and supervisory personnel so that the wing may achieve the desired standard of maintenance quality.

b. The object in appointing personnel to the standardization team is to make available to lesser trained personnel the knowledge of experienced personnel well schooled in high quality maintenance performance. Each appointee will provide quality training to the personnel of his career field. As a team member he must be an example to other personnel of his career field.

c. All personnel assigned to the standardization team will function as a technical adviser in their respective fields to the team chief. The team as a whole is the technical adviser to the chief of maintenance. It will train other maintenance personnel by actual demonstration of the performance of high quality maintenance. Each team member must be constantly on the alert for malpractices, faulty procedures, or below-standard maintenance quality. When on-the-spot correction is not feasible, appropriate recommendations for corrective action will be made to the team chief.

d. The team will be required to investigate areas of maintenance deficiencies and recommend improvements in procedures which will correct the deficiencies, increase maintenance quality, and/or improve efficiency. Normally, the team will investigate on its own initiative, consistent with the over-all policy established by the chief of maintenance. The need for investigation may be determined from many sources available to the chief of maintenance and the team. Some of these sources are:

- (1) Quality Inspection Reports.
 - (2) Discrepancy Trend Charts.
 - (3) Unsatisfactory Reports.
 - (4) Personnel Reports.
 - (5) Engine Change Data.
 - (6) Breaks in the Maintenance Schedule.
 - (7) Aircraft Abort Reports.
 - (8) Equipment Damage Reports.
- e. When investigating areas of deficiency,

the team will attempt to find the predominant cause or causes of the deficiency. The investigation must be wholly impartial and assume a "show me" attitude. It should be made a matter of record by use of a locally devised format which would permit a synopsis recording of each interview, etc. In general, the obvious reasons for substandard quality will vary with each investigation. For example, while many aircraft have some of the basic causes, almost always the predominant cause for substandard quality will be different for each aircraft. Each aircraft, then, must be considered separately. Even though the team is composed of personnel with extensive experience and high professional competence, they still must obtain facts to help solve the wing maintenance problems. Practically speaking, this will be accomplished by:

- (1) Observing certain crews or individuals at work,
- (2) Interviewing personnel
- (3) Supervisory check of maintenance accomplished,
- (4) Analysis of past maintenance records of aircraft, vehicles, equipment, or crews.

f. Following the investigation, the team will recommend corrective action to the chief of maintenance. The corrective action may be any one, or combination, of many possibilities. It may be a change in technique, policy, quality standard, procedure or method. The recommendations submitted should be complete. That is, the error or fault must be pointed out and the recommended change fully described. The chief of maintenance should need only to sign his name to approved changes in order to place them in effect.

g. When correcting malpractices, should the correction be technique, procedure, etc., the team will devote the maximum practicable emphasis on actual demonstration. In order to actually demonstrate the performance of quality maintenance it will frequently be necessary to utilize other specialist personnel who have consistently accomplished high quality maintenance. However, care must be exercised to prevent the use of such personnel if it will affect the normal maintenance routine. The use of these personnel will always be coordinated with their immediate supervisor to permit necessary schedule changes, work assignment, etc.

h. When the investigation leads into problems outside the area of maintenance control (supply, transportation, etc.), the team will present all available information

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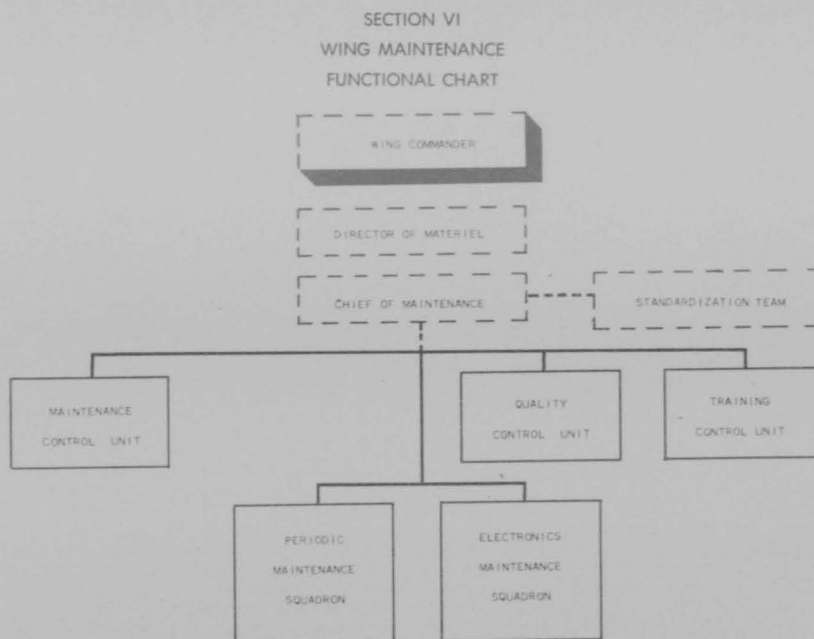
to the chief of maintenance for necessary coordination with the affected agency, or for reference to the director of materiel. **The team must be particularly careful in situations of this type to insure that all the facts are obtained.**

i. The team chief will establish a technical order familiarization chart in accordance with TO 0-20A-1. He will require all members of the team to be familiar with all current technical publications relative to their specialty. This is essential to the success of the program and will be continually stressed in meetings, interviews, and discussions. The team cannot

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be expected to correctly demonstrate high quality maintenance if they are not current in these publications.

j. The standardization team is charged with the responsibility for determining, and recommending to the chief of maintenance, acceptable maintenance standards for the wing. When standards are approved by the chief of maintenance, the team will coordinate with the training control unit to insure that the standards are included in the training curricula of all wing maintenance training facilities (MTD's, base schools, etc.).



1. **Function.** This unit will analyze maintenance requirements, plan maintenance operations, schedule maintenance performance, schedule mission aircraft, control maintenance activities, maintain pertinent records, and conduct all contract maintenance activities for the wing.

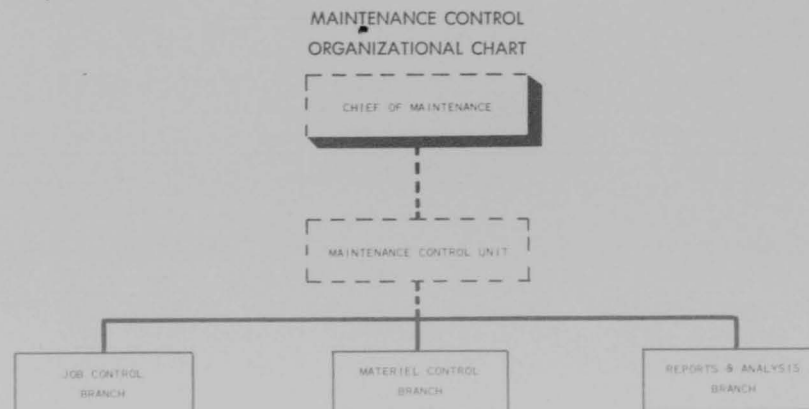
2. **Responsibility and Authority.** a. The maintenance control officer is the as-

sistant chief of maintenance and will be responsible to the chief of maintenance for accomplishing the functions assigned the maintenance control unit. This unit will implement the policies of the chief of maintenance and coordinate, control, and direct the activities of all wing maintenance functions.

b. The maintenance control unit will

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plan, schedule, and direct the operation of the maintenance organization to insure availability of the required number of safe, dependable, mission-ready aircraft, vehicles, and equipment.

c. The maintenance control unit will be divided into three branches which are: (1) reports and analysis; (2) job control; (3) materiel control.

(1) The reports and analysis branch will:

(a) Monitor the availability and utilization of maintenance personnel.

(b) Establish and control a central reporting and administration system for all maintenance reports and correspondence.

(c) Maintain all maintenance control unit correspondence, records.

(d) Collect the data necessary to measure the efficiency of the maintenance organization.

(e) Maintain charts, graphs, and/or tables required for analysis and presentation.

(f) Conduct all necessary analyses. (g) Establish maintenance performance standards for the wing.

(h) Maintain the historical records for wing assigned aircraft.

(i) Maintain an individual aircraft records jacket file for each wing assigned aircraft.

(j) Establish a procedure for documenting and reporting technical order compliance.

(k) Maintain TOC charts, files, or similar records for each assigned aircraft in accordance with TO 0-20A-1.

(l) Prepare and distribute anticipated component replacement lists for periodic inspections of wing assigned aircraft, vehicles, and equipment.

(2) The job control branch will use the information provided by the records and analysis branch to manage and direct the maintenance organization and will:

(a) Plan all maintenance operations to provide maximum production with minimum delay.

(b) Schedule and control the movement of aircraft, and equipment through all phases of maintenance.

(c) Establish work priorities and coordinate maintenance activities to insure an orderly flow of maintenance work in conformance to established schedules.

(d) Maintain the status of all aircraft, and equipment maintenance in progress.

(e) Keep the chief of maintenance advised of maintenance capabilities for use in planning aircraft use.

(f) Maintain the status and location of all wing assigned aircraft, and develop and publish a wing aircraft parking plan.

(g) Maintain the status of vehicles and aircraft support equipment.

(h) Direct the dispatch of electronics, specialist shop, and equipment maintenance specialists in accordance with established priorities.

(i) Coordinate with the standardization team in the development of plans and data for improving methods, procedures, working conditions, quality, and organization.

(j) Establish an effective communi-

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cation and transportation system to provide immediate information and movement of personnel to and from all maintenance activities.

(k) Coordinate with the quality control unit in the selection of aircraft and equipment for quality inspections.

(l) Allocate aircraft to meet mission schedule and commitments.

(3) The materiel control officer is responsible to and works for the maintenance control officer. The materiel control officer will:

(a) Keep the maintenance control officer advised of the over-all supply situation as it affects the wing maintenance organization.

(b) Establish a system to effectively anticipate and procure parts and supplies in a manner which will insure delivery of the required items at the required time and place.

(c) Maintain liaison with the base supply activities to insure the availability of adequate supplies and equipment to support maintenance requirements.

(d) Establish and monitor flight line shop, and dock stock supply levels in coordination with the appropriate maintenance officers.

(e) Verify AOCF and ANFE requisitions and maintain, by aircraft, or equipment serial number, current AOCF and ANFE status.

(f) Be aware of the current list of critical items and recommend reparable processing schedules and priorities.

(g) Monitor the expeditious routing of reparable property to supply and maintenance facilities, and coordinate in the establishment of a wing master repair schedule of critical items.

(h) Coordinate with the base supply officer to insure that all TOC kits and parts required for wing aircraft are obtained, assembled, stored, and issued as requested by the maintenance control officer.

(i) Monitor the requisitioning of TOC kits and parts for mission aircraft and allied equipment.

(j) Recommend cannibalization to the maintenance control unit when such action is deemed advisable in the best interests of the wing.

(k) Maintain files of pertinent supply catalogs and technical publications required for effective operation.

(l) Obtain necessary items to keep the preissue stocks in the shops at the established levels.

3. **Personnel.** The maintenance control unit will continually study the manning of the maintenance organization, make recommendations for changes, and monitor the availability and utilization of maintenance personnel.

4. **Relationships.** a. **General.** The efficient use of maintenance manpower and facilities will be achieved only by the establishment of carefully prepared schedules coordinated with all related functions. In this respect, the relationships of the maintenance control unit are of extreme importance to the successful operation of the maintenance organization since it is here that the maintenance plans and schedules are prepared and initiated.

b. **Chief of Maintenance.** The maintenance control officer is responsible to the chief of maintenance for the efficient management and supervision of the maintenance organization. He must determine the maintenance capability and keep the chief of maintenance advised of the capabilities of the maintenance organization to absorb off-base school quotas, training schedules, etc.

c. **Standardization Team.** The unit will recommend to the chief of maintenance the use of the standardization team to investigate areas of maintenance deficiency as indicated by the analyses of maintenance reports and data.

d. **Quality Control Unit.** The job control branch will coordinate inspection and flight test schedules to minimize disruption of the schedules of other maintenance functions.

e. **Training Control Unit.** The maintenance control unit will coordinate on all training schedules to minimize disruption of maintenance schedules.

f. **All Squadrons.** This unit will maintain a close relationship with all squadrons to determine that the maintenance product is satisfying requirements as to quality and quantity. It will assist in eliminating manpower loss due to uncoordinated squadron activities. It will direct, control, and advise all activities of the maintenance organization and obtain the assistance and recommendations of all supervisors.

5. **General Narrative.** a. **The maintenance control unit is the planning, scheduling, coordinating, and controlling center of the maintenance organization. As such it is the nerve center of the maintenance function. In effect, the maintenance control officer is the production man-**

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ager of the maintenance organization responsible for insuring that the efforts of all maintenance activities and personnel are coordinated to achieve the objective represented by the maintenance schedule.

b. For most efficient production capability, the maintenance organization must have one unit specifically charged with the responsibility for collecting factual and statistical data; establishing performance standards; planning, scheduling, and coordinating maintenance activities; and analyzing maintenance efficiency. To provide this, the maintenance control unit is established and placed under the control of the chief of maintenance. To efficiently execute the functions of the maintenance control unit, **an effective communications and transportation system must be established.** Failure to establish this basic requirement or control its utilization will result in a general loss of maintenance efficiency.

c. The maintenance control unit should operate as a compact unit occupying space adjacent to the office of the chief of maintenance. This arrangement permits ready access to all maintenance data and promotes better relationships and personnel utilization.

d. This unit must provide all maintenance supervisory personnel with information on what is to be done and when completion is required. Efficient use of maintenance facilities will be obtained by the establishment of carefully prepared maintenance plans and schedules coordinated with all activities directly or indirectly concerned. Such planning and scheduling, when well conceived and executed, results in more efficient use of facilities and manpower and a smoother flow of high quality maintenance.

e. Before scheduling can take place, the maintenance control unit must obtain current and accurate information which will permit determination of the maintenance requirements and formulation of a plan. Information must be obtained on operational requirements, total number of aircraft and vehicles available, manpower availability, performance standards, the time available to accomplish the job, the availability of materials, etc. The effective use of maintenance assets depends entirely on the ability of the maintenance control unit to analyze and use available information and plan accordingly.

f. This unit must continually monitor all maintenance activities to insure compliance with established schedules and

performance standards and to determine unbalanced work loads. Particular attention will be given to information which indicates the beginning or development of unbalanced conditions. An unbalanced condition is one in which any one activity is depending too heavily on another. Every effort must be made to insure that each activity is accomplishing the maintenance for which it is responsible. Because of the importance of these control measures the control unit is separated into three branches, each of which is further discussed below.

g. **The Reports and Analysis Branch.**

(1) Generally, this branch will provide the performance and statistical data essential to planning and directing maintenance operations, scheduling maintenance performance, and controlling maintenance activities.

(2) A basic requirement is to obtain accurate information on the availability and utilization of maintenance personnel. Personnel assignments must be determined and compared with authorization. Absentee factors must be computed to permit forecasting of manpower availability. Absence must be studied to determine and eliminate the causes, wherever practicable. Information must be obtained on what has been accomplished by how many persons in each function of maintenance. This information will further serve to provide a measure of the efficiency of the organization. The manpower information thus acquired may then be applied to known requirements and a plan developed. Consider a hypothetical situation, involving the periodic maintenance dock crew.

(a) The daily attendance reports indicate that an average of 20% of assigned personnel are normally absent due to leave, sick call, squadron duty, etc. This, if determined to be the acceptable average, becomes a planning factor and provides a potential of 80% of assigned strength. If this information is applied to the dock crew, production requirements and production standards can be established. Appropriate adjustment can then be made from recorded data and a performance standard established. These standards are used for maintenance planning and applied to monitoring production to schedule and control the work of the crew.

(b) The chief of maintenance has delegated the authority, and assigned the responsibility, for supervising and managing the periodic maintenance dock. It is,

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however, necessary for the maintenance control unit to analyze and be aware of operating trends. Assistance must be rendered and decisions coordinated with the supervisor to improve performance standards, improve job methods, eliminate materiel bottlenecks, and reduce absenteeism and indirect time to the minimum. The maintenance control officer will require the dock crew supervisor to provide current information at definite time intervals which will permit analysis and comparison with established performance standards. In this way the maintenance control unit stays "on top" of the dock's capabilities and is alert to changing conditions which may affect maintenance.

(3) The establishment of a central reporting and administration system for maintenance reports and correspondence will result in improved reporting accuracy, timely submission, correct preparation, inclusion of all pertinent information, and reduce "paper-work" in other maintenance activities. For example, the daily 110 information can be forwarded from records available to or maintained by the maintenance control unit. Other maintenance reports should be processed in the same manner. All reports for which the required information is available to the maintenance control unit should be prepared and submitted by them. Correspondence concerning any activity, or phase, of the maintenance organization should be prepared in final form by the maintenance control unit. In some cases it may be advisable to require the basic content of the correspondence to be prepared in draft form by the activity with final preparation in the maintenance control unit.

(4) To assist in the performance of the functions of the maintenance control unit it is necessary that certain data be collected and presented for ready use. In most cases the data collected (flying time; commission status of aircraft and equipment; backlog; manpower availability; etc.) can be easily presented, for ready use, in the form of tables, charts, and graphs. Care must be taken to avoid overburdening the reports and analysis branch with an excessive quantity of these presentations. Only the essential tables, charts, and graphs should be maintained and they should be as simple as possible.

(5) The establishment of performance standards within the maintenance organization is of extreme importance. Standards are essential to good management. We must establish standards be-

fore we can adequately plan, schedule, or analyze our maintenance operations. The standards established must be the best and most economical that can be devised. A realistic standard must meet the following criteria:

(a) **Attainability.** Any average group of workers under normal working conditions must be able to meet the standard with a reasonable expenditure of effort.

(b) **Applicability.** The standard must apply equally to the operating conditions of similar units.

(c) **Permanence.** Standards must not be subject to casual change.

(d) **Equitability.** The standard must furnish an equitable basis for comparison. Any deviation should reflect difference in effort, ability, or quality of supervision.

(6) The objective of the maintenance organization is to surpass, in effectiveness and economy, our previous maintenance performance. The degree to which we attain this objective cannot be determined without analysis. The reports and analysis branch is charged with the responsibility for conducting the necessary analyses.

(7) A very important phase of the work of this branch is coordinating in the development of plans and data for improving methods, procedures, quality, working conditions, and organizations. Much of this work will be accomplished by other units. For example, an analysis of reports may indicate that working conditions in a certain maintenance activity are affecting efficiency. This information and a recommendation for inspection should be passed to the chief of maintenance. From this point, the quality control unit, standardization team, and maintenance personnel may work on improvement with resulting increase in efficiency and effectiveness.

(a) The standardization team may be used to assist in the development of improved methods and procedures when faults are discovered through analysis. For example, the man hours required to accomplish an engine change may be fluctuating widely around the established performance standard. The branch should recommend to the chief of maintenance that the standardization team be assigned the responsibility for investigation and establishment of a standard procedure, step by step, by which the engine change crews will function. Further analysis, after a period of application of the new standard

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procedure, will determine the efficiency increased, need for further study, required training etc.

(b) The need for quality improvement may be determined from analyses of abort reports, quality control reports, aircraft status reports, historical records, etc. The standardization team and the quality control inspectors may be used in this respect to recommend necessary corrective action. Continuing review of the quality inspection reports will define certain areas in which quality is low due to apparent weaknesses. When these facts are known, the standardization team may be used to actually demonstrate the correct, high-quality manner of performance.

(c) Organizational improvements are the most difficult to determine and apply. Studies of the organizational structure should be undertaken only when the requirement for change has been definitely established. Organizational changes are for the most part prohibited due to the requirement for a standard organization in all wings. Frequently, however, minor organizational changes which will result in increased effectiveness may be made, with the written approval of the wing commander.

(8) Aircraft and equipment historical records serve as a means of permanently recording compliance with technical instructions, transfers of equipment, operating times at transfer, modifications, associate equipment installed, the periods during which installed, and other remarks pertaining to the history of the equipment. Historical files and records are of importance to the Air Force and must be properly processed. The reports and analysis branch is the central records unit in the maintenance organization and is responsible for insuring that this is accomplished. It is essential that files and records be correct and legible at all times. Entries will be made in compliance with TO 0-20A-1, and other pertinent directives.

(9) This branch will make all local entries on the following aircraft forms:

- (a) AF Form 60A - Technical Instruction Compliance Record (Aircraft).
- (b) AF Form 60B - Technical Instruction Compliance Record (Engine).
- (c) AF Form 61 - Propeller or Rotor Blade Historical Record.
- (d) AF Form 114 - Cylinder Compression Record.
- (e) -7 Technical Order - Winterization Instructions and Check List.

(10) The maintenance control officer will initial the "Engineering Officer"

and "Inspector" columns of AF Forms 60A, 60B, and 61, certifying completion of work directed by technical instructions provided he has obtained a copy of appropriate accessory change and TOC form, signed by the responsible maintenance officer and a quality control inspector, or qualified supervisor.

(11) All aircraft accessory changes performed by any function of the maintenance organization will be entered on the Part II, DD Form 781 (Formerly AF Form I). Entries will include the serial number of the newly installed accessory, aircraft or engine operating time at installation, and the name of the individuals performing the work. On receipt of the completed Part II, necessary entries will be made on the appropriate historical records by this branch.

(12) All maintenance performed on winterization equipment installed on aircraft will be reported to the records unit by entry on the Part II. On receipt of the completed Part II this information will be transcribed to the winterization instructions and check list (-7 TO) for that aircraft.

(13) Completed periodic inspection work books, work sheets, or work cards will be reviewed by the branch to determine completeness and the need for entries or changes in historical records. When all the records are made current following the completion of a periodic inspection, the branch will prepare an anticipated component replacement list for the next scheduled periodic inspection for that aircraft. **The list will be prepared from available records and forwarded to the materiel control branch for necessary action with the requisitioning activity.**

(14) An individual jacket file will be established and maintained for each wing-assigned mission aircraft. The jacket file will contain:

- (a) Completed Parts II, III, and IV, DD Form 781 (Formerly AF Form I).
- (b) AF Form 60A. Technical Instruction Compliance Record (Aircraft).
- (c) AF Form 60B. Technical Instruction Compliance Record (Engine).
- (d) AF Form 61. Propeller or Rotor Blade Historical Record.
- (e) AF Form 114. Cylinder Compression Record.
- (f) Current Winterization Instructions and Check List (-7 TO).
- (g) Periodic Inspection Work Books, Work Sheets, or Work Cards.
- (h) Preflight and Postflight Work Sheets. (Completed).

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(i) Flight Test Check Lists. (Completed).

(j) Copies of Technical Inspections and Indorsements.

(k) Correspondence and miscellaneous papers relating to transfer, acceptance, IRAN, and other individual aircraft matters.

(l) A record sheet on which quality control inspectors will record their names and the date of each inspection of the aircraft records contained therein.

(15) All items included in the jacket file will be retained for the periods specified by applicable directives. Forms for which no other retention period is specified will be retained for six months. AF Forms 263 and related correspondence will not be retained in the individual aircraft jacket file. AF Forms 263 will be maintained and filed in the periodic maintenance squadron.

(16) Prior to the periodic maintenance and inspection pre-dock meeting held by the maintenance control unit, the records and analysis branch and the crew chief will review the records and files of the aircraft scheduled for entry into the dock. Irregularities in the records and forms will be brought to the attention of the flight line maintenance officer for corrective action prior to entry into the dock. All time replacement, and special inspection requirements, will be checked against the anticipated component replacement check list prepared after the last periodic inspection. Changes to the original list will be immediately furnished the requisitioning activity. The records officer, or his representative, will attend the pre-dock meeting and bring with him all pertinent records and forms and a current copy of the anticipated component replacement list.

(17) When aircraft are scheduled for TDY movement, the chief of maintenance will determine, prior to departure, what aircraft records will be required and whether or not they will accompany the aircraft. The records which are to accompany the aircraft will be checked for accuracy and completeness and prepared for the TDY movement by the branch. The prepared records will be delivered to the individual designated by the chief of maintenance as responsible for their safekeeping during the TDY movement. Whenever possible, the aircraft records, other than the current Parts II and III, will not be carried in aircraft to which they apply. When a large number of aircraft depart on TDY, all the records will be car-

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ried in one aircraft. When on TDY status, the aircraft records will be maintained in a central location.

(18) One copy of each technical publication affecting the type of aircraft assigned the wing will be forwarded to the records and analysis branch by the quality control unit. Upon receipt, the branch will review the publication and review all pertinent aircraft records to determine which of the assigned aircraft are affected. The unit will make the necessary entries on the aircraft records and technical order compliance chart for the aircraft in accordance with Technical Order O-20A-1.

(19) When new technical orders affecting assigned aircraft are received, the branch will inform the affected squadron so that proper entries may be made on the DD Form 781 (formerly AF Form 1) as pertain to deferred maintenance.

(20) The reports and analysis branch will work in close coordination with the wing aircraft distribution officer to insure that all records on transferred or received aircraft are current, accurate, and in compliance with pertinent directives. This unit will advise the wing aircraft distribution officer of all factors affecting aircraft distribution, as evidenced by the appropriate aircraft records.

h. Job Control Branch.

(1) This branch, using the information available from the records and analysis branch, will plan, schedule, and control the operation of the maintenance organization. A prerequisite to aircraft maintenance planning is a sound flying schedule which allows operations the required flying hours and provides sufficient ground time for accomplishing quality maintenance. Flying schedules must provide maximum aircraft utilization, consistent with maintenance capability, to prevent the waste of maintenance manhours resulting from peak workloads and periods of idleness. When the flying schedule is firm, the job control branch will develop a schedule designed to accomplish the planned requirement. This branch will select the aircraft to fly to meet the schedules. The welfare of maintenance personnel (duty hours, overtime, etc.) must be considered in all work schedules.

(2) Maintenance planning must include predictable maintenance factors such as periodic maintenance, postflight inspections, known replacement schedules, etc. Allowances must be made for unpredictable maintenance such as engine failures, turbo failures, vehicle damage, etc. Full

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consideration must be given electronics requirements so that the maintenance plan is complete and less susceptible to last minute changes.

(3) A good example of aircraft maintenance planning may be found in the proper operation of the periodic maintenance activity. Similar planning will be accomplished for vehicle and equipment maintenance. The example quoted here is only an example and is not intended as policy. Calculations are based only on minimum requirements to meet a specified operational need. The purpose of the example is to show a basic plan and the evaluation of a basic schedule from that plan. The point to be remembered is: Adequate control of maintenance required planning and scheduling to provide an average "hours to next inspection" for all wing assigned tactical aircraft of one-half or more of the periodic inspection cycle. (i.e. 50 hours for 100 hour inspection aircraft, etc.).

- (a) Planning factors to be used are:
1. 30 aircraft assigned.
 2. 172 hours per month per a/c programmed.
 3. 5,160 flying hours per month.
 4. 100 hour periodic inspections.
 5. 25 hour Post Flight inspection.
 6. 51.5 total periodic inspection per month.
 7. 39 periodic inspections to be accomplished by the periodic maintenance squadron or contract maintenance.
 8. 12 ea. 400 hr. cycle IRAN and 100 hr. periodic inspections to be accomplished by contract maintenance or depot maintenance.
 9. 8 ea. inspection docks.
 10. 29 men per dock.
 11. 156 post flight inspections per month.
 12. 5 periodic inspections per dock per month.
 13. 19.4 post flight inspections per dock per month.
 14. 8 hours per duty day.
 15. 24 duty days per month per man.
 16. 192 duty hours per month per man assigned.
 17. 38 duty hours per periodic inspection per dock.
 18. 1,102 man hours per periodic inspection.
 19. 1 periodic inspection completed every 4.6 dock duty hours.

(c) Approximately three days prior to scheduled entry into the dock for periodic inspection, the maintenance control

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unit will conduct a pre-dock meeting to plan for the requirements of the inspection. At this meeting all matters pertaining to the inspection will be planned insofar as possible. TOCs and other maintenance requirements to be accomplished in the dock will be confirmed. The materiel control unit will provide information on supply action on anticipated parts. Specialist requirements will be projected and scheduled for dispatch and all questions of inspection requirements will be resolved.

(d) A note of caution must be injected at this point: When an aircraft fails to fly the anticipated number of hours prior to the scheduled entry into periodic maintenance, the maintenance schedule should be adhered to. This would appear, on the surface, to produce more inspections. However, there will be no noticeable increase in workload. The smoother operation which follows conformance to established schedules will increase the effectiveness of the maintenance organization.

(4) To maintain control of maintenance in accordance with established schedules it is essential that a system of work priorities be established and followed. Without a priority system, maintenance supervisors will be unable to determine which maintenance is to be given emphasis over other. Dispatching of specialists, unit change crews, and other maintenance work (reparable property, etc.) cannot be balanced with established schedules unless a priority system is used.

(5) When a sound priority system is followed, the result will be an equitable distribution of all facilities including manpower, equipment, and materials. This, in turn, will enable the maintenance organization to meet its schedules and standards. The flow of work will become semi-automatic in that assignments will be controlled and productive effort will be applied in the right direction. Concurrently, then, we are balancing our facilities with our workload.

(6) Priorities alone will not solve the problem of meeting the schedule but they will help. With priorities we must also balance our personnel assignments and reduce workload fluctuations. This sounds difficult but it can be reduced to an easily understandable operation.

(a) Balancing our personnel assignments means we must provide each activity with the personnel necessary to complete the required work. Also, we must attempt in every way to insure that each

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activity produces a volume of work in correct proportion to the work of the other activities. When our personnel and our workload are correlated on a planned basis we have assurance that work will flow without congestion.

(b) Another way of balancing our people with our workload is to provide each activity with a degree of flexibility. This will ease our problem by making possible the temporary loaning or borrowing of individuals to smooth out peak loads. One means of providing flexibility is to cross-train personnel within career fields. For example, an engine mechanic from the docks might easily be temporarily placed on duty in engine conditioning. Correspondingly, a heat and ventilation mechanic from this specialist shop could be used temporarily in dock maintenance. Other applications of this idea are obvious.

(c) Reducing work load fluctuations is a primary factor in continued ability to meet established schedules. Our schedule is based on known work loads. That, in itself, is stabilization. However, no matter how carefully the work is planned and scheduled certain fluctuations will occur. These "peaks and valleys" can normally be offset by regulating work backlogs, balancing work assignments, and preplanning supply requirements.

(d) Another, but more difficult manner, is to obtain more out of your available resources. That is, increase efficiency so that more maintenance is accomplished by the same people using the same tools, equipment, and facilities. This procedure requires very careful attention to detail and considerable study, and cannot be accomplished by directive.

1. For example, if the dock schedule indicates that maintenance can barely hold its own under current inspection time (manhours and calendar days) it would be advantageous to study dock operation for efficiency improvement. A very close, tight schedule allows no variation without undesirable results. Therefore, to provide a margin allowing variation while holding to the standard work week, it is necessary to lower the "in dock" time. Lowered "in dock" time will provide a cushion for variation, provided maintenance quality remains high. The lowered "in dock" time might be achieved by increased use of specialists; by more carefully planned and timed individual work assignments; by thorough pre-dock planning as far in advance as practicable; by preplanning and pre-positioning supply requirements; by pre-scheduling specialists

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for definite time and job assignments; by close study and reduction of indirect time; or by other methods.

(7) It is necessary that the maintenance control unit maintain the status of maintenance in progress. It is essential that the status be current and factual. The shifting of specialists, individual changes in priority, and other management actions depend entirely on factual status information. The job control branch must know the status of the aircraft, or items of equipment and the maintenance in order to accomplish its control function.

(8) Proper maintenance scheduling is one of the most important factors in the success of any maintenance organization. In this type of maintenance it assumes an even greater importance. A sound maintenance schedule results from maintenance planning based on operational requirements. Aircraft requirements are embodied in the flying schedule established by the wing aircraft scheduling committee. The flying schedule, maintenance plan, and maintenance schedule should be presented in visual form to provide all personnel with easily understandable information.

(a) One of the first requirements of scheduling is to find out how many aircraft are going to fly, when they are to fly, and for how long. This requirement is fulfilled by the flying schedule established in coordination with the director of operations. Operations must have enough aircraft to fulfill their mission requirements and maintenance must know when and for how long the aircraft are available for maintenance. Maintenance must select the aircraft to fill the established schedule.

(b) In order for maintenance to fulfill its obligations we must provide the required number of aircraft at the specified time. Scheduling and planning within the maintenance organization is the only way in which this job can be properly accomplished. The job control branch will accomplish the top-level scheduling for the maintenance organization. This schedule will include the date and hour as far in advance as practicable when scheduled events such as preflight, postflight, and periodic inspections will be performed. Thus, by scheduled control of our predictable maintenance and control of available maintenance resources, we keep within our capability those unpredictable (hence unscheduled) needs, such as cylinder change. The schedule thus established must be retained and every effort made to prevent its disruption.

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(c) Scheduling does not end in the maintenance control unit. Each individual activity must do realistic scheduling on its own. They must consider manpower, supplies, facilities, tools, and the master maintenance schedule.

(d) Aircraft maintenance schedules should not be forced by an attempt to "fly-out" the schedule. That is, if an aircraft is scheduled for the docks on the 15th, and on that date it has only 95:00 hours instead of its scheduled 100, it should enter the dock as scheduled. Adequate control of maintenance requires that established schedules be maintained in a manner which will prevent "peaks and valleys" in the maintenance workload.

(9) In order to adequately plan, schedule, and control maintenance the job control branch must have a sound schedule. In every case, however, maintenance must be prepared to give specific indication of their capability to meet wing requirements. This can only be accomplished by being "on top" of all maintenance activities, knowing the workload and capability of each activity, the established maintenance plans and schedules, and pertinent information on assigned aircraft, and equipment (commission status, AOC, ANFE, periodic maintenance schedule, etc).

(10) An essential to job control is the knowledge of what jobs have to be done and when and where they must be accomplished. For our purposes this information includes the status and location of each wing assigned aircraft and major item of equipment.

(11) The establishment of defined parking areas and, where practicable, specific aircraft locations is essential to the rapid and efficient dispatch of specialist personnel, inspectors, etc. When a parking plan is prepared it must be approved by the squadrons concerned, director of operations, provost marshal, and fire marshal prior to publication. After publication the plan must be distributed as widely as possible to permit rapid area identification by all affected personnel. Some parking plans in use number the individual aircraft locations within a specific area. Any suitable system may be used but a definite parking plan is required.

(12) The dispatch of specialists from the electronics or periodic maintenance activities will be accomplished by the job control branch through the electronics or shop maintenance supervision office. Job priority will be designated by the job control branch in accordance with the estab-

lished priority list. This branch must be continually alert for specialist dispatch delays. With an adequate and effective communications and transportation system specialist dispatch should be immediate. Definite corrective action must be taken to minimize time loss on the flight line, or in the docks, due to the lack of specialist personnel when required.

(13) In order for the maintenance organization to operate efficiently, it is extremely important that an effective communication and transportation system be established. The system must permit the immediate and rapid transmission of instructions and requests, and the movement of specialist personnel or supply materiel. In conjunction with the establishment of the system we must also establish procedures for the effective usage of the systems. The systems, once established, should be constantly reviewed to insure that maximum service is being realized.

(a) The communications requirements of the organization are a radio net and intercom net. The radio net is primarily intended for flight line and periodic maintenance support while the intercom system provides rapid communication between the more immobile activities of the maintenance organization.

1. The radio net will be established to provide mobile radio communications between the flight line and periodic maintenance activities and the maintenance control unit and base supply activities.

2. The two-way radio in the flight line and periodic maintenance activities should be installed in the vehicles assigned. That vehicle should be used to circulate around the aircraft parking area but should not normally leave that area. The vehicle should be driven by an individual having knowledge of the aircraft and the maintenance problems encountered. Procedures for use of the vehicle must be published by the chief of maintenance.

3. The intercom net should be established basically in accordance with Figure 1. An established procedure must be published and implemented wing-wide to insure understanding of the system and effective use.

i. **Materiel Control Branch.**

(1) The materiel control branch is established primarily to anticipate the supply requirements of maintenance and insure that they are made known to the supply agency. It must monitor the supply situation as it pertains to the maintenance

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organization. The materiel control branch will act in the name of the maintenance control officer to eliminate logistical conditions adversely affecting the efficiency or effectiveness of the maintenance organization. To accomplish this, the branch must assist all maintenance activities in anticipation of their supply needs as far in advance as practicable. Personnel of this branch must have access to base supply and warehouses so that they may be aware of the general supply situation.

(2) The materiel control branch will keep the job control branch informed of the over-all supply situation, make recommendations for the improvement of supply action, and recommend equipment distribution when inequalities exist. The efforts of this activity must be continually directed toward increasing the maintenance output by insuring that adequate action is taken to make equipment and supplies immediately available to maintenance personnel when and where required.

(3) Each maintenance activity of the wing is responsible for initiating supply action for materiel required to support its maintenance. When maintenance requirements cannot be satisfied by normal supply sources, the maintenance activity is responsible for notifying this branch. This branch when informed of the unsatisfied maintenance requirements will investigate, in coordination with the base supply officer, all possible wing sources for the required items.

(4) Particular attention will be given to ACCP, and ANFE requirements of the maintenance organization. Each such requisition will be cleared through the materiel control branch prior to submission to base supply. The branch will research the request for availability of the required part before verifying the requisition. Verification will be in compliance with current directives affecting AOCP and ANFE requisitions. The branch will insure that these requirements are accurate and in consonance with actual need.

(5) The materiel control branch will monitor the cannibalization of aircraft and equipment. He will recommend to the job control officer any cannibalization necessary, and insure that TO 1-1-637 is complied with. A locally devised form will be used to authorize cannibalization. The form will contain the approval signature of the wing commander or the chief of maintenance. Authorization slips will be filed by aircraft, vehicle, or equipment serial number in the materiel control branch until replacement parts are received and

installed. Authorization for cannibalization will be signed only by the chief of maintenance. No delegation of this authority will be made except during absence or off-duty hours when the individual representing the chief of maintenance may sign authorization slips for him.

(6) The materiel control branch will maintain current status of AOCP and ANFE items and submit required AOCP/ANFE reports. The items will be listed in serial number. The status will include information as to the current supply action on the items listed. Daily follow-up with the base supply function is necessary until the parts are received.

(7) The critical items list maintained by the base supply officer will be periodically reviewed by the materiel control branch as an aid in determination of supply action. The branch will recommend to the base supply officer any issue controls and priorities of items on the critical list until such time as an adequate level is available. The materiel control branch should not agree to the removal of an item from the wing's critical item list until the stock level is suitable for normal consumption needs, regardless of the established station stock level.

(8) The materiel control branch will establish and maintain an effective liaison with the base supply office to recommend establishment and maintenance of stock levels adequate for normal maintenance requirements. Initial levels of flight line, shop, and dock supplies will be established by the materiel control branch and the affected maintenance activity. When the items and quantities are agreed upon, the maintenance activity will requisition the established requirements through normal supply channels. Changes in the levels will be accomplished only with the approval of the materiel control branch. To lessen the time involved in requisitioning replacement items for flight line, shop, and dock stocks, or for pre-issue levels, pre-printed Issue Slips, AF Form 446, may be used. Each shop or dock should inventory their expendable supplies periodically, and the materiel control branch must review the stock levels for purposes of adjustment and control once each 45 days. The branch will periodically inspect to insure that such stocks are properly stored and cared for and that discrepancies are made known to the responsible maintenance officer and the maintenance control unit.

(9) A continuing study of supply action will be conducted by this branch to

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determine factors causing supply delays. Each delay will be analyzed and action taken to bring the matter to the attention of the appropriate supply officer for correction. Every effort will be made to eliminate supply delays and provide the required part at the work location at the proper time without loss of maintenance manhours. **The philosophy should be adopted that maintenance personnel will not leave their working areas for supplies but, rather, that the supplies will be delivered to them when and where required.**

(10) The materiel control branch will arbitrate on all problems between maintenance and supply. It will investigate and act upon all supply problems found in the maintenance organization. Continuous observation will be made to insure that the supply policies of the base supply officer are complied with by maintenance personnel.

(11) The processing of reparableables generated within the maintenance organization must be a subject of continuous investigation and emphasis by the branch. This branch must insure that all reparableables are expeditiously processed. Repair schedules and priorities will be established by the maintenance control unit in coordination with the materiel control branch for the processing of reparable items. Schedules must prevent the accumulation of dormant backlog of reparable items and insure immediate repair of critical items consistent with the demands of the maintenance organization. **Priority should always be given to the requirements of the flight line and periodic maintenance**

activities. The expeditious processing of reparableables is of extreme importance to both maintenance and supply. The materiel control branch must periodically check all activities to insure that reparable items are processed as soon as practicable. Items of reparable nature will not normally be permitted to accumulate for "group" processing. All reparable property being turned in will be clean and correctly tagged. Whenever practicable, the items will be in suitable containers (i.e., cans, boxes, etc.).

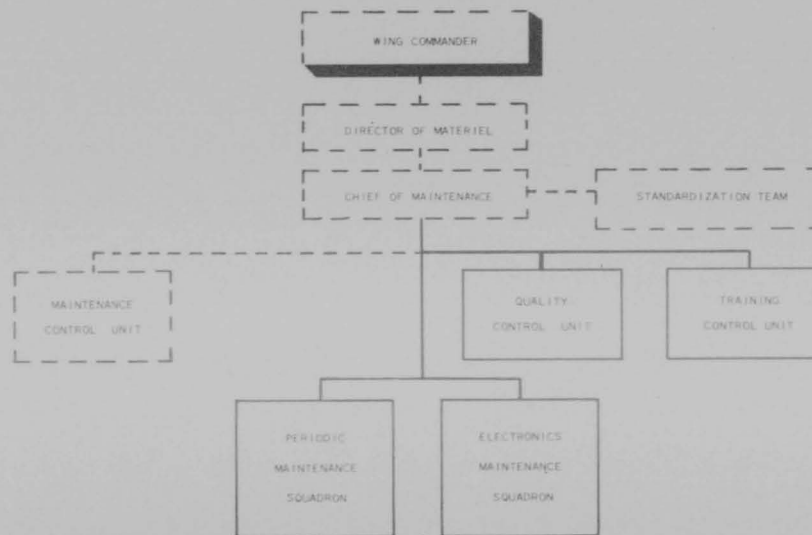
(12) The materiel control branch will assist all maintenance activities in anticipating their supply requirements. When an anticipated replacement components list is received from the records and analysis branch, the materiel control branch will forward one copy to the requisitioning activity and retain one copy. On the retained copy, the unit will record information furnished by the requisitioning activity on the supply status of each item. Prior to the periodic inspection and maintenance planning meeting, this branch will recheck the list with the requisitioning activity and initiate the necessary supply action to insure delivery when and where required.

(13) Technical order parts and kit requests will be consolidated and requisitioned by the materiel control branch for all wing-assigned combat aircraft and allied equipment. Technical order accomplishment will be controlled by the use of appropriate Aircraft Accessory Change and TOC forms.

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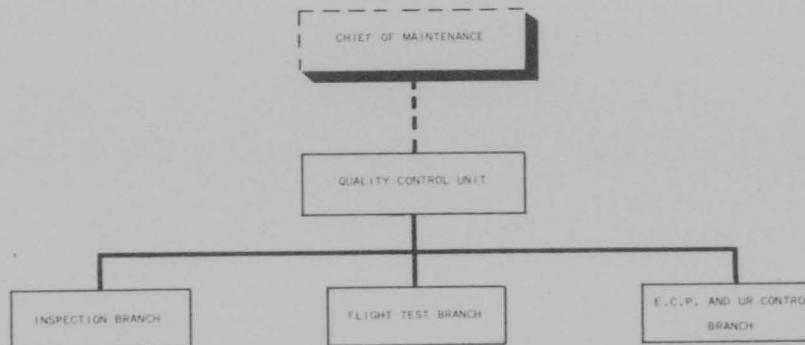
SECTION VII
WING MAINTENANCE
FUNCTIONAL CHART



1. **Function.** This unit will perform frequent inspections of aircraft, and ground power equipment to determine the quality of maintenance accomplished. All flight tests will be conducted under the supervision of this unit and in accordance

with current directives. The unit will review, analyze, and process all unsatisfactory reports and engineering change proposals and maintain a current technical publication file for the maintenance control unit.

QUALITY CONTROL
ORGANIZATIONAL CHART



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2. Responsibility and Authority. a.

This unit is responsible to the chief of maintenance for the efficient accomplishment of the assigned function. The authority for accomplishment will be delegated by the chief of maintenance. This unit will not be delegated directive authority.

b. The quality control unit will:

(1) Accomplish a quality inspection on each aircraft, as required by applicable directives.

(2) Accomplish a quality inspection each month on approximately 25% of in-commission flight line aircraft, and a representative number of vehicles and items of equipment actually in use.

(3) Maintain a master set of aircraft records (AF Forms 60A, 60B, 61, and, when applicable, 60B(1)) for each type aircraft assigned the wing.

(4) Maintain master copies of pre-flight, postflight and periodic inspection work cards for wing aircraft. The master work cards will be used to periodically check the master copies maintained by each flight line and/or periodic maintenance activity.

(5) Perform quality inspections each 90 days on ground servicing and motorized equipment, and other maintenance equipment, assigned each maintenance activity.

(6) Conduct other inspections as required to keep the chief of maintenance and squadron commanders informed of the quality of maintenance; conformance to established procedures; condition of maintenance forms, reports, records, and files; condition and status of equipment and areas.

(7) Prepare and submit inspection reports and maintain adequate trend charts of inspection results.

(8) Periodically check aircraft weighing procedures and the maintenance of weight and balance records.

(9) Perform flight tests in accordance with the provisions of TO 1-1-300 and other pertinent directives.

(10) Accomplish a flight test check list during each flight test.

(11) Maintain a master maintenance information file and a current file of technical publications and other pertinent publications required by the chief of maintenance and his staff to efficiently accomplish the maintenance mission.

(12) Review, analyze, and process all wing unsatisfactory reports and ECPs to insure compliance with current directives.

(13) Establish and maintain an effective and vigorous program to insure the proper and timely submission of unsatisfactory reports and maintain data necessary to determine unsatisfactory report trends.

(14) Assist other wing activities as required in the preparation of unsatisfactory reports.

(15) Keep the chief of maintenance and maintenance control officer advised of unsatisfactory report trends, unsatisfactory conditions affecting safety of flight, and conditions affecting mission capability. Review and disseminate applicable information of action taken on unsatisfactory reports.

3. Personnel. a. The quality control officer will coordinate with the chief of maintenance to insure that the unit is staffed with the most qualified personnel available and that all quality inspectors are assigned to and controlled by this unit.

b. Flight test personnel will be selected in compliance with TO 1-1-300.

c. The quality control officer will be a qualified flight test maintenance officer, AFSC 4334, fully experienced in the predominant type and model aircraft assigned to the wing.

4. Relationships. a. **General.** The importance of coordinated action, honest reports, and tactful contacts is emphasized. All relationships must be friendly, cooperative, and courteous. This unit has no command or directive authority and must report and advise in a manner which will insure willing cooperation throughout the maintenance organization.

b. **Chief of Maintenance.** The quality control unit is responsible to the chief of maintenance and will submit their reports and recommendations to him. This unit must function as the "eyes and ears" of the chief of maintenance and must, through their reporting, keep him informed on the quality of maintenance accomplished and the areas of deficiency existing in the maintenance organization.

c. **Standardization Team.** The unit will establish and maintain close contact with the standardization team to insure joint understanding and interpretation of technical requirements and establish maintenance standards. It will inform the team of deficiency and recommend investigation where necessary.

d. **Training Control.** The quality control unit must work in close coordination with the training control unit and insure that all indications of training needs are made known to them.

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e. **Maintenance Control Unit.** Close coordination must be maintained with the maintenance control unit to insure that the inspection schedule does not conflict with the maintenance schedules.

f. **Squadron Commanders.** (Tactical squadrons, periodic and electronics squadrons, etc.). The quality control unit will establish and maintain a close personal contact with the squadron commanders to keep them informed of the quality of maintenance accomplished and the general condition of their maintenance activities. The responsibility for establishing and maintaining this close contact lies with the quality control officer and not with the squadron commander. The quality control officer must determine that the commander is aware of the general status of his maintenance organization and the discrepancies found therein. The personal contact is essential. Written reports are matters of record and form an effective method of obtaining the commander's action; however, the quality control officer must insure that his inspection coverage meets the requirements of the commander, that his inspections are helpful, that his inspectors are capable, and that his suggestions and recommendations are sound and intelligent. In essence, the quality control officer must exert every effort to obtain the enthusiastic cooperation and support of the commanders.

g. **All Maintenance Personnel.** The quality control inspectors must maintain a cooperative and harmonious relationship with all personnel of the maintenance organization. Their approach must be honest, direct, helpful, friendly, and, whenever practicable and consistent with available time, instructive.

5. **General Narrative.** a. The quality of inspection, flight test, unsatisfactory report functions, and ECP review are combined in this unit because of the relation of each to aircraft safety of flight, vehicle safety of operation, and quality of maintenance. Quality must be continually observed through inspection of all phases of maintenance, investigation of maintenance procedures, analysis of equipment failures, and the actual flight test of the end product of the aircraft maintenance activities.

b. It is through this unit that the chief of maintenance, maintenance supervisors, and squadron commanders receive the information by which the quality of maintenance may be evaluated. It is important that the chief of maintenance re-

cognize the part that quality inspectors play in the improvement of maintenance quality. This unit must be staffed with the most capable, qualified, and experienced personnel available.

c. The success or failure of quality control depends on the command action taken on quality control reports. This emphasizes the importance of the relationship between the quality control unit, the chief of maintenance, and the commanders responsible for maintenance accomplishment. We must remember that quality cannot be inspected into any product but must be built into the product (i.e., maintenance accomplished). The action taken on quality control reports is a fair measure of the effectiveness of this unit. The initiative lies with the quality control officer to establish a relationship with the squadron commanders which will insure adequate corrective action on reported discrepancies. This relationship should be such that the same action is received on verbal reports as on written reports. The quality control officer should make frequent visits to each squadron commander and each major maintenance supervisor to determine whether his inspection coverage is adequate, whether inspection reports are helpful, and if inspectors are of assistance. Where possible, without sacrificing their quality position, the inspectors should help and assist the maintenance personnel by instruction in the correct method, procedure, or technique.

d. The complete and unqualified support of the chief of maintenance is essential to the successful accomplishment of the quality control function. A very close relationship with all maintenance personnel must exist. To merit confidence and active support, the quality control unit must render complete, accurate, and impartial reports with practical and intelligent recommendations that will aid in the correction of discrepancies or irregularities. This unit can be an invaluable tool to the supervisors of the maintenance organization; however, like most tools, it must be properly used if full benefits are to be realized.

e. The quality control officer will review all inspection and flight test reports, and any corrective action comments entered thereon, to ascertain the quality of his inspection coverage. A careful cross-check of inspection reports against flight test reports, etc., may indicate where individual inspectors are inadequate, careless, etc. Such review is essential to insure complete

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coverage and to point out deficiencies in assigned personnel.

f. Flight Test

(1) Flight test of aircraft has two very important and distinct functions. The first and most important function is to insure that the aircraft is safe for flight and capable of performing its assigned mission. This is accomplished through inspection and functional test of the aircraft and its operating systems in flight. The second function is to accurately determine and report the quality of maintenance performed as revealed by the flight test.

(2) Flight test will be performed in accordance with TO 1-1-300 and other pertinent directives. Sufficient flight test crews will be assigned by wing special orders to additional duty with the quality control unit. These crews will perform flight tests under the supervision of the quality control officer. He must insure that flight test crew personnel are current in flying requirements, highly qualified, and familiar with current flight test requirements. Test flights will not be used for training purposes. Under no circumstances should aircraft be flown on any mission, other than flight test, until all required maintenance has been completed and the aircraft released by the quality control officer or his designated representative. A crew must not be permitted to accomplish the test flight as the first portion of a standard training mission but will be required to land immediately following completion of the flight test.

(3) Members of flight test crews are chosen because of their high qualification in flying skill and technical knowledge. It is their job to ascertain and verify the airworthiness and combat-readiness of aircraft upon completion of maintenance as outlined in TO 1-1-300. They must remember that they are conducting the flight test so that their fellow crewmen will have an aircraft safe to fly and capable of accomplishing the assigned mission. This type of testing has a purpose which is easily understood. We must insure that our aircraft are capable of doing the job they are required to do. Test flights are insurance for this and are the final determination of airworthiness. They must not become so routine that they are treated passively. Each flight test crew member will be briefed as to his individual responsibilities prior to each test.

(4) A flight test check list will be accomplished for each flight. Each crew member will carefully evaluate each item on the check list relative to his crew posi-

tion during the flight. All discrepancies will be written on the form in sufficient detail to explain the trouble and make expeditious corrective maintenance action possible. The completed check list will be given to the maintenance officer of the activity designated by the job control branch as responsible for the correction of reported flight test discrepancies. Corrective action on reported discrepancies will be indicated on the flight test check list which will be forwarded to the maintenance control unit as expeditiously as possible. The maintenance control unit will review the completed check list and corrective action entries and refer major discrepancies to the chief of maintenance, who will direct necessary action to correct or eliminate the causes for discrepancies reported. After review, the completed check list will be filed in the individual aircraft jacket file in the records and analysis branch.

(5) Upon completion of flight test, the crew will return the aircraft to the last activity which accomplished maintenance requiring the flight test.

g. Quality Control.

(1) To provide consistency in quality inspection methods, and standardization of quality measurement, all quality inspection personnel will be assigned to and controlled by this unit. The quality control officer will dispatch quality inspectors to the various phases of maintenance in the numbers required to determine the quality of maintenance accomplished.

(2) The concept of quality control is that a quality inspection will be conducted by quality control inspectors after heavier type maintenance (such as period and field maintenance) to determine and report the quality of maintenance accomplished. This is the primary responsibility of the quality inspection section, but their activities are not limited to this alone. Additional coverage or assistance given to the maintenance organization must be left to the discretion of the chief of maintenance and the quality control officer, consistent with wing requirements. In this respect, the quality control officer will provide inspection coverage as dictated by need. He must use considered judgment to insure that equitable quality control inspection is provided all phases of maintenance, including activities such as the power plant branch of field maintenance, equipment maintenance on the flight line, etc. If his analysis of quality inspection reports indicate unsatisfactory conditions building up in any activity, he should increase the coverage provided that

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activity. The inspection frequencies specified in this Manual are minimum requirements only and should be amplified as dictated by local conditions.

(3) The number of personnel authorized this section prevents their inspection of every item of maintenance performed in the maintenance organization; in fact, there should be no need for them to inspect every item. The assigned inspectors must be used to determine the quality of maintenance accomplished. They should not be used for follow-up inspection of maintenance performed to correct discrepancies determined by their quality inspections. To do so is a waste of valuable ability that can be better utilized in quality determination. "Over the shoulder" inspection is generally undesirable and defeats the purpose of our quality control unit.

(4) The responsibility for inspection for aircraft safety of flight does not lie with the quality control inspector. This responsibility (safety of flight and operational safety) lies with supervisory personnel (maintenance officers and designated qualified maintenance supervisors). These individuals are authorized and are responsible for checking and clearing the work accomplished by their personnel and for clearing red cross conditions on aircraft. For example, the clearance of maintenance prior to "cover-up" (replacement of rocker box covers, landing gear limit switch adjustment, ignition timing, etc.) will be accomplished by the responsible maintenance officer or other designated qualified maintenance supervisors. The quality inspectors must approach their inspection with a viewpoint of safety of flight or operation as a primary consideration. The responsibility for safety of flight or operation will remain with the maintenance supervisors.

(5) All maintenance supervisors are safety inspectors and must understand that safety maintenance checks are among their primary responsibilities. To insure aircraft safety of flight quality maintenance, certain maintenance supervisors, because of high technical qualifications, will be further designated to check and clear maintenance performed to correct red cross safety of flight conditions.

(6) In order that the quality control concept may be carried out, the responsibility for one inspection of maintenance performed is given to (1) the technician level (71) in each specialty; and, (2) responsible maintenance officers. Normally, the inspection of the maintenance accom-

plished will be performed by the technician level for the particular specialty involved. When the worker is of technician level (71), he is qualified to act as his own inspector for clearing the work accomplished.

(7) Inspection by the appropriate technician level, supervisor level, or maintenance officer level is mandatory:

(a) Upon completion of any maintenance, repair, and/or component part or accessory replacement required to remove either the aircraft, engine, or any electronics system from a red cross status.

(b) At replacement of any major aircraft, engine, or electronics system component or accessory (i.e. control surfaces, cylinders, propellers, APS-20 antenna, APS-45 units).

(c) For all maintenance, repairs, adjustments, or replacements accomplished solely by three-level personnel.

(8) Inspection is not mandatory for any maintenance, repair, adjustment, or replacement normally considered as being organizational maintenance, provided:

(a) That the maintenance, repair, adjustment, or replacement is accomplished by either a qualified five-level, or higher, mechanic or specialist, or:

(b) That the maintenance, repair, adjustment, or replacement by a three-level mechanic or specialist is accomplished under the personal supervision and direction of a qualified five-level, or higher, mechanic or specialist.

(9) The supervisory personnel should at all times feel free to call upon the quality control unit for inspection assistance and advice. The quality inspectors should be available and willing to inspect specific items when requested by any maintenance supervisor when, either due to lack of knowledge or doubt of the allowable tolerance, he, the supervisor, does not feel qualified to make the decision. The production of maintenance quality is the responsibility of supervisory personnel, whereas the determination of maintenance quality is the responsibility of the quality control unit. Therefore, even though a quality inspection is completed, and all reported discrepancies are cleared, the inspector is not responsible for the safety of flight status of the aircraft or safety of operational status of the vehicle or equipment.

(10) The electronics and periodic maintenance squadron commanders must be authorized to designate certain qualified supervisory personnel of each shop to sign condition tags for items processed through

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their respective shops. Periodic checks will be accomplished by the quality inspectors to insure retention of high quality standards. A current copy of each authorization list will be furnished the quality control unit and the base supply officer.

(11) The quality control officer should schedule the inspections necessary to obtain maximum coverage and determine the over-all wing maintenance quality.

(12) An inspection schedule will be prepared to insure a periodic inspection of each activity of the maintenance organization at the minimum intervals listed herein. Quality inspectors should be periodically rotated in their inspection assignments to maintain over-all proficiency. Inspector personnel will be dispatched by the quality control officer as required to meet the inspection schedule, or whenever requested by a maintenance activity for an authorized purpose.

(13) The quality control unit will establish a master set of AF Forms 60A, 60B, 61 and, when applicable 60B(1), for each type aircraft assigned the wing. All entries on the master forms will be in accordance with TO 0-20A-1. Once each month they will be checked against the consolidated record of the status of technical order compliance maintained in the records and analysis branch. The master forms will be used as a check list when inspecting the individual aircraft jacket files maintained by the records and analysis branch.

(14) The individual aircraft files maintained by the records and analysis branch will be inspected by qualified inspectors in conjunction with each aircraft inspection or each 90 days, whichever is earlier. The inspection of the jacket file will be conducted in a manner which will insure that the records are being maintained in compliance with TO 0-20A-1, and other pertinent directives.

(15) Each activity of the maintenance organization will be inspected once each 90 days to determine the quality status of all assigned ground servicing, motorized, and other maintenance equipment. Reports will be prepared for each inspection accomplished. The original copy of the inspection report will be furnished the squadron commander of the activity inspected and a copy will be forwarded to the chief of maintenance. Corrective action on reported discrepancies will be expeditiously forwarded by indorsement to the director of materiel and wing com-

mander and returned to the chief of maintenance for review.

(16) Periodically, the quality control unit will observe the procedures used to weigh wing aircraft. Concurrently, the weight and balance records of the aircraft being weighed will be inspected to insure compliance with AFR 60-20, TO 1-1B-40, and other pertinent directives. The weight and balance records of each aircraft will be inspected at least once each 90 days to determine the quality of record maintenance. This may be accomplished in conjunction with the inspection of the individual aircraft jacket file or any other time as determined by the over-all inspection schedule.

(17) The quality control officer will keep the chief of maintenance informed of the areas of recurring discrepancies and recommend to him the need for increased emphasis on corrective action or the advisability of investigation by the standardization team. When investigation is recommended, the quality control officer will insure that the standardization team is furnished full information leading to the recommendation, including copies of the pertinent inspection reports, etc.

(18) The quality control officer will initiate the follow-up on any correspondence necessary for clarification of technical directives where the intent is not clear or specific. Questions in reference to the intent or interpretation of technical publications will be answered by the quality control officer for the chief of maintenance.

(19) The quality control officer will review each incoming technical publication and ECP's to determine whether or not it applies to the type, model, or series aircraft assigned the wing. The quality control officer will bring each pertinent publication to the attention of the maintenance control officer and recommend, from a technical viewpoint, how compliance may be effected.

(20) All limited technical publication files maintained within the maintenance organization will be inspected each 90 days for completeness and compliance with TO 0-4-1, or other pertinent directives.

(21) A technical order familiarization chart will be maintained for all personnel of the quality control unit. The quality control officer will implement a procedure to insure that pertinent incoming publications are read and understood by all quality control personnel. The unit will monitor the dissemination of technic-

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al information by conducting personal checks with personnel on the flight line, in the docks, and in the shops to determine that such personnel are familiar with pertinent directives, are provided ready access to technical files, are familiar with the use of the files, etc.

(22) The analysis function is designed to analyze the inspection, flight test, and unsatisfactory reports to pinpoint maintenance "soft spots" and areas of deficiency. This analysis is, in turn, used as source information for quality control planning and scheduling and is passed on to the various supervisors to assist them in their efforts to raise maintenance quality.

(23) Each inspection, flight test, and unsatisfactory report must be carefully reviewed and analyzed from the viewpoint of the entire wing maintenance effort. Consideration must be given to previous reports, conditions discovered, etc., to insure that all analyses are complete and thorough. The quality control officer will keep the chief of maintenance informed, as a result of analysis, of the quality of maintenance accomplished, "soft spots," etc.

(24) An important part of the analysis function is the maintenance discrepancy trend charts and quality rating data. Use of charts and graphs will simplify the analysis function and provide a simple graphic media of presenting certain types of quality information. In addition, graphic aids will portray many areas of training needs upon which the training control unit may concentrate as necessary.

h. Unsatisfactory Reports.

(1) The quality control unit will monitor and process all unsatisfactory reports. Processing will include station numbering, checking for completeness, and accuracy of preparation. A system will be established which will insure proper and timely submission of an unsatisfactory report in every case warranted. The unit will provide assistance as required in preparation of the reports.

(2) Successful use of the unsatisfactory report system depends principally upon the understanding of the system by all personnel. The quality control officer must be the foremost advocate of the importance of each maintenance activity supporting the established system. Further, he must continually emphasize the fact that correction of unsatisfactory con-

ditions of AF equipment and systems cannot be expected until these conditions are reported frequently enough to point out that the discrepancy is not an isolated case. Also, since the action taken is dependent upon the information contained in the report itself, this unit must emphasize the importance of accurate detail in the report. The description of the unsatisfactory condition, and the allied data, must be sufficiently clear so that no possibility of misunderstanding exists. Each unsatisfactory report should be studied and evaluated and the findings incorporated in the forwarding indorsement, when applicable.

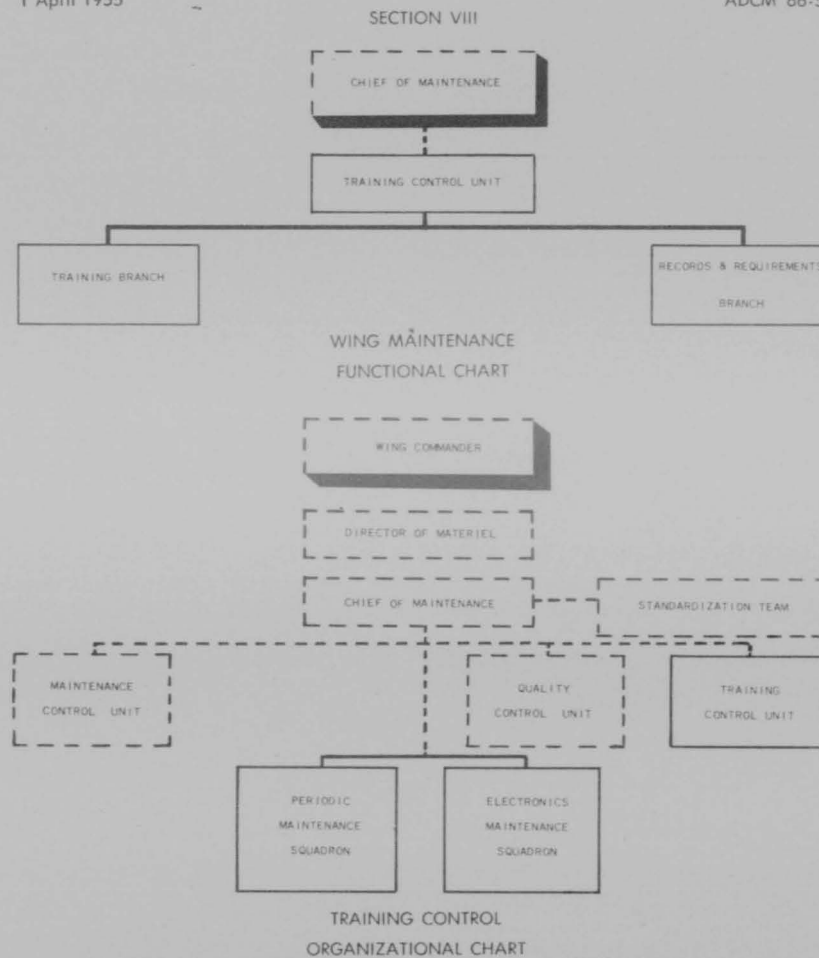
(3) Whenever practicable, evaluation of station reports should be compared with information in the UR Digest and other publications to provide the means for local correction of unsatisfactory conditions. Recommended corrective action must be analyzed to insure applicability to the reported condition. A continual evaluation of unsatisfactory reports must be accomplished to provide maintenance supervisors with information on the number of recurring failures, reasons for failure, inadequacies, etc. By establishing trends, inspectors and supervisory personnel will have a knowledge of the maintenance "soft spots" and the foundation for sound corrective action. The trend of unsatisfactory reports should be maintained in graphic form for periodic presentation to the records and analysis branch for evaluation in connection with other maintenance data.

(4) A procedure will be established to insure that activities initiating unsatisfactory reports are informed of the answers received. This unit will review and disseminate applicable information from the UR Digest, TO 0-10-1, and other sources. Whenever practicable, this unit should use the base newspaper, or other local publication, to publicize unsatisfactory reports, answers, new publications received, etc. However it is accomplished, the unit must insure the widest possible dissemination of quality information.

(5) The quality control unit must use initiative in devising systems to simplify and expedite the preparation and processing of unsatisfactory reports. If desired by the chief of maintenance, this unit may actually prepare all wing unsatisfactory reports from work sheets prepared by other activities.

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1. **Function.** The training control unit will establish and maintain a maintenance testing and evaluation program designed to point out areas of training needs in individual maintenance personnel and for the wing as a whole. The unit will establish training requirements and facilities to eliminate deficiencies and will coordinate training schedules with the maintenance control unit to minimize disruption of the maintenance routine.

2. **Responsibility and Authority.** a. This unit is responsible to the chief of maintenance for accomplishment of all maintenance training responsibilities. This unit will not be delegated directive authority.

b. The training control unit will:
(1) Insure the implementation and continuation of an adequate, carefully planned maintenance training program to train-out maintenance deficiencies.

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(2) Establish and maintain a testing program to evaluate maintenance proficiency and define areas of training needs.

(3) Insure that the training program is phased to provide, proficiency, career progression, management, and on-the-job training, as necessary.

(4) Coordinate training schedules with the maintenance control unit to minimize disruption of maintenance activities, plans, and schedules.

(5) Coordinate training requirements with the available facilities (MTD, contractor technicians, base schools, etc.).

(6) Take necessary action to insure adequate space availability for classrooms, etc., required to fill maintenance training needs.

(7) Conduct and/or monitor all maintenance training to insure that adequate training methods are used.

(8) Coordinate with all appropriate supervisors when necessary to use personnel from any other maintenance activity to provide specialized training.

(9) Assist supervisory personnel in the conduct of OJT programs.

(10) Prepare and submit all maintenance training reports in compliance with pertinent directives.

(11) Maintain all maintenance training records and files.

3. **Personnel.** a. The OIC, training control unit, will be appointed on wing orders as the wing maintenance training officer.

b. Personnel assigned this unit must be qualified by schooling, experience, and personality for training duties.

c. When specialized training is required for which adequate personnel are not assigned, the training officer will take necessary action to obtain the services of a qualified specialist to conduct the training.

4. **Relationships.** a. **General.** A tailored educational and training program will increase the effectiveness of the maintenance organization. The program designed for this purpose must provide minimum interference with the progress of maintenance. However, the training function cannot be relegated to a "poor cousin" role. The training control unit, through their normal relationship with other maintenance activities, must encourage active participation in planning a progressive program. The benefits received from this program will be directly proportional to the emphasis and support given it by the wing.

b. **Chief of Maintenance.** This unit must keep the chief of maintenance informed of the status of the training program and the current schedule. All scheduling and policy matters will be approved by the chief of maintenance prior to action by the training control unit.

c. **Maintenance Control Unit.** The training officer will insure that all maintenance training schedules are coordinated with the maintenance control unit to minimize disruption of maintenance plans and schedules. Every effort must be made to establish schedules that will permit the desirable combination of maximum training and maximum maintenance accomplishment.

d. **Quality Control Unit.** The training control unit must establish close liaison with the quality control unit to insure a free interchange of thought relative to maintenance training and training requirements.

e. **Standardization Team.** The function of the standardization team is closely allied to that of the training control unit since standardization is, in part, training. For this reason, a close working relationship must exist between the two activities so that both work toward the same goal. Coordination of training requirements with the team will lead to its active participation in the program.

f. **Maintenance Activities.** The training control unit must maintain a friendly, cooperative, and helpful relationship with all maintenance activities. The unit must insure that the training program is designed to fill the needs of the activities and the individuals. The active and cooperative participation of the maintenance activities will be dependent upon this relationship. Training schedules should be made known to the activities as far in advance as practicable so that adequate planning may be accomplished to provide for attendance of affected personnel.

g. **Squadron Commanders.** All maintenance training schedules (testing, evaluation, classroom, etc.) must be made known to the affected squadron commanders so that necessary action can be taken to insure attendance of trainees. A close relationship is essential since the commanders retain a certain responsibility for insuring adequate training of their personnel.

h. **Base Training Facilities.** The training control unit must establish a close, cooperative relationship with available base training facilities (i.e. MTDs, base schools, contractor technicians). The

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need for this is obvious since varying degrees of the training requirements will be filled by these activities. Emphasis must be placed on need and quality rather than quantity of training.

5. **General Narrative.** a. The Air Force is faced with an ever increasing need to insure the progress of maintenance personnel in experience and skill level. It is, of course, desirable that all qualified maintenance personnel be afforded the best possible training available. For this purpose, the formal training courses conducted under the auspices of Air Training Command are recognized as the best available to us. However, if the programmed limitations imposed on ATRC preclude adequate formal training, the wing commander must qualify his maintenance personnel through local training programs. This local maintenance training responsibility will be delegated by the wing commander thru channels to the training control unit.

b. Once the individual maintenance man has obtained knowledge through schooling or other training, he must be trained to develop his skill and his ability to perform on the job. This must be a continuous effort in which each individual gains experience and knowledge through day-to-day association with co-workers and supervisors and is supplemented by local training in classrooms or on-the-job.

c. All maintenance supervisors must recognize the necessity for conducting a continuous and comprehensive training program. The training control unit is charged with the responsibility of establishing this program. The training program must insure that maintenance personnel are provided an opportunity to progress to the maximum limit of their technical and administrative abilities. The training development will not be confined to initial training of a maintenance man, but will be continued in a manner which will permit career progression and provide increased proficiency and on-the-job training. Thus, the supervisor and the training control unit have a concurrent responsibility for developing maintenance personnel simultaneously with discharging their responsibility for high quality production.

d. It is recognized that tactical units should continue minimum flying training to attain and/or retain individual and crew proficiency. However, flying training should not be conducted at the expense of flight safety or development of an adequate maintenance capability at the ear-

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liest practicable date. Commanders must realize that mission fulfillment includes accomplishment of specific maintenance requirements. The thinning of our available maintenance "know-how," and the requirement for rapidly attaining a maintenance capability, make it mandatory that a vigorous maintenance training program be inaugurated and pursued by each wing.

e. To facilitate the accomplishment of the training function, the unit is formed in two branches:

(1) **Records and Requirements Branch.**

(a) All training, local or formal ATRC courses, will be recorded on appropriate records in accordance with current directives. Individual training files will be maintained, by the records and requirements branch for all local training accomplished, for all evaluation test results, etc. The individual record files will be used as source material for establishment of requirements, preparation of course outlines, etc. For this reason, and for pertinent classification action, it is essential that these records be accurate and current at all times. Entries should be made, or records initiated, immediately upon completion of testing, evaluation, training, etc.

(b) The Air Force is faced with an ever increasing need to assure the progress of maintenance personnel to greater experience and higher skill level. In recognition of the requirement for planned proficiency training for maintenance personnel, the records and requirements branch must institute a testing program designed to indicate the specific training needed for each individual. This will permit economic use of personnel and facilities and will prevent costly overlap in maintenance training. The intent, here, is to test our maintenance personnel by means of a comprehensive examination covering their individual specialty. Each test must then be analyzed and the area or areas of deficiency within the job defined. This is followed by training to eliminate the deficiency area or areas. This is, basically, the deficiency training program and is based upon the assumption that the individual has previous experience or training in his specialty.

(c) Upon completion of any individual or group testing, or upon receipt of deficiency information from the standardization team or quality control unit, the records and requirements branch will immediately analyze and evaluate the results. The analysis will portray individual and collective deficiencies which will form

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the basis for training action. The results of the analysis and evaluation will be tabulated and given to the training branch with recommendations pertaining to priority of training and type of training (OJT, etc.).

(d) Upon completion of any training, the training branch will immediately forward to the records and requirements branch, all pertinent data with reference to:

1. Personnel trained.
2. Type of training.
3. Length of each phase of training.
4. Grades of trainees, if appropriate.
5. Other appropriate information.

This information will be immediately posted to the individual records and all action taken to insure necessary official personnel record entries, classification action, etc.

(e) Based upon current directives, the branch will establish local procedures to insure that all required training reports are made accurately and on time. Necessary information for such reporting will be taken from available records and will not normally be solicited from individuals or any maintenance activities.

(2) **Training Branch.**

(a) When training requirements are determined, by means of evaluation testing or any other media, this branch will prepare the necessary schedules and outlines. The requirement, schedule, and outline will be coordinated with available base training facilities and a tentative class and instructor schedule made. Following this agreement, the schedule will be coordinated with the maintenance control unit and the affected squadrons to insure minimum disruption to maintenance activities and maximum availability of trainees. With all necessary coordination the schedule will be made firm and all trainee personnel informed.

(b) When available base training facilities cannot provide the required training (lack of qualified instructors, classroom space, etc.), the training branch will make other arrangements. For example, the automotive maintenance officer may be able to provide classroom area and a fully qualified instructor for certain types of training required. Whenever such action is necessary, the branch will insure that proper coordination is accomplished and all affected personnel are in agreement.

(c) Each class or individual undergoing training will be guided by a course

outline provided by the training branch. These outlines may be of local construction or may be outlines and curricula prepared for similar formal ATRC courses. In all cases, however, the training will be selected to fill specified needs and maintenance personnel will not normally be exposed to the "shotgun" form of training wherein all phases of a subject or specialty are presented.

(d) On-the-job training to increase maintenance capability is a desirable means of drawing upon the skill and experience of capable and qualified personnel to aid in training those of lesser skill. However, an OJT program must be closely controlled and carefully planned in order to maintain a desire on the part of the individual to learn. A careless OJT program is worse than none since it frequently destroys the initiative of both the instructor and the learner.

(e) Normally, the on-the-job training program of a wing can be divided into two phases. Phase One would be that part of the program designed to increase individual proficiency. This phase would normally be slanted toward those maintenance personnel who have previously taken training but are found to be deficient in one or more areas in their career field. Phase Two would be that part of the program designed to train an individual from the beginning of a given career field. This type program would normally be intended to prepare an individual for the assumption of basic duties in the selected career field.

(f) It is preferred that for entry into Phase Two OJT an airman possess the prerequisites for entry into the corresponding formal training course (USAF Training Prospectus), or as prescribed in current training directives if there is no formal course. There would, of course, be no similar prerequisites for Phase One OJT, proficiency training.

(g) Management training forms an integral part of the over-all training program of the wing. A high degree of management skill and knowledge is essential for all maintenance supervisors and those being groomed for such positions, so that the wing may give increased and regular attention to the economy and effectiveness of its operational mission. Part of this training may be acquired by careful scheduling of maintenance personnel into established base management training classes and schools. Another part of this training may be obtained by utilization of management analysis personnel, and similar

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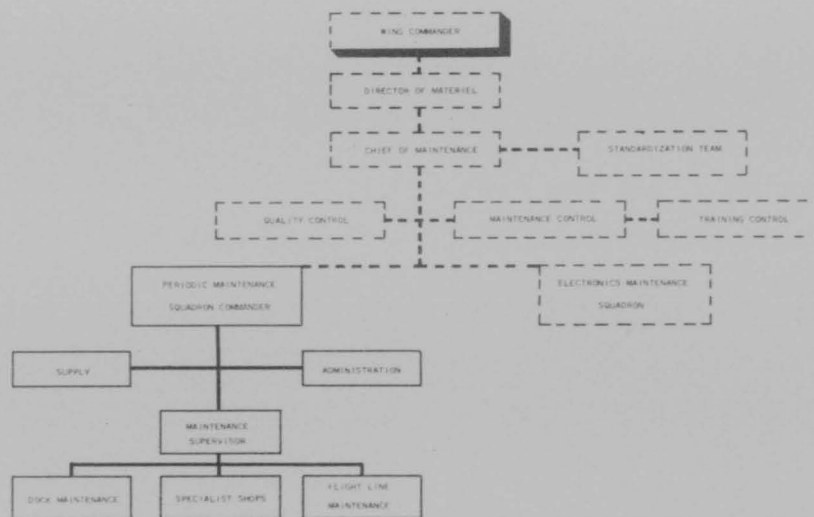
professional personnel available within the wing.

(h) A concentrated educational and training program will increase the effectiveness of the maintenance organization. Each maintenance supervisor, as part of the wing training program, will be exposed to a planned program designed to explain the reasoning behind the wing maintenance organization and, in particular, his specific place and responsibilities. Each supervisor should be made aware of the concept, operation, and functions of the organization and the individual and collective responsibilities for the accomplishment of the wing mission. Where possible and practicable, the MTD assigned the wing should conduct this training in conjunction with their regular curricula. When an MTD is not available, the course will be planned and outlined by the training control unit personnel, the standardi-

zation team, or personnel selected by the chief of maintenance.

(i) In addition to the above types of training, the training control unit will advise maintenance supervisors of the training value of careful selection and distribution of skills in work assignments. The proper distribution of skills will constitute a training program which is simple to control and highly effective. Wherever possible, skills should be grouped in a manner which will provide highly trained personnel working with lesser trained. In addition, this skill grouping will help to ease the training problem inherent in specialization of skills such as is necessary in the Air Force today. Scheduled rotation of personnel through the various jobs in their career field will help to eliminate improper and inefficient specialization within specialty.

SECTION IX
WING MAINTENANCE
FUNCTIONAL CHART



1. **Function.** As directed by the maintenance control unit, this squadron will perform all periodic flight line main-

tenance and special inspections on assigned aircraft and will accomplish maintenance on assigned ground power and ser-

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vic equipment. Field and depot maintenance on air frame, engine, ground power and servicing equipment will be performed by the host base.

2. **Responsibility and Authority.** The periodic maintenance squadron commander is responsible to the wing commander for the organization and functioning of the periodic maintenance activity and for the accomplishment of quality maintenance by his squadron. However, the wing commander, through the director of materiel, has assigned the responsibility and delegated the authority to the chief of maintenance for the direction of the maintenance function of the wing. Therefore, the normal contact for the squadron commander in the accomplishment of his maintenance responsibilities is the chief of maintenance.

3. **Personnel.** The periodic maintenance squadron commander is responsible for the efficient utilization of all personnel assigned his squadron. He will also insure that specialist assistance is requested from field maintenance activities whenever required. He will conduct the necessary studies to determine optimum dock, shop, and flight line manning and insure, insofar as practicable, that this manning is retained even if necessary to reduce the number of operating docks, shops or flight line crews.

4. **Relationships.** a. **General.** Specialization of the maintenance effort is climaxed in the periodic maintenance activity. It is here that personnel from all phases and activities of the maintenance organization are required to work in close contact with positive coordination. The effectiveness and capability of this squadron is largely dependent upon other maintenance activities. Therefore, the relationships between the periodic maintenance squadron and the other maintenance activities are extremely important.

b. **Chief of Maintenance.** The commander must establish and maintain direct and close contact with the chief of maintenance so as to remain aware of major maintenance problems and policies. He must actively support the chief of maintenance and require the periodic maintenance activity to comply with the established maintenance policies and procedures of the wing. He should advise the chief of maintenance when he feels that any maintenance directives or policies are contrary to the best interests of the wing.

c. **Maintenance Supervisor.** The

maintenance supervisor is the manager of the periodic maintenance activity. He must be delegated the authority necessary to operate it in a manner consistent with established policies and directives. The commander must authorize the maintenance officer to work directly with the maintenance control unit in the normal day to day functioning of maintenance.

d. **Electronics Maintenance and Field Maintenance Squadron Commander, and Tactical Squadron Commanders.** The periodic maintenance squadron commander must coordinate with these commanders as necessary to obtain unified action, required support and mutual aid and assistance in accomplishing the assigned mission.

e. **Quality Control Unit.** The commander must use the quality control unit as a management tool to improve periodic maintenance operation. He must insure that positive corrective action is taken on reported discrepancies and must strive to prevent recurrence. He should advise the quality control officer of dissatisfaction with the assistance rendered, inspection coverage, etc. He must insure that this unit provided him with the quality control assistance necessary to meet his requirements.

f. **Standardization Team.** He must actively support and assist the standardization team in its investigations and studies of periodic maintenance operations so as to obtain maximum benefit from its functioning. The commander should recommend to the chief of maintenance those areas of periodic maintenance in which the team could be advantageously utilized.

g. **Training Control Unit.** He must actively support the established maintenance training program and insure that assigned personnel meet all pertinent training schedules.

5. **General Narrative.** a. The periodic maintenance squadron commander is responsible to the wing commander for the operation of his squadron. However, because of the complexity and scope of the maintenance activity, the wing commander has, through the director of materiel, delegated the necessary authority to the chief of maintenance to direct and supervise the entire maintenance activity of the wing. It is important that the periodic maintenance squadron commander recognize and understand his maintenance position and establish and maintain a close personal relationship with the chief of

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maintenance. It is important that the commander be aware of the operation of the entire maintenance organization and its major problems. It is important to the chief of maintenance that, through this personal relationship, he be assured of the active participation of the commander in the correct and efficient accomplishment of high quality maintenance.

b. It is not intended under this maintenance concept, that the chief of maintenance usurp or assume any of the commander's responsibilities or prerogatives. Nor is it intended that he, or the director of materiel, be an intermediate commander between the squadron and wing commanders. The relationship here should be one of mutual coordination and cooperation, and the commander must inform the chief of maintenance of inefficiencies, faulty procedures, etc. If the commander cannot resolve a maintenance difficulty with the chief of maintenance, or the director of materiel, it is only logical for the matter to be referred to the wing commander for decision.

c. The maintenance supervisor is actually responsible to, and works for, the squadron commander. However, for expediency and balance in the maintenance organization, the chief of maintenance or the maintenance control officer should normally transmit maintenance directives and instructions directly to the aircraft maintenance supervisor. It is the squadron commander's prerogative to insist that he personally sanction all maintenance control actions affecting his squadron. To do so, however, would be impracticable. The most efficient operation will be achieved when the commander permits his maintenance officer to work with the maintenance control unit on routine maintenance matters. The commander and the chief of maintenance should work together on major items and the over-all phases of maintenance without becoming submerged in the details.

d. The periodic maintenance squadron is responsible for the accomplishment and quality of all periodic, flight line maintenance, and special inspections directed and scheduled by the maintenance control unit. Periodic maintenance will include all airframe, engine, flight line maintenance, and organization maintenance on ground powered and servicing equipment, except electronic maintenance, with available equipment and facilities within the allowable working period.

e. In view of the large man-hour potential represented in the periodic main-

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tenance squadron and its impact on the effectiveness of the wing, the squadron commander and his maintenance supervisors will be constantly alert to possible improvements in operation. The wing can only fly the number of hours which can be supported by this squadron. Every effort must be made to decrease the out of commission time of an aircraft while retaining high maintenance quality. Assigned personnel and specialist assistance must be fully used. Wherever practicable, every operation should be preplanned and all necessary supplies and equipment prepositioned. Continual studies will be conducted by the squadron and the standardization team when available, to point out areas of weakness, inadequate planning, poor utilization of resources, lost time, and other factors influencing efficiency.

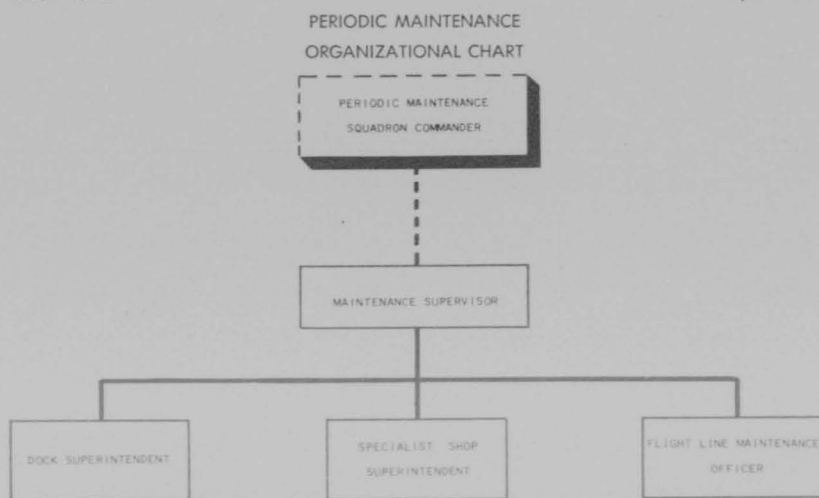
g. It is vital that the maintenance organization stay in balance. Each section must accomplish the correct amount of maintenance in relation to that accomplished by the other sections. The periodic maintenance squadron commander must have an active interest in maintaining this maintenance balance. He must insure that his supervisors assume an active responsibility in this respect, also. The docks must fully utilize their personnel in essential maintenance tasks and request specialist assistance when necessary by virtue of time, skill, or equipment limitations.

h. Reports submitted by the quality control unit should be carefully reviewed and analyzed by the periodic maintenance squadron commander to insure that adequate action is being taken and that the reports fulfill his requirements. The commander, through coordination with the quality control officer, may request additional coverage, change in technique, or any other variation that will make the quality control unit of more value to him. This unit will make every possible effort to be of help and assistance to the periodic maintenance squadron. However, the extent of their assistance will depend upon the desires and interests of the commander. He must develop within his squadron a positive attitude to correct reported discrepancies and recurrence.

6. **Function.** The maintenance supervisor will organize, man, and supervise the maintenance activity. He will insure adequate maintenance of assigned ground power and servicing equipment. He will advise the squadron commander and maintenance control unit of the current status of all work in progress.

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7. Responsibility and Authority. a. The maintenance supervisor is responsible to, and works for, the periodic maintenance squadron commander. However, for expedient maintenance accomplishment, he must be authorized to work directly with the maintenance control unit for routine operation of the maintenance activity.

b. The maintenance supervisor will:

- (1) Organize the periodic maintenance function generally as outlined in this Manual, in consideration of current manning authorizations.
- (2) Manage and provide over-all supervision through the section chiefs to the maintenance activity.
- (3) Insure the accomplishment of high quality inspections and maintenance.
- (4) Be familiar with the status of maintenance in progress and the capability of each section.
- (5) Fully use specialist support as required to maintain the dock schedules and support flight line maintenance.
- (6) Study, develop, and improve maintenance tools, facilities, techniques, and procedures for expediting maintenance and increasing the quality of maintenance accomplished.
- (7) Establish personnel controls necessary to obtain maximum availability and utilization of personnel working in each section.
- (8) Schedule and insure accomplish-

ment of organizational maintenance on assigned ground power and servicing equipment.

(9) Establish, in coordination with the materiel control branch, adequate dock and shop stocks for each dock and shop and insure through frequent inventories that adequate levels are maintained.

(10) Maintain master copies of periodic inspection work cards and insure that all cards issued to the docks are current.

(11) Prepare and submit unsatisfactory reports on all unsatisfactory conditions occurring within the periodic maintenance activity.

8. Organization. a. The maintenance supervisor will organize the periodic maintenance activity, within current manning authorizations, generally as outlined in the organization chart.

b. The periodic maintenance activity is designed to provide the basic personnel necessary to accomplish periodic inspection and maintenance on wing assigned mission aircraft. The aircraft crew will be considered part of the dock manning while an aircraft is undergoing periodic inspection and maintenance. The aircraft crew chief will assume the duties of assistant dock chief while his aircraft is in the dock. Specialist support will be obtained from the specialist shop and electronic maintenance as required to maintain the established schedule.

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9. **Relationships.** a. **Periodic Maintenance Squadron Commander.** The maintenance supervisor is responsible to and works for the periodic squadron commander. He must manage the maintenance activity in a manner consistent with the policies and requirements of the commander and must keep the commander informed of major difficulties encountered.

b. **Maintenance Control Unit.** Normally, the maintenance supervisor will work directly with the maintenance control unit on routine maintenance matters. A close, working relationship must exist between all maintenance officers and this unit. Routine maintenance instructions and directives must be fully complied with immediately.

c. **Standardization Team.** The relationship with this team should be very close and cooperative in order to obtain maximum benefits from its investigations and studies. The maintenance officer, in his efforts to cut out-of-commission time, should request its services whenever required.

d. **Quality Control Unit.** The requirement for a quality control inspection of aircraft leaving the docks necessitates a close, coordinating relationship with this unit to prevent maintenance delays and man-hour loss. In addition, the maintenance officer should initiate positive and continuous corrective action on reported discrepancies to improve the quality of maintenance accomplished.

10. **General Narrative.** a. The maintenance supervisor, as manager of the periodic maintenance activity, occupies a very important position in the maintenance organization. His application of sound management principles will be reflected in the maintenance efficiency of the wing. The importance of this position is emphasized by the realization that this activity, in effect, controls the number of flying hours available to the wing.

b. This officer is responsible for accomplishing high quality periodic inspection and maintenance on wing assigned mission aircraft. Maximum productivity and efficiency must be obtained from each dock and shop in order to provide the aircraft availability required by the wing. The maintenance officer must obtain cooperation and full utilization of support personnel, under this maintenance concept, to realize maximum production while maintaining balance in the maintenance organization.

c. The dock is the place where planning and scheduling really pay off. Every

minute expended in planning, scheduling, and coordinating requirements will result in increased efficiency and less confusion in maintenance completion. Careful sequencing and timing of each operation and individual will result in higher quality and decreased "in-dock" time.

d. The maintenance supervisor must control his organization in such a manner that each supervisor is permitted to manage his own function in a manner consistent with established policies. The selection of personnel to fill supervisory positions should be based on supervisory ability as well as technical ability. The organization must be designed in a manner which will not demand more than the individual is capable of accomplishing. Insofar as practicable, the maintenance officer should supervise the activity through the dock, shop and flight line supervisors. The chain of command should be definitely outlined and followed.

e. In providing adequate supervision, the maintenance supervisor should place emphasis on definite job assignments, fixed work areas, and sequenced jobs, preferably in written form, so that individual mechanics are not subject to hurried instructions from his supervisor or assignment to congested work areas. Job instructions should be devised so that delays and interruptions are minimized. The time spent in job study and sequencing will result in increased efficiency and effectiveness. Detailed planning is a requirement for the effective operation of the periodic maintenance activity and the efficient utilization of assigned personnel. Mechanics assigned the docks, shops, and flight line are skilled, trained craftsmen whose normal responsibility is merely to do an assigned job. They should be employed in the most efficient, effective, and economical manner possible.

f. In addition to applying personnel management, the maintenance supervisor will continually study his facilities, tools, and equipment with a view toward improvement and modernization. Particular emphasis should be placed on the use and location of speed tools and maintenance equipment. The supervisory personnel of this activity must insure that, whenever practicable, all required tools, parts, and materials are brought to the mechanic to keep him on the job. Appropriate administrative procedures will be established to insure adequate control of tools and equipment.

g. Job descriptions will be prepared for each individual, and organization

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charts will be prominently displayed in each dock, shop, and flight line office. Frequent checks will be conducted to insure that all personnel know and understand individual responsibilities, duties, and command channels. All newly assigned personnel will be made aware of their duties, responsibilities, and place in the organization. The maintenance supervisor will continually observe personnel working within his activity to determine inefficiencies or below-standard performance. When such situations are discovered, immediate corrective action will be taken. Particular attention will be given to the performance of trainee and semi skilled personnel to assist them in performing quality maintenance and to prevent the formation of undesirable work habits.

h. The maintenance supervisor will monitor daily attendance reports. Absences will be checked and action taken to eliminate absenteeism. A manpower status board or chart will be maintained to reflect personnel status. It is the personal responsibility of this officer to have daily knowledge of the personnel authorized, assigned, and present for duty. Each dock, shop, or flight line chief will be contacted at frequent intervals during the day to determine current personnel status.

i. A program will be established to insure that all supply requirements of the periodic maintenance activity are anticipated as far in advance as practicable and made known to the appropriate supply agency. This can be partially accomplished by active coordination with the flight line maintenance officers and active participation in the periodic inspection pre-dock meetings. Adequate dock stocks are vital to the success of the periodic maintenance activity. The maintenance officer must require frequent inventories to insure that required supplies are available in established levels. Insofar as practicable, these supplies should be made available to the worker at his location. The mechanic should not leave his work area for parts but will have them available when and where required. Also, the maintenance officer must instill a supply discipline program that will insure the expeditious processing of reparable and protection of supplies from pilferage. Hoarding will be discouraged.

j. All maintenance personnel must be made aware of the reparable processing procedure and the exchange facility established by the pre-issue levels of certain components. Maximum use of the prescribed bench test and necessary exchange

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of serviceable items for reparable improves the maintenance capability of the wing and serves to prevent serviceable items from entering the reparable pipeline. To aid in this supply economy program, the maintenance supervisor will officially designate specific individuals who are authorized to sign AF Forms 50D. A copy of this authorization will be forwarded the quality control unit, materiel control branch, and base supply officer.

k. The maintenance supervisor will insure that all maintenance accomplished is recorded on appropriate records in accordance with current directives. He will ascertain that quality maintenance has been performed and that all discrepancies have been corrected prior to releasing the aircraft for test flight.

l. It is essential, for planning and scheduling, that the maintenance supervisor know the status of maintenance in progress, difficulties encountered, and the relation of maintenance progress to the established schedule. Action will be taken to report status changes at intervals required by the maintenance control unit and to eliminate "bottle-necks" or factors delaying maintenance. Personnel shifts between docks, shops, and flight line will be made when maintenance status indicates inability to meet the established schedule.

m. The maintenance supervisor must insure that an adequate training program exists for the periodic maintenance activity. Each assigned individual should be made aware of the opportunities in his maintenance career field and encouraged to take advantage of these opportunities. Particular attention should be given to training in deficiency areas rather than general, over-all training. Each airman should be offered and encouraged to participate in training toward the next higher skill level.

n. The maintenance supervisor must have current knowledge of the status and availability of authorized tools and equipment. When equipment is inadequate or deficient in any manner, he will initiate corrective action in accordance with current directives. Organizational maintenance on assigned ground power and servicing equipment will be scheduled and accomplished in accordance with current directives.

o. Unsatisfactory reports will be prepared and submitted on all unsatisfactory conditions occurring in the periodic maintenance activity. The maintenance supervisor must review each unsatisfactory re-

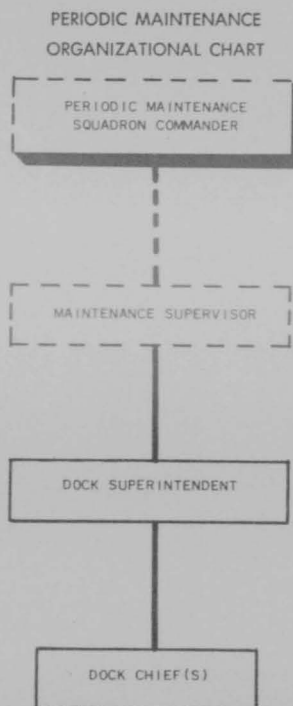
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port to insure accuracy and completeness and remain aware of the unsatisfactory conditions.

p. In conjunction with the quality control unit and the standardization team, the maintenance supervisor will continually

review periodic inspection requirements and make appropriate recommendations for change to inspection requirements. All such changes should be forwarded through channels, with substantiation, to facilitate review and action.



11. **Functions.** Under the direction of the maintenance supervisor, the dock superintendent will supervise and manage the dock maintenance activities.

12. **Responsibilities.** a. The dock superintendent is directly responsible to the maintenance supervisor for the supervision and management of the dock maintenance section.

b. The dock superintendent:

(1) Directly supervises the dock maintenance activity through the dock chiefs.

(2) Spot checks maintenance accomplished in the docks to insure high quality performance.

(3) Plans and schedules the work, with the assistance of the dock chiefs, to insure full utilization of all personnel and a smooth flow of maintenance in accordance with established schedules.

(4) Assigns specific responsibilities and delegates commensurate authority to each dock chief and recommends personnel changes to the maintenance officer.

(5) Insures that organizational maintenance on assigned equipment is

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scheduled and accomplished in accordance with current directives.

(6) Insures prompt and accurate aircraft maintenance and status reporting.

13. **Relationships.** a. **Maintenance Supervisor.** The dock superintendent works for the maintenance supervisor and must keep him informed of maintenance difficulties and the status of maintenance in progress. He must manage and supervise the dock maintenance activity consistent with the policies of the maintenance officer and recommend changes for improving efficiency.

b. **Maintenance Control Unit.** He will keep the maintenance control unit informed of the status of possessed aircraft and the status of maintenance in progress. He must be constantly aware of the overall maintenance schedule and insure that the schedule of the docks are in consonance. He must insure that the maintenance control unit is promptly informed of specialist support requirements.

c. **Standardization Team.** The dock superintendent must assist the team as much as possible during its investigations and visits to the docks and insure that improvements recommended by the team are followed. He must realize that the team is designed to help him help himself. He should feel free to request its services wherever necessary and should insure that the team receives the correct reception and cooperation.

d. **Quality Control Unit.** The quality control unit will be of high value to the docks if the dock superintendent adopts the correct attitude. He must insure a cooperative attitude throughout the periodic maintenance activity. The relationship should be such that the quality control unit receives the same enthusiastic corrective action on verbal reports as on written.

e. **Dock Chiefs.** The dock superintendent must maintain a direct supervisory relationship with the dock chiefs. He should accomplish all supervision and direction through these personnel and limit other individual contacts to the minimum.

f. **Other Maintenance Supervisors (Shop Chiefs, Flight Line Chief, etc.).** A close relationship should exist between the dock superintendent and his counterparts in other maintenance activities so that cooperative action is obtained with minimum delay or discussion. There should be a free exchange of maintenance thought and suggestions so that wing maintenance effectiveness may be increased.

14. **General Narrative.** a. The

dock superintendent is the manager of the dock maintenance activity and is responsible to the maintenance officer for efficient operation of the maintenance function. He is the assistant to the maintenance officer and is responsible for aiding him in the accomplishment of assigned functions. With the concurrence of the maintenance officer, the dock superintendent will be responsible for the proper placement and assignment of personnel. He must have daily knowledge of personnel authorized, assigned, and present for duty.

b. To obtain balance and provide upgrade training in each function, the dock superintendent will insure that lesser qualified personnel are assigned with skilled personnel and will perform frequent checks to determine the need for additional training. He should then request the necessary training and, as required, assistance from the training control unit and standardization team. Personnel must not be assigned responsibilities beyond their capabilities.

c. In coordination with the dock chiefs, the dock superintendent will plan and schedule maintenance to meet the schedule established by the maintenance control unit. He will monitor the progress of maintenance to insure that the schedule is being met. Insofar as practicable, he must anticipate delays, supply needs, etc., and take appropriate action to prevent scheduling delays.

d. The dock superintendent will periodically inspect the maintenance accomplished in the docks to insure quality. He will accomplish these supervisory inspections to insure that established standards are being met and to determine areas of maintenance deficiency. The responsibility for safety of flight status of the aircraft lies with the supervisory personnel and not with the quality control unit. These checks will be in addition to any prescribed or requested quality control inspections. The dock superintendent, or his designated qualified supervisors, should normally clear, in accordance with TO 0-20A-1, the majority of maintenance falling within the scope of their authority. Whenever the dock superintendent feels that he is not qualified to check and clear a particular item or installation it is essential that he request additional coverage and assistance from the quality control unit.

e. The dock superintendent will ascertain by his spot inspections and close relationship with the dock chiefs that the

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aircraft in the docks are receiving quality maintenance. He will advise all maintenance personnel of the production and quality standards established by the maintenance control unit. Failure to attain established standards should be studied and action taken to eliminate unsatisfactory conditions. He will perform periodic checks of all periodic inspection work cards, and appropriate forms to insure accurate and complete entries.

f. Specialist support will be fully used in accomplishing maintenance which is beyond the capabilities of assigned personnel and equipment, or which will exceed the available time. By frequent checks and constant observation the dock superintendent will insure that the requirements for specialist support are expeditiously relayed to the maintenance control unit and that required personnel are obtained promptly. He will make every effort to insure that specialist requirements are made known in advance of need so that adequate planning and scheduling may be accomplished.

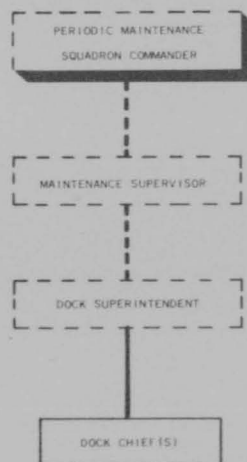
g. The dock superintendent is responsible for the effective and efficient use of assigned personnel, and will institute controls necessary to keep personnel on the job. Specific break periods should be scheduled and controlled. Sign out sheets

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or boards should be used to record the absence, time of departure, and approximate time of return of all personnel. Every effort must be made to eliminate the necessity for a man to leave his work area for any reason. The dock superintendent must insure the judicious use of personnel and equipment to get the job done in accordance with the established schedule. Adequate planning and scheduling should virtually eliminate the necessity for overtime. The dock superintendent will constantly strive to substitute good management for excessive overtime work. A sound human relations approach will result in willing cooperation and higher morale with resultant higher quality.

h. The dock superintendent will insure that adequate emphasis is placed on the normal housekeeping functions. He will insure that possessed aircraft, the docks, equipment, and maintenance area are well policed, in good repair, and safe for use. He will be constantly alert for safety and fire hazards and accident conditions and will take immediate corrective action to rectify conditions and/or remove the hazards. Necessary administrative procedures must be implemented to insure adequate control of tools and equipment and maximum availability when and where required.

PERIODIC MAINTENANCE
ORGANIZATIONAL CHART



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15. **Function.** The dock chief will supervise the accomplishment and insure the quality of periodic and post flight inspection and maintenance on aircraft scheduled into the dock.

16. **Responsibilities.** a. The dock chief is responsible to the dock superintendent for the accomplishment and quality of periodic and post flight inspections and maintenance on aircraft assigned to his dock.

b. The dock chief will:

(1) Organize and operate the dock generally in accordance with this Manual, consistent with current manning authorization.

(2) Insure the performance of quality periodic inspection and maintenance.

(3) Supervise and coordinate the work of the dock in a manner which will insure that established maintenance schedules are met.

(4) Notify the maintenance control unit of maintenance requirements beyond the technical or schedule capabilities of the dock and fully utilize specialist support personnel.

(5) Insure complete and accurate recording of all maintenance accomplishments.

(6) Report the status of work in progress.

(7) Supervise assistants and specialist personnel to obtain full utilization, high quality maintenance, and compliance with current directives and SOPs.

17. **Relationships.** a. **Dock Maintenance Superintendent.** The dock chief works for the dock maintenance superintendent and must keep him informed of the status of maintenance in progress, problems encountered, and assistance required.

b. **Crew Chief.** The crew chief assumes the responsibilities of assistant dock chief while his aircraft is in the dock. The crew chief has the individual responsibility for his aircraft at all times. Therefore, a close, cooperative relationship must exist between these two. The dock chief must accept his aid and assistance and insure that all maintenance accomplished satisfies the requirements of the crew chief.

c. **Records and Analysis Branch, Maintenance Control Unit.** The dock chief must provide this branch with recorded information on the maintenance accomplished and should maintain close coordination to insure that all forms and records are accurate.

d. **Standardization Team.** He must utilize the standardization team as an aid

to improving the efficiency of the dock and to increase the quality of maintenance accomplished. The dock chief must provide and insure full cooperation to the team during its investigations and visits in the dock.

e. **Quality Control Unit.** The dock chief must use the quality control unit and its reports to define areas of training needs and maintenance improvement. He should maintain a relationship which will provide the quality inspection coverage required and desired by him.

18. **General Narrative.** a. The dock chief has a very important job in the maintenance organization. He must accomplish, in an efficient, high-quality manner, all periodic, post flight and special inspection and maintenance on aircraft scheduled into his dock by the maintenance control unit. The effective supervision of the personnel assigned to or working in his dock is his principle function. He is responsible for the quality of maintenance performed in the dock and for meeting maintenance schedules. To assist him, he has engine chiefs and an aircraft general chief to whom he must assign specific responsibilities and delegate commensurate authority. Also, the aircraft crew chief will act as assistant dock chief while his aircraft is in dock.

b. The dock chief must have current knowledge of the personnel authorized, assigned, and present for duty. He will review daily attendance records and take necessary action to reduce absent time to the minimum. Personnel controls must be devised and implemented to keep his workers on the job. "Coffee" breaks should be scheduled and controlled in a manner which will not interfere with the progress of maintenance and established schedules. The dock chief must at all times know the location of assigned personnel. Sign out boards showing name, destination, time of departure, and estimated time of return should be used.

c. The dock must be managed to provide a procedure which will minimize lost motion and inefficiency. This may be best accomplished by sequencing and phasing the work of dock and support personnel. Each individual must be assigned specific jobs to be accomplished at definite times to prevent work area congestion, confusion, or loss of time. Planning must include full consideration of all phases of the inspection, including electronics and the application of power to the aircraft. The goal of the dock chief's planning and scheduling must be lowered air-

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craft time in the dock at no expense to maintenance quality. The retention of high maintenance quality is a primary responsibility of the dock chief.

d. Constant attention must be given to the status of maintenance in progress so that the dock chief will be constantly aware of his position in relation to the established schedule. He must be fully aware of the work status of his dock at all times. It is necessary that he constantly plan and schedule to insure that specialist requirements, supply needs, etc., are known and prepared for as far in advance as practicable. A delay in the schedule caused by the lack of a specialist is a direct reflection on the supervisory abilities of the dock chief. Conversely, there is no credit due the dock chief who has unemployed specialists available at his dock. Full and efficient utilization of all personnel must be achieved.

e. The dock chief cannot place sole reliance for quality determination on the quality control unit, but will periodically inspect the various phases of maintenance accomplished by his mechanics. By frequent inspection of the work being accomplished, the dock chief will stay "on top" of his crew and be aware of the weakness in his organization. He must know who is doing what at all times so that his "in-dock-training" can be focused toward a definite goal -- to raise the qualifications of all personnel and the quality of maintenance accomplished. In this manner he is helping his dock produce high quality maintenance. The responsibility for the safety of flight status of the aircraft in the dock does not lie with the quality control unit but does lie with the dock supervisory personnel.

f. By being "on top" of his crew, the dock chief will be in a position to foresee specialist needs in advance. As the need becomes known, he will immediately inform the maintenance control unit so that required specialists can be scheduled and dispatched. To be effective, the specialists must be on the job in the dock at the time best suited for their particular function. Power requirements, availability of the work area, and amount of work to be accomplished must be fully considered when

planning specialist utilization.

g. The aircraft crew chief acts as assistant dock chief while his aircraft is in the dock. The dock chief will insure full use of the crew chief's knowledge of the aircraft and his supervisory ability.

h. The dock chief will insure that the inspection is performed in accordance with current inspection requirements and pertinent technical directives. He will review all completed inspection forms to insure that entries are completed and correct and that all discrepancies have been corrected. When discrepancies exist that cannot be corrected within the scheduled time, he will inform the maintenance control unit so that necessary rescheduling can be accomplished. He must cooperate in every way with the quality inspectors to permit fast and efficient quality inspection without delaying the maintenance schedule.

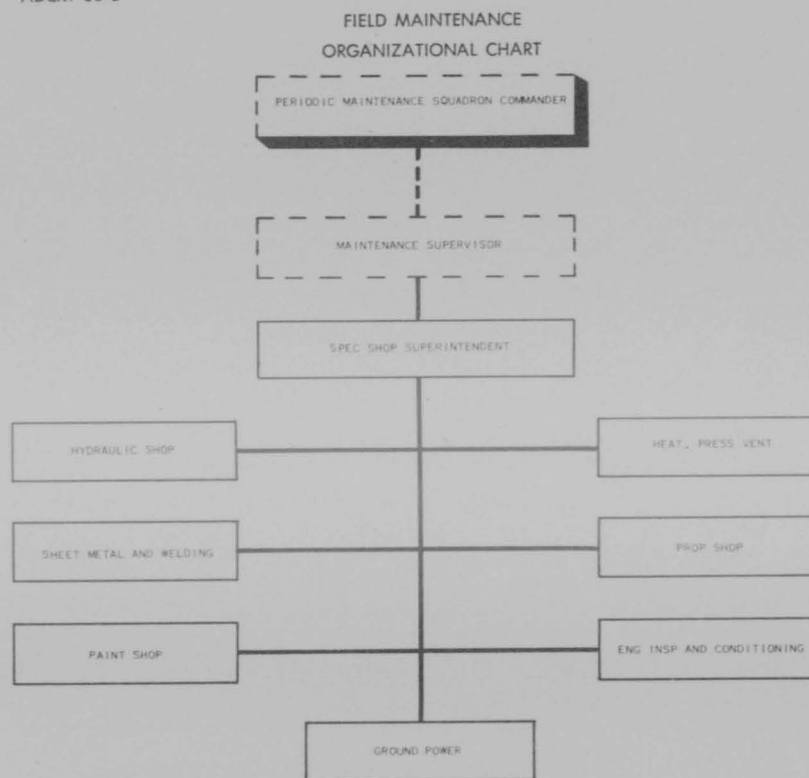
i. The dock chief will keep the dock maintenance superintendent informed of the status of maintenance in progress in his dock, and in particular, of any delays encountered. When a definite time is determined for removal from the dock, he will inform the dock superintendent so that necessary arrangements may be made for post-dock runup and maintenance, test flight, engine conditioning, etc.

j. The dock chief will do everything practicable to provide his workers with the tools and parts they need on the job. The dock supply personnel must be fully utilized in order to prevent the misuse of maintenance personnel waiting parts, chasing stock, etc. The effective utilization of dock personnel will be in proportion to the time and detail expended in predock planning and supply anticipation.

k. Supply discipline, as well as maintenance and quality discipline, will be practiced and enforced by the dock chief. All supplies, parts, or materiel in the work area will be maintained in a secure manner, adequately protected from pilferage and weather, correctly tagged, and clean. Hoarding will be neither practiced nor tolerated. Repairable property will be placed in supply channels as expeditiously as possible.

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19. **Function.** Under the direction of the periodic maintenance supervisor the specialist shop superintendent will supervise and manage the specialist shop section.

20. **Responsibilities.** a. The specialist shop superintendent is responsible to the periodic maintenance supervisor for the supervision of the shops of the specialist shop section and the quality of maintenance accomplished.

b. The specialist shop superintendent is responsible for:

(1) Insuring prompt accomplishment of specialist dispatch and work orders in accordance with established priorities.

(2) Manufacture and/or repair of aircraft parts and assemblies fabricated from sheet metal, cloth, canvas, leather,

wood, when directed by the maintenance control unit.

(3) Welding, heat-treating, aircraft parts and assemblies and items pertinent to aircraft maintenance, in accordance with equipment authorizations and available facilities.

(4) Painting of aircraft, parts, and assemblies, and equipment pertinent to aircraft maintenance.

(5) Engine conditioning, cylinder change, engine change on assigned aircraft.

(6) Maintenance of the heating, ventilation, and pressurization equipment.

(7) Supply required specialist support to change and perform maintenance of hydraulic units.

(8) Supply required specialist support to change and perform maintenance

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on propeller and propeller systems.

(9) Perform organizational maintenance on ground power and servicing equipment.

(10) Dispatch all ground power and servicing equipment.

(11) Organizational maintenance on all assigned ground power and servicing equipment.

(12) Maintenance of pertinent maintenance records and limited technical files.

21. Organization. The specialist shop section will normally be composed of the following shops. However, variation from this listing may be made, consistent with current manning and assigned equipment.

- a. Sheet Metal Shop and Welding.
- b. Heating, Pressurization and Ventilation Shop.
- c. Hydraulic Shop.
- d. Propeller Shop.
- e. Engine Inspection and Conditioning Shop.
- f. Paint Shop.
- g. Ground Power Shop.

22. Relationships. a. **Periodic Maintenance Supervisor.** The specialist shop superintendent is responsible to, and works for, the periodic maintenance supervisor. He must supervise the shops in a manner consistent with the policies of the periodic maintenance supervisor and must keep him informed of major difficulties encountered. He will normally work from the shops maintenance office where centralized control is established.

b. **Shop Chief.** The shops superintendent must maintain a direct supervisory relationship with the shop chiefs of the shops and should normally accomplish all supervision and direction of the shops through these personnel.

c. **Other Maintenance Supervisors (Maintenance Officers, Line Chiefs, etc.).** A close relationship should exist between the specialist shop superintendent and other maintenance supervisors so that maintenance accomplished which is not equal to established quality standards is expeditiously reported and corrected.

d. **Standardization Team.** The specialist shop superintendent must assist the team as much as possible during its investigations and visits so that maximum improvement is obtained from its observations and recommendations. He should feel free to request team assistance at any time.

e. **Quality Control Unit.** The quality control unit will be of tremendous as-

sistance to the specialist shop superintendent if he adopts the correct attitude toward it. He will insure expeditious and continuous action on reported discrepancies so that the quality of maintenance accomplished remains high at all times. He should request the assistance of this unit whenever he feels that their services may be necessary.

23. General Narrative. a. The specialist shop section is composed of those shops which accomplish organization maintenance as directed by work orders and specialist dispatches issued by the maintenance control unit. The majority of shop work and reparable units will be processed through this branch, therefore, large backlogs of work will accumulate if this activity is not closely monitored. The specialist shop superintendent will recommend distribution of work to field maintenance and/or to be shipped off the station when pertinent. The work assigned this branch will be closely observed to insure that only work essential to the accomplishment of the wing mission is being accomplished.

b. Aircraft parts and assemblies required to return an aircraft to an in-commission status will be processed in accordance with established priorities. The shops of this branch will provide maintenance support to all other wing activities as directed by the maintenance control unit. Work of non-aircraft nature should be accomplished only when directed by work order issued by the maintenance control unit.

c. The specialist shop superintendent is the manager of the section and is responsible to the periodic maintenance supervisor for the efficient accomplishment of all work assigned. The specialist shop superintendent is an assistant to the periodic maintenance supervisor and will assist him in every manner in accomplishing the shop maintenance function. With the concurrence of the maintenance officer, the specialist shop superintendent will be responsible for the proper placement and assignment of shop personnel. He must have daily knowledge of the personnel authorized, assigned, present, in the shop, and on dispatch from each shop.

d. To maintain balance and provide training in each shop, the specialist shop superintendent will insure that lesser qualified personnel are assigned to work with skilled personnel. He will perform frequent checks, in conjunction with the shop chiefs, to determine the need for additional training. He should then request the

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necessary training and, as required, the assistance of the training control unit and/or standardization team.

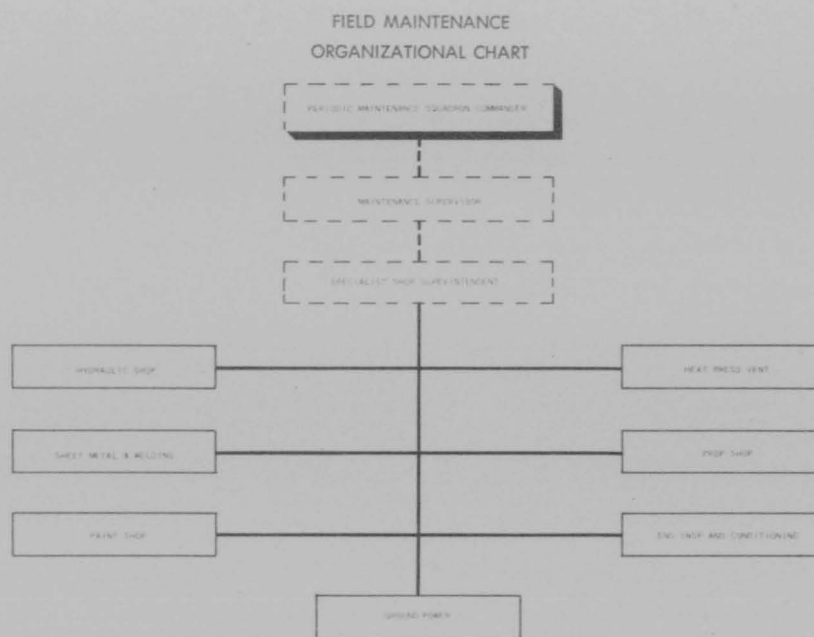
e. In coordination with the shop chiefs, the specialist shop superintendent will monitor the progress of maintenance to insure that the schedule is being met. Insofar as possible, he will anticipate delays, supply needs, etc., and take appropriate action to prevent delays or slow-downs.

f. The specialist shop superintendent will periodically inspect the maintenance accomplished by assigned personnel to determine quality. He will accomplish these supervisory inspections to insure that established standards are being met and to determine areas of maintenance deficiency. These inspections will be accomplished in accordance with TO 0-20A-1 and will be in addition to any prescribed or requested quality control inspections. Whenever the specialist shop superintendent feels he is not qualified to check and clear

a particular item, it is essential that he request assistance from the quality control unit.

g. The specialist shop superintendent is responsible for the effective and efficient utilization of assigned personnel and will institute controls necessary to keep personnel on the job. In coordination with the maintenance supervisor, specific break periods will be scheduled and controlled. Sign out sheets, status boards, or similar devices must be maintained to record the location of assigned personnel. This is important to the expeditious dispatch of specialists directed by the maintenance control unit.

h. Ground power and servicing equipment assigned the branch is vital to the successful accomplishment of the assigned mission. The specialist shop superintendent must insure that all such equipment is maintained in a manner which will insure maximum availability of serviceable equipment.



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24. **Function.** Under the direction of the specialist shop superintendent, the shop chief will supervise the accomplishment of high quality maintenance by his shop.

25. **Responsibilities.** a. The shop chief is responsible to and works for the specialist shop superintendent. He is responsible for the accomplishment and quality of all work directed by the maintenance control unit or the specialist shop superintendent.

b. The shop chief will:

(1) Supervise and manage his shop in a manner which will insure the fast and efficient accomplishment of high quality maintenance in compliance with current directives and SOPs.

(2) Schedule the work to insure full utilization and maximum training of assigned personnel.

(3) Insure complete and accurate recording of all maintenance accomplished.

(4) Report, as required, the status of all work in progress.

(5) Perform periodic checks of maintenance accomplished to insure quality and determine areas of deficiency requiring closer supervision.

(6) Maintain the shop and all assigned equipment in a neat serviceable condition.

(7) Insure that all property, material, and supplies are secure and protected, and that reparable property is expeditiously processed.

26. **Relationships.** a. **Specialist Shop Superintendent.** The shop chief works for the specialist shop superintendent and must keep him informed of the status of maintenance in progress, personnel status, problems encountered, and assistance required. The chief must serve as the top technical adviser to the specialist shop superintendent insofar as shop capability and performance is concerned.

b. **Materiel Control Branch.** The shop chief must assist the materiel control branch in the establishment of shop stocks of expendable items and insure that the authorized list is sufficient for needs.

c. **Standardization Team.** The standardization team will be provided full cooperation during its visits and investigations. A close relationship should exist so that maximum advantage may be gained from the findings and recommendations of the team.

d. **Quality Control Unit.** The shop chief should use the quality inspectors and

their reports to improve the quality of maintenance accomplished and to define the areas where further supervision is required. He must insure positive and continuous corrective action on reported discrepancies and should request additional quality inspections when he feels this is necessary to improve shop operation or maintenance quality.

27. **General Narrative.** a. The shop chief works for and is responsible to the specialist shop superintendent. He is the top technical man in his specialty in the field maintenance activity and will keep the branch chief informed of the technical and practical capabilities of the shop. He will supervise and manage the shop in a manner which will insure the expeditious and efficient completion of all specialists dispatch, repair, TOC, or manufacture work directed by the maintenance control unit.

b. To insure efficiency, the shop chief must have current knowledge of the personnel authorized, assigned, and present for duty. In addition, he must know which individuals are currently on specialist dispatch or are working in the shop. He must also review the shop daily attendance reports and take necessary action to increase his manpower availability. Insofar as practicable, the shop chief will plan his work in a manner which will insure that each individual knows what jobs he is to perform and when.

c. Constant attention will be given to that status of all work in progress so that the chief is constantly aware of his maintenance position in relation to the schedules of the maintenance control unit. It will be necessary for him to constantly plan and schedule the work of the shop to insure that priorities are met, full personnel utilization is achieved, and specialists are dispatched as directed by the maintenance control unit. A delay in specialist dispatch may result in disruption of the schedules of other maintenance activities and personnel.

d. The shop chief is responsible for insuring that quality maintenance is accomplished by his personnel. He will periodically inspect the maintenance accomplished to determine quality and areas of maintenance deficiency where additional supervision is required. He will accomplish these inspections in addition to any prescribed or requested quality control inspections. These inspections will aid him in insuring high quality maintenance and will put him in the position of knowing the strength and weakness of his shop. In

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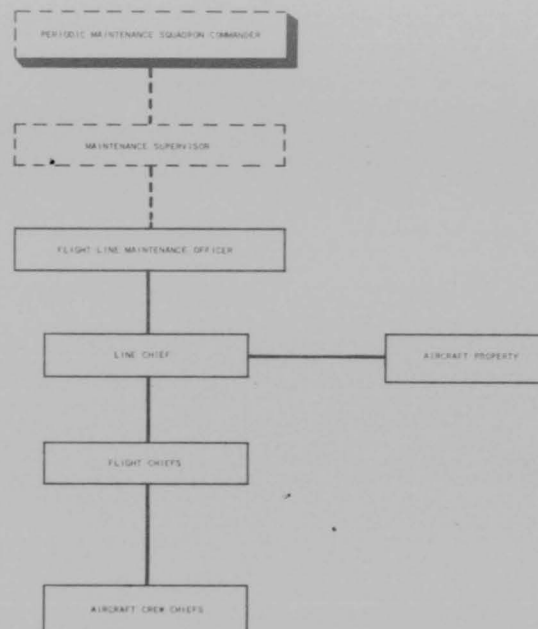
this way he is supervising and assisting his personnel to produce with quality.

e. Much of the efficiency and effectiveness of the shop will be determined by the serviceability of assigned equipment and availability of authorized equipment. The shop chief must be aware of his equipment authorization and insure that he has that equipment on hand or that the responsible supply officer has it on requisition. The equipment available will be maintained in accordance with current directives. Insofar as practicable, the shop chief will assign specific responsibilities for equipment maintenance to designated individuals. In addition, he should maintain a schedule, and insure compliance with that schedule, for routine preventive maintenance operations (lubrication, cleaning, etc.) on his equipment and shop area facilities.

f. Supply discipline, as well as maintenance discipline, must be practiced and taught by the shop chief. All supplies, parts, or materials in the shop will be maintained in a secure manner adequately protected from unauthorized use and the elements. They will be clean and correctly tagged or stored in appropriately identified bins or containers. Hoarding will be discouraged. Care should be exercised to insure that authorized stock levels are not exceeded.

g. Because of the testing facilities available and the technical knowledge of shop personnel, the shop chief will insure that unsatisfactory reports are prepared and submitted on all unsatisfactory conditions reported by the shop.

FLIGHT LINE MAINTENANCE
ORGANIZATIONAL CHART



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1. **Function.** The flight line maintenance section of the periodic maintenance squadron is responsible for accomplishment and quality of flight line maintenance on assigned aircraft to include pre-flight inspection, servicing, and minor maintenance. It will maintain aircraft 263 property and records.

2. **Responsibility and Authority.** a. The flight line maintenance officer is responsible to and works for the maintenance supervisor. For expedient maintenance accomplishment he must be authorized to work directly with the maintenance control unit for purposes of routine operation of the flight line maintenance activity.

b. The flight line maintenance officer will:

(1) Organize the flight line maintenance activity generally as outlined in this Manual in consideration of current manning authorization.

(2) Manage and provide over-all supervision through the line chief to the flight line maintenance activity.

(3) Insure the performance of quality maintenance on assigned aircraft.

(4) Fully use specialist support and supervise the work accomplished by specialist personnel.

(5) Establish personnel controls necessary to obtain maximum availability and utilization of assigned personnel.

(6) Inventory, store, and account for all aircraft 263 property in accordance with TO 0-35D-263.

(7) Support the established maintenance training program.

(8) Prepare and submit unsatisfactory reports on all unsatisfactory conditions occurring within the flight line maintenance activity.

3. **Organization.** a. The flight line maintenance officer will organize the flight line maintenance activity generally as outlined in the organization chart.

b. The flight line maintenance activity is designed to provide minimum strength basic aircraft crews to service the aircraft and accomplish minor and preventive maintenance between routine inspection periods. Work required beyond the technical capability of assigned personnel and their authorized equipment, or which will exceed the allowable working time, will be reported to the maintenance control unit for specialist assistance.

4. **Relationships** a. **General.** The flight line should normally enjoy the highest priority in the maintenance organiza-

tion; therefore, it is particularly important that the flight line maintenance officer maintain a close relationship with the supervisors of the supporting maintenance activities as well as with the maintenance control unit. This is the activity on which depends the state of balance of the maintenance function.

b. The flight line maintenance officer is responsible to, and works for, the squadron maintenance supervisor. He must keep him informed of major maintenance difficulties encountered. He must manage the maintenance activity in a manner consistent with the policies and requirements of the commander.

c. **Maintenance Control Unit.** A close working relationships must exist between the flight line maintenance officer and the maintenance control unit. Normally, the flight line maintenance officer will work directly with this unit in the performance of his routine duties in much the same manner as the various squadron commanders work with each other. Routine maintenance directives or instructions must be complied with immediately.

d. **Quality Control Unit.** He must cooperate with the quality control unit to obtain maximum benefit and efficiency improvement from the inspectors and their reports. The flight line maintenance officer must take positive corrective action on reported discrepancies so as to improve his activity.

e. **Standardization Team.** The goal of the team is to improve the quality of maintenance accomplished and should receive active assistance from the flight line maintenance officer. He should not be content to wait for the team to come to him, but should request aid through recommendations to the chief of maintenance for specific investigations.

f. **Training Control Unit.** He must work in close liaison with the training control unit to insure that all trainee personnel attend classes, etc. as scheduled and that required training is programmed.

g. **Other Maintenance Officers.** The flight line maintenance officer must establish and maintain a close, harmonious relationship with the other maintenance officers of the wing so that maintenance problems are easily resolved and all participate in a coordinated effort.

5. **General Narrative.** a. The flight line maintenance officer is the top manager of the flight line. He must manage the activity in a manner which will insure the proper balance of the maintenance organization. This is particularly important

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since his activity has the highest priority in the maintenance organization. He must not attempt more maintenance than his organization is manned or equipped to perform. He must not call for specialists to accomplish work which is within the capability and allowable working time of his organization, and he must not defer maintenance to be accomplished at a later date in the docks or by field maintenance.

b. The flight line maintenance officer is responsible for accomplishing quality flight line maintenance on assigned aircraft. Maximum productivity must be obtained from each assigned individual, and the support of other functions of maintenance must be judiciously used under the specialization concept.

c. This officer, with assistant flight line maintenance officers, must constantly monitor all functions of the flight line. They must be constantly alert for inefficiencies or maintenance below acceptable standards. Emphasis will be given to quality of maintenance and quality of management. It is important that particular attention be given to the establishment of proper and congenial relations between the flight line and all supporting maintenance activities. The flight line maintenance officer is responsible to do his part to correct conditions or situations where friction exists. When friction between the flight line and support activities cannot be eliminated by personal contact, the flight line maintenance officer must inform the maintenance control unit of the situation for necessary correction.

d. The flight line maintenance officer must decentralize authority by charts, and job descriptions should be prominently displayed in the activity. The maintenance officer will insure that specific responsibilities and authority are known and understood by each individual. All incoming personnel should be briefed on the maintenance organization and informed of their specific duties, responsibilities, and authority. He will observe the chain of command and supervise through his line chief to retain supervisory continuity in the organization. He should not circumvent intermediate supervisors by working directly with the crew chiefs or individual mechanics. Each man should have but one "boss" and all instructions should come through him.

e. Roll calls will be held in the maintenance areas as required. Absence must be monitored and actions taken to eliminate contributing factors. A manpower status board depicting personnel assigned,

present, TDY, etc. will be maintained. It is the specific responsibility of the flight line maintenance officer that he have daily knowledge of the personnel authorized, assigned, and present for duty. The span of control is such that this officer will have the opportunity to know "first-hand" at all times the status of crews, aircraft, equipment, etc. He must inform the squadron commander when he believes that squadron duties or similar causes are reducing his effectiveness.

f. The flight line maintenance officer will insure that all maintenance is performed in accordance with established schedules and is properly recorded in accordance with TO 0-20A-1. Specialist assistance will be requested as required and closely monitored to insure full use and quality maintenance. The flight line maintenance function will not normally accomplish major unit changes. Periodic maintenance other than preflight inspections will not be performed on the flight line. The flight line maintenance officer will use specialist assistance and provide maintenance supervision in such a manner that quality maintenance is produced with minimum overtime work.

g. A program will be established by the flight line maintenance officer which will insure that the supply requirements of that activity are anticipated, as far in advance as practicable, and made known to the appropriate supply activity. Supply difficulties will be brought to the attention of the materiel control branch for necessary action. All AOCP and ANFE requisitions will be cleared through the materiel control branch for verification prior to supply processing. The maintenance officer should keep informed on the status of supply action on all AOCP, ANFE, or other priority requisitions. Wherever practicable, parts and supplies will be delivered by the supply activity to the crew chief, and maintenance manhours will not be used in chasing parts.

h. The flight line maintenance officer must exert every effort to avoid supply situations which necessitate cannibalization. This can be reduced to the minimum through adequate supply anticipation and careful maintenance troubleshooting. Every effort will be made to insure that only unserviceable items enter the supply channels as reparables. The false economy of indiscriminate "remove and replace" must be impressed upon all personnel. Each serviceable item entering the reparable processing pipe-line is an unnecessary expense that reduces the Air

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Force's capacity to provide all requirements when and where required. To assist in this control program, the flight line maintenance officer will designate, by official written media, specific individuals who are authorized to sign AF Forms 50D, Repairable or Rework Tag. Copies of these authorizations will be provided the quality control unit, materiel control branch, and base supply officer.

i. Efficiency in the flight line maintenance activity is greatly dependent upon the availability of authorized equipment and tools. The maintenance officer must know the authorization, status, and availability of tools and equipment. If equipment deficiencies or inadequacies exist, appropriate corrective action will be taken in accordance with applicable directives. The flight line maintenance officer is responsible to inform the proper authority of equipment deficiencies and insure that equipment not on hand is on requisition.

j. To provide maximum availability of aircraft parts and accessories, the flight line maintenance officer will insure that all repairable property is returned to the appropriate supply agency with the least practicable delay. Repairable property will be cleaned and tagged and, whenever practicable, will be returned to supply channels in suitable containers.

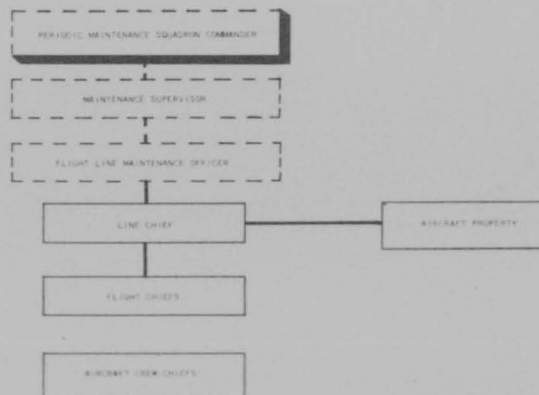
k. The flight line maintenance officer must insure that the assigned equipment is adequately and efficiently used.

He must continually review that portion of the communication and transportation equipment assigned his activity to insure that maximum service and use is being realized.

l. The flight line maintenance officer will work in close liaison with the training control unit to insure that an adequate training program is scheduled and conducted for the flight line maintenance activity. Each assigned individual will be made aware of the opportunities in his maintenance career field and encouraged to take advantage of those opportunities. Each airman should be given thorough training in his particular skill, offered and encouraged to participate in training toward the next higher skill level.

m. The flight line maintenance officer will maintain a master copy of appropriate preflight work cards for the aircraft assigned. The master copies will be physically retained in the flight line maintenance office. The maintenance officer will insure that all work copies of the preflight work cards are checked against the master copies and made current prior to issue and use by flight crew personnel. The maintenance officer should conduct, in coordination with the quality control unit and standardization team, a continuing review of preflight inspection requirements. All recommendations for change in inspection requirements should be forwarded through channels, with justification, for necessary review and action.

FLIGHT LINE MAINTENANCE
ORGANIZATIONAL CHART



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6. **Function.** Under the direction of the flight line maintenance officer, the line chief will supervise and manage the flight line maintenance activity.

7. **Responsibilities.** a. The line chief is directly responsible to the flight line maintenance officer for the supervision and management of the flight line maintenance activity.

b. The line chief will:

(1) Directly supervise the flight line maintenance activity through the flight chiefs.

(2) Assign specific duties and delegate commensurate authority to each flight.

(3) Plan and schedule the work of the flight chiefs and recommend necessary personnel and equipment changes to the maintenance officer.

(4) Sign off red cross symbols in accordance with TO 0-20A-1 when deemed necessary or upon request of the flight chief.

(5) Assist assigned personnel in solving technical problems.

(6) Insure that maintenance is accurately recorded and reported, and investigate indications of abnormal maintenance delays and similar problems.

(7) Spot check and evaluate the maintenance accomplished on assigned aircraft and equipment.

8. **Relationships.** a. **Flight Line Maintenance Officer.** The line chief works for the flight line maintenance officer and will keep him informed of maintenance difficulties and the status of aircraft and the maintenance in progress. He must manage the flight line consistent with the policies of the maintenance officer and recommend to him any changes deemed necessary for improving efficiency.

b. **Maintenance Control Unit.** He will keep the maintenance control unit informed of the status of assigned aircraft and the status of maintenance in progress. He must keep informed of the over-all maintenance schedule and insure that the maintenance schedule of the flight line is in consonance with it. He will request specialist assistance when necessary and insure efficient utilization of specialist personnel received.

c. **Standardization Team.** The line chief will assist the team as much as possible during its investigations or visits to the flight line and insure that the quality improvements recommended by the team are followed. The line chief must recognize that the team is a tool to insure that

the team members receive the correct reception by flight line personnel.

d. **Quality Control Unit.** The line chief must be an advocate of the quality control unit if that unit is to be of value to the flight line. He must be energetic in the application of corrective action on reported discrepancies and should exert every effort to prevent recurrences. The relationship should be such that the line chief and the quality inspectors receive the same action on verbal reports and requests as they do on written.

e. **Flight Chiefs.** The line chief must maintain a direct supervisory relationship with the flight chiefs. He should accomplish all flight line maintenance supervision and direction through these individuals and limit his contacts with other assigned personnel to the minimum.

f. **Other Maintenance Supervisors (Shop Chiefs, Dock Chiefs, Etc.).** A close relationship should exist between the line chief and his counterpart in the other maintenance activities so that cooperative action is obtained without delay or debate.

9. **General Narrative.** a. The line chief actually manages the flight line maintenance activity and is responsible to the flight line maintenance officer for its efficient operation. Under the general direction of the maintenance officer, he should be responsible for the proper placement and assignment of personnel. He must have current knowledge of the personnel authorized, assigned, and present for duty. He must carefully select his flight chiefs on the basis of their ability to manage and supervise as well as for their technical ability.

b. To obtain balance and provide up-grade training, the line chief will insure that lesser trained personnel are assigned to work with skilled personnel. He will accomplish frequent checks to the extent required to determine the need for additional quality control coverage or standardization team investigation and request these additional services. He should use these two units to maximum advantage in obtaining improvement in his organization. Both are units established for his benefit and will be requested whenever necessary.

c. In coordination with the flight chiefs, the line chief will plan and schedule the activities of flight line maintenance to meet the schedule established by the maintenance control unit. He must constantly monitor the progress of maintenance to insure that the schedule is being

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met. Insofar as practicable, he will anticipate delays, supply needs, etc., and take appropriate action to prevent scheduling delays. He should refer problems which he cannot solve to the maintenance officer or the maintenance control unit for action.

d. The line chief will periodically check the maintenance accomplished on the flight line to determine quality. He must do this as a supervisory inspection to insure that established standards are met and that areas of maintenance deficiency are determined. This supervisory inspection is in addition to the quality control inspection required by the maintenance control officer or requested by the maintenance officer. The line chief and his designated qualified supervisors should normally check and clear the majority of the items falling within the scope of their authority. The responsibility for safety of flight status of the aircraft does not lie with the quality control unit. This responsibility does lie with the supervisory personnel. Whatever these supervisors do in this connection is in line with actually producing quality, whereas the quality inspectors only determine the quality produced. The supervisory inspections will be accomplished in accordance with TO 0-20A-1. Whenever the line chief feels that he is not qualified to check a particular item or installation, it is essential that he request additional coverage and assistance from the quality control unit.

e. Maintenance of the DD Form 781 (Former AF Form 1), with the exception of the Part V, is a responsibility of the flight line maintenance activity. The line chief should inspect the DD Form 781 of each assigned aircraft at least once each week paying particular attention to accuracy of all entries and the status of delayed discrepancy entries. Delayed discrepancy entries will be investigated and the causes for delay determined. Every effort must be made to hold the delayed discrepancies to the minimum. It is par-

ticularly vital to insure that maintenance is not deferred because of an approaching periodic inspection. The requirement for the flight line to maintain the state of balance in the maintenance organization must be continually recognized and acted upon by the line chief.

f. The line chief is responsible for the direct supervision of the flight line and the effective and efficient utilization of assigned personnel. He must institute the controls necessary to keep personnel on the job. Every effort will be made to preclude the necessity of any individual leaving his place of work for tools, parts, or any other miscellaneous reasons. Under a heavy workload the usual tendency is to work the personnel longer hours. Frequently, however, the judicious use of personnel and equipment in accordance with a carefully prepared plan and schedule should accomplish the job without consistent overtime. The line chief, through the flight chiefs, should strive to substitute good management, planning, and personnel utilization for overtime. Sound human relationships are very important to successful operation and high morale.

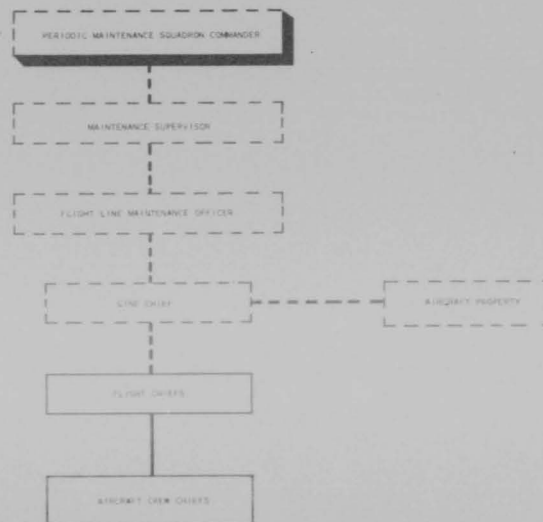
g. During the course of his supervision, the line chief will insure that adequate emphasis is placed upon the normal housekeeping functions. He will insure that aircraft and parking areas are kept as clean as practicable, that equipment is in good repair and safe for use, and that repairable property is expeditiously processed to supply channels. He will be constantly alert for hazards and accident conditions and take immediate corrective action to rectify these conditions and remove the hazards.

h. The aircraft 263 section will function under the direct supervision of the line chief. The line chief will insure that the 263 property of all assigned aircraft is adequately stored, protected, and accounted for in accordance with current directives.

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FLIGHT LINE MAINTENANCE
ORGANIZATIONAL CHART



10. **Function.** The flight chief will supervise the accomplishment of flight line maintenance on aircraft assigned his flight and coordinate with the line chief to plan and schedule the work of assigned personnel and specialist assistance. He will insure accuracy of all aircraft and maintenance records maintained by the crew chiefs of his flight.

11. **Responsibilities.** a. The flight chief is directly responsible to the line chief for the efficient operation of the flight and the accomplishment and quality of maintenance on assigned aircraft.

b. The flight chief will:

(1) Insure accomplishment of quality maintenance by constant surveillance and spot checks of the work of assigned crews and specialist support received.

(2) Know at all times the current status of aircraft assigned the flight and all maintenance in progress.

(3) Supervise and control, through the crew chiefs, all personnel assigned to or working with the flight, and assist in solving technical problems.

(4) Accomplish daily checks of

flight line entries on the DD Form 781 and other records to insure accurate and complete maintenance recording, and investigate indications of maintenance failings.

(5) Maintain cleanliness of the flight line area and expedite the processing of reparable items to supply channels.

(6) Prepare and submit unsatisfactory reports on unsatisfactory conditions occurring within the flight.

12. **Relationships.** a. **Line Chief.** The flight chief works directly for the line chief and must maintain a close relationship with him. He should supervise and manage his flight in consonance with the policies of the line chief and flight line maintenance officer. He must keep the line chief informed of the status of assigned aircraft and the status of work in progress.

b. **Crew Chiefs.** All supervision of the flight should be conducted through the crew chiefs. The relationship with the crew chiefs should be very close and helpful.

13. **General Narrative.** a. The flight chief must determine the status of each

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aircraft assigned the flight and the status of all maintenance in progress and keep the line chief informed. The DD Form 781 for each assigned aircraft will be checked daily for accuracy and completeness of maintenance recording. The flight chief will insure that all maintenance accomplished is recorded and that completed forms are expeditiously forwarded to the maintenance control unit.

b. Regular spot checks will be accomplished by the flight chief to insure that aircraft are being maintained in a satisfactory manner consistent with the established quality standards of the wing. Particular attention must be given the possibility that discrepancies are not immediately corrected. Maintenance will be deferred when it is possible and practical to correct the discrepancies noted. At this point in the maintenance organization, retention of the state of balance assumes its greatest importance. The flight chief will be constantly alert to any conditions arising which may affect the balance and must take immediate corrective action to remedy the condition.

c. The flight chief is authorized to check and sign-off maintenance symbols on the DD Form 781 in accordance with TO 0-20A-1. In doing this, he is accomplishing one part of his supervisory responsibilities and is assisting the personnel of his flight to produce high quality maintenance. Through the medium of these supervisory maintenance checks, the flight chief will become aware of the training requirements of his flight and can recommend appropriate action to the line chief. Whenever he feels that he is not qualified to clear a particular maintenance operation, he should request the assistance of the quality control unit. He must use this unit to assist him in producing the maximum effectiveness from his flight.

d. The flight chief is responsible for managing the activities of assigned personnel to obtain maximum efficient utilization. He will make all duty assignments in coordination with the line chief and should endeavor to assign his less skilled personnel with qualified personnel. He is responsible to have current knowledge of personnel authorized, assigned, and present for duty and to recommend to the line chief any changes deemed necessary to increase personnel availability and utilization.

e. The flight chief will be required to use all the principles of management to keep his assigned aircraft in commission.

He must plan, direct, and control, in coordination with the maintenance officer and the line chief, the day by day activities of the flight. The basic aircraft maintenance crew is the minimum required to accomplish flight line maintenance. Therefore, the flight chief must insure full utilization of all support and assigned personnel in accomplishment of this maintenance.

f. Every effort will be made to keep assigned personnel on the job by eliminating the reasons for absence or extraneous functions. Whenever possible, parts and equipment should be made available to the worker on the job when required. Personnel will not be permitted to leave the working area for any reason unless authorized by the flight chief. All "coffee" breaks will be scheduled and controlled as directed by the line chief. Sign out sheets or boards should be used to record absence from the job, destination, and expected time of return to permit the flight chief to adequately maintain his personnel controls.

g. In order to provide additional capability to the wing, the flight chief will insure that all reparable property is expeditiously processed to supply channels. Reparable items will be clean, correctly tagged, and, when practicable, returned to supply in suitable containers. The flight chief must impress on his personnel the urgent need for economy of operation. Hoarding serviceable or reparable items will be discouraged. The flight chief must insure operation in a manner which will permit the base supply activity to fully support the squadron in the manner required and desired. This cannot be achieved if cooperation on the part of maintenance is not provided. The flight chief will assist his crew chiefs in the anticipation and requisitioning of parts required for flight line maintenance and insure that appropriate supply activity is correctly notified.

h. The flight chief must be constantly alert for unsatisfactory conditions within his flight. He will inform the line chief of those conditions which he cannot correct himself, but which are correctable locally. He will encourage submission of unsatisfactory conditions which are discovered in equipment, parts, etc., as outlined in TO 0-35-D-54.

i. The flight chief will insure that all equipment and facilities, including the parking areas, assigned the flight are maintained in clean, serviceable condition.

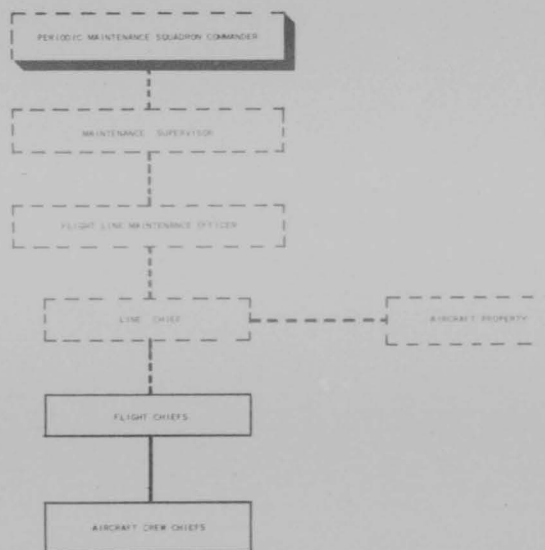
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Through his constant supervision of the flight he can observe the housekeeping practices of assigned personnel and direct necessary improvement or changes. The

effectiveness and efficiency of the flight may frequently be gaged by the condition and appearance of its assigned equipment and facilities.

FLIGHT LINE MAINTENANCE
ORGANIZATIONAL CHART



14. **Function.** The crew chief will supervise the accomplishment of and insure the quality of all maintenance on his assigned aircraft. He will supervise and train assistants and maintain familiarity with current technical directives.

15. **Responsibilities.** a. The crew chief is responsible to the flight chief for the accomplishment and quality of maintenance performed on his assigned aircraft.

b. The crew chief will:

(1) Maintain the aircraft in a safe, dependable, clean, mission-ready condition.

(2) Supervise all maintenance accomplished on the assigned aircraft. Accompany the aircraft through all phases of maintenance and assume the duties of assistant chief while the aircraft is under-

going periodic or postflight maintenance.

(3) Supervise assistants and specialist support personnel to obtain full utilization, high quality maintenance, and compliance with current directives and SOPs.

(4) Insure that all maintenance performed on the aircraft is correctly recorded on the Part II, DD Form 781.

(5) Inform the flight chief of all changes in aircraft status.

(6) Insure that all property, supplies, and materiel are secure and protected, and that reparable units are expeditiously processed.

(7) Report unsatisfactory conditions to the flight chief.

16. **Relationships.** a. **Flight Chief.** The crew chief works directly for the flight chief and must keep him informed of the status of the aircraft, problems encount-

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ered, or required.

b. **Dock Chiefs.** While his aircraft is undergoing postflight or periodic inspection and maintenance, the crew chief becomes assistant postflight or assistant dock chief. He must assist the chief in supervising maintenance completion and must inform the chief of any maintenance accomplishment which he believes to be below acceptable quality.

c. **Flight Crew.** The crew chief must maintain a close relationship with the flight crew and, in particular, the aircraft commander and flight engineer. This relationship should encourage the discussion of maintenance discrepancies and participation of the flight crew in maintenance of aircraft.

17. **General Narrative.** a. The crew chief has the individual responsibility for maintenance of aircraft to which he is assigned. The entire maintenance organization functions to assist him in fulfilling his responsibility. He is responsible for supervising all maintenance accomplished on the aircraft and is the individual most familiar with its overall condition. The condition of the aircraft is a direct responsibility of his at all times and all specialist assistance will be generally supervised by the crew chief under the "customer" concept.

b. The crew chief or his assistant will accompany their aircraft through all phases of maintenance. While the aircraft is in the periodic maintenance dock (or undergoing postflight inspection) the crew chief will assume the duties of assistant dock chief. In this capacity he will actively participate in the general supervision and direction of maintenance accomplishment and will accept only quality maintenance. The retention of high quality is a primary responsibility of the crew chief. In the event the crew chief is not satisfied with the maintenance accomplished and cannot reconcile the condition with the personnel concerned, he must inform the dock chief or other supervisory personnel of the unsatisfactory condition and request necessary corrective action. The responsibility for the safety of flight status of his aircraft belongs to the crew chief, basically, and not with the quality control unit.

c. This maintenance organization provides only minimum strength basic crews for the flight line maintenance function to accomplish preventive maintenance and servicing between routine periodic inspections. The successful functioning of the organization is based upon each

activity accomplishing that maintenance for which it is manned and equipped; therefore, the crew chief plays a large part in determining the degree of successful operation. The maintenance organization becomes unbalanced if the crew fails to carefully and thoroughly accomplish his maintenance which is beyond the capabilities of his crew, their equipment, or their available time. Correspondingly, he must not request specialist support if it is not actually required.

d. Each individual working on the aircraft will be directly responsible to the crew chief except during the accomplishment of postflight or periodic inspection and maintenance. During these phases the crew chief still has the responsibility for accepting only quality maintenance. As the crew chief or assistant dock chief, he is responsible for insuring that personnel and skills are utilized in the most efficient manner and that reasons for inefficiency or ineffectiveness are made known to the proper authority for corrective action. Each individual should be permitted to work at essential tasks for his full duty day.

e. Maintenance planning and scheduling, from an overall viewpoint, is accomplished by the maintenance control unit. However, each supervisor is required to plan and schedule the work of his subordinates to enable his section to meet their part of the master plan and schedule. Planning is an important part of the crew chief's job. Failure to plan properly and coordinate the plan with the related maintenance activities will cause serious delays which will disrupt the over-all plans and schedules. It is impossible to accurately predict every condition which will arise on the aircraft; however, if all predictable maintenance requirements are planned and scheduled, maximum maintenance and supply support may be provided and the crew chief may more efficiently fulfill his responsibilities.

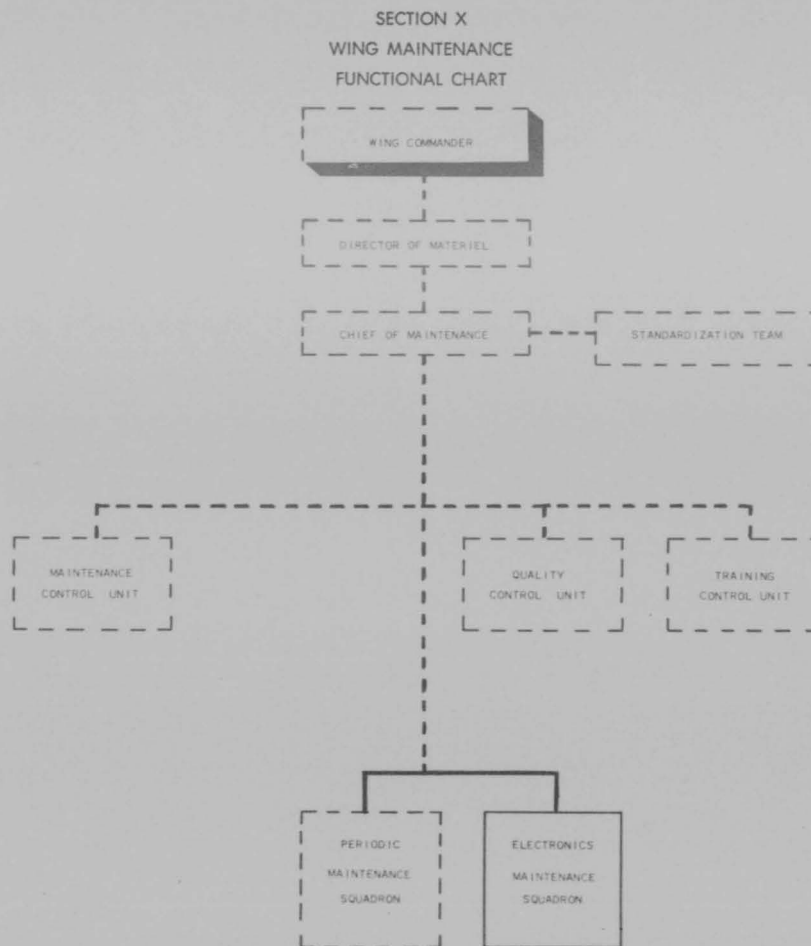
f. The crew chief or his assistant should actually enter or monitor each entry on the Parts II and III, DD Form 781, after the accomplishment of maintenance on the aircraft. The crew chief will frequently visit the records and analysis branch to check the records on his aircraft to insure that they are current and accurate, and to determine approaching maintenance requirements. Each change in aircraft status must be reported to the flight chief to enable him to adjust his plans and schedules accordingly and to inform the maintenance control unit.

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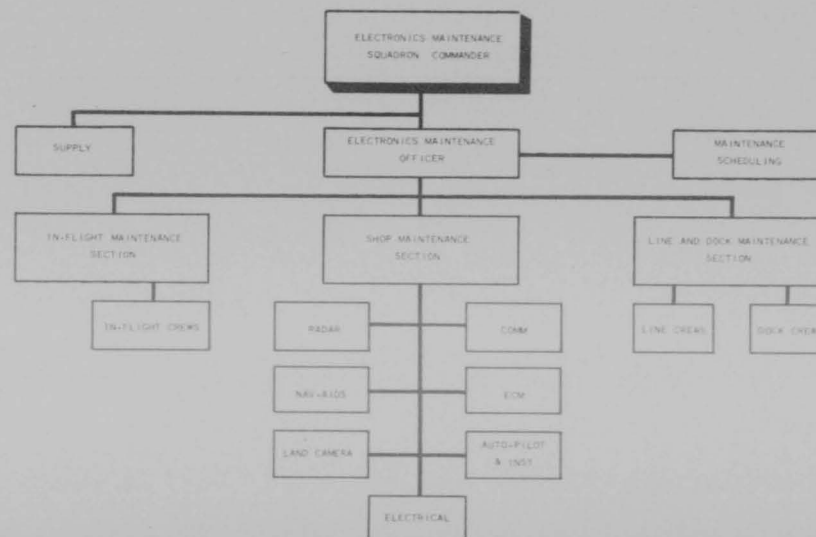
g. Supply discipline and economy, as well as maintenance and quality discipline and economy, will be practiced and enforced by the crew chief. All supplies, parts, or materiel in the work area must be maintained in a secure manner, adequately protected from pilferage and weather, correctly tagged, and clean.

Hoarding will be neither practiced nor tolerated. Repairable property will be cleaned, tagged, and turned in to supply channels as expeditiously as practicable. Every effort will be made to insure that serviceable items do not enter the repairable pipeline.



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ELECTRONICS MAINTENANCE
ORGANIZATIONAL CHART

1. **Function.** This squadron will provide flight-line, periodic, inflight, and field maintenance for all wing electronics equipment, and perform field maintenance on communications equipment installed in maintenance and supply expediter system.

2. **Responsibility and Authority.** a. The electronics maintenance squadron commander is responsible to the wing commander for the organization and functioning of the electronics maintenance activity and for the quality accomplishment of all electronics maintenance. However, the wing commander through the director of materiel has assigned the responsibility and delegated the authority to the chief of maintenance for the direction of the wing maintenance function. Therefore, the normal contact for the commander in the accomplishment of his maintenance responsibility is the chief of maintenance.

3. **Personnel.** a. The electronics maintenance squadron commander is responsible for the efficient utilization and effective training of all personnel assigned the squadron. He must insure that all specialist support directed by the main-

ance control unit is expeditiously dispatched.

b. **The Commander must insure that his squadron is staffed with sufficient qualified personnel to adequately support the wing.** Local schooling and training facilities must be fully used to maintain high proficiency and obtain necessary cross-training. Wherever practicable, he should team lesser qualified personnel with skilled personnel to obtain maximum benefits from experience and technical knowledge.

c. Contractor technicians assigned the squadron must be carefully monitored and scheduled to insure full utilization in the authorized consultant, maintenance, engineering, and training capacity.

4. **Relationships.** a. **General.** The electronics maintenance squadron occupies a unique position in the maintenance organization. It is responsible for supply and maintenance of all electronics equipment assigned to the wing. Therefore, close, cooperative, and harmonious relationships are essential. The commander must insure that these relationships are established and maintained.

b. **Chief of Maintenance.** The com-

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mander must maintain direct and close contact with the chief of maintenance so as to remain aware of major maintenance policies and problems. He must actively support the chief of maintenance and require that the electronics maintenance activity comply with established maintenance policies and procedures. He should advise the chief of maintenance when he believes that any maintenance directives are contrary to the best interest of the wing.

c. **Electronics Maintenance Officer.** The maintenance officer is the manager of the electronics maintenance activity. He should be delegated the authority to operate the maintenance activity in his own manner consistent with established policies and directives. The commander must authorize the maintenance officer to work directly with the maintenance control unit in the normal day-to-day maintenance functions.

d. **Supply Officer.** The supply officer is the manager of the technical and unit supply. He should be delegated the authority to operate the supply activity in his own manner consistent with established policies and directives. The commander must authorize the supply officer to work directly with the base supply officer in normal day-to-day supply functions.

e. **Quality Control Unit.** The electronics squadron commander must use the quality control unit as a management tool to improve the operation of, and the quality of maintenance accomplished by the electronics maintenance squadron. He must insure that positive and continuous corrective action is taken on reported discrepancies and must make every effort to prevent recurrence. He should advise the quality control officer of dissatisfaction with assistance rendered, inspection coverage, report contents, etc.

f. **Standardization Team.** The electronics maintenance squadron commander must actively support and assist the team in its investigations and studies of the electronics maintenance activity. Where practicable, the commander should recommend to the chief of maintenance those areas in his squadron in which the team could be used advantageously.

5. **General Narrative.** a. The electronics maintenance squadron commander is responsible to the wing commander for the operation of his squadron. However, because of the complexity and scope of the maintenance activity, the wing commander has, through the director of materiel, delegated the necessary authority

to the chief of maintenance to direct and supervise the entire wing maintenance activity. It is important that the commander recognize and understand his maintenance position. He must establish and maintain a close relationship with the chief of maintenance so that he may be aware of the operation of the entire maintenance organization and its major problems. This is vital since his squadron is responsible for accomplishing flight line, in-flight, periodic, and field maintenance on electronics equipment assigned to or installed in wing aircraft. The chief of maintenance must be assured of the active participation of the electronics squadron commander in the correct and efficient accomplishment of high quality maintenance.

b. It is not intended under this maintenance concept that the chief of maintenance usurp or assume any of the commander's prerogatives or responsibilities. Also, it is not intended that he, or the director of materiel, be an intermediate commander between the squadron and wing commanders. The relationship should be one of mutual coordination and cooperation. If the commander cannot resolve a maintenance difficulty with the chief of maintenance or the director of materiel, it is only logical for the matter to be referred to the wing commander for decision.

c. The electronics maintenance officer is responsible to, and works for, the squadron commander. However, for maintenance balance and expediency, the chief of maintenance or the maintenance control officer should normally transmit routine maintenance directives and instructions directly to the maintenance officer. It is the commander's prerogative to insist that he personally sanction all maintenance control. To do so, however, would be impracticable. The most efficient operation will be achieved when the commander permits his maintenance officer to work directly with the maintenance control unit on routine maintenance matters.

d. The electronics maintenance squadron is designed to provide centralized control of all electronics maintenance. It is organized on the systems-maintenance concept and must provide for the maintenance and inspection of electronics components of the entire aircraft and the repair and/or reclamation of unserviceable components of parts. The repair, inspection, maintenance, or reclamation of telephone, teletype, and TWX equipment, or radio sets organizationally assigned to the air base group, will not be accomplished by this activity.

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e. The combat effectiveness of the wing is greatly dependent upon the efficiency of, and quality of maintenance produced by this squadron. Therefore, it is extremely important that proven management principles be applied by all supervisory personnel. The commander must be progressive in his thinking and aggressive in his policies to insure that all maintenance functions are operating efficiently and effectively. The degree of effectiveness in the utilization of assigned personnel, equipment, and facilities will bear a definite relationship with the mission effectiveness of the wing.

f. Each supervisor in the squadron will be required to be constantly aware of how many personnel are assigned his activity, how many are present for duty, and their current location and duty. The commander must insure that a system is established in the squadron which will permit this information to be known at all times and enable him to keep the maintenance control unit informed.

g. Particular attention will be given to the delegation of maintenance within the squadron so as to retain the desired state of balance between the line and dock, in-flight, and shop maintenance sections. Each section must accept a practical view of their designed capability. Each must accomplish that maintenance for which it is responsible and help to maintain balance in the maintenance organization. An unbalanced condition exists when the line and dock section fails to meet its responsibilities and overloads the shop maintenance

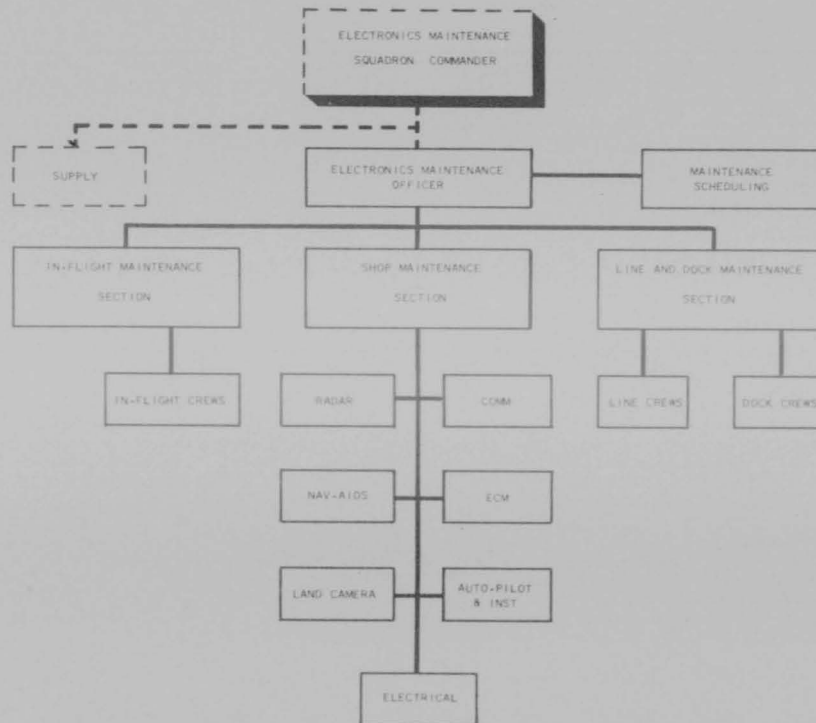
section with reparable units or work for which they have not been scheduled. The commander will conduct frequent personal surveys to insure that the balance is maintained so that over-all wing effectiveness is not decreased.

h. Specialist support of all other maintenance activities will be expeditiously furnished when directed by the maintenance control unit. While a specialist is on dispatch, the squadron commander retains the responsibility for insuring that he accomplishes efficient, high quality maintenance. The commander will require that all supervisory personnel of the squadron make frequent checks of the maintenance accomplished by their personnel to insure quality and to determine areas of maintenance deficiency. Also, he will insist that emphasis be placed on the prompt dispatch of maintenance personnel and that they report ready to work with no requirement to return to the shop for tools, test equipment, etc.

i. Reports submitted by the quality control unit will be carefully reviewed and analyzed by the commander to insure that adequate corrective action is being taken and that the reports meet his requirements. He must realize that this unit exists to help him do his job. If he believes he is not receiving sufficient help, he should inform the quality control officer and recommend necessary changes to meet his requirements. He must develop within his squadron a position attitude of cooperation and assistance to obtain full value from the efforts of his unit.

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ELECTRONICS MAINTENANCE
ORGANIZATIONAL CHART

6. **Function.** The maintenance officer will organize, man, and supervise the electronics maintenance activity in accordance with the concepts outlined in this Manual. He will provide expeditious specialist dispatch as directed by the maintenance control unit and advise the squadron commander of maintenance status, problems, and progress.

7. **Responsibility and Authority.** a. The electronics maintenance officer is responsible to and works for the electronics maintenance squadron commander. How-

ever, for expedient maintenance accomplishment he should be authorized to work directly with the maintenance control unit for routine operation of the maintenance activity.

b. The electronics maintenance officer will:

(1) Organize the maintenance activity generally as outlined in this Manual, consistent with current manning authorizations and wing assigned equipment.

(2) Accomplish maintenance, repair, reclamation, and inspection of all electronics equipment of the wing.

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(3) Maintain communications equipment installed in maintenance and supply expediter system.

(4) Be responsible for the maintenance of electronic components of instruments furnished the wing.

(5) Maintain current status of the electronics equipment installed in wing aircraft and keep the maintenance control unit informed.

(6) Provide expeditious dispatch of specialist personnel to other maintenance functions when directed by the maintenance control unit and maintain current status record of the location and availability of specialist personnel.

(7) Establish liaison with, and develop a utilization program for assigned electronics contractors technicians.

(8) Perform field maintenance on wing training aids.

(9) Schedule and perform organizational maintenance on assigned equipment.

(10) Prepare and submit unsatisfactory reports as appropriate.

(11) Maintain a current file of pertinent technical publications.

8. Organization. a. The organizational structure of the electronics squadron will follow the form shown by the chart. (Page 68). The organization of the sections and number of personnel to be assigned to each section will be dependent upon the work loads encountered in each section. Section work loads will be closely monitored to insure the best utilization of personnel, tools and test equipment.

b. Technical liaison is authorized between the in-flight, shop, line and dock maintenance sections for the coordination of maintenance and assignment of personnel.

c. A chief and foreman will be appointed to each section. Each of these supervisors will be delegated the authority necessary to accomplish the assigned responsibilities.

9. Relationships. a. **Electronics Maintenance Squadron Commander.** The maintenance officer is responsible to and works for the electronics maintenance squadron commander. He must manage the activity in a manner consistent with the policies and requirements of the commander and must keep the commander informed on maintenance difficulties encountered.

b. **Maintenance Control Unit.** Normally the maintenance officer will work directly with the maintenance control unit

on routine maintenance matters. A close working relationship must exist since these two control and direct all electronics maintenance for the wing. The maintenance officer must keep the maintenance control unit constantly informed of the status of all electronics equipment and the status of all maintenance in progress. Both parties must be constantly aware of the overall wing maintenance schedule and the existing work load in order to establish suitable schedules and maintain overall effectiveness.

c. **Standardization Teams.** The maintenance officer will cooperate with the team in its investigations and studies so that maximum benefit may be obtained from its services. The team is a management aid which the maintenance officer should use to his own advantage in improving the quality of maintenance accomplished and the efficiency of the activity.

d. **Quality Control Unit.** A relationship of cooperation and coordination should exist between the quality control unit and the electronics maintenance officer. The maintenance officer should insure positive and continuous corrective action on reported discrepancies so as to improve the quality of maintenance accomplished and prevent recurrent discrepancies.

e. **Training Control Unit.** The maintenance officer must maintain a close relationship with the training control unit to insure that his organization is provided necessary training, and that trainee personnel meet established schedules.

f. **Line and Dock Maintenance Officer.** He must maintain close coordination with the aircraft flight-line maintenance officers to insure combat-readiness of assigned aircraft and meeting of flight schedules. This coordination is of vital importance in order that scheduled changes and unforeseen circumstances will have the minimum effect on accomplishment of the mission assigned the wing.

g. **Shop Maintenance Officer.** He will be responsible for the organization of the shop activities for the accomplishment of maintenance in the shop and assisting the line and dock maintenance section when requested. His section will be responsible for all field maintenance as well as assisting line and dock maintenance section. Close coordination must be maintained with the line and dock maintenance officer for the accomplishment of his maintenance mission and to obtain minimum "out-of-commission" time.

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h. In-Flight Maintenance Officer.

His responsibility consists of assigning flight crews and the training of flight personnel. This will require close coordination with the shop, line and dock maintenance sections to insure the adequate assignment of flight personnel for training and assisting in maintenance duties.

10. General Narrative. a.

The electronics maintenance officer is the top manager of the electronics maintenance organization. As such he is responsible to the squadron commander for organizing and operating this activity. Routine maintenance directives and orders should be passed directly from the maintenance control unit to the maintenance officer for accomplishment. The maintenance officer and all supervisory personnel must plan and schedule the work of their activities in a manner which will insure the accomplishment of quality maintenance in accordance with the master schedule established by the maintenance control unit. The time and effort expended in planning and scheduling maintenance will be directly reflected in the effectiveness of the wing.

b. The maintenance officer is primarily responsible for insuring the quality accomplishment of flight line, periodic, in-flight, and field maintenance on all electronics equipment, and for obtaining maximum utilization of assigned personnel. In conjunction with his designated section chief and foreman, he must constantly monitor all electronics maintenance activities. They will be constantly alert for inefficiencies or maintenance quality below acceptable standards and must take necessary corrective action.

c. The responsibility for quality maintenance is an active responsibility. The maintenance officer will require that his supervisors periodically inspect the maintenance accomplished by their personnel. These supervisory inspections are necessary to determine quality and establish areas of maintenance deficiency. Supervisory inspections will be in addition to any prescribed or requested quality control inspections and must be accomplished in accordance with TO 0-20A-1. Whenever the supervisors or the maintenance officer believe they are not qualified to check a particular job, it is essential that the assistance of the quality control unit be requested.

d. All supervisory personnel must be aware at all times of the manpower availability and work backlog in their activity.

They will exert every effort to obtain maximum personnel utilization so that the workload will remain in consistent proportion to the maintenance capability. Each individual will be assigned definite duties and responsibilities and delegated authority equal to the assigned responsibilities. Job descriptions will be prepared for each individual. Supervisors should be required to conduct frequent personal interviews to insure that each individual knows and understands his specific duties, responsibilities, and authority. Organization charts will be prominently displayed in each shop and office to outline the organization of the electronics maintenance squadron and depict its position in the maintenance organization. The maintenance officer must follow the established organizational structure. Normally, each man should have but one "boss" and all directions and instructions should come through the "boss."

e. Effective and efficient accomplishment of the electronics maintenance function requires that the maintenance officer know the current manpower status in the squadron. A manpower status board will be maintained to show personnel assigned, present, TDY, in shop, on dispatch, etc. This is particularly important to scheduling and retention of maintenance balance.

f. The maintenance officer and his designated supervisors must be constantly aware of the electronics workload and the priorities established by the maintenance control unit. The supervisory section of this activity will insure the expeditious dispatch of specialist personnel to other maintenance activities in accordance with the priorities established by the maintenance control unit. Specialist personnel must be immediately effective in order to insure the availability of the maximum quantity of serviceable, combat-ready electronics equipment. Any factors delaying or preventing accomplishment of this function, or the immediate dispatch of required specialists, will be immediately brought to the attention of the maintenance control unit for necessary action.

g. Maintenance supervisors must carefully analyze the time and man-hour information available from completed specialist dispatches to determine reasons for delay in job completion, causes for large manhour expenditure, and the efficiency of the specialist or team dispatched. Reasons for delays and excessive man-hour expenditures should be thoroughly evaluated and action taken to eliminate

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the causes. In addition, the supervisory section must analyze the maintenance and manhour accounts and reports compiled by the maintenance control unit to determine inefficiencies, faulty procedures, need for increased supervision, etc. This analysis is of extreme importance to the improvement of the quality of maintenance and the quality of management.

h. The supervisory section will maintain the current status of all electronics equipment and will immediately report to the maintenance control unit all status changes as they occur. The planning and scheduling of electronics maintenance work will be organized to provide "In-Commission" status of the maximum quantity of assigned equipment. The mission effectiveness of the wing is dependent on this concept.

i. Repairable property will be processed in accordance with current directives and repair priorities established by the maintenance control unit. Large backlogs of repairable property will not be permitted to accumulate. The shop maintenance officer will designate certain qualified personnel to sign condition tags for items tested, repaired, or condemned in the shop since it is not feasible for an individual outside the shop to certify serviceability without completely reworking or retesting the unit. This will be accomplished in the form of a letter of authorization signed by the maintenance officer and bearing specimen signatures of the designated personnel. Copies of the letters will be furnished the base supply officer, materiel control branch, and the quality control unit. Also, one copy of the current authorization letter will be posted in the shop.

j. The maintenance officer will require his supervisory personnel to be continually alert for unsatisfactory conditions

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or equipment during the accomplishment of the electronics maintenance function. Unsatisfactory reports will be submitted when appropriate. They serve as the only practicable method of obtaining Air Force-wide equipment improvements with consequent reduction in malfunction, aborts, etc.

k. Adequate equipment maintenance is extremely important to the successful and efficient accomplishment of electronics maintenance. The maintenance officer will require that his section chiefs and foremen schedule and accomplish organizational maintenance and maintain appropriate preventive maintenance records on assigned ground servicing and motorized equipment in accordance with current directives.

l. The various maintenance sections of the squadron, shown on the chart, will perform flight line, in-flight, periodic and field maintenance. Maintenance personnel will be assigned to the various sections for operational control. The scope of each section is described below:

(1) **In-Flight Maintenance Section.** This section will maintain all of the electronic equipment installed in the aircraft while in flight and assign personnel to the other sections when they are available for duty.

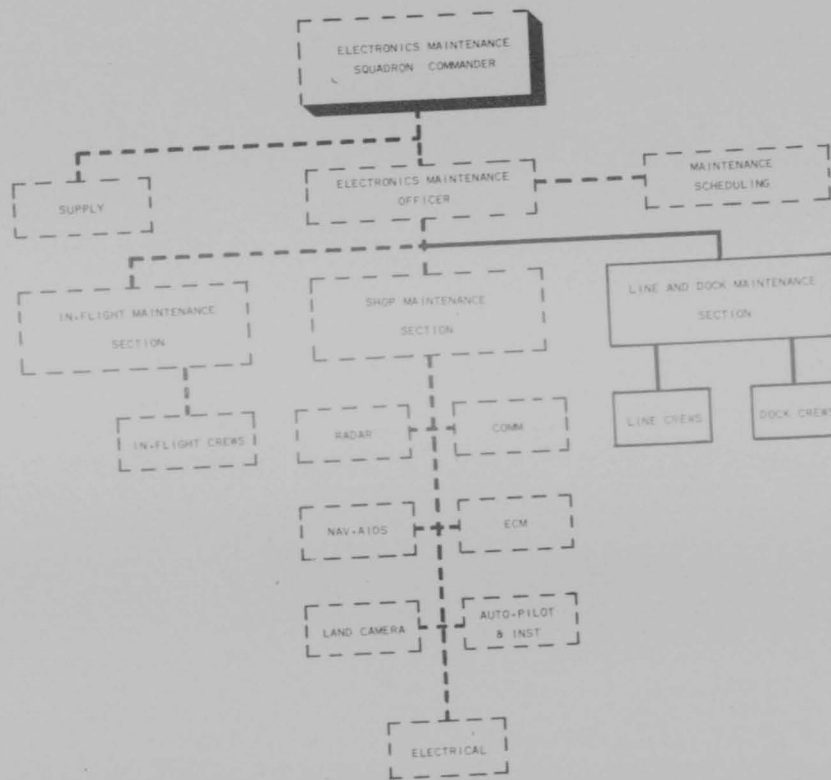
(2) **Shop Maintenance Section.** Will perform field maintenance on all electronic equipment assigned to the wing and in addition will assist the line and dock maintenance crews whenever possible. The internal organization of the shop is left to the judgment of the shop maintenance officer.

(3) **Line and Dock Maintenance Section.** This section will accomplish flight line and periodic maintenance of electronic equipment installed in all aircraft assigned to the wing.

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ELECTRONICS MAINTENANCE
ORGANIZATIONAL CHART



11. **Function.** Under the direction of the electronics maintenance officer, the line and dock maintenance officer will manage the section.

12. **Responsibilities.** a. The line and dock maintenance officer is responsible to the maintenance officer for supervision of his section and the quality of maintenance accomplished.

b. The line and dock maintenance officer is responsible for:

- (1) The accomplishment of flight

line and periodic maintenance.

(2) Organizational maintenance on equipment and tools assigned to his section.

(3) Maintenance of pertinent records. (Shop maintenance section will maintain technical files.)

13. **Relationships.** a. **Electronics Maintenance Officer.** The line and dock maintenance officer is responsible to, and works for, the electronics maintenance officer. He must supervise the branch in a

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manner consistent with the policies of the electronics maintenance officer and will keep him informed of major difficulties encountered.

b. **Line and Dock Maintenance Foreman.** The line and dock maintenance officer must maintain a direct supervisory relationship with the foreman of the section and should normally accomplish all supervision and direction through these personnel.

c. **Other Maintenance Supervisors.** A close relationship should exist between the line and dock maintenance officer and other maintenance supervision so that maintenance that is not equal to established quality standards can be expeditiously reported and corrected.

d. **Standardization Team.** The line and dock maintenance officer must assist the team as much as possible during its investigations and visits so that maximum improvement is obtained from its observations and recommendations. He should request the assistance of this unit whenever he feels that their services may be necessary.

14. **General Narrative.** a. The line and dock maintenance officer is the manager of the section and is responsible to the electronics maintenance officer for the efficient accomplishment of all work assigned. He is also an executive assistant to the maintenance officer and must assist him in every manner in accomplishing the electronic maintenance function. With the concurrence of the electronic maintenance officer, he will be responsible for the proper placement and assignment of section personnel. He must have daily knowledge of the personnel authorized, assigned, and present for duty.

b. Electronics parts and components required to return an aircraft to an in-commission status will be processed in accordance with established supply procedures.

c. To maintain balance and provide upgrade training in the section; the line and dock maintenance officer will insure that lesser qualified personnel are assigned to work with skilled personnel. He will perform frequent checks, in conjunction

with the shop foremen, to determine the need for additional training. He should request the assistance of the training control unit for any additional training that is required.

d. In coordination with the shop foreman, the line and dock maintenance officer will plan and schedule maintenance to meet the master schedule established by the maintenance control unit. He will monitor the progress of maintenance to insure that the schedule is being met. Insofar as possible, he will anticipate delays, supply needs, etc., and take appropriate action to prevent delays or slowdowns.

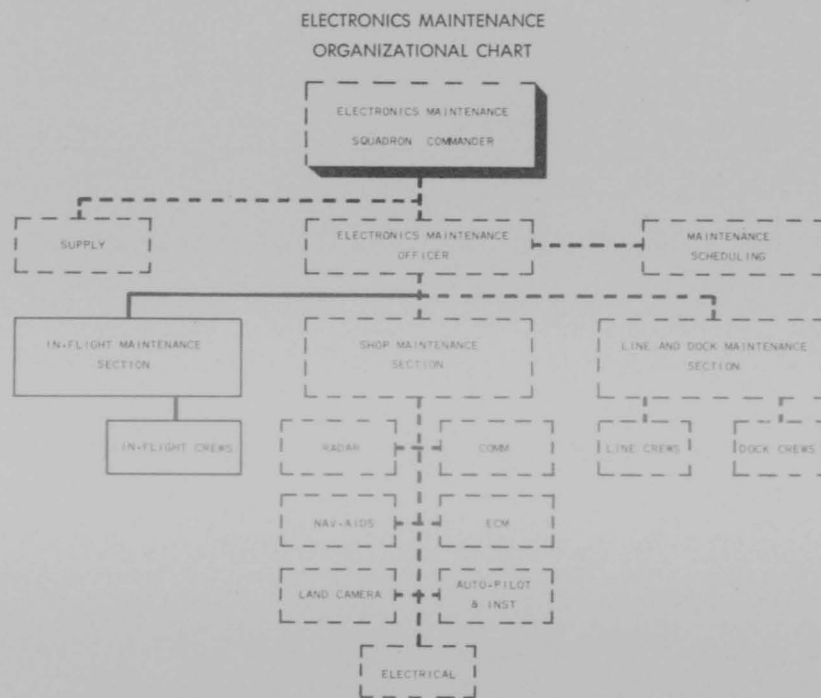
e. The line and dock maintenance officer will periodically inspect the maintenance accomplished by assigned personnel to determine quality. He must accomplish these supervisory inspections to insure that established standards are being met and to determine areas of maintenance deficiency. These checks will be accomplished in accordance with TO 0-20A-1 and will be in addition to any prescribed or requested quality control inspections.

f. The line and dock maintenance officer is responsible for the effective and efficient utilization of assigned personnel, and will institute controls necessary to keep personnel on the job. Sign out sheets, status boards, or similar devices must be maintained to record the location of assigned personnel. This is important to the expeditious dispatch of specialists directed by the maintenance control unit.

g. The line and dock maintenance officer will be intimately involved in the master maintenance scheduling accomplished by the maintenance control unit. Since he has the responsibility of all flight line and periodic maintenance of electronics equipment, it is essential that he carefully schedule his maintenance activities in coordination with the maintenance personnel of the various sections. Close coordination is particularly vital in connection with the accomplishment of pre-flight and post-flight inspections to insure fast return to the "in-commission" status, and aircraft availability for mission accomplishment.

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15. **Function.** Under the direction of the electronics maintenance officer, the in-flight maintenance officer will supervise and manage the section.

16. **Responsibilities.** a. The in-flight maintenance officer is responsible to the electronics maintenance officer for the supervision and quality of the in-flight maintenance accomplished.

b. The in-flight maintenance officer is responsible for:

- (1) The assignment of qualified personnel to flight crews.
- (2) The assignment of personnel to the other sections for OJT training and assisting in maintenance.
- (3) Maintenance of pertinent records in connection with his maintenance mission.

17. **Relationships.** a. **Electronics Maintenance Officer.** The in-flight maintenance officer is responsible to and works for the electronics maintenance officer. He

will supervise the section in a manner consistent with the policies of the electronic maintenance officer and must keep him informed of major difficulties encountered.

b. **Shop Foreman.** The in-flight maintenance officer must maintain a direct supervisory relationship with the shop foremen of the section and should normally accomplish all supervision and direction of the section through these personnel.

c. **Other Maintenance Supervisors.** A close relationship should exist between the in-flight maintenance officer and the other section chiefs so that maintenance accomplished which is not equal to established quality standards is expeditiously reported and corrected.

d. **Standardization Team.** The in-flight maintenance officer must assist the team as much as possible during its investigations and visits so that maximum improvement is obtained from its observations and recommendations. He should

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feel free to request team assistance at any time.

e. **Quality Control Unit.** The quality control unit will be of tremendous assistance to the in-flight maintenance officer if he adopts the correct attitude toward it. He will insure a cooperative attitude throughout the section by evidencing acceptance and cooperation. He will insure expeditious and continuous corrective action on reported discrepancies so that the quality of maintenance accomplished remains high at all times. He should request the assistance of this unit whenever he feels that its services may be necessary.

18. **General Narrative.** a. The in-flight maintenance officer is manager of the section and is responsible to the electronics maintenance officer for the efficient accomplishment of all assigned work. The in-flight maintenance officer is an executive assistant to the electronics maintenance officer and must assist him in every manner in accomplishing the electronic maintenance function. With the concurrence of the electronic maintenance officer, the in-flight maintenance officer will

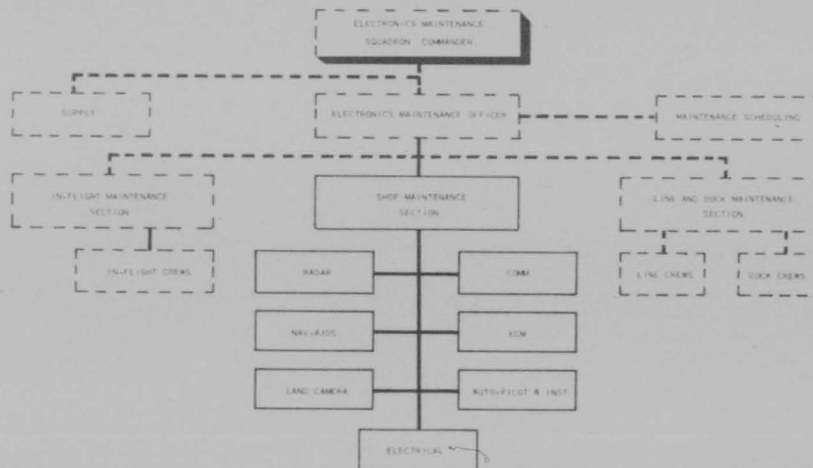
be responsible for the proper placement and assignment of section personnel. He must have daily knowledge of the personnel authorized, assigned, and present for duty.

b. To maintain balance and provide upgrade training in each shop, the in-flight maintenance officer will insure that lesser qualified personnel are assigned with skilled personnel. He will make frequent checks to determine what additional training is required and take the necessary action to obtain assistance.

c. The in-flight maintenance officer will periodically inspect the maintenance accomplished by assigned personnel to determine quality. He will accomplish these supervisory inspections to insure that established standards are being met, and to determine areas of maintenance deficiency. These checks will be accomplished in accordance with TO 0-20A-1.

d. The in-flight maintenance officer is responsible for the effective and efficient utilization of assigned personnel. Sign out sheets, status board, or similar devices must be maintained to record the location of assigned personnel.

ELECTRONICS MAINTENANCE
ORGANIZATIONAL CHART



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19. **Function.** Under the direction of the electronics maintenance officer the shop maintenance officer will accomplish field maintenance and assist the line and dock maintenance section when requested.

20. **Responsibilities.** a. The shop maintenance officer is responsible to the electronics maintenance officer for the supervision of the shop and quality of maintenance accomplished.

b. The shop maintenance officer is responsible for:

(1) Prompt accomplishment of all work orders in accordance with established priorities.

(2) Accomplishment of all electronics maintenance functions as directed by the maintenance control unit, including accomplishment of field maintenance on wing training aids.

(3) Organizational maintenance on all assigned equipment and tools.

(4) Maintain pertinent records and all technical files.

21. **Relationships.** a. **Electronics Maintenance Officer.** The shop maintenance officer is responsible to and works for the electronics maintenance officer. He must supervise the section in a manner consistent with the policies of the maintenance officer and must keep him informed of major difficulties encountered.

b. **Shop Foreman.** The shop maintenance officer must maintain a direct supervisory relationship with the shop foreman of the section and should normally accomplish all supervision and direction of the shops through these personnel.

c. **Other Maintenance Supervisors.** A close relationship should exist between the shop maintenance officer and other section officers to insure quality maintenance accomplishment.

d. **Standardization Team.** The shop maintenance officer will assist the team as much as possible during its investigations and visits so that maximum improvement is obtained from its observations and recommendations. He should feel free to request team assistance at any time.

e. **Quality Control Unit.** The quality control unit will be of great assistance to the shop maintenance officer if he adopts the correct attitude toward it. He will insure a cooperative attitude throughout the branch by evidencing acceptance and cooperation. He will insure expeditious and continuous corrective action on reported discrepancies so that the quality of maintenance accomplished remains high at all times. He should request the assistance of this unit whenever he feels that

its services may be necessary.

22. **General Narrative.** a. The shop maintenance officer is manager of the section and is responsible to the electronics maintenance officer for the efficient accomplishment of all work assigned. The shop maintenance officer is an executive assistant to the electronics maintenance officer and will assist him in every manner in accomplishing the electronics maintenance function. With the concurrence of the electronics maintenance officer, the shop maintenance officer will be responsible for the proper placement and assignment of section personnel. He must have daily knowledge of the personnel authorized, assigned, and present for duty.

b. To maintain balance and provide upgrade training in each shop, the shop maintenance officer will insure that lesser qualified personnel are assigned to work with skilled personnel. He will perform frequent checks, in conjunction with the shop foremen, to determine the need for additional training. He should then request the necessary training from the control unit.

c. In coordination with the shop foremen, the shop maintenance officer will plan and schedule maintenance to meet the master schedule established by the maintenance control unit. He must monitor the progress of maintenance to insure that the schedule is being met. Insofar as possible, he will anticipate delays, supply needs, etc. and take appropriate action to prevent delays or slowdowns.

d. The shop maintenance officer will periodically inspect the maintenance accomplished by assigned personnel to determine quality. He will accomplish these supervisory inspections to insure that established standards are being met, and to determine areas of maintenance deficiency. These inspections will be accomplished in accordance with TO 0-20A-1 and will be in addition to any prescribed or requested quality control inspections.

e. The shop maintenance officer is responsible for the effective and efficient utilization of assigned personnel and will institute controls necessary to keep personnel on the job. Sign out sheets, status boards, or similar devices, must be maintained to record the location of assigned personnel.

f. Ground servicing and motorized equipment assigned the branch is vital to the successful accomplishment of the assigned mission. The shop maintenance officer must insure that all such equipment is maintained in a manner which will in-

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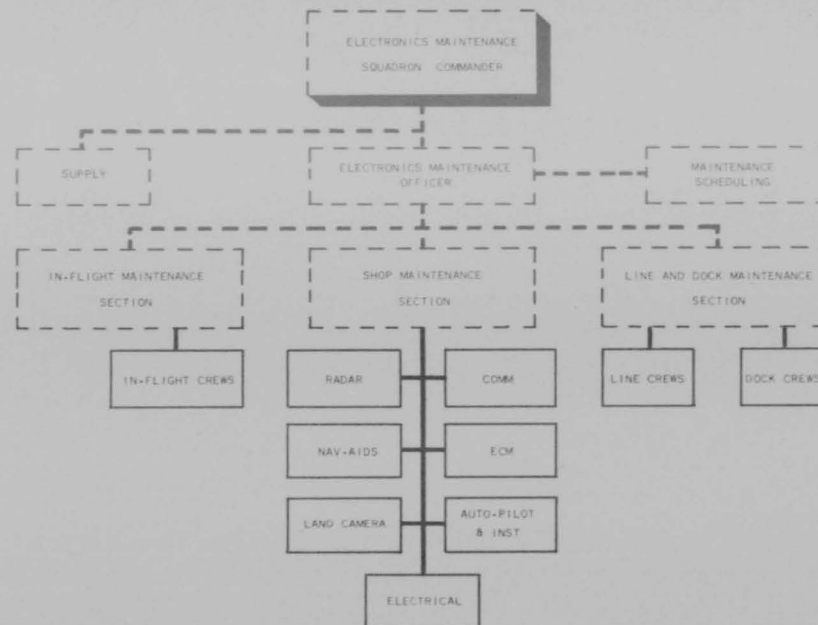
sure maximum availability of serviceable equipment.

g. The variety of electronics maintenance functions makes it imperative that the shop maintenance officer closely monitors the maintenance activity. He will accomplish maintenance in accordance with the priorities established by the maintenance control unit.

h. It is the responsibility of the shop maintenance officer to insure the shop is adequately supplied with tools, test equipment and spare parts for the accomplishment of the maintenance mission.

i. The shop maintenance officer is responsible for determining maintenance which is beyond the capability of his section.

ELECTRONICS MAINTENANCE
ORGANIZATIONAL CHART



23. **Function.** Under the direction of the section chief, the section foreman will supervise the accomplishment of high quality maintenance by his section.

24. **Responsibilities.** a. The section foreman is responsible to and works for the section officer. He is responsible for the accomplishment and quality of all work directed by the maintenance control unit

or the section officer.

b. The section foreman will:

(1) Supervise and manage his section in a manner which will insure the fast and efficient accomplishment of high quality maintenance in compliance with current directives and SOPs.

(2) Schedule the work to insure full utilization and maximum training of assigned personnel.

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(3) Insure complete and accurate recording of all maintenance accomplished.

(4) Report the status of work in progress.

(5) Perform periodic checks of maintenance accomplished to insure quality and determine areas of maintenance deficiency.

(6) Maintain the section and all assigned equipment in a neat, serviceable condition.

(7) Insure that all property, material, and supplies are secure and protected and that reparable property is expeditiously processed.

25. **Relationships.** a. **Section Officer.** The shop foreman works for the section officer and will keep him informed of the status of maintenance in progress, personnel status, problems encountered and assistance required. The foreman must serve as the top technical advisor to the section officer insofar as shop capability and performance is concerned.

b. **Materiel Control Branch.** The shop foreman must assist the materiel control branch in the establishment of shop stocks of expendable items and insure that the authorized list is sufficient for his needs.

c. **Standardization Team.** The standardization team must be provided full cooperation during its visits and investigations. A close relationship should exist so that maximum advantage may be gained from the findings and recommendations of the team.

d. **Quality Control Unit.** The shop foreman should use the quality inspections and their reports to improve the quality of maintenance accomplished and to define the areas where closer supervision is required. He will insure positive and continuous corrective action on reported discrepancies and will request additional quality inspections when he feels it necessary to improve shop operation or maintenance quality.

26. **General Narrative.** a. The shop foreman works for and is responsible to the section officer. He is the top technical man in his specialty in the maintenance activity and will keep the section officer informed of the technical and practical capabilities of the shop. He will supervise and manage the section in a manner which will insure the expeditious and efficient completion of repair, TOC and work directed by the maintenance control unit.

b. To insure efficiency, the section

foreman must have current knowledge of the personnel authorized, assigned, and present for duty. In addition, he must know which individuals are currently on specialist dispatch or are working in the shop. Insofar as practicable, the shop foreman should plan his work in a manner which will insure that each individual knows what jobs he is to perform and when.

c. Constant attention will be given to the status of all work in progress so that the foreman is constantly aware of his maintenance position in relation to the schedules of the maintenance control unit. It will be necessary for him to constantly plan and schedule the work of the shop to insure that priorities are met, full personnel utilization is achieved, and specialists are dispatched as directed by the maintenance control unit. A delay in specialist dispatch may result in disruption of the schedules of other maintenance activities or personnel.

d. The shop foreman is responsible for insuring that quality maintenance is accomplished by his personnel. He will periodically inspect the maintenance accomplished to determine quality and definite areas of maintenance deficiency where additional training or supervision is required. He will accomplish these checks in accordance with TO 0-20A-1, which will be in addition to any prescribed or requested quality control inspections. These checks will aid him in insuring high quality maintenance and will put him in the position of knowing the strength and weakness of his shop. In this way he is supervising and assisting his personnel in quality production.

e. Much of the efficiency and effectiveness of the shop will be determined by the serviceability of assigned equipment and availability of authorized equipment. The shop foreman must be aware of his equipment authorization and insure that he has that equipment on hand or that the responsible supply officer has it on requisition. The equipment available must be maintained in accordance with current directives. Insofar as practicable, the shop foreman should assign specific responsibilities for equipment maintenance to designated individuals. In addition, he should maintain a schedule and insure compliance with that schedule for routine preventive maintenance operations on his equipment and shop area facilities.

f. Supply discipline, as well as maintenance discipline, must be practiced and taught by the shop foreman. All supplies,

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parts, or materials in the shop must be maintained in a secure manner adequately protected from unauthorized use and the elements. They should be clean and correctly tagged and stored in appropriately identified bins or containers. Hoarding will be discouraged. Care should be exercised to insure that authorized stock levels are

not exceeded but are maintained.

g. Because of the testing facilities available, and the technical knowledge of shop personnel, the shop foreman must insure that unsatisfactory reports are prepared and submitted on all unsatisfactory conditions reported by the sections.

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CHAPTER 3

MAINTENANCE MANAGEMENT CHECK LIST

1. **Check List.** To assist you in applying the principles of management and to help you become a better supervisor, a management check list is provided. It is suggested that this check list be used daily until you become proficient in its application. In addition, it is recommended that you study AFM 35-15, "Air Force Leadership."

a. **Management of Time.**

- (1) Delegate routine work.
- (2) Do regular work efficiently.
- (3) Accept special assignments.
- (4) Accomplish creative work.
- (5) "Never be too busy to find out how to become less busy."

(This does not mean for you to study ways to "goof-off." It does mean: Learn to study your work to determine whether the right people are doing the right jobs at the right time. You should supervise. Your people should work. Proper delegation of work is one way of "becoming less busy.")

b. **Principles of Management.**

- (1) Unity of Command.
 - (a) Each person knows his boss and whom he bosses.
 - (b) Each person reports to only one supervisor.
- (2) Span of Control.
 - (a) Numbers. There is a limit to the number of men a supervisor can control.
 - (b) Distance. Work must be close to the one who does it.
 - (c) Time. Work should not be processed through too many hands.
- (3) Homogeneous Assignment.
 - (a) Duties must not overlap. (Am I doing "Joe's" job?)
 - (b) Duties must be specific and clear cut. (What is my job?)
 - (c) Each function of every unit must be the responsibility of one individual, whenever practicable. (Who does this?)
 - (d) Every assignment must be within the range and capabilities of the individual to which assigned. (Is "Joe" qualified and capable to fill this assignment?)
- (4) Delegation of Authority.
 - (a) Delegate authority equal to the assigned responsibility.
 - (b) Delegate authority to the maximum within assigned responsibilities.
 - (c) Establish definite line of authority. (Whom do I supervise? Who supervises me?)

c. **Functions of Management.**

- (1) Planning.
 - (a) Why? - What?
 - (b) When? - Where?
 - (c) Who? - How?
- (2) Organizing.
 - (a) Determine the jobs to be performed. (What do I have to do?)
 - (b) Set up the organization structure. (Who does what?)
 - (c) Make initial allocation of personnel, functions, responsibilities, and authority.
- (3) Coordinate.
 - (a) Hold frequent meetings of key personnel.
 - (b) Interpret policies and regulations.
 - (c) Invite recommended changes to policy and procedures.
- (4) Personnel Management.
 - (1) Get the right man on the job.
 - (a) Establish the job requirement, then get the man.
 - (b) Utilize personnel classification.
 - (c) Reassign the jobs within the range of skill and capabilities.
 - (2) Increase the time available.
 - (a) Control the absent time.
 - (b) Keep the man on the assigned job.
 - (3) Stimulate the will to work.
 - (a) Improve the working conditions.
 - (b) Reduce overtime to the minimum. (Can this be done in standard duty hours?)
 - (c) Furnish the right incentives.
 - (d) Obtain maximum utilization of men and skills.
 - (a) Give the man a full days work.
 - (b) Schedule the man efficiently and keep him informed of his assignment.
 - (c) Question the requirement of every task. (Is this job necessary?)
 - (d) Improve the procedure or method of doing the work.
 - (e) Measure the results by employing control devices, such as inspection ratings, etc.
- (5) Personnel Relations.
 - (1) Apply the principles of leadership. (AFM 35-15)
 - (2) Take an interest in the individual.
 - (3) Fully utilize the man's abilities.
 - (4) Train the man to meet the job and jobs of higher skills.
 - (5) Show the man a method of improvement when correcting a fault.

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(6) Appraise the work of groups and individuals and take appropriate actions.

(7) Build the individual's confidence in organization.

(8) Listen to the ideas, suggestions, and criticisms of your men.

(9) Admit your errors.

(10) Inform your men of things affecting them or their work.

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CHAPTER 4
DEFINITIONS

In general, the words and phrases employed in this Manual are standard terminology. However, to prevent misunderstanding and to promote standardization, the following definitions are provided:

Abort: A flight which is not carried to its scheduled completion.

(1) **Ground Abort:** A flight which does not become airborne within the specified time limit (AOC - one and one-half (1½) hours after scheduled take-off time).

(2) **Air Abort:** A flight which does not complete its assignment after it becomes airborne, consequently requiring the aircraft to land or to be diverted to a secondary assignment which it can satisfactorily complete, although an equipment malfunction prevents completion of the primary assignment.

Absent Time: Time lost from the job or duty assignment by reason of absence, either authorized or unauthorized. The types of absence are defined in "Accounts."

Accounting Ledger: A ledger for the daily recording of direct manhours expended.

Aircraft Accessory Change and TOC: A form printed on green paper, designed to provide control and documentation for aircraft accessory change and/or technical order compliance.

Analysis: The operation of studying pertinent management information, in the light of one's experience and the principles of good management, for the purpose of determining the best course of required management action.

AOC Mission: A scheduled function wherein one of the two aircraft, defined as flights below, is capable of performing the airborne early warning assignment.

Blanket Work Order: A work order issued monthly authorizing a specific repetitive job accomplishment.

Cancellation: A situation in which neither aircraft (two flights) assigned to accomplish an AOC mission can perform the mission. If one flight aborts, or is otherwise scratched, but the other flight becomes airborne within the stipulated time limit and accomplishes the AOC mission, the situation does not constitute a cancellation.

Cannibalization: The act of removing parts or accessories from one aircraft, or item of equipment, to install on another and, thus, make the latter in-commission, serviceable, or mission-ready. Cannibalization can only be approved by the wing commander or the chief of maintenance.

Critical Item: A critical item is a component, accessory, or part whose failure would directly affect either safety or flight, safety of operation, or mission capability.

Daily Attendance Record: A daily attendance record of assigned personnel for each activity of the maintenance organization.

Daily Manhour Utilization Record: A daily report to record direct, indirect, and absent time expenditure of designated maintenance activities.

Delay (AOC): A mission which is not begun on or before the scheduled time, but which does not begin within the specified time limit of one and one-half (1½) hours after scheduled take-off time.

Depot Maintenance: That maintenance performed on USAF Materiel requiring major overhaul or complete rebuilding of parts, assemblies, sub-assemblies, and/or the end item, including the manufacture, testing, and reclamation, as required. Depot maintenance supports lower categories of maintenance by providing technical assistance and performing that maintenance beyond the lower category capability.

Dispatching: The procedure of directing the flow of work to and from maintenance units in accordance with established schedules.

Dock, Shop, Flight Line Stock: A 15-day level of expendable nonrecoverable supplies required to support a specified maintenance activity.

ECL (Equipment Components List): A listing of components (tools, etc.) for kits and sets of equipment authorized a maintenance activity.

Field Maintenance: That maintenance authorized for, and performed by, designated maintenance activities in direct support of using activities. (Repair, testing, calibration, etc.)

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Flight: An aircraft selected to perform an assignment, i.e., AOC, LRN, Transition, etc. An AOC mission normally has two aircraft assigned (two flights); primary and standby.

"H" Hour: The hour designated by the maintenance control unit when each periodic inspection will begin. Normally, the "H" hour will be made known to all affected maintenance activities at least six working hours in advance.

"H-Plus" Hour: The number of working hours after "H" hour when specific jobs or operations will be accomplished.

Indirect Time: The manhours connected with the operation of the activity but not expended in the direct accomplishment of authorized work.

In-Flight Discrepancies: Those malfunctions or discrepancies which occur or which are discovered after the aircraft is airborne.

Inspection Analysis Chart: A chart designed to provide an accumulative recording of irregularities and deficiencies, by inspection work card and item number. These trends are used to determine realistic inspection requirements.

Inspection Planning Meetings: A meeting conducted by the maintenance control unit to coordinate, plan, and schedule the inspection. This meeting will be conducted at least three days before the aircraft enters the dock and prior to the last flight of the aircraft before inspection.

Inspection Requirements: The maintenance and inspection requirements for a given type and model aircraft.

Inspection Work Card: A card designed to provide the mechanic or specialist with a detailed work guide telling what to do, where to do it, and how to do it.

Instruction Slip: The form used in field or armament-electronics maintenance activities to obtain aid from another shop in job completion.

Maintenance Control: The function of providing centralized coordination of all wing maintenance activities. It includes planning, scheduling, directing, coordinating, and controlling.

Management: The act of planning, scheduling, directing, and controlling.

Management Training: Training pro-

vided selected personnel to increase their managerial abilities and thus improve the operation of the maintenance organization.

Manhour: The time equivalent to one man for one hour.

Manhour Utilization: The percentage of available manhours actually expended on direct labor.

Manhours Assigned: The work capacity of the shop equal to the total number of personnel assigned multiplied by the number of work hours of the day (see "Work Day").

Manhours Available: The manhours assigned and borrowed minus manhours absent and loaned.

Materiel: The collective materials required in the operation of a maintenance activity which includes tools, equipment, supplies and other physical property.

Monthly Maintenance Summary Report: A monthly report summarizing the manhour and workload information pertinent to the maintenance organization.

On-the-Job Training: Training which can be best provided by close supervision and instruction while actually performing duties for which the training is required.

Overtime: Time expended over and above the usual or specified work day.

Planning: The process of determining the means and steps for attaining a goal.

Post-Dock: That portion of the periodic inspection, including flight test, accomplished after leaving the dock but prior to return to the flight line maintenance section.

Pre-Dock: That portion of the periodic inspection accomplished prior to entry into the periodic maintenance dock.

Pre-Issue Items: Items issued to designated maintenance activities in advance of actual need to permit build-up, inspection, calibration, etc., prior to installation and thus provide immediate availability of serviceable items to the user.

Proficiency Training: Training provided to increase the individuals' proficiency in his job and/or career field.

Quality: The degree of excellence required of a job or operation.

Quality Control: A function of in-

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spection to insure that the end product conforms to certain prescribed standards of performance and workmanship, and to insure that their relationships to one another are properly maintained.

Quality Control Data Sheet: Pre-printed forms outlining the items and conditions to be inspected during a quality inspection. These forms provide the sampling data for quality ratings.

Quality Discrepancy: A form, printed on pink paper, designed to provide a record of discrepancies discovered by quality inspectors. These items become part of the unscheduled maintenance to be completed during the periodic inspection.

Quality Standard: The established degree of acceptable quality.

Reparable Units: Items of property no longer serviceable but warranting return to serviceable condition.

Scheduled Maintenance (Predictable Maintenance): That portion of the periodic inspection known in advance. These requirements are pre-printed on Inspection Work Cards and are normally directed by technical instructions.

Scheduling: The advance determination of the timing of various aspects of an operation, including timing of availability of facilities, supplies, and the personnel to accomplish the planned work.

Scratch: When a flight cannot meet its assignment and is deleted from the schedule, it is considered "scratched."

Sequence Chart: A chart to graphically portray what is done, in what order, at what time, and by whom.

Specialist Routing: The directing of specialist movement from the place of duty to the required job and location.

Supply Delivery: The concept which requires the supply activity to deliver to the user at his work location those supplies required for accomplishment of maintenance.

Time Standard: The established average time in manhours for performing a specific maintenance function.

TOC Kits (Parts): Those items required to complete a designated TOC for

one aircraft, vehicle, or item of equipment.

Unscheduled Maintenance (Unpredictable Maintenance): Maintenance discovered in pre-dock or during the periodic inspection. When discovered, this maintenance is scheduled by use of the sequence chart.

Unscheduled Maintenance Description: A card designed to provide a method of recording all unscheduled maintenance, and to furnish a media for the dock chief to schedule the correction at a time convenient to the maintenance schedule.

Work Area: Defined areas of the airframe or engine in which mechanics or specialists are required to work. These areas are depicted on a work area chart and numerically identified.

Work Area Chart: A chart to display the work areas of an aircraft. This chart is a cut-away drawing of the aircraft. It specifically defines each work area and numerically identifies the area for cross-referencing to the inspection work cards and sequence chart. Work area charts will be conspicuously posted at the pre-dock and dock. By using a work area chart it is possible to prepare a work sequence which prevents overcrowding, interference, and interruption in a given area. (See also "Critical Area.")

Work Day: The established duty day (eight hours Monday through Friday, and four hours Saturday).

Workload: The quantity of work awaiting completion.

Workload Control: The function of scheduling workloads in relation to resources of manpower and equipment and responsibilities.

Work Order: Document issued by the maintenance control unit to authorize the expenditure of manhours in the performance of specific work.

Work Order Register: The document used to record essential information on work orders issued.

Work Order Request: A document prepared by an organization requesting issuance of a work order to accomplish a definite job.

SUPPLY

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AIR DEFENSE COMMAND MANUAL

443

SUPPLY

APRIL 1955

AIR DEFENSE COMMAND

ENT AIR FORCE BASE (2,000)
DPS, Dayton, Ohio

1062

1 April 1955
ADC MANUAL)
67-1)

ADCM 67-1
Headquarters Air Defense Command
Ent Air Force Base
Colorado Springs, Colorado

FOREWORD

1. It is essential that organizations and operations be standardized at like levels in order to attain the maximum efficiency and effectiveness. This supply manual has been prepared toward that end. All personnel concerned are enjoined to cooperate with the spirit and intent of the provisions of this Manual to the fullest extent.
2. This Manual has been divided into four Volumes, as follows:
 - a. Volume I prescribes standard unit supply policies, procedures, and methods of operation for all organizations.
 - b. Volume II prescribes policies, procedures and methods of operation for all base supply elements.
 - c. Volume III prescribes special supply procedures.
 - d. Volume IV pertains to scoring methods for various supply operations for purposes of analysis and drawing comparisons of efficiency between like operations. As additional scoring methods are developed they will be included in this volume. This volume eventually will also pertain to workload factors which will be obtained from representative Air Defense Command units and bases in the future. From these workload factors, "yardsticks" will be developed for determining realistic manpower requirements.
3. Reorganization of base and unit supply activities will be effected within presently authorized personnel ceilings to conform with the organizational concept contained herein. Manning surveys will be conducted following reorganization.
4. The provisions of this Manual will be implemented on a phased basis. It is not the intent of this Manual to precipitate an immediate reorganization of all base and unit supply elements within the Air Defense Command, however, complete reorganization will be accomplished not later than six months subsequent to the effective date of this Manual. The participation and cooperation of all ADC personnel concerned is required to insure the successful fulfillment of this Manual.
5. The standards established in this Manual are mandatory and deviation therefrom is not authorized without prior approval by this headquarters.
6. In the preparation of this Manual, it was realized that, in certain instances, peculiarities in base layout, terrain, geographic factors, etc., may create variances which would necessitate some deviation. In such cases, complete justification must be furnished together with the detailed operating procedure or organizational structure recommended by the supply element involved.
7. It is not the intent of this Manual to violate or duplicate, in any respect, existing Air Force directives. This Manual establishes the Air Defense Command policy in those areas in which Air Force directives require clarification and/or implementation or leaves the final decision to the discretion of the major air command. In certain instances, for the purpose of emphasis or clarification, some repetition of existing directives has been found necessary. Procedures and policies established in this Manual will supersede and/or rescind all like procedures and policies previously published by all levels of this command. Supply policies and procedures previously established to govern the support of Air Defense Command ACW sites in Canada by this headquarters and by Detachment #1 of this headquarters at Ottawa, Ontario, Canada, are not superseded by this Manual. Changes to such policies and procedures will be effected by promulgation of ADC regulation from this headquarters or by instruction from Detachment #1.

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8. Recommendations for improvement or changes to this Manual are encouraged from all units and individuals and will be submitted through channels to this headquarters, ATTENTION: Materiel Management Division, Asst for Materiel Control, ADMMC.

BY ORDER OF THE COMMANDER:

OFFICIAL:

GEORGE F. SMITH
Major General, USAF
Chief of Staff

WALTER W. ROBINSON
Colonel, USAF
Command Adjutant

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VOLUME I
UNIT SUPPLY PROCEDURES
SECTION I
UNIT SUPPLY GENERAL

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1. **Purpose.** This volume of the Manual sets forth standard operating procedures which will be used by unit commanders, unit supply officers, and other unit personnel in the supply operation of an organization. The instructions herein supplement the procedures contained in Vol IV, AFM 67-1.

2. **Scope.**

a. This volume is divided into three sections as follows:

(1) Section I, "Unit Supply General," consists of procedures applicable to all ADC units.

(2) Section II, "Fighter-Interceptor Squadrons," consists of supply procedures peculiar to fighter-interceptor squadrons.

(3) Section III, "ACW Squadrons," consists of supply procedures peculiar to ACW squadrons.

b. ADC organizations tenant on bases of other major air commands will comply with this Manual to the extent that it does not conflict with local policies and procedures.

3. **Responsibilities.**

a. Unit commanders are responsible for:

(1) Insuring that property within their organization is properly safeguarded, administered, and accounted for.

(2) Insuring strict compliance by all concerned with AFR 67-10, AFM 67-1, and this Manual.

(3) The assignment of sufficient

qualified personnel required to accomplish the unit supply workload.

(4) Making periodic visits to unit supply (at least once a month) to determine the adequacy of the supply operation. This responsibility will be satisfied by detailed personal observation of the equipment and records. Each visit will be made a matter of record indicating results of such visits. Only fifty per cent of this responsibility may be delegated to a subordinate.

b. Unit supply officers are responsible for:

(1) Strict compliance with AFR 67-10, AFM 67-1, and this Manual.

(2) Superintending all supply functions within the organization.

(3) Establishing within current personnel authorizations a standard organizational supply section, incorporating the functions as outlined in applicable sections of this Manual.

(4) Proper coordination with all squadron maintenance officers to determine realistic equipment and spare parts requirements, and to forecast such requirements to base supply.

(5) Compiling supply data for reporting purposes as may be necessary to comply with existing directives.

4. **Issue Procedures.** (See Sec 4, Vol IV, AFM 67-1)

a. An ADC unit located on an ADC base will obtain supplies and equipment from base supply by the following methods.

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(1) AF Service Store. All expendable local purchase supplies required by the organization will be drawn from the AF Service Store. This system has been devised to reduce paper work, record keeping, and simplify the procedures for the storage and issue of local purchase expendable supplies. Issues will be made only to authorized personnel in accordance with par 3, Sec 4, Vol IV, AFM 67-1. (Ref Air Force Service Store procedures, Vol II, ADCM 67-1).

(2) Telephone Order System (Spare Parts). The emergency issue of aircraft, electronics, automotive, and installation type spare parts (anticipated AOCP and similar priorities and work stoppages) will be accomplished through the base supply expediter system. This system has been designed to provide expedient service to using activities by use of telephone order and delivery system. In an emergency, when a mechanic requires an item which is not in bench stock or stand-by, he will advise the designated unit supply expediter of his requirements. By use of telephone, the unit supply expediter will submit the request to appropriate service unit of base supply, furnishing control number and other necessary data, for subsequent delivery to the activity (ref par 8, Vol II). In the event that the unit is located immediately adjacent to the base supply service unit, the delivery system will not be used. In these instances, the unit supply expediter will personally draw the items from the appropriate service unit of base supply. In the event that items requested on a priority basis are not available in base supply, the request will be turned over to the priorities clerk for appropriate action. A due-out copy of the AF Form 446, indicating action taken by base supply to obtain the item (i.e., lateral support, requisition on depot, estimated delivery date, etc.), will be forwarded to the requesting activity within 24 hours. Known requirements for scheduled maintenance and such other like requirements will be submitted by the unit supply expediter to base supply on AF Form 446 in accordance with par 4a (3) below. Such requirements will be submitted to base supply sufficiently in advance of the required date to allow base supply adequate time to process and deliver the material.

(3) Normal Issue Procedures. Organizational property (UME and USE) and all other supplies and equipment not specifically covered by par 4a (1) and (2) above will be obtained by the submission of AF Form 446, "Issue Slip," to base supply

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in accordance with Sec 4, Vol IV, AFM 67-1.

(4) Follow-up on Issue Request (AF Forms 446) Submitted to Base Supply. This follow-up procedure is designed to place the responsibility on the unit to advise base supply of items to be retained on back order. When an item has been on back order for a period of 90 days (180 days for UME and USE Equipment) and a requirement for the item still exists, the organization will advise base supply, in writing, that the item is still required. If the organization fails to notify base supply, the back order will be automatically cancelled and the organization advised. It is not the intent of this procedure to discourage the cancellation of back ordered items prior to expiration of 90 or 180 days. At any time that a unit determines that a back ordered item is no longer required, base supply will be notified immediately in order that the requisition to the depot may be cancelled.

5. Turn-in procedures. (See Sec 5, Vol IV, AFM 67-1.)

a. An ADC unit located on an ADC base will dispose of all property by turn-in to base supply on AF Form 447, "Turn-in Slip", prepared in accordance with Sec 5, Vol IV, AFM 67-1. Exception to the foregoing will be reparable items for which a continuing requirement exists. These will be handled in accordance with par 6, Vol III. Turn-in of excess property (serviceable and reparable) will be accomplished as follows:

(1) Pick-up Service. Base supply will establish a pick-up and delivery schedule to service all units on the base. The organization will prepare the necessary AF Form 447 for items to be picked up by base supply. At the time of pick-up, the base supply representative will conditionally receipt for the property and return the unit supply officer's suspense copy. Unit supply will retain the receipted suspense copy pending return of the completed copy #2 by base supply.

(2) Organizations physically located immediately adjacent to base supply may turn in property direct to receiving and classification in accordance with the schedule established by base supply, except as otherwise provided in par 6, Vol III (Bench Check). ADCM 67-1

b. Excess Property. Unit Commanders and unit supply officers are responsible to insure prompt return of excess property to base supply. This responsibility is not limited to organizational equipment auth-

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orized by unit authorization lists, but also encompasses spare parts, bench stock items, housekeeping supplies, etc. Unit commanders and unit supply officers can carry out this important responsibility only by strict enforcement of supply discipline within the organization. Visits must be made to sections of the organization to insure that excess and unserviceable property is not being accumulated. Unit Authorization Lists, unit property records, bench stock levels, and stand-by levels should be continuously reviewed to insure that property on hand is not in excess of authorized allowances and levels.

6. **Property Records.** a. The maintenance of property records for organizational property is contained in Sec 7, Vol IV, AFM 67-1. This paragraph sets forth supplemental instructions for the purpose of standardizing unit accounting in those areas where optional provisions are contained in AFM 67-1.

b. **Control Register.** The "Register of Control Numbers AF Form 115A, will be maintained in the manner prescribed in Sec 7, Vol IV, AFM 67-1. In addition, the following instructions will also govern:

(1) All permanent entries in the control register will be made by typewriter, pen and ink, or indelible pencil.

(2) Only one control register (AF Form 115A) will be maintained within the organization. Blocks of control numbers will be allocated to supply elements of the organization as required, to be used for the purpose of drawing and turning in spare parts, exclusive of stand-by components, to base supply. Organizational equipment and unit stand-by components will in all cases be handled by the General Supply Section of the organization.

c. **Unit Property Records.** Unit Property Records, (AF Forms 1120) will be maintained in accordance with Volume IV, AFM 67-1. In addition, the following instructions will also apply:

(1) AF Forms 1120 for newly activated organizations or units undergoing reorganization will be prepared mechanically by the appropriate air defense force simultaneously with the preparation of the UAL for the activity concerned.

(2) Stationary visible type filing equipment will be used for maintaining AF Forms 1120 for both unit mission and unit support equipment. In the event that an ADC unit deploys to an overseas location, binder type filing equipment, as authorized in Sec 7, Vol IV, AFM 67-1, will be obtained and used by the deploying organi-

zation to maintain AF Forms 1120.

(3) All entries on AF Form 1120 will be accomplished by typewriter, in ink or indelible pencil, except the "Total Authorized," "Droppage Allowance," "Unit Cost," "Issue Control Code," and "Location" portions of the form. The foregoing exceptions will be completed by use of ordinary pencil. Erasures may be made in the location portions of the form when all spaces allocated to a particular account have been completed and a new form is not as yet required. Incorrect entries in the "due-in" and "in-use" inventory columns will be corrected by lining out, with a non-obliterating line, the incorrect entry and making the corrective posting immediately following. The individual making the corrective posting will initial the entry.

d. **Unit Supply Files.** Unit document files will be maintained in accordance with par 11, Sec 4, and par 5, Sec 7, Vol IV, AFM 67-1. In addition, the following instructions will also apply:

(1) **Suspense File.** Only one suspense file will be maintained within unit supply and will consist of a copy of each supply document which has been assigned a control number and on which completed action has not been taken. The organization suspense file is primarily used to facilitate cancellation and follow-up on items placed on back order by base supply. However, all other suspense documents will also be maintained in this file until completed action has been taken. As soon as the completed action of a supply document is received, the suspense copy will be removed and destroyed. It is imperative that the suspense file be maintained accurately and be current at all times. (For back order and follow-up procedures, see par 4b).

(2) **Completed Document File.** Only one completed document file (regardless of the type of property involved) will be maintained within unit supply and will consist of the valid copy of each completed document which has been assigned a control number. (See par 5, Sec 7, Vol IV, AFM 67-1.)

(3) **Custody Receipt Files.** A separate custody receipt file will be maintained for each section and individual of the organization issued property on custody receipt. AF Forms 538 "Organizational and Flying Clothing and Equipment Account (Airmen and Officers)," will be filed in the custody receipt folder for each individual concerned. It is imperative that all custody receipts pertaining to a particular individual be filed in the folder established for that individual to expedite his clearance

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upon transfer. In order to reduce the number of postings to the location portion of AF Forms 1120, each unit will assign a single account symbol to the set of folders representing individual issues of tool kits, bedding, flying clothing (issued on a permanent basis) and similar items to a group of individuals. Such issues will be totaled and recorded in the location portion of AF Forms 1120 as a single entry.

7. **Bench Stocks.** a. The term "bench stock" is applied to 15 day levels of expendable nonrecoverable supplies required to support the needs of an active function.

b. The primary purpose of bench stocks is to provide at a location as near as possible to each function area, a sufficient quantity of constant-use material to meet all immediate needs of individual operating personnel. These provisions apply primarily to aircraft maintenance, installations, and automotive maintenance type organizations. However, the same procedures will apply equally to other type activities. (For ACW activities, see Sec III).

c. Each shop or individual function will develop a proposed initial list of expendable nonrecoverable items required for constant use. If desired, such lists may be consolidated for several shops or individual functions provided these activities are in close proximity to one another and can conveniently operate out of the same bench stock. Lists will be prepared in stock number sequence by sub-class and will indicate the quantity desired. Unit pack quantities will be used wherever possible. If substitute stock numbers exist, at least one substitute item will be indicated immediately below the desired item. (Reference Figure 1-2.)

d. After the maintenance officer and unit supply officer have screened and approved the proposed initial lists, the unit supply officer will reproduce final master lists for each property sub-class on AF Form 446A, "Issue Slip," as illustrated in Figure 1-2, for each shop, individual function, or group of shops and individual functions. Preprinted lists (AF Forms 446A) will be prepared by direct spirit process, preferably by ditto master. Sufficient copies will be prepared to preclude retyping prior to revision of the lists. Preprinted Forms 446A will initially contain the typewritten data as illustrated in Figure 1-2. The hand-scribed data (Unit S. O. No., On Hand, Required) will be entered at the

time of submission of the request to appropriate service unit.

e. Every ten working days the unit supply bench stock operator will submit replenishment requests to the unit supply officer on preprinted AF Form 446A, in the normal number of copies required by AFM 67-1. The "On Hand and Due In" and "Quantity Required" columns will be filled in by the bench stock operator prior to submission. The unit supply officer will review each request for correct preparation and assign a control number prior to forwarding to appropriate service unit. One copy of the request will be retained in the unit suspense file.

f. Revision to preprinted lists will be accomplished every six months or more often, as required. When lists are revised, a new ditto master will be prepared and the old ditto master, together with any old unused preprinted lists, will be destroyed. During the period between revision dates, normal requisitioning procedures will be used to obtain those supplemental requirements not included on preprinted lists. Supplemental requests will be annotated "SUPPLEMENTAL" in the "Remarks" space on AF Form 446. A record of supplemental items will be maintained on 3" x5" cards until preprinted lists are revised, at which time the 3" x5" cards will be destroyed. Cards will contain stock number, description, and recommended level, and will be maintained within the bench stock section. This record will be used to reflect consumption data for determining realistic levels and will justify the inclusion of supplemental items on the revised preprinted lists. No formal record of transactions will be maintained by "bench stock" personnel.

g. The unit supply officer or a designated squadron supply representative will review all bench stock items at least every sixty days to determine adequacy of levels, excess and degree of supply discipline being exercised within the unit. Items determined excess to actual requirements will be returned to base supply immediately, in accordance with par 1b, Sec 5, Vol IV, AFM 67-1, unless such overages are minor and can be consumed in a reasonable time.

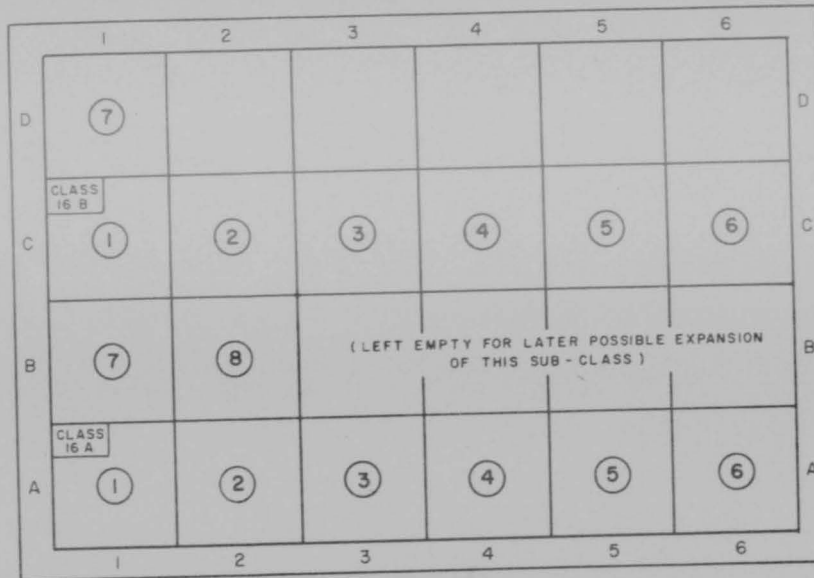
h. Storage of bench stocks will be standard to the extent that items prelisted will be binned in numerical order, where practicable, by class as indicated in preprinted lists. Bin rows will be lettered vertically starting at the bottom shelf with the letter "A" and continuing upward. Numbers will be used horizontally from

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left to right starting with the number "1." Bin row numbers and sub-classes will be indicated in the appropriate location on the bins as required. Provisions will be made to allow for forecasted expansion of locations for new items to avoid rebinning entire stocks. Supplemental items will be stored in separate locations until included in revised preprinted lists at which time all items will be rebinned in proper "item number" sequence as indicated on preprinted lists. Each location will be identified by

a bin tag or label. Tag or label will indicate stock number, noun and stock level. Excess items will be returned to base supply when generated in sufficient quantities to warrant such action. Care will be exercised by all concerned to insure proper storage and issue of "dated items" such as rubber goods, sensitized paper, etc., in accordance with applicable technical orders. Shown in Figure 1-1 is an example of required bin storage arrangement and item location.



NOTE: ①, ②, ETC SHOWN ABOVE REPRESENTS NUMERICAL SEQUENCY BINNING OF ITEMS IN ORDER LISTED ON PRE-PRINTED BENCH STOCK LISTS BY SUB-CLASS.

METHOD OF BINNING
BENCH STOCK

FIGURE 1-1

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ISSUE SLIP		Bench Stock		DATE		1 Oct 54			
UNIT SUPPLY OFFICER				UNIT S. O. NO.					
TO BASE SUPPLY OFFICER				PROPERTY CLASS		ACCOUNT SYMBOL			
AF 69 SO				04A					
BASIS OR AUTHORITY (If requesting parts for installation in a vehicle, aircraft, or other major assembly, give type and serial number)									
Bench Stock Replenishment (Hydraulic Shop)									
LINE	STOCK NO.	DESCRIPTION	UNIT	AUTH	ON HAND AND DUE IN	QUANTITY REQUIRED	UNIT COST	TOTAL COST	ACTION
1	6500-016250	Bolt	ea	50	31	19	.03		B 25
2	6500-016270	Bolt	ea	45	20	25	.03		30
3	6500-016320	Bolt	ea	60	25	35	.04		15
4	6500-030179	Bolt	ea	30	15	15	.03		20 15B
5	6500-032105	Bolt	ea	75	40	35	.03		10
6	6500-293714-4	Clamp	ea	20	10	10	.14		
	-293712-2	Clamp	ea						0
7	6500-293714-6	Clamp	ea	35	20	15	.14		15
	-293714-3	Clamp	ea						
8	6500-293714-336	Clamp	ea	15	8	7	.20		7
	-293714-8	Clamp	ea						
9	6500-293714-338	Clamp	ea	55	40	15	.20		B
	-293715-25	Clamp	ea						
10	6500-326530	Clip	ea	15	6	9	1.03		9
11	6500-326575	Clip	ea	25	6	19	.04		20
12	6500-326605	Clip	ea	30	0	30	.04		B

FOR AF DEPOTS USE ONLY			
TRANSACTION	CONDITION	ACCOUNT	TYPE
<input checked="" type="checkbox"/>	ISSUE		
<input type="checkbox"/>	BACK ORDER RELEASE		
<input type="checkbox"/>	TO MAINTENANCE FOR		
<input type="checkbox"/>	REPAIR	<input type="checkbox"/>	TEAR-DOWN
<input type="checkbox"/>	BUILD-UP		
POSTED BY (Initials and date) LWH 10/22/54			
FROM (Originating organization or unit, name, address, building, room number, and telephone number) 42d Fighter Interceptor Squadron, B-25, tel. 2105			
QUANTITIES SHOWN IN "ACTION" COLUMN HAVE BEEN RECEIVED			
DATE 23 Oct 1954			SIGNATURE OF AUTHORIZED REPRESENTATIVE R.W. Collins, T/Sgt.
AF FORM 446 A 1 JUN 51			BASE SUPPLY VOUCHER NO. 55-19428

FIGURE 1-2

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8. **Stand-By Components.** a. The term "stand-by components," as used herein, refers to those expendable recoverable aircraft, electronic, automotive and installations type spare parts issued on loan by base supply to using organizations in advance of actual requirements. Advance issue is necessary to accomplish the following:

(1) Build-up, inspection, calibration, bench check, or other technical action prior to installation on aircraft or other major assemblies.

(2) To provide ready availability of serviceable assemblies to using activities.

b. The maintenance officers and the unit supply officer in cooperation with the base supply officer will determine those items and quantities of spare components required by the organization to insure continued operation. A list of required stand-by items will be maintained by the unit supply officer and will be continuously reviewed to insure adequacy of levels and that excesses are not accumulated. Overstockage of such items will create an excessive supply workload and will result in loss of control. Under-stockage will tend to create an excessive workload on the expediter delivery service within base supply.

c. Formal record of stand-by components will be maintained by the unit supply officer on AF Form 84B. Such records will reflect all transactions with base supply as well as exchanges within the organization. The base supply officer is also required to maintain a record of stand-by components in possession of using organizations. (See par 5, Vol II ADCM 67-1.)

d. **Control of Stand-by Components.** It is the responsibility of squadron commanders, unit supply officers, squadron and field maintenance officers, shop foremen, and other supervisory personnel to adequately supervise, control, and safeguard stand-by components in accordance with AFR 67-10. Unit supply officers will require inventory of stand-by components at least once each 90 days. The inventory should be conducted by AF property class or subclass in conjunction with the base supply stock balance and consumption reporting cycle, as indicated in par 5c(2)(f), Vol II. Each inventory will be recorded on AF Form 84B maintained for stand-by components. Shortages revealed by inventory will be adjusted in accordance with Sec 2, Vol IV, AFM 67-1. Overages will be turned in to base supply.

9. **Tool Crib Operation.** a. All tool cribs will be under the direct control of

unit supply. Supply AFSC's authorized within the squadron will be under the direct supervision of the unit supply officer and used for the purpose of manning this function. Tool cribs will be an integral part of aircraft and electronic supply sections, commonly referred to in the past as "Technical Supply." The physical location of tool cribs will be immediately adjacent to or located within the aircraft, electronic, automotive and/or installations supply sections.

b. Tool kits authorized by appropriate ECL's will be assembled and issued on preprinted item lists in accordance with Sec 6, Vol IV, AFM 67-1. Periodic inventories of such tool kits will be performed by the unit supply officer in cooperation with the various maintenance officers concerned for the purpose of adjusting shortages and replacement of worn tools. Certain special tools may be issued on a permanent basis to designated individuals if considered necessary by the maintenance officer.

c. Tools issued on a temporary basis from the tool crib will be issued on AF Form 1297, "Temporary Issue Receipt," when available in supply channels. In the interim, AF Form 446 marked "Custody Receipt" will be used. The standard period of time that any tool will remain out of the tool crib will be established by the unit supply officer in coordination with the maintenance officer. Aggressive action will be followed to effect compliance with time periods established.

d. All torque wrenches and other equipment requiring recalibration will be handled as prescribed in applicable technical orders or other directives.

e. Adequate security storage facilities will be made available by the maintenance officer to store tool kits which have been issued to individuals.

10. **Custody Receipts.** a. AF Form 538 will be accomplished for each individual assigned. These forms will be maintained and filed within the "general supply" section of unit supply. For items temporarily issued to individuals, AF Form 446, Issue Slip (Custody Receipt), prepared in accordance with Sec 4, Vol IV, AFM 67-1, marked "Custody Receipt Issue," will be used. These custody receipts will be filed in the individual's AF Form 538 jacket file. Upon PCA or PCS of an individual to a new duty station, those items which are authorized to be transferred with the individual concerned will be posted to the appropriate AF Form 538 and processed

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in accordance with AFR 67-81.

(1) All items of personal flying equipment within fighter-interceptor squadrons will be issued in bulk to the "unit personal equipment officer." All individuals will draw equipment from and turn in equipment to the personal equipment officer, using a custody receipt system.

(2) The following procedure will be used when orders specify that individuals will take equipment upon transfer:

(a) The personal equipment officer will prepare a turn-in slip to return items to unit supply.

(b) The individual will carry turn-in slip to unit supply, receipt for items on AF Form 538, and obtain signature of unit supply representative on the turn-in slip.

(c) Individual will surrender turn-in slip to the personal equipment officer in exchange for individual's custody receipt.

b. The base personal equipment pool will issue flying equipment as required on a "per flight" basis. The only exception to this will be in the case of "flight test maintenance officers" appointed by orders or other individuals designated by the base commander to be issued flying equipment on a full time basis. These individuals will be issued equipment on permanent custody receipt from the personal equipment pool. When individuals are required to take equipment upon transfer, action will be taken in accordance with par 10a(2) above. Transfer documents will be required in lieu of turn-in slips when individuals are assigned to an organization other than the one operating the pool.

c. Isolated units operating aircraft will include personal equipment, as required, on their UAL.

11. **Safeguarding Small Arms and Ammunition.** a. Installation and unit commanders are directly responsible for insuring that all precautions are taken to safeguard small arms and ammunition. Buildings for storage of small arms and ammunition will be of masonry construction with concrete floors, barred windows and strong doors, equipped with secure double locks wherever possible within existing facilities. If this type of structure is not available, the building selected will be secured by barring windows and ventilators, installing double locks, etc. If outdoor storage is necessary, packing containers will be protected from the elements in conformance with established storage practices. Suitable security enclosures will be provided. Such outdoor storage areas will be guarded at all times. Record of lot numbers for ammunition on hand will be

maintained at all times.

b. Small arms will be stored in arms racks authorized in current equipping documents. Such racks will be secured to the building.

c. When personnel responsible for safeguarding of small arms and ammunition are in the immediate vicinity and have constant visual coverage, locked racks are considered adequate and will preclude construction of security storage rooms.

d. Commanders will not authorize small arms to be kept in an individual's possession over night, except when required in the performance of duty. In such cases, individual custody receipts will be used to effect issue. Personnel having access to arms racks or small arms storage areas will be held to an absolute minimum.

e. All small arms will be issued to individuals by unit supply, as required. To facilitate the issue of arms and ammunition in the event of emergency, preprinted "custody receipt" cards will be used. These cards will bear the following information and will be issued to each member of the organization:

Individual's name, grade and service number.

Organization

Stock number, noun and weapon serial number.

Ammunition (number of rounds).

Signature of individual.

At the time of issue of weapons and ammunition, the individual will surrender his preprinted card to the unit supply officer for use as a custody receipt. Upon return of the weapon and ammunition, the custody receipt card will be returned to the individual for subsequent use.

f. Accounting for lost or stolen ammunition and weapons will be in accordance with Volumes IV and VI AFM 67-1 except that Reports of Board of Officers will be used in lieu of reports of survey in determining pecuniary liability and relief from accountability of lost or stolen weapons. Organizations supported by other commands will comply with the applicable portions of AFM 67-1 as implemented by that command.

12. **Property Adjustments.** a. The preparation and processing of property adjustment documents (Reports of Survey, Statement of Charges, Schedule of Collections, one per cent droppage) by unit supply is contained in Sec II, Vol IV, AFM 67-1. The following additional instructions will also apply:

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(1) DD Form 362, "Statement of Charges," for Organizational Property. DD Form 362 will be prepared in three copies. Signature of each responsible individual will be obtained on the original and one copy of the statement of charges and forwarded to the unit commander, and in turn to the personnel officer for necessary action. The original copy of the statement of charges will be returned to the unit supply officer and the duplicate retained by the personnel officer. The third copy of the statement of charges will be retained in suspense by the unit supply officer pending receipt of the completed original copy. Upon receipt of the completed original copy, the unit supply officer will effect necessary postings to the appropriate AF Forms 1120 and file the document in the permanent document file.

(2) Standard Form 1044, "Schedule of Collections," for Organizational Property. Standard Form 1044 will be prepared in a minimum of four copies unless the local finance officer requires additional copies. One copy will be retained in suspense by the unit supply officer pending return of the copy received by the finance officer. The receipted copy of the schedule of collections will be posted to the appropriate AF Forms 1120 and filed in the completed document file.

(3) Accounting by Certificate for Property Lost, Damaged or Destroyed. Pursuant to par 7, Sec 2, Vol IV, AFM 67-1, certain items of organizational property lost, damaged or destroyed through no fault or neglect may be dropped from property records. These provisions are intended to cover operational losses only. Personnel reporting such loss should be given full consideration for adjusting such losses by the certificate method provided there is no evidence of negligence on the part of the individual concerned.

(a) A file will be established by each unit supply officer (in T/O units separate files will be maintained for unit mission and unit support equipment) and will contain the following documents:

1. A copy of the statement indicating dollar value by class of property, grand total of property (UME and/or USE) and maximum yearly droppage allowance.

2. A copy of each AF Form 447, "Turn-in Slip," used to effect droppage of property. (The suspense copy will be used for this purpose subsequent to action by the approving authority).

13. **Publications.** a. Shortage of necessary publications has long been a problem within ADC, therefore, it is con-

sidered of sufficient importance to make reference to appropriate procedures contained in AFM 67-1.

b. Various studies made in the past point out laxity in preparation of publication requirements by using organizations as well as poor distribution upon receipt.

c. In order to avoid such conditions, qualified personnel will be made available by the base supply officer to assist organizational personnel in arriving at realistic requirements. For ACW sites not located on an AF base, publications will be requested by the organizations direct from the appropriate Class 30 zonal depot. The supply officers at such ACW squadrons will be responsible for the submission of accurate and realistic publication requirements.

d. Upon receipt of publication, organizations will insure that correct distribution is made to all elements concerned.

e. Section 11, Vol I, AFM 67-1, fully outlines procedures for obtaining necessary publications. Strict compliance with these procedures will be made by all concerned.

f. The responsibilities of the unit supply officer for acquiring and maintaining current files is further covered in par 2, Sec 3, and par 13, Sec 7, Vol IV, AFM 67-1.

14. **Field Equipment.** a. Unit supply will maintain on hand only minimum quantities of individual field equipment to meet the requirements of their organizational responsibilities and position in the appropriate base defense plan.

b. Under no circumstances will this equipment be charged to or maintained by each individual of the organization. This equipment will be issued only for purposes as required in the base defense plan.

c. Unit supply will assemble all items required to make up an individual "unit kit." These kits will be stored in areas as close to the required "personnel" assembly points as possible. Upon issue, individuals will sign for one complete kit, "consisting of (steel helmet, canteen, etc.)," and the items will be listed. Issue lists will be pre-printed. Steps will be taken by each unit to insure adequate security from damage or pilferage of these kits while in storage.

d. Kits will consist of:

- (1) Steel helmet and liner.
- (2) Belt, web, ammunition.
- (3) Canteen.
- (4) Additional items as required.

e. Upon notification that complete implementation will be made of the base defense plan, unit supply will effect im-

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mediate action to obtain balance of field equipment, as required, from base supply.

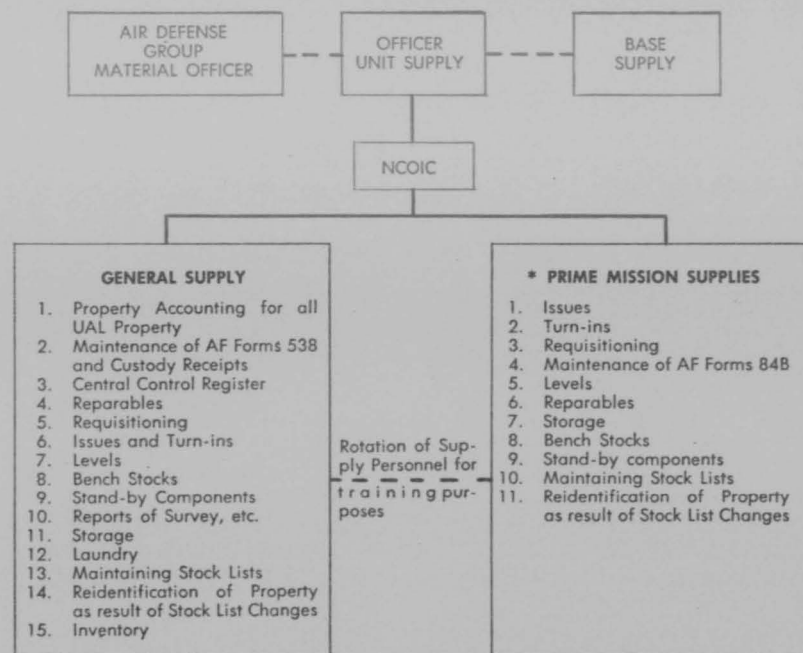
15. **Storage** (See Section 8, Volume IV, AFM 67-1.)

a. **Supplies and Equipment.** (1) All supplies including bench stocks, stand-by items, etc., will be stored in an orderly manner and in areas which will permit ease in access and location. Such stocks will be inventoried and excesses disposed of as prescribed in par 5, above.

(2) All authorized equipment phys-

ically possessed but not required for immediate use will be stored in accordance with established storage procedures. Proper safeguarding measures will be taken to prevent loss or damage to such property. Personnel having access to unit storage areas will be held to a minimum. All property will be properly preserved for storage within the capabilities of units concerned in accordance with applicable directives. Corrosion control facilities available in field maintenance activities will be used for this purpose.

A TYPICAL UNIT SUPPLY ORGANIZATION



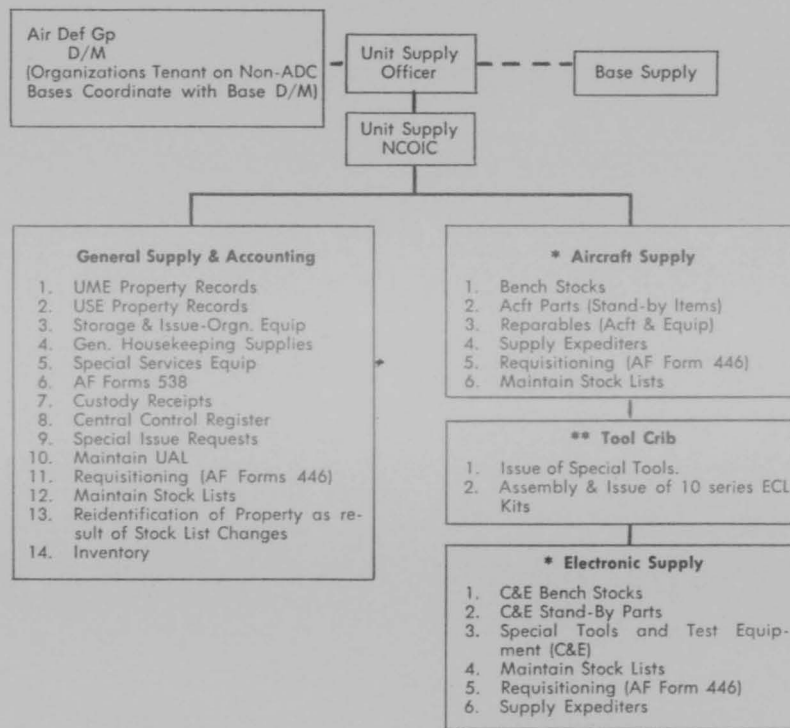
* - The use of a separate "Prime Mission Supply Section" is authorized for only the Aircraft Maintenance Flight or Squadron, Automotive Maintenance Flight or Squadron and Air Installation Flight or Squadron of Air Defense Groups as may be required.

FIGURE 1-3

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Fighter-Interceptor Unit Supply Organization



* Will be physically located within the immediate area of the using activity insofar as facilities permit.

** Aircraft and electronic tool cribs may be combined where facilities permit.

NOTE: All functions may be physically combined provided facilities available will permit such consolidation.

FIGURE 1-4

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VOLUME I
SECTION III
ACW SQUADRON

PARAGRAPH	TITLE	PAGE
1	GENERAL	13
2	REQUEST FOR SUPPLIES	13
3	ISSUES (NON-DUTY HOURS)	14
4	PROPERTY RECORDS	14
5	PRIORITY REQUISITIONING STATUS BOARDS	14
6	LEVELS	14
7	INVENTORY	15
8	BENCH STOCKS	15
9	STORAGE	15
10	PRIORITY REQUESTS FOR ELECTRONIC ITEMS	15

1. **General.** a. This section consists of procedures peculiar to ACW squadrons. These procedures are in addition to those contained in Section I.

b. Each unit supply officer will establish within present personnel authorizations a standard organizational supply section incorporating the functions as outlined in Figure 1-5.

c. At ACW squadrons, where all facilities are located within the same area, unit supply will consolidate the electronic supply and general supply sections into the same building for administration and operation. If additional storage is required, arrangements will be made locally within existing facilities for sufficient space to provide a bulk storage area as may be required.

d. ACW squadrons having split operational facilities will provide blocks of control numbers to the electronic supply section, as required. All issues, turn-ins, stock replenishment, requisitioning, etc., for C&E items will be accomplished by the electronic section. Electronic sections will maintain AF Forms 84B for all C&E items in stock. Personnel will be cross-trained between general supply and electronic supply sections.

e. When shipments are received direct from depots, the unit supply officer will process necessary receiving documents in accordance with Sec 3, Vol I, AFM 67-1, to the applicable logistic support base within a maximum of 24 hours. This also applies to those shipments received from support bases and local pur-

chase shipments received direct from contractors.

(1) Receiving documents for C&E Project equipment received direct from depots or contractor will be processed to the applicable depot by the unit supply officer or the installing AMA supply representative.

f. Supply personnel will inspect all items for proper identification, condition, and count. Shipping documents for automatic shipments with attached master packing lists will be assigned unit control numbers, posted to appropriate records if required, and filed in the completed file.

2. **Requests for Supplies.** a. AF Form 446 or AF Form 104, as appropriate, will be used by ACW sites to request supplies from the support base. The supply officer will screen and consolidate requests submitted by operating units.

b. Requisitions for non-stock listed items will be ordered in the appropriate Air Force class, using the class code dash NSL. Full description, including dimensions, operating characteristics, specifications, manufacturer, manufacturer's part drawing numbers, type of equipment used in, and source from which all the above information was obtained will be included on the requisition.

c. The supply officer will, upon receipt of a priority request for supplies from maintenance activities, exhaust all local sources for the items required. Local sources will include utilization of substitutes, next higher assemblies, bench stocks

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in other sections, petty cash purchasing, and local repair facilities. If not available locally, he will then initiate action as outlined in AFR 67-95 and ADCR 67-21.

d. All telephone requests for supplies to electronic support bases will include the following information:

- (1) Type of request.
 - (2) Control number.
 - (3) Stock number.
 - (4) Major noun.
 - (5) Quantity required.
 - (6) Type of prime search equipment and serial number.
 - (7) Equipment by type and serial number that is defective.
 - (8) Stock number of the next higher assembly or suitable substitute, if any.
 - (9) Date and time item required.
- e. Canadian ACW sites will obtain arctic clothing in accordance with par 10, Vol III.

3. Issues. (Non-Duty Hours). a. The supply officer will, during other than normal unit supply duty hours, provide the officer in charge of operations with a key to the electronic supply storage area. If during the operation officer's tour of duty it becomes necessary to draw parts from supply, he will insure that such items are correctly indicated on a "recap sheet" to be provided by the unit supply officer. The officer in charge of operations will be responsible for compliance with AFR 67-10 and will be subject to the provisions therein.

4. Property Records. a. AF Form 84B "Service Stock Balance Record," will be used to record all issues, receipts, balances, stock levels, reorder points, status, unit price, unit of issue, location, etc., for all C&E spare parts and supplies in stock.

b. Sample of all types of postings commonly used in electronic supply sections are indicated on a sample AF Form 84B, Figure 1-6. The 84B form will be prepared and maintained as indicated by sample form. Entries on the dotted lines following class, status, etc., will be in lead pencil in order to effect changes, as required. Erasures on the body of the AF Form 84B (transactions) will not be authorized. Errors made in posting will be lined out and initialed. Corrected posting will be made on the horizontal line immediately below the lined out posting. On nonexpendable and recoverable items, the "Balance" column on AF Form 84B will be divided to reflect serviceable and repairable quantities on hand.

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c. AF Form 84B cards maintained on items which are subject to periodic technical order compliance will be marked or stamped "T. O. C." across the body of the card in bold letters to facilitate T. O. C. inspections, as required. The applicable cost category, i.e., (CAT-3) will also be marked or stamped across the body of the card in bold letters.

(1) Issues (Electronics)
 (a) All issues of electronic items will be made by use of AF Form 81A (Recap Sheets) and posted daily to the AF Forms 84B. After posting is completed, AF Forms 81A will be filed by control number sequence in the completed document/file.

(2) Turn-Ins (Electronic)
 (a) Turn-in of repairable nonexpendable and recoverable electronic items from maintenance activities will be effected without use of AF Form 447. Repairable items will be accepted by supply personnel and stored in one central location (see par 9) pending shipment to the appropriate support base or contractual repair point. Non-critical repairables will be accumulated only in such quantities as to justify expense in shipping. Critical items in repairable status will be shipped immediately. AF Form 104 or AF Form 447, as appropriate, will be used to effect turn-in to support base.

(b) All items being turned in will be tagged with the appropriate AF Form 50 series tag. Tags will be signed by qualified inspectors designated on squadron personnel memorandums.

(c) Turn-ins of contractor support items on an exchange basis will be accomplished as outlined in Technical Order 16-1E-2 or 16-1E-3.

5. Priority Requisition Status Board.
 a. All electronic supply sections will establish a "priority requisition" status board. This board will be kept posted up-to-date at all times. Such status boards will show the following information: Stock number, major noun, control number, status (ROCP, etc.), date, equipment affected, and requisition action status.

6. Levels. a. Stockage objectives for all supplies will be the total quantities of supplies needed to meet issue demands for a thirty day period plus pipeline time. Levels maintained will be screened on a monthly basis when reordering and will be revised as necessary. (See Sec 11, Vol II, AFM 67-1).

b. Stand-by levels will be established for all items which, due to lack of move-

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ment or regulated status, would not justify a quantitative level but on which stand-by quantities are required to insure uninterrupted operation of station facilities. (See par 8, Section I).

c. Stock levels will be established for required items based on estimates of future requirements for a thirty day period where firm consumption data is not available. Table XVI's and other pertinent publications will be used as guides.

7. **Inventory.** a. Inventory of C&E spare parts and supplies in stock will be performed annually or more often as determined necessary by the supply officer, using AF Form 85A. Discrepancies in count or identification will be adjusted, using AF Form 85, Inventory Adjustment Voucher. These adjustment vouchers will be prepared as outlined in Sec 5, Vol I, AFM 67-1. The supply officer will assign a control number to each property class or sub-class. The control number will be placed in the blank allocated for voucher number. The supply officer will sign as accountable officer and the site commander will sign as approving authority. The Inventory Adjustment Voucher will then be posted to the AF Form 84B stock record card by control number for the appropriate class. This procedure is not applicable to items maintained in "stand-by" status. Losses of such items will be adjusted in accordance with Sec 2, Vol IV, AFM 67-1.

8. **Bench Stocks.** a. Operating sections within ACW squadrons will maintain only minimum quantities of expendable

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nonrecoverable items on hand for bench stock purposes. Bench stocks for these activities are authorized primarily to preclude the requirement for manning electronic supply sections during other than normal duty hours.

b. Automotive maintenance shops and installations sections will maintain bench stocks in accordance with procedures established in par 7, Section I.

9. **Storage.** (Reference Sec 6, Vol I, AFM 67-1.) a. In order to promote efficient operation and to effectively use available storage space within the electronic supply building, a standardized bin layout as shown in Figure 1-7, will be used, unless bin sections available are of such size as to prevent arrangement as depicted. Bin number 11, as shown in Figure 1-7, will be used to store reparables awaiting out shipment as well as incoming shipments of serviceable items prior to binning. To avoid commingling, a division will be established to separate reparables and excess serviceable items awaiting shipment from incoming serviceable items awaiting binning. A clearing space near bin number 11 area will be provided to accommodate receipt and issue of supplies.

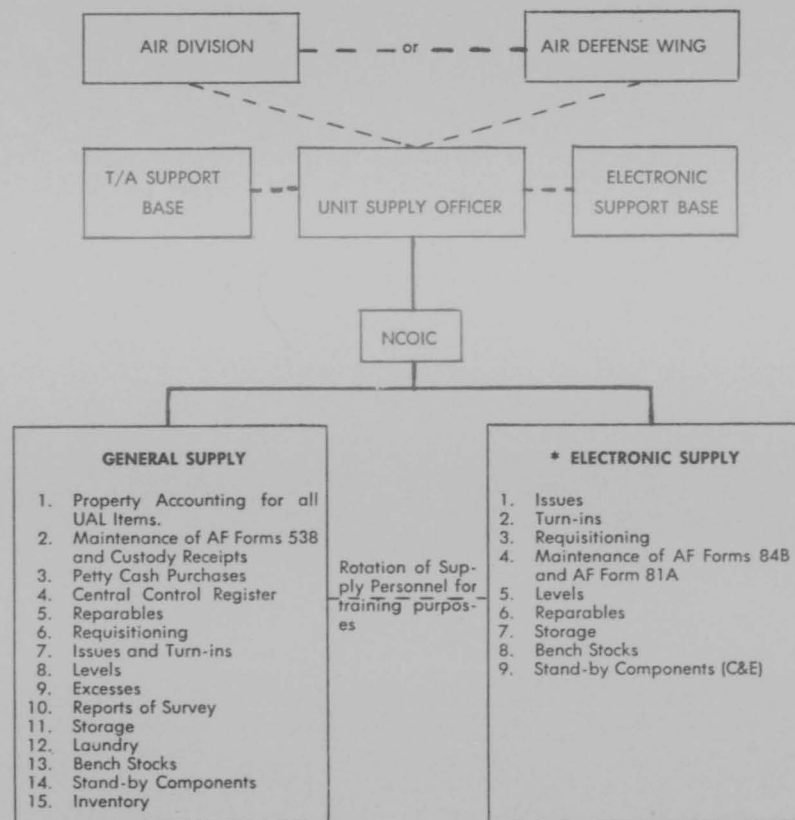
b. Electronic storage areas will be arranged, marked, etc., as shown in Figures 1-7 through 1-15.

c. Wherever general supply and electronic supply are located within the same building, a separation of the two storage operations will be made by partitions or some other suitable division.

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ACW SQUADRON UNIT SUPPLY
ORGANIZATIONAL STRUCTURE AND FUNCTIONS



*At ACW squadrons having split operations the "electronic supply" section will be separate from the "general supply" section and located in an area immediately adjacent to the operations section.

FIGURE 1-5

FIGURE 1-6

EXAMPLE POSTINGS
AF FORM 84-B

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ITEM DESCRIPTION		APPL. A. C. OR ENG.		Stock Level		CARD NO.				
				Reorder Point						
				Class			Unit Of Issue			
				Status			Location			
				Price						
INTERCHANGE DATA:										
DATE	CONTROL NO.	REC'D	ISSUED	BAL SER REP	ORGANIZATION	DUE OUT	BAL D O	DUE IN	BAL D I	REMARKS
10/5/54	1-N-1000			0	AF-31-50			5	5	
10/25/54	1-10-1000	5		5	AF-31-50				0	55-89783
10/26/54	1-10-1020		2	3	2					Recap
11/1/54	1-11-1023			3	2	AF-31-50		2	2	
11/1/54	1-11-1024			3	0	AF-31-50				T/I Rep
11/5/54	1-11-1030		1	2	1					Recap
11/8/54	1-11-1034			2	1	AF-31-50		1	3	
11/8/54	1-11-1035			2	0	AF-31-50				T/I Rep
11/10/54	1-11-1023	2		4	0	AF-31-50			1	55-89983
11/20/54	1-11-1040		1	3	0					72 Hr Loan
11/20/54	1-11-1034	1		4	0	AF-31-50			0	55-90181
11/21/54	1-N-1045			4	1					T/I 72 Hr Loan (1040)

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AF FORM 84B REPLACES AF FORMS 84 B, C AND D WHICH MAY BE USED.

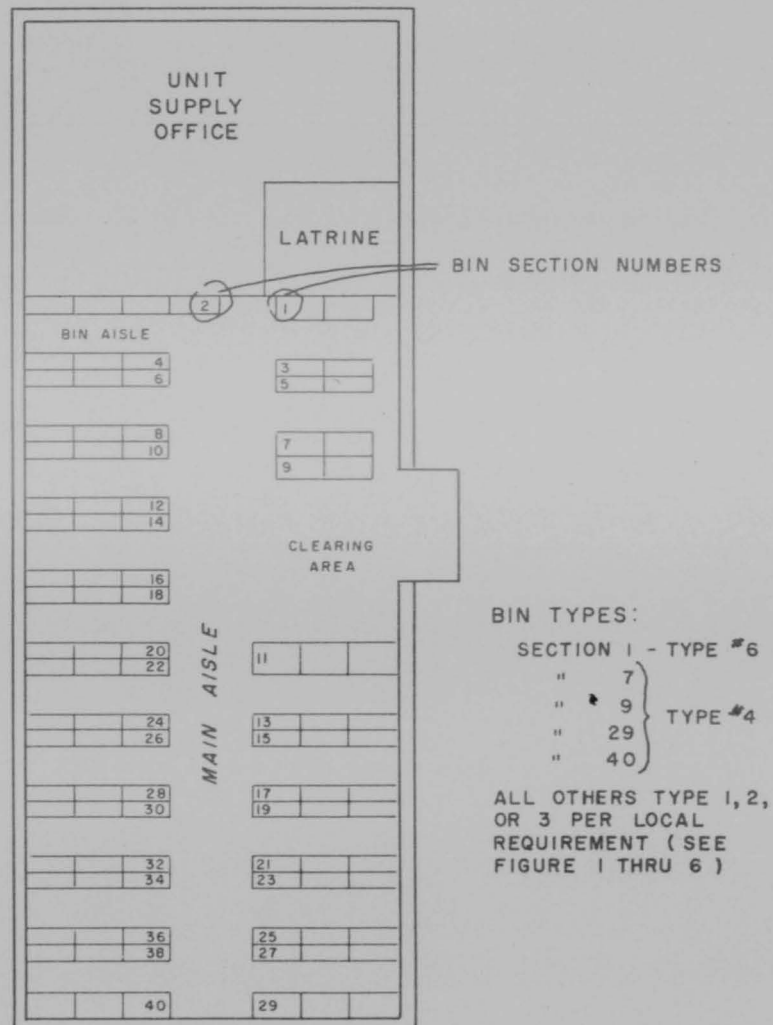
SERVICE STOCK BALANCE RECORD

80/4007

1080

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ADC STANDARD BIN LAYOUT NUMBER ONE

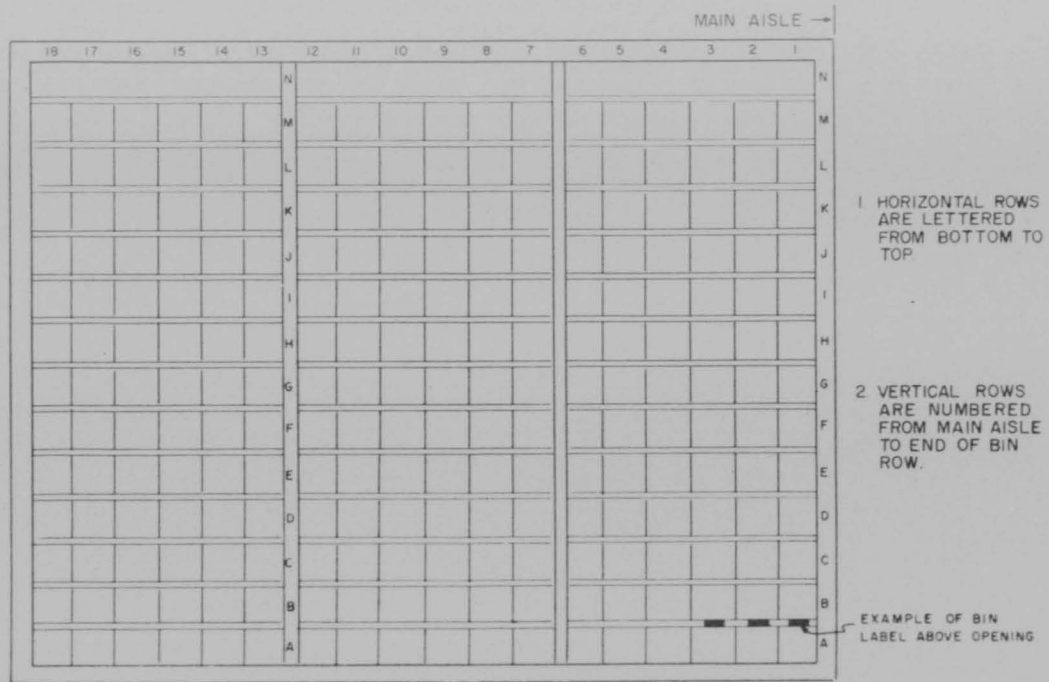
FIGURE 1-7

FIGURE 1-8

DETAIL OF TYPE I BIN
SHOWING METHOD OF IDENTIFYING BIN LOCATIONS

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OPENINGS ARE 6" x 6" AND 12" DEEP

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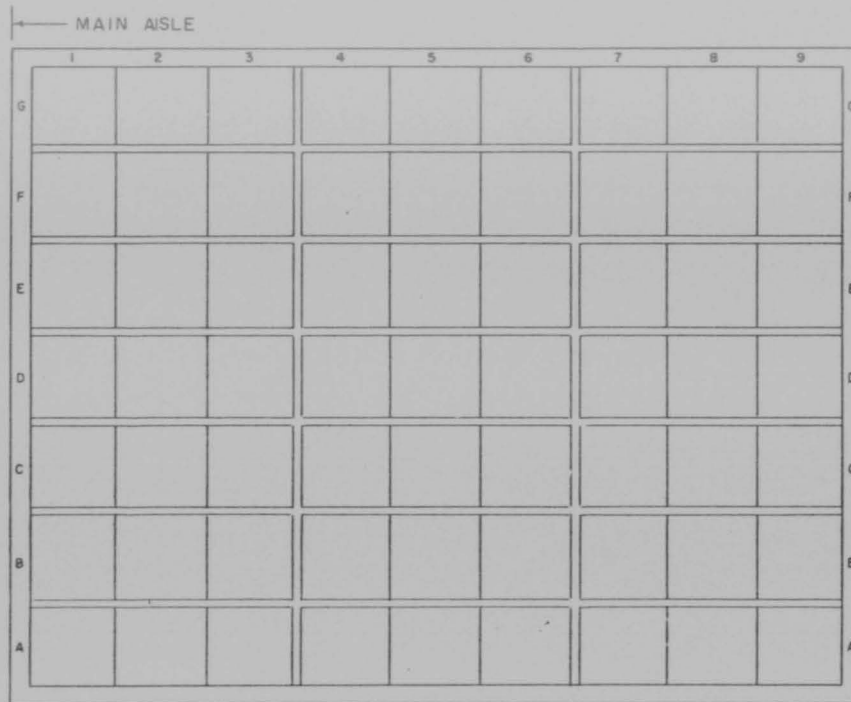
1082

FIGURE 1-9

DETAIL OF TYPE 2 BIN

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OPENINGS ARE 12" x 12" AND 12" DEEP

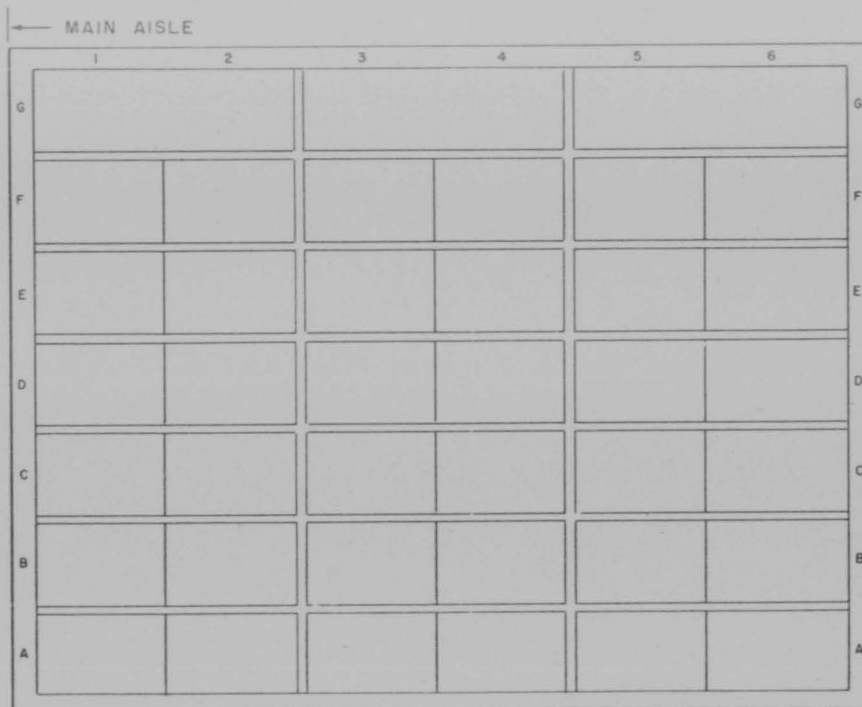
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1083

FIGURE 1-10

DETAIL OF TYPE 3 BIN

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21

OPENINGS ARE 12" x 18" AND 12" DEEP

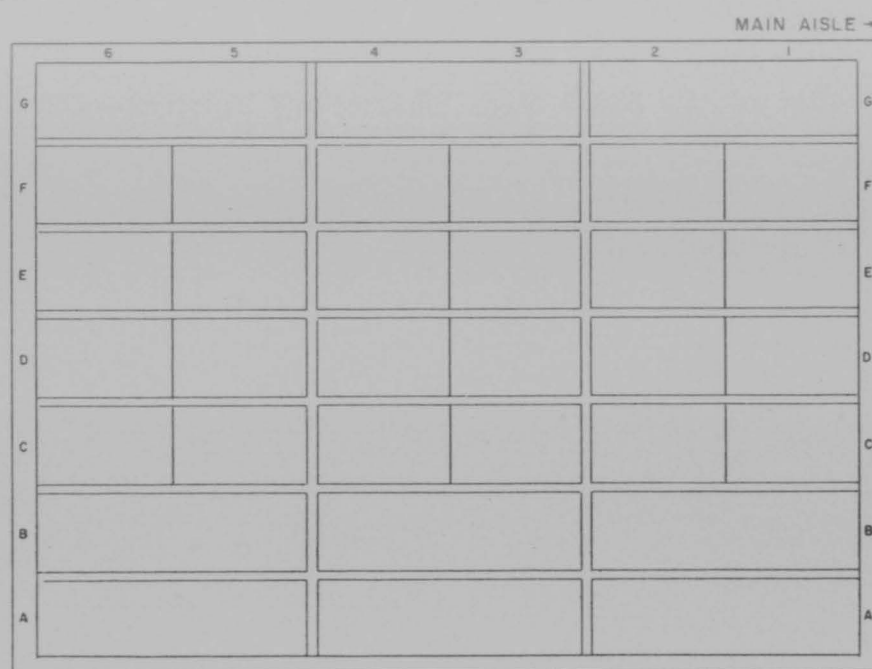
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FIGURE 1-11

DETAIL OF TYPE 4 BIN

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FIGURE 1-12

DETAIL OF TYPE 5 BIN

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DETAIL OF TYPE 6 BIN WITH DRAWER UNITS

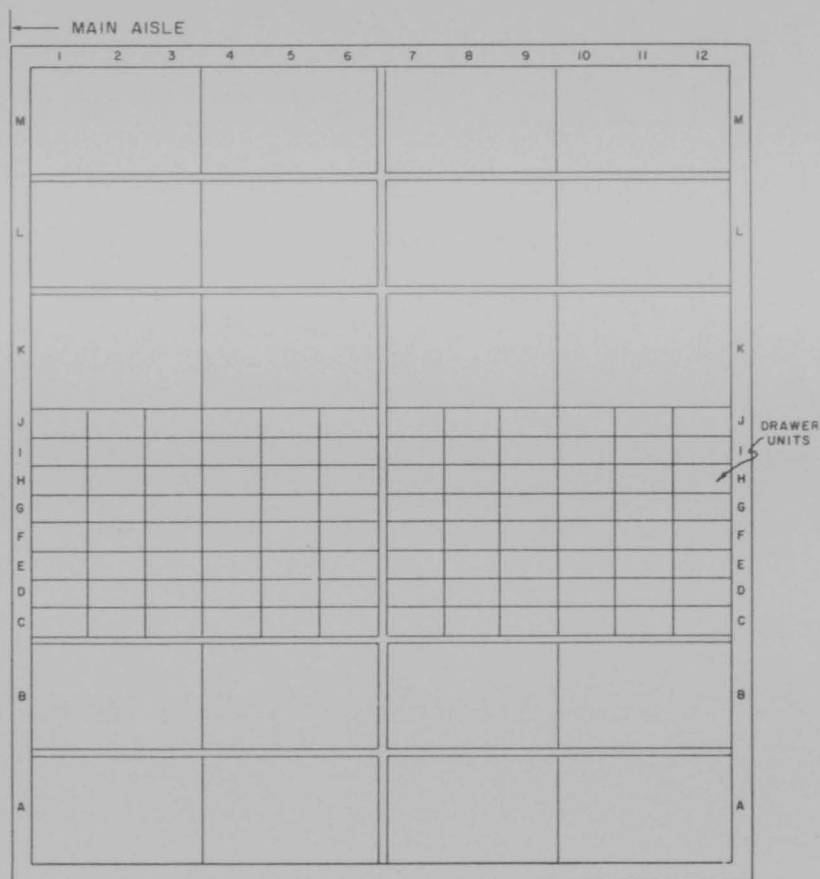
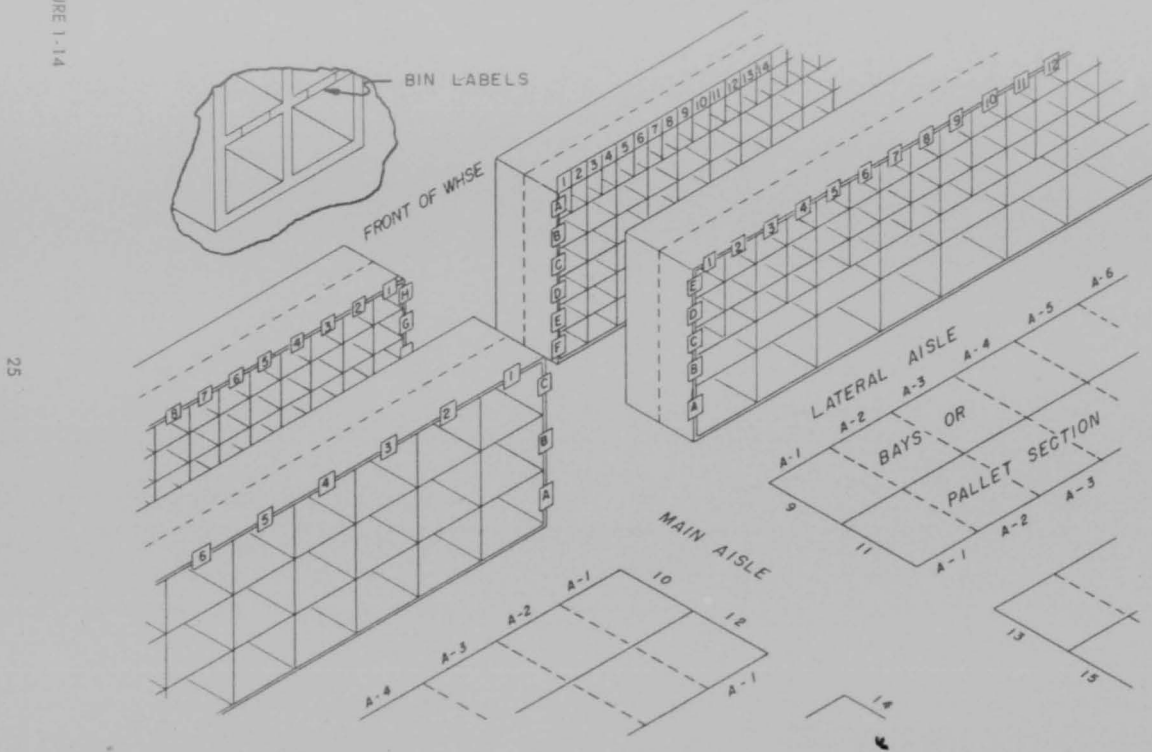


FIGURE 1-13

FIGURE 1-14

STOCK LOCATION DIAGRAM

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BIN DESIGNATIONS

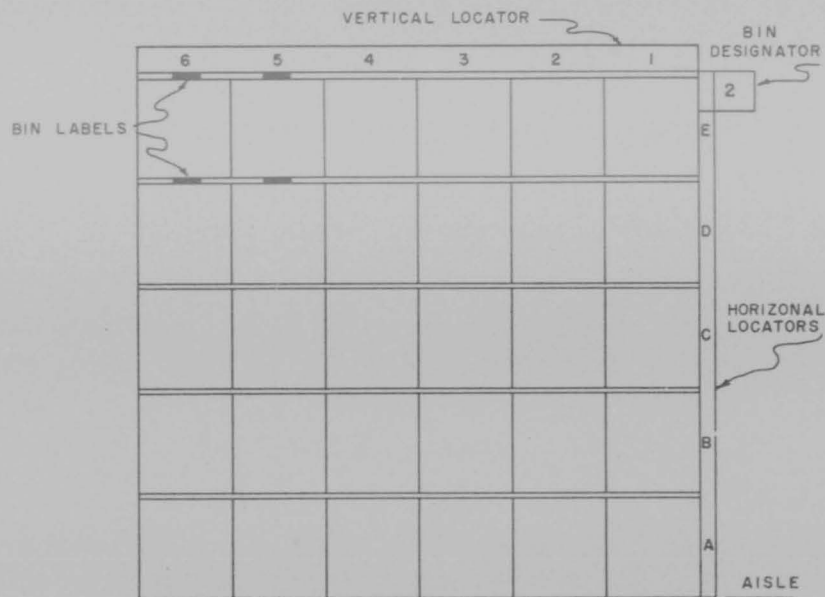


FIGURE 1-15

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VOLUME II
BASE SUPPLY PROCEDURES

PARAGRAPH	TITLE	PAGE
1	PURPOSE	1
2	SCOPE	1
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4	BASE SUPPLY SERVICE UNIT SYSTEM	1
5	AIRCRAFT SERVICE UNIT	2
6	GENERAL SUPPLIES SERVICE UNIT	4
7	ELECTRONIC SERVICE UNIT	4
8	BASE SUPPLY EXPEDITER DELIVERY SYSTEM	4
9	INVENTORY	4
10	AF SERVICE STORE	5
11	DISPOSITION OF EXCESS PROPERTY	7
12	BASE SUPPLY REPORT	8
13	POSTAGE STAMPS AND SIMILAR ITEMS	10
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17	BASE SUPPLY RADAR MONITORS (ELECTRONIC SUPPORT BASES)	14
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1. **Purpose.** This volume of the Manual sets forth standard operating procedures which will be used by commanders and base supply officers in the supply operation of a base. The instructions and procedures contained herein supplement the procedures contained in AFM 67-1.

2. **Scope.** This volume applies to all ADC base supply officers. Certain procedures contained in this volume are equally applicable to units supported by base supply.

3. **Responsibilities.** a. Base commanders are responsible for:

(1) Appointing a fully qualified officer from a Non-T/O position to duty as a base supply officer and as a special staff officer of his staff. This officer will be assigned to the headquarters squadron. He will be directly responsible to the base commander, but will effect necessary coordination of all supply matters with the base materiel officer.

(2) Insuring that the base supply officer is relieved of unnecessary additional duties in order that he may devote all time possible to the fulfillment of his responsibilities.

(3) Exercising his office to insure full support of acceptable programs initiated

ed by the base supply officer.

(4) Full compliance with AFR 67-10, AF Manual 67-1, and this Manual.

b. Base supply officers are responsible for:

(1) Organizing base supply as outlined in this Manual.

(2) Supervising and coordinating the functions of all activities under his control.

(3) Delegating sufficient authority to qualified subordinates to enable him to devote most of his time to interdepartmental affairs.

(4) Keeping the base commander and materiel officer informed and fully abreast of the current status of the over-all supply operation.

(5) Full compliance with the provisions of AFR 67-10, AFM 67-1, and this Manual.

4. **Base Supply Service Unit System.** (See Figure 2-11.) a. The base supply service unit is a self-sustaining activity capable of performing all accounting, storage, inventory count, issue, and delivery functions for the classes and sub-classes prescribed in Figure 2-2. The service unit will be organized as shown in Figure 2-8. The service unit will normally serve as a central receiving point for all requests for

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supplies from supported activities. Requests for items not stocked by the service unit will be referred to the appropriate property class. Delivery control will be maintained by the storage and issue section in conjunction with the expediting sub-unit.

b. The classes and sub-classes necessary to support armament and electronics maintenance are included in the aircraft service unit except as otherwise provided in Figure 2-2.

c. The service unit organization coupled with the expediter delivery service is designed to provide maximum of supply support with a minimum of man-hour expenditure.

d. Normally, an ADC base can function with two service units; aircraft service unit and general supplies service unit; additional service units may be established, if required, at those bases servicing ACW units.

e. The service unit supervisor is responsible to the base supply officer for the operation of the service unit. Problems peculiar to warehousing will be referred to the materiel control officer just as problems peculiar to stock record accounting, etc., will be referred to the stock control officer. The materiel facilities officer and stock control officer will monitor all warehousing and accounting operations respectively.

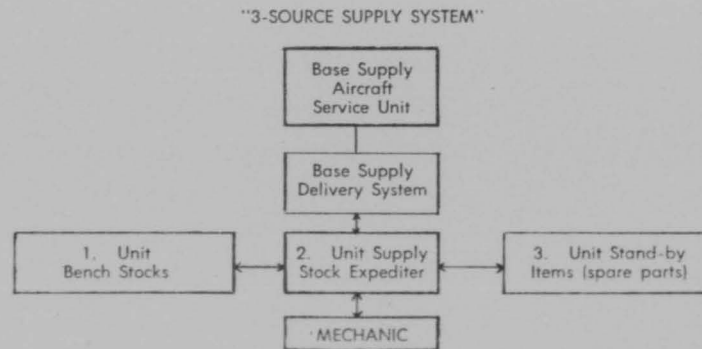
f. All incoming shipments and/or base turn-ins will be received by central receiving and classification for distribution to the applicable service unit. Material received in the service unit will not be binned prior to processing receiving documents through the stock record section. The stock record section will post the receiving documents to stock record cards

and indicate on the warehouse copy of the document the proper bin location symbol. Back order releases, if any, will be prepared and processed immediately and returned to the service unit receiving area for direct issue. On new items or items for which no location is indicated on AF Form 105F-1, the stock record clerk will request warehouse personnel to establish stock locations and return this information for posting to the applicable AF Form 105F-1.

5. **Aircraft Service Unit.** a. The aircraft service unit will be established in an adequate warehouse as near to the aircraft maintenance shops as possible. The service unit will be organized into the sections and sub-sections as shown in Figure 2-8. All requisitioning, receiving, accounting, storage, inventory count, and issue will be accomplished by this unit for those classes and sub-classes handled in accordance with applicable portions of AFM 67-1.

b. The service unit will serve as a central receiving point for all requests for supplies from aircraft maintenance activities.

c. This procedure is primarily designed to reduce the supply functions of operating activities to those minimums necessary for stock control and conservation of critical materials. Wherever possible, the bulk of the essential workload has been placed upon base supply. Concurrently, the effort required to provide supply service has been lessened by elimination of service stocks and their costly duplication of functions. As a substitute for service stock and over the counter issue, the "three source" supply system for organizations maintaining aircraft has been adopted as follows:



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(1) Unit Bench Stocks.

(a) The term "bench stock" is applied to fifteen day levels of expendable nonrecoverable supplies required to support the needs of an active function. The purpose of a bench stock is to provide at a location as near as possible to each active function area, a sufficient quantity of constant-use material to meet all immediate needs of individual operating personnel. These provisions apply primarily to aircraft maintenance, installations, and automotive maintenance type organizations. However, the same procedure will apply equally to other type activities. (For ACW activities, see Section III, Vol. I).

1. The unit supply officer will submit to the appropriate service unit every ten working days a preprinted list (AF Form 446A) of bench stock items required for replenishment (See par 7, Sec I, Vol I). Bench stock type items which are required in addition to those items contained in preprinted replenishment lists normally will be processed in a routine manner. The requesting unit will be responsible for including such additional items in the next revision to their preprinted bench stock replenishment lists. Base supply will process and deliver bench stock requirements within three working days after receipt.

(2) Unit Stand-by Components.

(a) The term "stand-by components," as used herein, refers to those aircraft, electronic, automotive and installations type spare parts issued by base supply to using organizations in advance of actual requirements. Advance issue is necessary to accomplish the following:

1. Build-up, inspection, calibration, bench check, or other technical action prior to installation on aircraft or other major assemblies.

2. To provide ready availability of serviceable assemblies to using activities.

(b) The maintenance officers and unit supply officer in cooperation with the base supply officer will determine those items and quantities of spare components required by the organization to insure continued operation. A list of required stand-by items will be maintained by the unit supply officer and will be continuously reviewed to insure adequacy of levels and that excesses are not accumulated.

(c) Formal record of stand-by components will be maintained by the unit supply officer on AF Form 84B. Such records will reflect all transactions with base sup-

ply as well as exchanges within the organization.

(d) The base supply officer will maintain record of stand-by components issued to using organizations on AF Form 105F-1, "Stock Control Record," to indicate the stand-by quantity issued to each organization. These entries may either be made in the blank "Levels" column or under "Interchangeability Data." As unit stand-by levels are increased or decreased, appropriate changes will be made to the AF Form 105F-1 card.

(e) To insure ready identification of items held on stand-by by using organizations, each AF Form 105F-2, F-10 or F-11, as appropriate, will be conspicuously "flagged" or "marked." Colored celluloid tabs inserted in the visible portion of the file holder may be used to identify these items.

(f) Stand-by items are considered a part of base assets for stock balance and consumption reporting purposes. It will, therefore, be necessary for the base supply officer to ascertain the status of the physical "unit stand-by" assets prior to preparation of the stock balance and consumption report. Just prior to the date for submission of the stock balance and consumption report in each class or sub-class containing "unit stand-by" items, the base supply officer will request a statement from each unit involved, indicating the results of inventory taken in compliance with par 8d, Sec I, Vol I. The statement will contain the following information:

1. Total quantity of each line item issued. (This figure will be compared with the information reflected on the AF Form 105F-1 to verify quantities issued).

2. Quantity of each item on hand in serviceable condition.

3. Quantity of each item on hand in repairable condition.

(g) When preparing stock balance and consumption reports, for those classes containing stand-by items, base supply officers will combine stand-by asset information with quantities in base stock.

(h) Items in cost category 1 are authorized for inclusion in unit stand-by levels; however, the additional controls required by Sec 16, Vol II, AFM 67-1, will be maintained by the base supply officer.

(3) All other spare parts and components for which stand-by or bench stock levels have not been established will be obtained from base supply by the unit supply expediter. Either telephone order system for emergencies, or AF Form 446, will be used to obtain such spare parts.

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6. General Supplies Service Unit. a. The general supplies service unit will be organized as shown in Fig. 2-8. All requisitioning, receiving, accounting, storage, inventory count, and issue will be accomplished by this unit for those classes and sub-classes handled in accordance with applicable portions of AFM 67-1.

b. The service unit will serve as a central receiving point for all requests for supplies and equipment handled by the unit and will process and deliver material requested in accordance with par 4.

7. Electronic Service Unit. When authorized, an electronic service unit may be established in accordance with Fig. 2-8. The functions of this unit will be similar to the functions of the aircraft service unit except that the issue of supplies to off-base ACW units will be as prescribed in par 17, and par 2, Sec III, Vol I.

8. Base Supply Expediter Delivery System. a. The purpose of the base delivery system is to provide efficient supply delivery and pick up service of all materials, except Air Force service store items to all on-base dependent units, and the maximum effective utilization of manpower and equipment. An average delivery criteria of thirty minutes on each emergency type request and maximum of three days on routine requests is a prerequisite to the successful operation of this system.

b. The supervision of this system is a direct responsibility of the material facilities control officer. Vehicles and material-handling equipment will be dispatched to service units, receiving unit, packing and crating unit, etc., as required.

c. Base commanders will insure the assignment of sufficient vehicles and material-handling equipment to the base delivery system to allow a capability of conforming to the time criteria specified in paragraph 1, above. In event sufficient supply personnel are not available in the base delivery section, additional drivers will be furnished from the motor pool. Vehicles assigned to the base delivery system will be afforded priority inspection and repair, second only to emergency vehicles such as ambulances and fire trucks.

d. For all routine requests, the material facilities control officer will establish a delivery and pick up schedule for all organizations on base to meet the delivery time criteria established in paragraph 6a. Emergency delivery runs will, whenever practicable, be scheduled with routine runs if the established time criteria of 30 minutes can be met. Otherwise, special hand-

ing will be afforded emergency requests to prevent temporary AOCF, work stoppage, etc.

e. The service unit organization will receive all requests for supplies from using organizations either by telephone, for emergency requests, or AF Forms 446 and 446A on routine requests.

f. In accomplishing telephone supply requests (emergency) the service unit expediter will be responsible for the preparation of AF Form 446. It is recommended that such AF Form 446 be hand-scripted to expedite their preparation. The unit supply expediter, submitting the telephone request, will furnish the unit control number to the service unit expediter to be assigned to the issue request. The AF Form 446 will then be processed in the normal manner as outlined in AFM 67-1. The service unit expediter will insure that the destination (Bldg. No., Rm. No., etc.), is clearly indicated on the AF Form 446 to expedite delivery to the proper recipient. A record will be maintained by the service unit expediter as shown in Fig 2-12 for the purpose of control and future reference as may be required. Delivery personnel will obtain signature from the authorized representative in the organization (normally the individual calling in the request). If items requested on a priority basis are not available in base supply, the request will be turned over to the priorities clerk for appropriate action. A due-out copy of the AF Form 446, indicating action taken to obtain the items (i.e., lateral support, requisition on depot, estimated delivery date, etc.), will be forwarded to the requesting activity immediately.

g. Issue slips submitted for bench stock replenishment, stand-by components, organizational equipment, etc., (other than AF Service Store items and emergency items) will be prepared by the using organization and processed in the normal manner.

9. Inventory. a. In order to instill desired housekeeping and storage practices within base supply and to realize effective utilization of personnel, physical count of stock during scheduled and special inventories will be performed by assigned storage and issue personnel.

b. Except for cost category I items, semi-annual inventories will be performed regardless of the percentage of accuracy of the previous inventory.

c. All inventories will be accomplished as outlined in Vol II, AFM 67-1, with the following exceptions:

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(1) Prepared inventory count cards will be forwarded to the applicable service unit supervisor one day in advance of inventory "cut-off date."

(a) Count card decks will be receipted for by serial number; i.e., 12568 through 12927 by the service unit supervisor.

(2) Initial counts will be conducted by service unit storage and issue personnel.

(a) Upon completion of physical count, count card decks will be returned to the inventory section for further action, as required.

(3) Comparison of inventory count cards with stock record cards will be accomplished by inventory section personnel.

(4) Rechecks of those items indicating discrepancies will be made by inventory section personnel and storage and issue personnel whose initials appear on the count card reflecting the discrepancy.

d. The inventory section will maintain a record of errors which were found as a result of recheck of discrepancies. This information will be furnished the base supply officer upon completion of each subclass inventory.

10. Air Force Service Store. This procedure establishes a simplified system for the issue and accounting of all expendable items authorized for local purchase. It is applicable to all ADC bases and applies to expendable (including recoverable) items authorized for local purchase or to be locally procured upon exhaustion of depot stock. Items procured through GSA which are expendable are also included. Medical, petroleum, and fuels are exempt from this procedure.

a. The receipt, storage, and issue of expendable locally purchased supplies will be completely separated from centrally procured items. This will be done by establishing an air force service store under the base supply officer. Each air force service store will be under the supervision of an air force service store manager. The store's manager may be an officer, civilian or noncommissioned officer - Grade E7.

b. The Air Force service store will be divided into departments by grouping commodity classes. (See Fig. 2-2.) Airmen or civilians may be used as department managers. Where departments are small, two or more may be under the jurisdiction of one manager.

c. The service store manager is responsible to the base supply officer for the operation of the service store. The material facilities officer and stock control of-

ficer will monitor all warehousing and accounting operations respectively.

d. The purchasing and contracting officer should make available to the supply officer - buyers, either civilian or military, whenever local conditions and volume of work make it feasible. This individual may be assigned to work with the store manager, however, an individual thus assigned will remain under the control of and be responsible to the purchasing and contracting officer.

e. The assignment of individuals to perform this operation will be from the present personnel performing the base supply function. Initially, one department should be set up and as the workload is removed from present functions, other spaces will become available for additional departments.

f. The following AFSC's are suggested as sources for the specific jobs in this operation:

Store Manager - 64100, 6424, 64174

Department Manager - 64175, 64152, 64174

Buyer - 65150, 65170, 65000, 6444

g. This system will be placed in effect in a manner which will allow the widest latitude to base commanders. No specific procedures will be written other than this Manual setting forth the general policy and system. Only such reports and information as are necessary for supply management, such as dollar inventory summaries, dollar issue and purchase summaries, stock turnover comparisons, and a system for reporting and redistribution of excess stocks will be required. This system has been developed principally in the interest of reducing the cost and personnel requirement incident to over-all handling, storage, issue, and accounting for this category or class of property.

h. Expendable items now coded as local purchase and those items so designated in the future will be physically separated from other supplies and will be warehoused by departments as described in par a. and b. above. Physical facilities available, as well as volume of supply activity, will dictate the arrangement and number of the departments into which the organization is divided. The various departments may be in different locations, preferably closest to the point of use of the material handled, or in one section or part of a warehouse. However, local purchase supplies must be physically separated from the other items stored in that warehouse. Departments will be separated to the point

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that stocks are not mixed. One, two, or more departments may be in separate locations but a department should not be split - it should be all in one location.

i. This category of supply will be accounted for on a dollar basis by department in accordance with paragraph 30224, AFM 177-1. Accounting records will be maintained by the comptroller in accordance with procedures outlined therein.

(1) Stock record cards or locator cards will not be maintained. A card or price tag will be placed on the bin or location of the item indicating item nomenclature, standard price, stock number, stock level, reorder point, etc.

j. An annual inventory will be made of the stock of all stores of this category of supply at the end of the fiscal year. It will be a closed warehouse type of inventory and any discrepancy between dollar receipts, dollar issues, and dollar inventory will be adjusted by the base commander in accordance with inventory adjustment procedures in AFM 67-1 on total dollar basis instead of item basis. No report of survey will be required for adjustments within 1% of total dollar value of all issues. Store accounts are subject to audits in the same manner as other base accounts.

k. The criteria of a good supply operation of this type is a minimum of stocks, high rate of turnover, and stocking, insofar as possible, only those items which are in recurring demand and move rapidly. A stock turnover rate of six times per year may be considered acceptable, but a higher rate is desirable. No formal procedure will be established for calculating or determining stock levels. It will be a matter of judgment of the department manager and items will be ordered generally on the basis of periodic checks as to quantity on hand versus personal knowledge of the rate of issue, established levels, and reorder points. Initially, information on issue rates from the bin tag may be used. Stock levels should average as close to 30 days as possible; however, important consideration will be given to the economical quantity per individual purchase. A minimum of stand-by items will be retained in stock when a valid requirement for such item exists. This requirement should be supported by a letter from the appropriate officer.

(1) Special care and consideration will be given to stocking only those items which do move. Occasional requirements for items will be met through direct cash purchase and delivery to the requesting unit or small purchase procedures (refer-

ence AFR 70-16). A measure of efficiency in this operation is the ability of the store manager to prevent accumulation of dead or excess stock items.

l. The method of determining requirements shall be on the basis of requests by "customers" and only recurring items will be stocked. From experience, the store manager should indicate on the bin tag the quantities he should order and how frequently. One principal purpose of this entire procedure is to eliminate the costly process incident to requirements determination and calculation, stock control, accounting, etc.

m. The department manager will, from his mimeographed inventory list, periodically indicate quantities to be ordered and submit them to the buyer for processing. A copy of the mimeographed list should be used for this. The store manager, buyer, and/or department managers may be designated as cash purchasing officers, and all cash purchases of items of the type carried in the local purchase stores should be made by them. Requisitions required to be prepared for submission to depots pending depletion of central stocks, or for submission to the General Services Administration (GSA), will be prepared by AF service store personnel. Such requisitions will be annotated to indicate that the final delivery point is the store or department.

n. Items procured by the store either by the cash purchasing method, small purchase procedures, ordinary local purchase methods, or any purchase procedure developed in the future, as well as those requisitioned from GSA or other government agencies will be received by the department in which they are to be stored and issued, and the vendor's invoice or shipping document will be priced at the standard price of the item, totaled, and posted to the applicable journal. Processing of such invoices, shipping documents, etc., to the disbursing officer for payment will be in accordance with current procedures.

(1) Items which will continue to be requisitioned from depots pending depletion of central stocks will be handled as follows:

(a) Requisitions will be prepared by AF service store personnel and "marked for" the appropriate department of the AF service store.

(b) Material will be received in central receiving and immediately dispatched to the proper department. Boxes will not be opened in central receiving unless re-

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quired for identification or as the result of mixed shipments.

(c) Shipping documents will be priced at the standard price and the items placed in department stock.

(d) Total cost will be posted to the receipts journal.

(e) Items stocked in the departments will be priced at a standard cost price which will be as nearly as possible the actual cost of the initial procurement of the item. Prices should be rounded off above fifty cents to the nearest five cents and to the nearest ten cents above two dollars. The comptroller will assist in the proper indoctrination of all personnel in the use of standard pricing technique. In pricing exchange items, i.e., vehicle spares, the standard price will be the exchange price and the exchange of items of this nature with the vendor should be followed. On this basis, then, those items in the store awaiting exchange will not have a price and will not be carried in the inventory account.

(1) Repairable items will not be returned to the department for other than exchange purposes. If repair is to be effected locally, the item will remain in the maintenance function and only those bits and pieces required for its repair will be issued.

(2) Issues will be made only to accredited personnel of using organizations. They will be charged by total dollar value to the expense account code of the appropriate function for which they are required. (reference AFM 171-8). No special forms for requesting items will be used. They may be verbal, written, or ordinary "shopping list" type of request.

(1) Items received in bulk may be prepared in convenient sizes for issue to expedite inventory. Each package will be plainly marked as to content and quantity.

(2) It is recommended that in the interest of reducing operating personnel to the very minimum, consideration be given to warehousing items in such a manner that the requesting individual may personally select those items he requires. Only those small bits and pieces which would become mixed on a serve-yourself basis and those items particularly susceptible to pilferage should be so placed that the store clerk issues them. When the "customer's" order has been filled, it will be totaled and charged out on a sales ticket, serially numbered, to the appropriate expense account code. The customer will sign this form, and transaction will be posted in accordance with paragraph 16036, sub-paragraph 11a, AFM 177-1. DD Form 649,

Sales Ticket, may be used for this purpose.

(3) It is recognized that perfection cannot be expected in buying to the point that there will be no excess stocks. However, every effort will be made to keep these to a minimum and, when such excesses do develop, the base commander will be responsible for disposing of them in accordance with procedures established in Sec 11, Vol II, AFM 67-1.

(4) Budget estimates and fund requirements for local purchase expendable type items can be developed and determined through the use of the local purchase obligations incurred, issue data, and inventory records on a dollar basis by function, adjusted by the base commander and air defense force to show future requirements and mission of the base.

(5) Control of this operation will be by inspection and will be the responsibility of the base commander and the air defense force. A system of quarterly credits for each using unit or function will be established. This will provide an additional management control. An estimated amount will be determined for the initial period for each unit. As experience is gained, this amount will be adjusted. This figure can be used for budget estimates and as a measure of the unit's ability to reduce costs to a minimum.

(6) Only the following forms are necessary and no other forms will be developed for this operation.

- (1) Bin Tag.
- (2) Sales Ticket.
- (3) Mimeographed Inventory List.
- (4) Receipts, Issues, and General Journals.

(7) Additional supply reports from department or base will not be required by Headquarters ADC or intermediate headquarters. ADC and intermediate headquarters will extract necessary local purchase data from the Quarterly Analysis Inventory Transactions Reports.

(8) Pending the revision of the many policies, procedures and regulations, particularly AFM 67-1, in which instructions conflicting with the policies contained in this Manual may appear, such deviations as necessary are authorized with the exception of procurement directives. This paragraph will be revised upon receipt of new procedures being developed for inclusion in AFM 67-1.

11. Disposition of Excess Property.

(9) Procedures for determining, processing, reporting excess property, both Air Force and Army procured items, are

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contained in Section 11, Vol II, AFM 67-1. The format to be used by ADC bases in reporting excess Air Force property will be as illustrated in Fig 2-13. In the space entitled "TYPE" will be entered the type of property being reported (reference par 8i(1) through (5), Sec 11, Vol II, AFM 67-1). In order to conserve space, the description of non-listed items may be written into the "QUANTITY, UNIT, CONDITION, and UNIT COST" columns, with this information appearing directly below the description. The format is otherwise self-explanatory. Procedures and format for reporting Army stored and issued items are contained in par 9, Sec 11, Vol II, AFM 67-1.

b. Excess Vehicles.

(1) Excess vehicles of all types will be reported for disposition in accordance with par 8i(3), Sec 11, Vol II, and par 21, Sec 19, Vol I, AFM 67-1. Equipment requiring organizational or field maintenance services will be repaired to conform with serviceability standards in TO 00-25-61 prior to requesting disposition instructions. When engineer type equipment requires maintenance beyond the capabilities of the base shops, the assistance of the engineer regional maintenance representative will be requested in accordance with AFR 66-3. The recommendations of the engineer regional maintenance representative, as recorded on ENG Form 2155, will be included in the request for disposition when reporting engineer equipment requiring depot maintenance. Depot assistance for other types of equipment requiring maintenance beyond the capabilities of the base shops will be requested in accordance with par 39, Chapter 4, AFM 77-1.

(2) When shipping instructions for serviceable and/or reparable equipment are received, the equipment will be re-inspected and all discrepancies noted will be corrected before shipment. The following

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notation will be made on all copies of the shipping documents and will be signed by the base automotive maintenance officer.

"I certify that this equipment meets the Air Force serviceability standards as established in TO 00-25-61."

Upon receipt of shipping instructions for equipment scheduled for evacuation to a depot for repair, all organizational and field maintenance within the capabilities of the base automotive maintenance shops will be performed before shipment.

c. Excess training aids will be reported through command channels to Headquarters ADC for disposition instructions.

12. **Base Supply Report.** AF-S1. In order to insure correct reporting of information required by the AF Form 359 (Base Supply Report) the following information, in addition to that contained in Vol I, AFM 67-1, is included for the purpose of clarification and guidance.

a. In compiling figures for Section IV (Reparable Action), the following formula will be used:

(1) Add columns F and G from previous reporting period. This equals the amount of reparable units on hand at the beginning of the current reporting period.

(2) To this total, add column B for the current reporting period.

(3) From the total of columns F, G and B indicated in (2) above, subtract the totals of columns C, D, and E of the current reporting period. The resultant figure represents the total of columns F and G for the current reporting period.

(4) The total figure of columns C, D and E for current reporting period is then divided by the total of columns B, F and G of the current reporting period. This figure reflects the percent of reparable effectiveness.

Example:

Sept.		Oct.						
Col F	Col G	Col B	Col C	Col D	Col E	Col F	Col G	Col H
19	48	201	8	171	0	9	80	66%

b. In compiling figures for Section VI (General Information), the following formula will be used:

(1) Line 12 of previous reporting period reflects the number of line items

backlog on hand beginning of current reporting period. From the total of lines 12 and 5, subtract line 7 of the current reporting period. The resultant figure reflects the total figure for line 12 of

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the current reporting period.

Example:

Sept.	Oct.		
Line 12	Line 5	Line 7	Line 12
3475	11380	9946	4909

c. In addition to pipeline time required by paragraph 106J(1), Sub-section E, Section I, Volume I, AFM 67-1, the following information will be indicated on the reverse side of the AF Form 359 (Base Sup-

ply Report) in the exact format shown below:

(1) Number of requisitions and Line Items requested under the following priorities:

	Col. A	Col. B	Col. C	Col. D	
				Percent of Total	
				(a)	(b)
	Priority	No. of Rqns	No. of Line Items	Rqns	Line Items
1.	2				
2.	3				
3.	4&5				
4.	7&12				
5.	8&13 9&10				
6.	14&15				
7.	16				
8.	Total				

(2) Instructions:

Column A:
Line 1 thru Line 8 Self Explanatory

Column B:
Line 1 thru Line 7
Enter total No. of Rqns Submitted under ea. priority as indicated.

Line 8
Enter total No. of all rqns submitted for reporting period.

Column C:
Line 1 thru Line 7
Enter total no. of L/I submitted under ea. priority as indicated.

Line 8
Enter total no. of all L/I submitted for reporting period.

Column D:
(Percentages in this column will be carried 2 decimal places, i.e.: 5.12)

(a) Line 1
Divide figure in Col B, Line 1 by figure in Col B, Line 8 to obtain percentage. Etc. thru Line 7.

(b) Line 1
Divide figure in Col C, Line 1, by figure in Col C, Line 8 to obtain percentage. Etc. thru Line 7.

Line 8
This figure will be 100%.

(3.) If for any reason line items requested under priority 2 thru 5 exceed 10% of total line items requisitioned, the Base Commander will authenticate reasons for such excess of priority items requested.

.d. The base commander will sign a statement on the reverse side of the Base Supply Report, to the effect that he has reviewed subject report.

e. No additional information will be indicated on the reverse side of the Base

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Supply Report, or attachments included, except as indicated in Volume IV.

f. The "date block" will indicate only the month and year to which the report pertains.

g. A letter of transmittal is not required for this report. Reports will be submitted in accordance with paragraph 103, Sub-section E, Sec 1, Volume I, AFM 67-1, to reach Hq ADC by 10th calendar day of the following month.

13. Postage Stamps and Similar Items.

a. Postage stamps will be obtained by the base supply officer for issue to base activities authorized to maintain mail sections in accordance with par 18, Sec 5, Vol II, AFM 67-1. Authorized base activities include the base adjutant, wing adjutant, separate headquarters if assigned, commercial transportation and off-base activities authorized to maintain their own mail section. Individual squadrons on the base are not authorized to draw postage stamps.

b. The base supply officer will maintain applicable 105F series stock record cards for all postage stamps required by the base. In addition to the 105F series cards, the base supply officer will maintain a supplemental record on AF Form 1120, "Unit Property Record," of postage stamps issued to authorized activities, IAW par 37, Sec 4, Vol II, AFM 67-1, except that individual jacket files will not be required. The quantity of postage stamps issued to organizations initially will be posted to AF Forms 1120 in the location portion of the form. This quantity will be considered the authorized level for each activity and will not be changed when replacement issues are made. As changes in levels occur, the quantities in the "location" portion of AF Form 1120 will be increased or decreased accordingly.

c. Responsible individuals to whom postage stamps have been issued will maintain a record of stamps on hand and those expended to insure proper administration. Replacement for stamps expended will be obtained IAW par 18, Sec 5, Vol II, AFM 67-1.

d. The above procedure is also applicable to local transportation tickets or tokens, bridge tickets, and similar items issued to the commercial transportation officer.

14. **Petroleum, Oil, and Lubricants.**
a. The "Petroleum, Oil, and Lubricants" Branch is a self-sustaining activity capable of performing all accounting, storage, is-

sue, and delivery functions as set forth in this Manual and other applicable directives. This branch will be organized and will function in accordance with Figure 2-10. These procedures are applicable to all Air Defense Command bases.

b. A qualified officer will be assigned primary duty as Petroleum Officer, AFSC 6454, and will be responsible as the accountable officer for all petroleum products, under the direct supervision of the base supply officer. This officer is also responsible for maintaining necessary records and accounting for all items placed under his supervision for storage, issue and delivery.

c. Only qualified and potentially qualified personnel will be assigned duties within the POL branch. All personnel assigned will either possess a POL AFSC, as established in applicable 35 series AF Regulations, or be training into the appropriate AFSC of this career field.

d. Necessary action will be taken to stabilize the POL officers and airmen in their assignment and to continue the duty of these personnel as long as possible in order to establish desired management and accounting practices.

(1) To insure proper management and accounting practices, it is desirable that well qualified POL personnel be retained in their duties, and that adequate coordination is effected between the base controller, base operations officer, base supply officer, and the base POL officer regarding management, operations, and accounting procedures.

(2) Through frequent coordination between supervisors mentioned in d(1) above, problems confronting the four sections can immediately be resolved and action taken to prevent recurrences. An example of poor coordination is indicated by the considerable differences between issue reporting and consumption reporting. The probable cause of this is failure on the part of the POL (issuing) personnel to properly record entries on the AF Form 1, from which consumption data is obtained. It is estimated that \$50,000,000.00 of fuel is lost to the Air Force petroleum program each year through omission or erroneous entries on AF Form 1 in the aircraft when fuel deliveries are made. It is obvious that an urgent need for improvement in this area is required.

e. Changes in temperature of large quantities of fuel creates wide variations in inventory. Losses or gains in product will take place when changes in tempera-

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ture are rapid, especially during the transition period from winter to summer and vice versa.

(1) A temperature reading will be taken coincident with each gauging of bulk storage tanks. These temperatures will be recorded and used by the petroleum operations officer to determine an average daily temperature of fuel in bulk storage. This average temperature, based on reading taken before and after each receipt or issue, will be considered as the temperature of fuel transferred to the hydrant operating tanks, and will be used to analyze the effects of temperature on gains or losses in inventories. Such gains or losses, when appreciable and traceable to temperature changes, will be used on all petroleum reports to explain unusual variations. When losses cannot be correlated to temperature changes or handling, an immediate investigation will be conducted to determine the reason for such losses.

(2) To complete the analysis, the average daily temperatures of fuel in hydrant systems will be taken and recorded. To determine the effect of temperature on issues through hydrants, the procedure will be as follows: Take three temperature readings of the fuel in the hydrant system tanks. These readings will be taken at times which most nearly represent the greatest volume of issues from the hydrants. Experience gained in the initial phase of the study may dictate that the number of temperature samples should be increased or decreased. At any rate, the average temperature of the fuel issued must be determined. A comparison between the prevailing temperature in bulk tanks, and the average temperature of fuel issued to aircraft, will indicate the amount which should be gained or lost on issues due to temperature changes. For example, if 50,000 gallons of JP-4 fuel were issued from the hydrant system at an average temperature of 4 degrees higher than the temperature of the fuel transferred from bulk storage, a temperature gain of approximately 120 gallons should be experienced. The results of this computation will also be used for explanation of variations caused by temperature on AFACG test reports.

f. Fuel deliveries should be scheduled by the petroleum operations officer to maintain maximum possible inventories consistent with good operating practices. A schedule suitable to fuel suppliers and base personnel, which will involve a minimum of weekend fuel deliveries, will be established wherever possible. To achieve

maximum effectiveness of transportation and prevent demurrage, fuels received by tank car or tank trucks on weekends will be unloaded without undue delay. When required, weekend rail switching service will be arranged through the base transportation officer.

g. Each base petroleum operations officer will be apprised of base emergency reserve levels, and he will insure that these levels are maintained at all times. The specific quantities required to support all ADC and other command operations are expressed in base operations plans. Key operating personnel should be thoroughly familiar with the levels established. In event fuel stocks are reduced to established emergency levels, no further fuel will be removed from base storage without prior approval of this headquarters.

(1) Emergency levels established by this procedure will fluctuate with the number of tactical aircraft possessed plus augmentation aircraft requirements. This procedure applies to Air Defense Command bases supporting tactical interceptor aircraft.

(a) The base commander at each ADC base will be responsible for:

1. Maintaining minimum emergency fuel and oil levels at all times except as outlined in par 14g(1) (a) 3.

2. Insuring fuel storage tanks are kept at the fullest possible level at all times.

3. Initiating immediate action, when only the minimum emergency fuel level (jet or 100/130 octane) is on hand to discontinue all flying that is dependent upon the type of fuel in short supply, except for tactical intercepts and those tactical support flights authorized by the air division (defense) commander. Notifying immediately the Fuels Division, Headquarters ADC, for supply assistance when apparent that the base is unable to maintain fuel and oil supply above the emergency level, (direct communication is authorized between the base and this headquarters in this instance). Information copies will be sent through normal channels.

(2) Specific emergency levels of fuel and oil required to support a three-day period of combat operations by number of tactical aircraft are indicated below. To compute total emergency levels for any given base:

(a) Determine quantity required to support number of tactical aircraft possessed (T-33's will be considered tactical air-

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craft for the purpose of this Manual), plus:
 (b) Quantity required to support augmentation aircraft as indicated in current ADC Operations Orders, plus:

(c) Quantity to support aircraft of other commands engaged in special missions as required by separate directives.

JET FUEL RESERVES

NO. A/C POSSESSED	F-33	F-84 E-C	F-84 AEW	F-82D	F-86A	F-83 BAC	F-89D	F-94 ASD	F-94C	F-102A	F-102B
1	5,400	3,750	3,750	1,825	8,615	7,000	7,300	3,125	3,835	4,945	7,670
2	6,900	5,000	5,000	2,450	9,224	14,000	14,600	7,059	7,278	5,490	10,149
3	10,300	11,500	11,250	31,475	32,834	21,000	21,900	10,575	10,974	14,235	10,270
4	13,660	14,850	15,000	15,330	18,412	18,000	29,300	14,100	14,502	18,880	20,580
5	17,000	18,500	18,750	14,105	23,065	35,000	36,500	17,625	18,150	13,525	23,550
6	20,400	21,200	21,850	22,960	27,478	42,000	43,900	21,150	21,678	14,470	20,420
7	23,850	25,800	26,250	28,775	32,231	49,000	51,700	24,875	25,404	15,215	23,455
8	27,200	28,400	30,000	33,800	36,908	56,000	58,400	28,100	28,704	17,940	24,540
9	33,900	33,800	33,750	34,425	41,517	63,000	66,700	31,725	32,741	42,705	45,605
10	34,320	37,000	37,500	38,030	46,190	70,000	73,000	34,750	35,340	47,450	50,700
11	37,450	40,100	41,250	42,034	50,743	77,000	80,900	38,775	40,014	52,195	55,730
12	40,800	44,400	45,000	45,920	55,356	84,000	87,600	42,310	43,656	54,940	59,840
13	44,200	48,700	48,750	49,725	59,969	91,000	94,900	45,825	47,294	61,685	65,910
14	47,600	51,800	52,500	52,550	64,582	98,000	102,200	49,350	50,932	66,430	70,980
15	57,000	55,500	56,250	57,375	69,195	105,000	109,600	52,875	54,570	71,175	76,050
16	54,400	59,300	60,000	61,200	73,808	112,000	116,800	56,400	58,208	75,920	81,120
17	57,800	62,900	63,750	65,025	78,421	119,000	124,100	59,925	61,846	80,665	86,195
18	67,200	66,400	67,500	68,950	83,034	126,000	131,400	63,450	65,484	85,410	91,260
19	64,600	70,300	71,250	72,675	87,647	133,000	138,700	66,975	69,123	90,155	96,330
20	68,000	74,000	75,000	76,500	92,260	140,000	146,000	70,500	72,740	94,900	101,400
21	71,400	77,100	78,250	80,325	96,873	147,000	153,300	74,025	76,399	99,645	106,470
22	74,800	81,400	82,500	84,150	101,486	154,000	160,400	77,550	80,036	104,390	111,540
23	78,200	85,100	86,250	87,975	106,099	161,000	167,900	81,075	83,474	109,135	116,610
24	81,600	89,500	90,000	91,800	110,712	168,000	175,200	84,600	87,312	113,880	121,680
25	85,000	92,500	93,750	95,625	115,325	175,000	182,500	88,125	90,940	118,625	126,750

FIGURE 2-1

Note: Jet Engine Lubricating Oil Reserves will be maintained in the amount of 1 gallon oil per each 1,000 gallon fuel.

All fuels and oil are in U. S. (Gallons)

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15. **Storage Space and Occupancy Report.** RCS AF-Z12. a. This paragraph supplements par 23, Sec 6, Vol I, AFM 67-1, and establishes procedures for submitting the report required therein to Headquarters, ADC. Reports will be prepared as prescribed in AFM 67-1, except as follows:

(1) Heading. "Command" block will indicate the air defense force. "RCS" block will show the reports control symbol prescribed herein. "Reporting Activity" block will show unit designation and location. Show month and year of report in the "For Month Of" block.

(2) No entries will be posted to blocked-out portions of AF Form 384.

(3) A certification as to completeness of audit will be entered in the space provided for remarks on the bottom of AF Form 384.

b. Audits. Specified audits will be performed by the preparing activity, by Headquarters 4600th Air Base Group, 47-50th Air Defense Wing (Weapons) and by air defense forces prior to processing the report.

c. Reporting Data.

(1) Frequency: See AFM 67-1.

(2) Due Date:

(a) Reporting base to air defense force headquarters as prescribed by air defense force.

(b) Air defense force, 4600th Air Base Group, and 4750th Air Defense Wing (Weapons) to this headquarters - arrive not later than 15th of the month following the "as of" date of report.

(3) "As of" Date: See AFM 67-1.

(4) Method of Transmission: Mail or air mail, as appropriate.

(5) Security Classification: See AFM 67-1.

(6) Addressee and Number of Copies: See AFM 67-1, and as follows:

(a) Reporting base to base commander - 3d copy.

(b) Reporting base to air defense force headquarters - original, 1st and 2d carbon copy.

(c) Air defense force to this headquarters - original and 1st carbon copy.

(7) Records Disposition: This report will be destroyed after one year, in accordance with AFM 181-5.

d. Reports Control Symbol. AF-Z12.

16. **Control Data Book.** The base supply officer is responsible for maintaining a control data book. This book will be current at all times and will be used by

the base supply officer as a management tool in the performance of his duties.

a. The base supply officer being in a management executive position must delegate much of his authority to competent staff personnel sufficiently to carry out his duties and also maintain proper control over his operational responsibilities; therefore, such a source for accurate information is of prime importance.

b. The control data book will enable the base supply officer to have at his fingertips at all times a consolidated and up-to-date information file. Such information will be invaluable to the base commander and his materiel staff in planning and providing adequate support to dependent organizations.

c. The control data book will contain current information on the following items; however, it is not necessarily limited to these items. If the supply officer so desires he may include other subjects which he considers necessary.

(1) Personnel. To include authorized, assigned, present for duty, turnover, sick, leave, details, total manhours realized and total manhours possible, broken down by civilians and military.

(2) Personnel Assignment Chart. Chart will reflect names of all personnel assigned, the section to which they are assigned, their primary AFSC and duty AFSC. This chart need not be in the control data book but will be maintained in an appropriate location within base supply and kept current at all times. The organizational structure chart modified to include this information will be used for this purpose.

(3) Training. Includes number of assigned personnel undergoing "on the job" training and formal classroom training. Will also reflect AFSC's training out of and AFSC's training into.

(4) List of On-base and Off-base Organizations and Type of Support Rendered.

(5) Number of Aircraft Assigned for Support by Type.

(6) Warehouse Layout Plans. Will include total square and cubic feet, amount of space currently being used, plus space available for additional storage. These plans will also include open storage areas.

(7) Base Supply Report (AF Form 359). If desired, the base supply officer may maintain additional detailed operational data pertaining to functions for which he is responsible.

(8) Schedule of Inventory. Will reflect dates completed, per cent of error for

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each class, and total dollar inventory by class including POL.

(9) Daily Priority Status. Will include all AOC's, ANFE's, ROCP's, RNFP's and VDP's. Number of aircraft and vehicles by serial number, ROCP's, and RNFP's by type equipment and items, including stock number, noun, and quantity. In addition, all action taken to obtain requirements will be indicated such as lateral support, reclamation, cannibalization, supply depot, etc.

(10) Programs and Projects. (a) To include complete information pertaining to current plans and degree of completion to date.

(b) If applicable, such plans will include, but are not limited to, the following:

1. Re-warehousing
2. Excesses.
3. Repairables.
4. Stock lists.
5. Stock levels.
6. Reconversion of aircraft.
7. Inventory.

(11) Resume of Base Supply Officers Weekly Staff Meetings. Will include brief minutes of meeting and action taken to correct problems presented. These meetings will be conducted weekly. The assistant base supply officer will conduct such meetings in the absence of the base supply officer.

17. Base Supply Radar Monitors (Electronic Support Base). a. The radar monitor at electronic support bases will be a fully qualified person, preferably civilian, responsible to the electronic service unit supervisor for monitoring supply transactions of all ground radar and associated communications equipment.

b. The radar monitor's prime duty at the electronic support base is to assist ACW installations in maintaining maximum operational effectiveness by expediting all priority requests for supplies. He will maintain constant liaison with depots by follow-up action until items are received and the emergency condition is alleviated. The monitor will advise ACW sites of the latest supply action.

c. Radar monitors will coordinate all problems involved in priority requisitioning, extracting, local purchase, and transportation of priority supplies. The radar monitor will be given complete support from all base facilities in order to expedite supplies to alleviate emergency conditions. Base transportation and operations officers will cooperate with the radar moni-

tor to provide the most expeditious and direct means of transportation from the support base to the squadrons. Departure from low cost transportation is authorized in accordance with pars 17b(1) and (8), AFR 75-2. Pilot pick-up, air drop, commercial air, military vehicles and commercial surface transportation will be used in order to expedite flow of supplies.

d. The radar monitor will receive priority requests for supplies in support of ground radar and associated equipment by the most expedient method.

e. Base supply will coordinate with base transportation and base operations sections to establish an adequate procedure for delivery of priority type requirements to ACW sites during other than normal duty hours.

f. Electronic support bases will establish the following procedure for after duty hours, weekends and holidays to adequately render service for priority electronic requirements to ACW squadrons.

(1) Establish a rotating roster of qualified military supply personnel on a stand-by basis.

(2) Furnish information to all ACW squadrons as to base telephone number of applicable support base squadron CQ for use in requesting items required on a priority basis during other than normal duty hours.

(3) Establish an SOP for use of the support base squadron CQ in obtaining all pertinent information required to identify requested item or items.

(4) The support base squadron CQ will contact the supply representative on stand-by duty for this period and relay all information to him.

(5) The supply representative will obtain requested items from stock and make necessary arrangements with the commercial transportation section or base operations to effect immediate delivery to the site concerned. In the event the supply representative encounters difficulty in locating or identifying requested items, he will contact the support base radar monitor for further instructions.

18. Bench Check (Reparables). The procedures contained in par 6, Vol III have been developed in an effort to reduce previous administrative workloads in handling repairables within base supply and to provide a more efficient bench check and repair system for using organizations. The procedures contained in par 6, Vol III (Bench Check and Repair System) of this

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Manual are applicable to all organizations being supported by Air Defense Command bases.

19. Use of Conveyer Systems.

a. Wherever possible, it is recommended that conveyers be used to the fullest extent in order to avoid undue physical handling of material by assigned personnel. Sections within base supply such as central receiving, service units, packing and crating, base delivery sections (delivery trucks) and others, can realize substantial benefits from the use of this type equipment.

b. It is suggested that in those geographical locations where commercial concerns specialize in selling this type of equipment, they be contacted through the local base procurement office for the purpose of rendering all technical assistance necessary to determine actual requirements. Care will be exercised not to commit the Air Force or unit concerned to any obligations in connection with such assistance other than that authorized by current applicable directives.

20. Base Supply Storage Factors.

This paragraph is included for information and guidance in determining amounts of warehouse space required for certain types of aircraft and/or personnel. The tables herein are the best figures available to date on warehouse requirements. As developments are made in the future pertaining to factors for use in determining requirements, they will be published as amendments to this Manual unless published through other sources which are readily available to all concerned.

a. Base Supply Warehouse. This facility provides for the bulk and bin storage of authorized stock levels of base supplies and equipment pending issuance to using activities. It will include such space required for the receipt and shipment, packing and crating, and aisle space for the handling and storage of supplies and equipment, and warehouse office space re-

quired in conjunction with these storage functions, in addition to space required for latrine and lavatory facilities.

b. Base Supply Shed. This building is required to store supplies and equipment that are not authorized for open storage and do not require closed warehouse space, but require covered protection from the weather because of the nature of the materials or the manner in which they are packed. This building will include space for the receipt, storage, and shipment of materials.

c. Base Supply Open (Improved or Paved) Storage Area. Improved or paved open storage area is required to store materials authorized for open storage since it is more economical to provide open storage than to construct covered or closed space. In order to operate materials handling equipment in the movement and handling of these materials, paving or some other suitable form of surfacing improvement of the area is required.

d. The following Table of Base Storage Factors will be used as a guide in computing requirements for base storage facilities. Requirements will be determined by multiplying the appropriate storage factor, shown in Table below, by the number of authorized aircraft for a particular base, plus the number of authorized personnel times the factor per man. (Number Acft x Factor per Acft (Number personnel x Factor per Man) = Requirements for Sustained Operations).

e. The factors for base storage requirements were developed based on normal authorized stock levels. When stock levels to be maintained are greater than the normal authorized stock levels, because of depot distribution complexities or particular type of mission, adjustments should be made in computing storage requirements to provide for the increased levels. Detailed justification will be furnished when requirements for storage facilities are adjusted to provide for increased stock levels.

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TABLE OF BASE STORAGE FACTORS

(1) Aircraft, by Type	Warehouse Space Gro. Sq. Ft Per Acft	Shed Space Gro. Sq. Ft. per Acft	Open Improved Gro. Sq. Ft. Acft
F-80, F-84, F-86, F-94, F-100, F-101			
F-102, T-33	375	8	110
F-89	400	8	115
C-47, C-119, C-122	350	15	125
C-74, C-97, B-17	500	28	225
C-54, C-121, C-124, C-130	525	30	200
T-7, T-11, C-45	250	5	50
T-28, T-6, H-19	175	5	50
H-21	250	8	75
B-25, B-26, B-45, B-57	400	8	100

NOTE: (a) Requirements for aircraft not listed above will be computed by selecting a similar type aircraft for which the storage factor is shown and applying the factor to the formula.

(2) Base Personnel	Warehouse Space Gro. Sq. Ft Per Man	Shed Space Gro. Sq. Ft Per Man	Open Improved Gro. Sq. Ft Per Man
Per Man - Up to 4,000 population	15	2.0	5
First additional 2,000 "	10	1.5	3
Second additional 2,000 "	5	0.5	2
Over 8,000 "	3	0.0	0

NOTE: (a) The storage factors per man provide for space required to store supplies and equipment in support of base maintenance and operations as well as the space required to store materials to support the man.

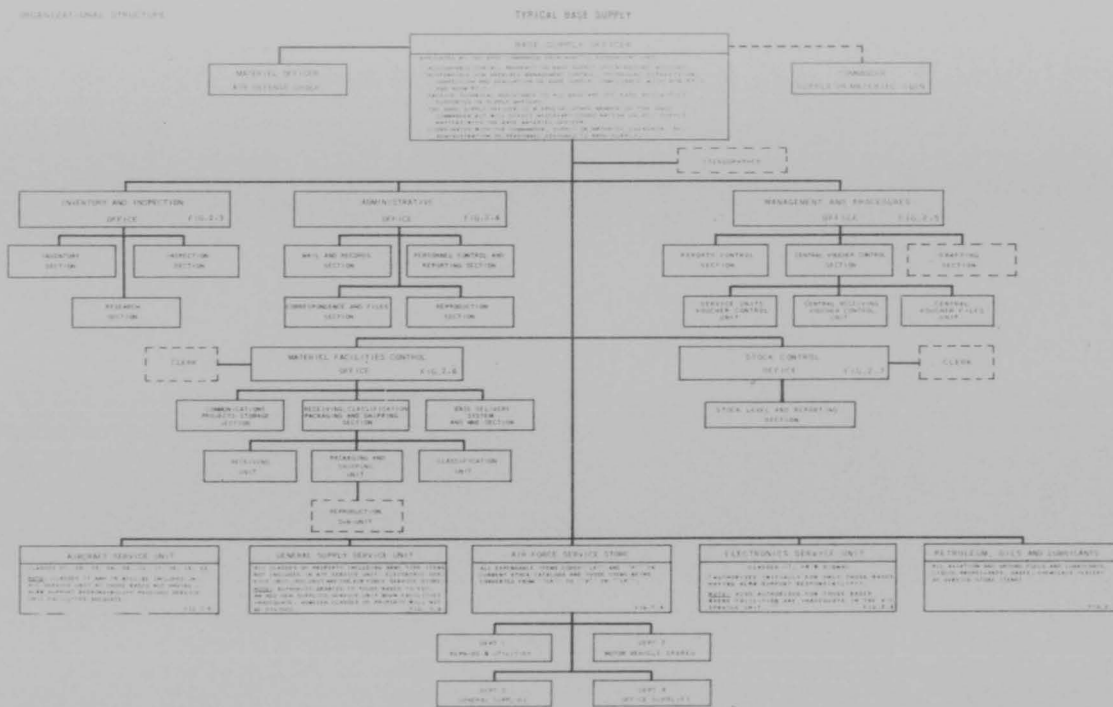
NOTE: (b) In those areas where it is impracticable to use shed and open space for the storage of supplies and equipment because of weather conditions, total storage requirements should be included in warehouse space. In the inclusion of such space as warehousing, a full

explanation of conditions and complete justification will be submitted to support such requirement.

NOTE: (c) Requirement for storage space for base disposal (salvage) will be determined by using the following percentages after base storage needs have been computed based on the factors in the above Table. The storage space required for the disposal function will then be added to the base storage requirements to reflect total storage needs in each category.

Warehouse	Shed	Open
3%	5%	10%

FIGURE 2-2



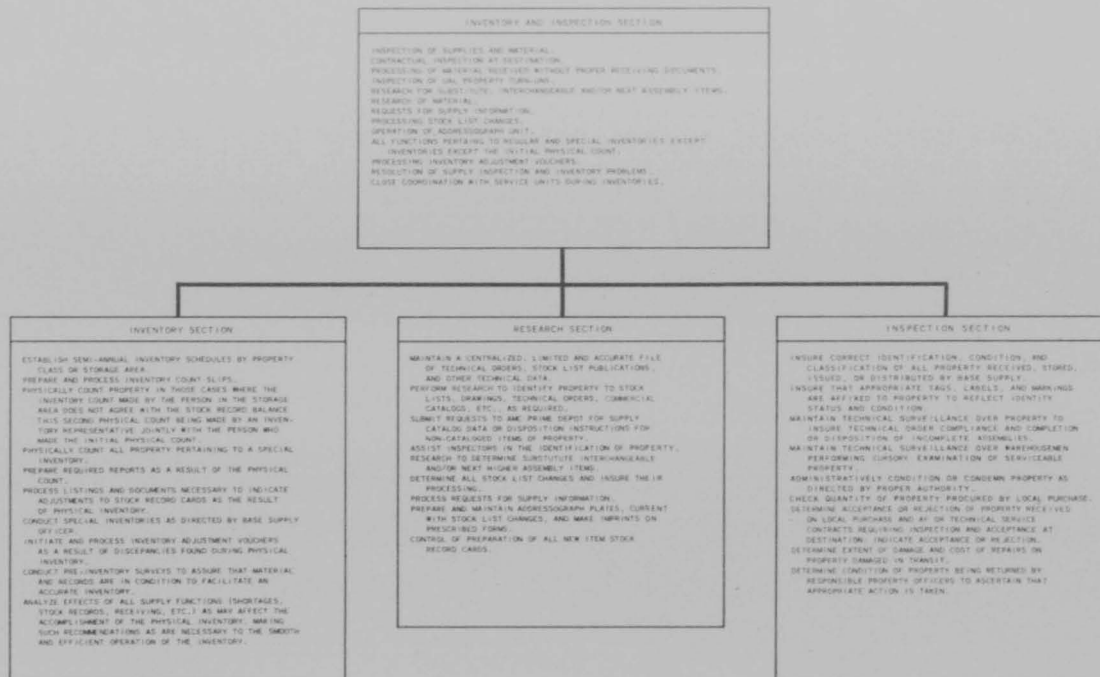
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FIGURE 2-3

ORGANIZATIONAL STRUCTURE AND FUNCTIONS



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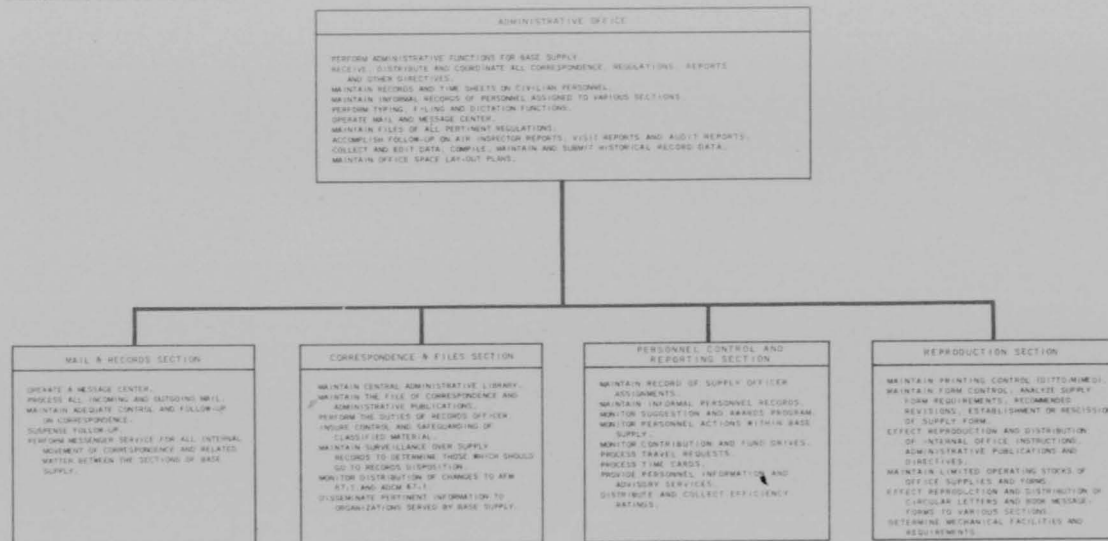
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FIGURE 2-4

ORGANIZATIONAL STRUCTURE AND FUNCTIONS

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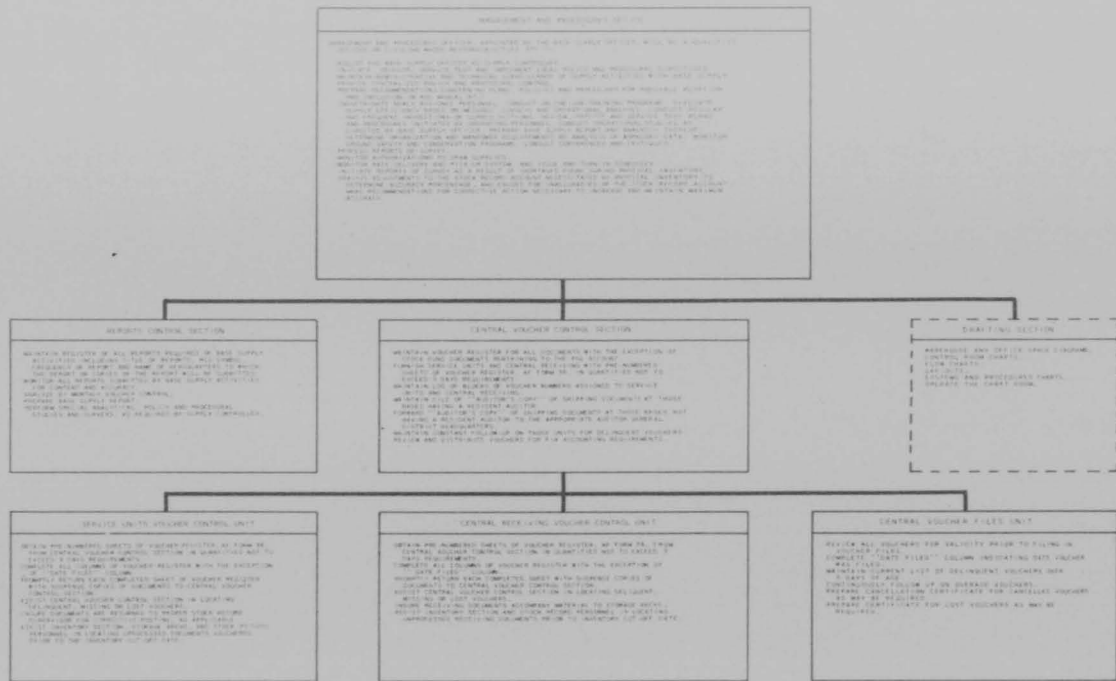
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FIGURE 2-5

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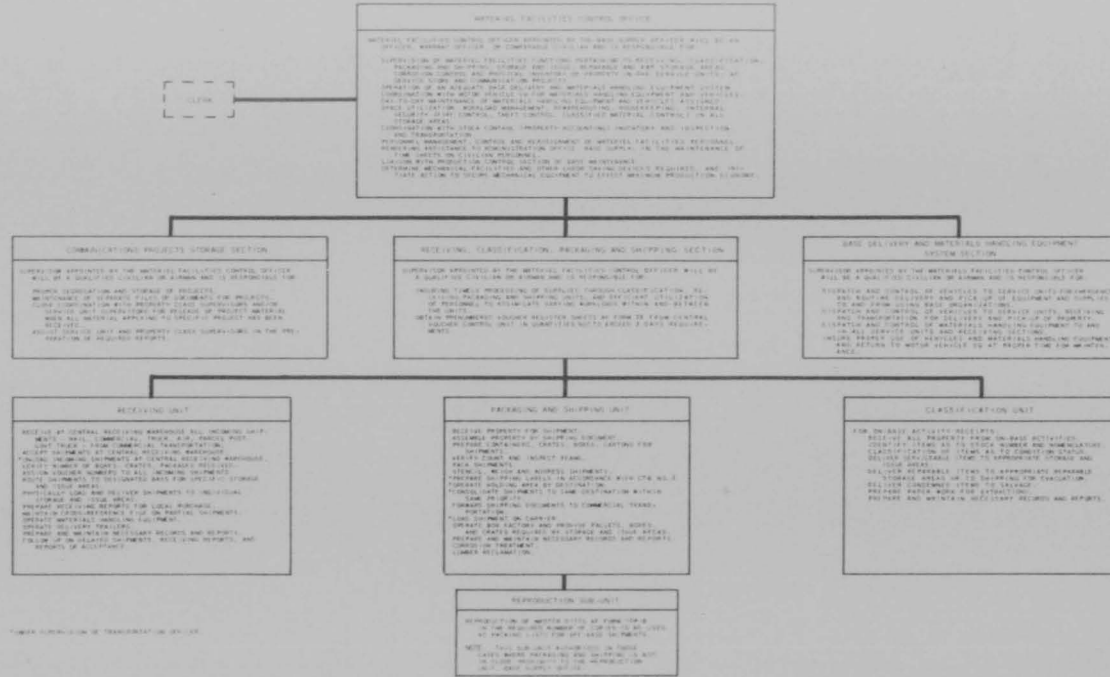
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FIGURE 2-6

ORGANIZATION STRUCTURE AND FUNCTION



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ORGANIZATIONAL STRUCTURE AND FUNCTIONS

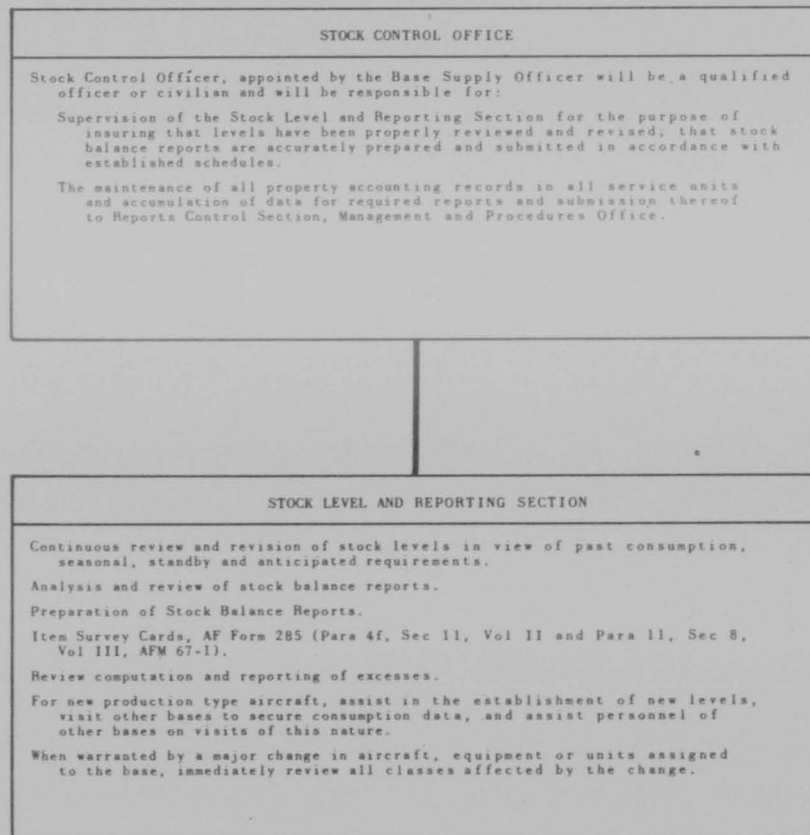
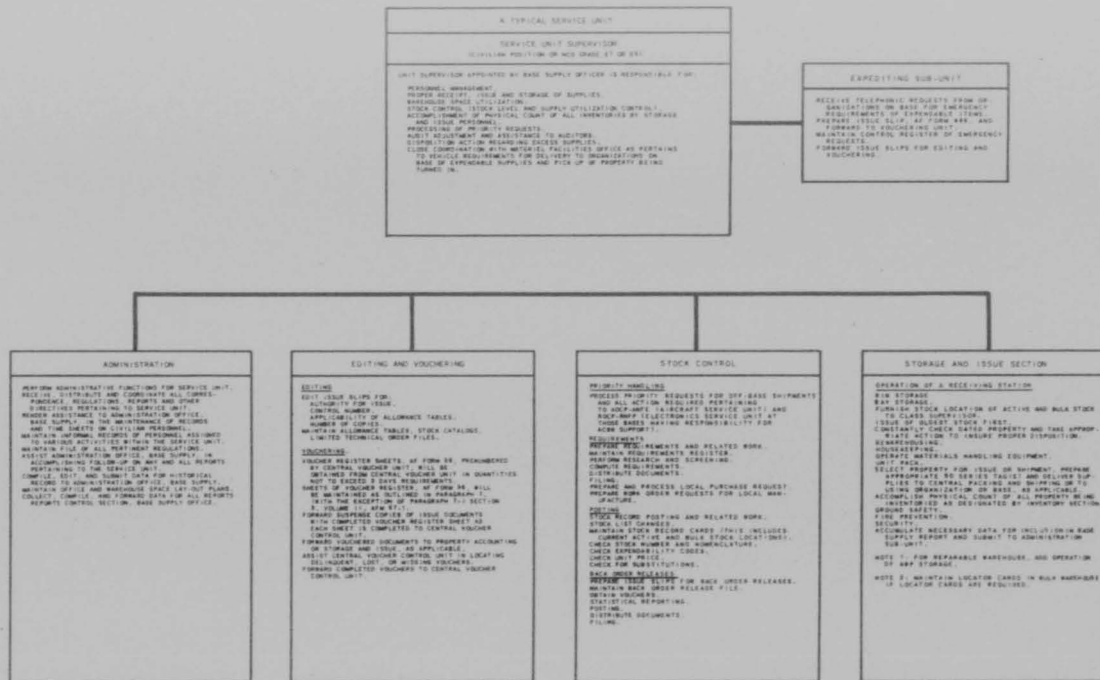


FIGURE 2-7

FIGURE 2-8

ORGANIZATIONAL STRUCTURE AND FUNCTIONS

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ORGANIZATIONAL STRUCTURE AND FUNCTIONS

A TYPICAL AIR FORCE SERVICE STORE

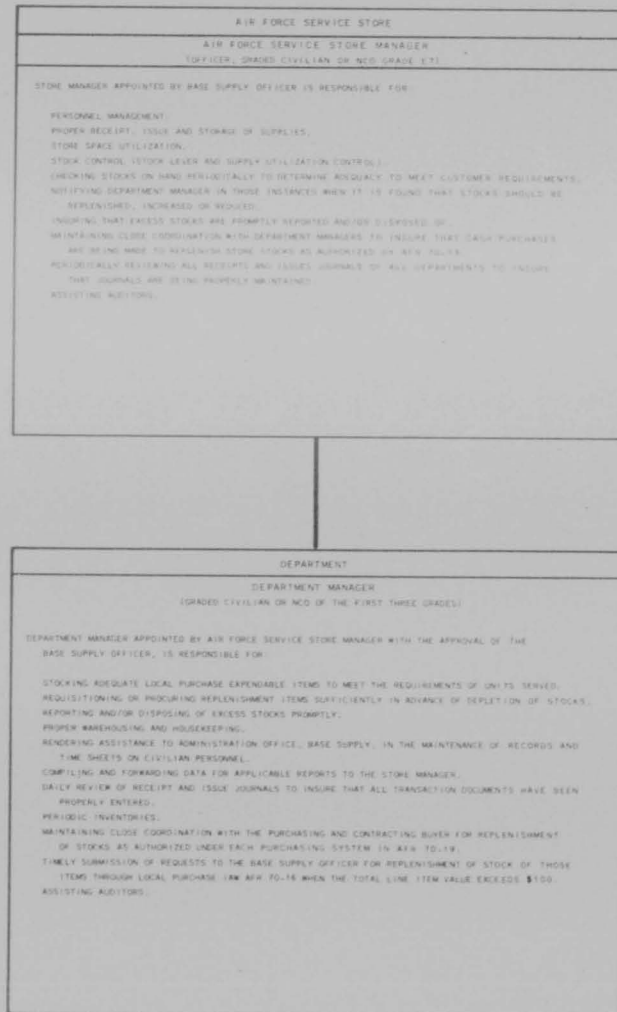
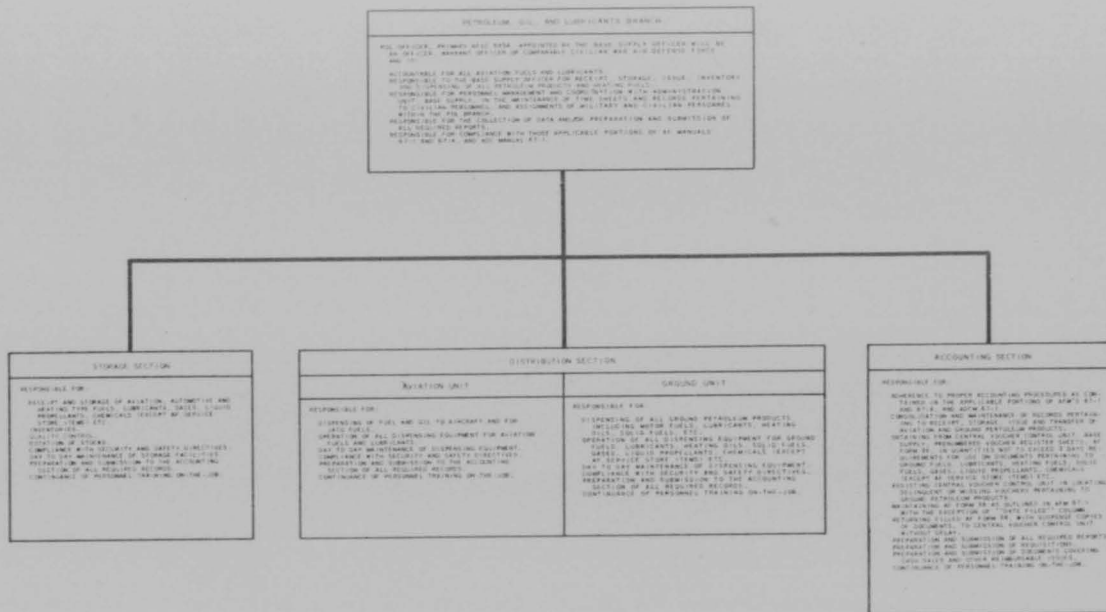


FIGURE 2-9

FIGURE 2-10

ORGANIZATIONAL STRUCTURE AND FUNCTION

A TYPICAL PETROLEUM, OIL, AND LUBRICANTS BRANCH
BASE SUPPLY



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SUGGESTED
"TYPICAL SERVICE UNIT"
LAYOUT

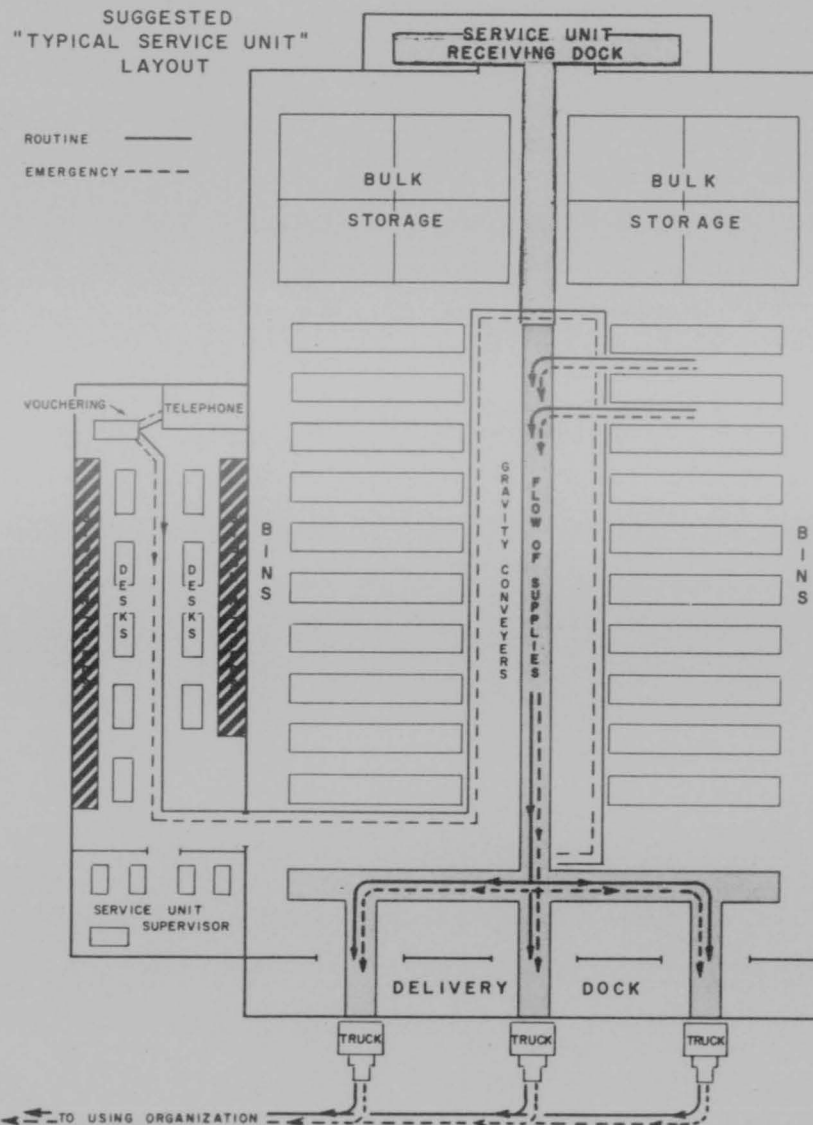


FIGURE 2-11

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CONTROL RECORD

DATE & TIME	ORG. CONTROL NO.	STK. NO.	NOUN	QTY.	NAME OF PERSON CALLING	REMARKS

FIGURE 2-12

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VOLUME III
SPECIAL SUPPLY PROCEDURES

PARAGRAPH	TITLE	PAGE
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2	SCOPE	1
3	SPECIAL SERVICE SUPPLIES	1
4	PROCESSING OF REPORTS OF SURVEY	1
5	SUPPLY MANAGEMENT SYSTEM	2
6	BENCH CHECK AND REPAIR SYSTEM	3
7	EQUIPMENT UTILIZATION AND EQUIPPING REVIEW BOARDS	4
8	PROCESSING REPORTS OF VISIT AND AUDIT	5
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10	ARCTIC CLOTHING FOR CANADIAN ACW SITES	7

1. **Purpose.** This volume of the Manual sets forth special procedures which are applicable to various supply echelons.

2. **Scope.** This section is devoted to all special supply operating procedures for which requirements peculiar to a specific operation are not defined or fully covered elsewhere.

3. **Special Service Supplies.** All requests for special service recreational equipment will be initiated under the authority contained in Equipment Component List (ECL) 20-00-16, Set-Special Services and Physical Training, 2 March 1954. The "Tentative Table of Authorization of Recreational Equipment," published by Headquarters AMC, 31 July 1951, is no longer applicable.

a. In order to obtain special service equipment for the over-all base program, the special service officer will establish a listing of equipment required for the base program on the applicable Unit Allowance List (AF Form 601), and submit through appropriate channels for review and approval. Upon approval of items listed on applicable UAL, requests will be submitted to base supply in accordance with procedures contained in Vol IV, AFM 67-1.

b. Since many items are coded LP by AMC, special service officers will furnish their complete support to local purchasing and contracting officers to insure that those items required which are obtained through local purchase are of the type and quality desired.

c. Expendable recreational supplies such as games, playing cards, etc., will be procured locally. Commanders are authorized to establish stock levels for such expendable supplies as required. This type of supplies or equipment will not be included on Special Service UAL.

d. Except for class 36 and 40A, all

requisitions for special service equipment will be forwarded by base supply through command channels to Headquarters ADC for approval prior to procurement action. Requisitions for special service equipment in Class 36 or 40A will be submitted in accordance with par 10, Sec 11, Vol. II, AFM 67-1, and will be forwarded by base supply direct to Headquarters ADC. Issue of certain supplies may be made from ADC stocks on hand, or the item may be furnished from appropriate zonal depot, since some shipment is still on hand in Air Force depot stock. If items are not available within ADC stocks, Headquarters ADC will forward requisitions to appropriate supply depot for continuance of supply action. If item is coded local purchase by the depot, the requisition will be returned to the base supply concerned for appropriate action.

e. In that many ADC units, particularly nontenant ACW squadrons, are supported logistically by bases of other major commands, Headquarters ADC will provide necessary funds to the applicable support base to meet special service requirements for attached ADC units. **Requisitions for recreational equipment originating from such bases supporting the ADC unit, which are coded local purchase (class 36, 37 and 40A), will be forwarded to Headquarters ADC for approval. (Reference par 8, Sec 2, Vol II, AFM 67-1).** Commanders not having sufficient funds to procure items of this equipment will make their requirements known to intermediate commanders for necessary action.

f. Accounting for special service property will be performed by the special service officer in accordance with procedures contained in Sec 1, Vol I.

4. **Processing of Reports of Survey (DD Form 200).**

a. This paragraph supplements Vol

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VI, AFM 67-1, by delegating authority to limited reviewing authorities and base commanders to take final action on reports of survey on which they have approved a pecuniary charge within the limits set forth below.

b. This paragraph is applicable to reports of survey originating within units of ADC and within units of other commands which are tenant on ADC bases or located off base and receiving support from an ADC base.

c. The term "Limited Reviewing Authority" as used herein refers to the air defense force commander. Limited reviewing authorities are authorized to take final action "by authority of the Secretary of the Air Force" on reports of surveys which they have approved for a pecuniary charge in an amount not in excess of \$100.00.

d. Base commanders are authorized to take final action "by authority of the Secretary of the Air Force" on all reports of survey which they have approved for a pecuniary charge in an amount not in excess of \$50.00.

e. The commanders of wings, air divisions, or higher headquarters may act as appointing authority for all reports of surveys arising within their headquarters.

f. The base commander will act as the appointing authority for all reports of survey originating within his installation. The commander of minor activities at separate locations, such as ACW sites and ground observer units will act as appointing authority on reports of survey originated within his unit. Reports of survey originated by detachments which have no officer assigned will be forwarded to the commander of the support base for action as appointing authority.

g. The "base commanders" action on reports of surveys will be accomplished by air defense group commander. Wing, air division, or higher headquarters commanders may also act as "base commander." (Reference par 1, Sec 6, Vol VI, AFM 67-1.)

h. Reports of survey pertaining to tenant units of other commands will be processed by the host base commander in accordance with Par 17, Sec 4, Vol VI, AFM 67-1.

5. Supply Management System.

This paragraph establishes a procedure to assist in resolving base level supply problems and applies to all ADC operating activities including ADC units tenant on non-ADC bases and isolated ACW squadrons.

a. The base commander or, in the

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case of organizations not located on ADC bases, the squadron commander will establish a supply management board for the purpose of identifying and isolating deficiencies in supply operations between all activities on base. Problems having to do with off-base support and problems related to lack of support by responsible agencies will also be included. The base commander or squadron commander, as appropriate, will preside over such meetings.

b. Supply management boards of ACW squadrons, fighter-interceptor squadrons, and other ADC units not located on ADC bases are authorized to deal directly with supply management boards at ADC bases on matters pertaining to supply problems for which that base is responsible. All other problems beyond the capabilities of the supply management board involving support by other major command organizations will be forwarded through ADC command channels.

c. The board will be comprised of as many members as the board president considers necessary and will meet periodically (no less than once a month) as determined by the president. Committees may be utilized if necessary to analyze and recommend action on difficult supply problems.

d. Supply problems presented to the board will be categorized by phases and handled accordingly. Supply phases are as follows:

(1) Organizational supply problems (housekeeping, administrative supplies, equipment, and procedures).

(2) Technical supply matters (support of aircraft, automotive, electronics, and installations office field maintenance).

(3) Repairable supply matters (field and organizational maintenance action of aircraft, automotive, electronics and installations office type repairable items).

(4) Supply disposal and reclamation matters (field maintenance reclamation action, base supply action, and base disposal action).

(5) Supply transportation matters (transportation of items between operating activities on and off base, and between the base and depots and special activities).

(6) Supply personnel matters (quality, quantity and grades of authorized and assigned personnel; training being given and determination of actual personnel requirements).

(7) Supply funding matters (budget and fund allocation for salaries, supplies, and transportation).

(8) Supply planning matters (plan-

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ning data, program changes, and projects).

(9) Supply control matters (accounting, inventory, reports of survey, records maintenance, etc.).

e. Board action will be to present problems for discussion (appointing committees, if necessary) and analysis of applicable factors.

f. Upon evaluation of data available, the board will develop solutions and recommend corrective action to be taken. Such recommendations will be forwarded to the staff section concerned for appropriate action.

g. Reference is made to the following regulations which will be used in connection with this procedure:

- (1) AFR 25-1.
- (2) AFR 25-3
- (3) ADCR 25-1.

h. The base or squadron commander as board president will maintain a file of board minutes and records pertaining to each meeting and completed action taken on problems appearing before the board. Such files will be made available to inspectors or other representatives of higher ADC command staff agencies upon request.

6. Bench Check and Repair System.

a. The purpose of this paragraph is to effect maximum repair at organizational and field maintenance level and to insure that such property, to be forwarded to depots for repair, is actually beyond the base level technical capabilities and facilities. This system applies only to items having a continuous requirement or for which a forecast requirement exists. Repairable items which are excess to base requirements will be handled in accordance with Section 11, Vol II, AFM 67-1. The procedures contained herein supplement the procedures contained in AFR 66-27 and AFM 67-1.

b. All repairable items generated by ADC organizations which require field maintenance repair will be turned in direct to the appropriate field maintenance shop for bench check and repair when possible, except as follows:

- (1) Repairable items which are excess to requirements of the generating activity.
- (2) Items which are obviously in a condemned condition.
- (3) Repairable items which specifically require Depot level repair in accordance with applicable technical orders, (after bench check to determine serviceability if within the scope of field maintenance facilities).

c. The category of items listed in par 6b(1) through (3) will be turned in direct to base supply in accordance with par 5, Sec I, Vol I, unless otherwise directed by the base supply officer.

d. Repairable items requiring bench check will be turned in to the appropriate field maintenance shop in accordance with Par 4, Sec 5, Vol IV, AFM 67-1, regardless of whether the items are organizational property or spare parts. The maintenance shop will take the following action on items received:

(1) Items checked and found to be serviceable will be tagged with a Serviceable Parts Tag "AF Form 50B," and returned to the using organization.

(2) Items which can be repaired within a reasonable length of time will be repaired, tagged, and returned to the using organization. Storage facilities within the maintenance shop may preclude retention of certain quantities of repairable items; in which case the items will be returned to the using organization for turn-in to base supply. AOC items, repairable within base shops and not available in unit stand-by or base supply will be repaired on the highest priority basis.

(3) Items turned in to field maintenance for "bench check repair and return" which cannot be repaired within a reasonable time, or items which cannot be repaired in time to meet required date, will be returned to the using organization for turn-in direct to base supply. In such instances the using organization will submit AF Forms 446 to base supply for replacement, or in the case of emergency, replacement will be obtained in accordance with par 4a(2), Sec I, Vol I.

(4) Items bench checked and found to require higher level repair will be appropriately tagged and returned to the using organization for turn-in to base supply. Field maintenance will stamp or mark repairable tags "Not Repairable this Base" to expedite clearance of such items from the repairable warehouse.

(5) Items bench checked and found to be in a condemned condition will be appropriately tagged and returned to the using organization. When the repair activity subjects condemned items to cannibalization or reclamation, the repair activity will take action as prescribed by par 4e, Sec 5, Vol IV, AFM 67-1.

e. When the repair activity possesses stand-by items in accordance with par 5, Sec I, Vol I, direct exchange will be made at the time of turn-in of the repairable item for bench check.

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f. In all instances, the repair activity will furnish the base supply officer with a copy of each appropriate work order on which an item(s) has been repaired and returned to the using organization, (field maintenance repair only), in order that necessary reparable turnover and consumption data, when required, can be reflected on the appropriate AF Form of the 105F series stock record card for revising stock levels and for stock balance and consumption reporting purposes. Copies of such work orders will be annotated "Repaired and Returned." A wash posting is all that will be required to reflect a "reparable receipt" in the "Receipts" portion of the card, and an "issue" in the "Issues" portion of the card, with no change in the balance columns.

g. The base supply officer is responsible for establishing close relationship with field maintenance to insure that repair activities are completely informed of items which are excess to base requirements. Periodic lists of base excesses should be furnished to field maintenance to insure that repair activities do not perform maintenance on items for which base supply has excess stocks.

7. Equipment Utilization and Equipping Review Boards. a. This paragraph prescribes the establishment of an equipment utilization and equipping documents review and survey function at Headquarters ADC, air defense forces, and bases of the Air Defense Command.

b. The Commander, Air Defense Command, will establish a permanent equipping review board. The responsibilities of the equipping review board are as outlined in AFR 150-8.

c. The commanders, air defense forces, will establish permanent equipping review boards which will be responsible for:

(1) Reviewing and evaluating recommendations submitted by organizations for additions or deletions to equipment documents for command-wide application, and reviewing all requests for special issues for subsequent submission to Air Materiel Command or Headquarters USAF.

(2) Assisting Headquarters ADC in the equipment utilization program and in the development and maintenance of equipment authorization documents.

(3) Conducting surveys of equipment within the command as the need is indicated or as directed by Headquarters ADC. Obtain on-the-spot information regarding the utilization of equipment by op-

erating personnel and take corrective action as required.

(4) Conduct reviews and surveys with particular attention to the following aspects of equipment authorization documents:

(a) Authorization of the minimum amount of equipment to accomplish the assigned mission of the unit.

(b) Addition of required items.

(c) Elimination of unnecessary items.

(d) Reduction of rarely used items through pooling, rental, or contract maintenance procedures.

(e) Compliance with published authorization guidance.

(f) Utilization of lower cost items.

(g) Compliance with special issue procedures.

(h) Maximum utilization of UAL - Unit Mission Equipment items and return to stock of like USE items.

(5) Examining and evaluating command equipping directives to insure that they are essential, current, and compatible with existing Air Force equipping directives. Insuring that these directives and command equipping documents are kept in close consonance with the assigned missions and planned objectives of the command. Initiate necessary internal command restrictions to insure efficient utilization of equipment.

(6) Insuring the establishment and proper operation of equipping review boards at base level. Insure the establishment of equipping review boards at air division levels as the air defense force commander deems necessary. Headquarters ADC will be notified of boards established at air division level.

d. Clothing and Individual Equipment.

(1) Authority is delegated to air defense force commanders to authorize the issue of items listed in T/A 1-21 which require the authorization of the major air commander. Care will be taken to insure that such issues are kept within the allowances prescribed by T/A 1-21.

(2) In rugged or mountainous areas, climatic conditions change very rapidly with elevation so that clothing allowances which are adequate for valley locations are insufficient on the mountainside. Therefore, air defense force commanders may authorize the issue of clothing within allowances prescribed by T/A 1-21 for the next colder zone than that in which a unit is located. Such issues will be confined to those items considered necessary for com-

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fort and health of assigned personnel.

(3) Authority delegated to air defense force commanders by this paragraph will not be redelegated to lower echelons of command.

e. Membership.

(1) Minimum representation of at least one qualified member from comptroller, operations, and materiel is required. It is recommended at least one qualified representative of manpower be appointed as a member of the board.

(2) The president of the equipping review board at air defense forces will be the director or assistant director of materiel.

(3) The president of the equipping review board at base level will be the base executive officer or base materiel officer.

(4) Subordinate panels may be established as required to operate under the close guidance of the review board.

f. Reporting Data. Reports will be submitted in accordance with AFR 150-8.

8. Processing Reports of Visits and Audit

a. Processing Reports of Scheduled Field or Staff Visits. In order to realize full benefit of field and technical liaison visit reports as a management tool, the following processing procedures are established for compliance by all concerned. Reports referred to above also include reports prepared by AMA activity teams.

(1) Action to be taken by base or site commander:

(a) Process clear and concise replies within fifteen days after receipt, to Headquarters ADC through channels indicating completed corrective action, and action taken to prevent recurrence of cited discrepancies, or where necessary, deadline dates established and corrective action taken. If report cannot be completed within the time established, Headquarters ADC, Attn: ADMMC, will be notified through channels, stating reason for noncompliance and approximate date the report will be forwarded.

(2) Action to be taken by defense wing commander and/or air division (def) commander:

(a) Defense wings and/or air division commanders will process subject reports within five days.

(b) All topics and corrective action indicated will be closely scrutinized. Any corrective action which appears to be incomplete will be handled by separate correspondence to the base or site concerned. Further, the indorsements to the air defense force will indicate which corrective

action was not satisfactory and the corrective measures to be taken.

(3) Action by Air Defense Forces:

(a) All reports of visits received will be processed to Headquarters ADC within five days after receipt.

(b) Positive and aggressive review of subject reports to determine whether compliance has been made as required in par 8a(1) and 8a(2) above, and action, if necessary, as required in paragraph 8a(2)(b) above.

b. Reports of Audit. (Reference AFR 175-3 and AFR 175-4.)

(1) This paragraph prescribes a routing procedure for reports of audit and establishes definite responsibilities within each echelon of command to insure prompt corrective action with respect to deficiencies reported. These provisions are applicable to all units of this command maintaining property or sales accounts which are subject to audit by the Office of the Auditor General, as prescribed in par 2, AFR 175-3.

(2) The original and three copies of reports of audit will be forwarded by the resident auditor serving the activity direct to the appropriate installation commander. An information copy will be forwarded simultaneously to the major air command having jurisdiction over the activity audited.

(3) Responsibilities. The responsibilities of commanders at all echelons of command pertaining to reports of audit are outlined in par 11, AFR 175-3.

(a) Action by Installation Commander:

1. The installation commander will take necessary action to adjust, explain, or correct deficiencies reported.

2. If no deficiencies are reported, the original and one copy of the report will be forwarded immediately to the appropriate air defense force.

3. If deficiencies are reported, corrective action will be taken immediately. When all deficiencies have been corrected, or fifteen days from the date the report was received, whichever is sooner, the original and one copy will be forwarded through command channels to the appropriate air defense force headquarters with a report of corrective action taken to clear the deficiencies reported. If any deficiencies remain uncorrected at this time, the report will include an explanation and an approximate date by which the corrective

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action will be completed. This report will be signed personally by the installation commander.

(b) Action by Headquarters Air Defense Forces: The air defense force headquarters will review the deficiencies reported, the corrective action taken, and will direct any further action required. A copy of the report of audit and report of corrective action will be retained in the files of the air defense force headquarters. Within ten days after receipt, the original report of audit and report of corrective action will be forwarded to this headquarters by indorsement, stating (a) any further action that has been directed by the air defense force, (b) anticipated date all deficiencies will be corrected, and (c) necessary action will be taken to prevent the appearance of same or similar deficiencies on subsequent report of audit.

(c) Action by Headquarters Air Defense Command: The original correspondence will be filed by Headquarters Air Defense Command and action will be considered as complete unless subsequent reports of audit indicate previously reported deficiencies remain uncorrected.

(d) Installation Commanders Also Are Responsible For:

1. Providing clerical assistance necessary to aid in the performance of audits when requested by the resident auditor servicing the activity and accommodating other reasonable requests consistent with local conditions.

2. Notifying Headquarters Air Defense Command, Attention: Deputy for Materiel, of the following changes or conditions affecting the status of property accounts under jurisdiction of this command.

a. Activation or inactivation of property or sales accounts and the assignment or discontinuance of stock record account serial numbers to Headquarters Air Materiel Command.

b. Transfer of property accounts to or from the jurisdiction of the Air Defense Command.

c. Property and sales accounts which are overdue for audit.

(4) Reports of Accounts Not in Condition for Audit.

(a) Reports of accounts not in condition for audit will receive the same distribution as reports of audit.

(b) In all instances of accounts reported not in condition for audit, the installation commander will take immediate action to have the account placed in condition for audit and notify Headquarters Air Defense Command of the earliest date

the account will be ready for audit.

(c) If it is determined that the local installation administrative action will not suffice to place an account in condition for audit, the installation commander will furnish Headquarters ADC with a statement as to the reasons that the account cannot be placed in condition for audit.

9. **Supply Coordination Visits to Depots.** Visits by authorized personnel are welcomed by depots since mutual benefit results from exchange of information. However, past experience has shown that too often visits are made by personnel without proper preparation, such as coordination with their base supply officer, securing necessary information of previous supply action, and making follow-up visits too soon after requisitions are submitted. In some cases separate groups of visitors from one base have made visits on the same day, each group representing a different organization. Visits under these conditions are fruitless and wasteful.

a. In order that the most benefit may be realized by both depot and field personnel, it is necessary that personnel authorized to visit AMC installations be thoroughly qualified, properly briefed, and have with them all information necessary to successfully conclude the purpose of the visit.

b. Supply coordination visits to depots will be carefully monitored by base commanders to insure that:

(1) Coordination with all supported units is effected prior to a visit so that visits will be held to a minimum.

(2) Not more than one group of visitors from the Air Force base is authorized to visit the same depot at the same time.

(3) Authorized visitors are fully versed in supply procedures to successfully conclude coordination visits.

(4) Authorized visitors are briefed by the base supply officer prior to making the visit.

(5) Authorized visitors have in their possession a copy of all requisitions from their base supply on which follow-up or expeditious action is desired.

(6) Requisitions have had sufficient time to reach the depot before follow-up is made by coordination visits.

(7) Representatives of ADC squadrons will not visit depots unless authorized by the base commander of the support base.

(8) All supply coordination visitors to depots will report to the adjutant of the depot for necessary clearances. The area

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activities branch will be contacted to insure maximum assistance from depot activities concerned. The depots should be notified in advance of the estimated time of arrival and security clearance of visitors.

10. Arctic Clothing for Canadian ACW Sites. a. Arctic organizational clothing and equipment prescribed for Zone VII (Arctic), T/A 1-21, will be issued to all military personnel assigned to ADC Canadian ACW squadrons prior to their departure from the Zone of Interior. Likewise, stocks of such items at Canadian ACW stations in excess of squadron requirements will be returned to supply channels. The procedures outlined herein will be followed for the issue and turn-in of this type clothing and equipment.

b. When ADC personnel are reassigned to Canadian ACW squadrons, commanders of air defense forces will insure that such personnel are issued the items of arctic organizational clothing and equipment prescribed for Zone VII, T/A 1-21, prior to their departure. This information will be included in the special orders reassigning such personnel. The issue of these items to individuals will be recorded on his property record, AF Form 538, as prescribed by AFR 67-81.

c. Commanders, air defense forces, will take necessary action to insure that personnel being reassigned to these squadrons are processed through Selfridge or McChord Air Force Bases (as applicable). These installations will issue the required items. However, if such items are on hand at the installation from which the individual is being reassigned, these items may be issued by such installation upon direction by the air defense force concerned.

d. Upon arrival of such personnel at the Canadian station, organizational clothing and equipment in their possession will be checked against the individual's property record, AF Form 538, and appropriate action taken in accordance with AFR 67-81. Replacement clothing and equipment requirements will be obtained by requisitioning on the USAF depots through the Commander, Detachment #1, Ottawa, Canada (AF 494 SO).

e. As there are no cleaning or repair facilities for organizational clothing and equipment at the Canadian stations, such items will be shipped to Selfridge or McChord Air Force Bases, whichever is nearer, for rehabilitation. Existing excesses of serviceable and reparable property and those which may be generated in the future at these stations likewise will be ship-

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ped to Selfridge or McChord Air Force Bases. Such excesses will be shipped in an "as is" condition. Under no circumstances will items in condemned condition be returned to the Zone of Interior. Disposition of these items will be accomplished by the Canadian ACW unit commander under the provisions of ADCR 68-1.

f. Reparable organizational clothing and equipment shipped by a squadron to Selfridge or McChord Air Force Bases for cleaning or repair will be returned, if such request is made at time of shipment. When such request is not made, the items will be considered as excess to the requirements of the squadron and disposition will be made by the base supply officer. If items received for cleaning or repair and return are condemned after inspection at the processing installation, the squadron will be notified. Replacements for these items then will be requisitioned by the squadron under procedures prescribed in paragraph 10d above.

g. Commanders of air divisions (defense) having command of the aircraft control and warning squadrons in Canada will insure that squadron commanders reassigning military personnel to McChord and Selfridge Air Force Bases will require and provide for the return of arctic clothing and equipment with the individual, regardless of the season of the year in which reassignment is made. Special orders issued will contain authority for the return of such items and direct the turn-in upon arrival in the Zone of Interior, under the provisions of AFR 67-81. In the event of a shortage of organizational clothing and equipment within the squadrons, the commander, Detachment #1 may authorize the retention of such quantities of the items at these stations as he deems necessary. He may further authorize intersquadron shipments of such items when necessary. In such instances he will notify the commander of the air division (defense) concerned, so that special orders can be amended as required.

h. Arctic clothing in the possession of all other personnel returning to ZI assignments will be withdrawn from the individuals by the "C" site commanders. Periodically, excesses will be returned to McChord or Selfridge by either unit or command aircraft or other means. This will preclude uneconomical trans-shipment of the items from ZI bases and at the same time it will provide direct return of resources to the initial issuing base.

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VOLUME IV
ANALYSIS OF SUPPLY OPERATIONS

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1. Purpose.

a. The purposes of this volume are:

(1) To provide a system by which air defense group commanders and applicable members of staffs may determine the degree of effectiveness being realized within the various supply operations of the base.

(2) To provide information on individual factors affecting the performance of the various supply operations in order that corrective action can be initiated.

(3) To provide workload factors that may be used to determine and justify actual personnel, equipment, and facilities requirements.

2. Scope.

a. Eventually this volume will contain scoring systems for all phases of supply operation within this command. It is and will be applicable to all ADC units. In the interim, scoring systems have been devised only for ADC organizational supply operations, base supply operations and clothing sales stores. Yardsticks for personnel, equipment, and facility requirements will be established and included in this volume at a later date.

b. All levels of command are encouraged to submit recommendations for the scoring of new areas or functions.

3. Responsibilities.

a. The scoring of the base supply and clothing sales store operation as outlined in paragraphs 4 and 5 will be the responsibility of the air defense group deputy for materiel. Results of the scoring will be submitted to Headquarters ADC and air defense force Headquarters each month as an attachment to the base supply report. RCS ADC-S21 applies.

b. The scoring of unit supply, as outlined in paragraph 6, will be the responsibility of the air defense group deputy for materiel. Scoring of units tenant on non-ADC bases, and ACW squadrons will be the responsibility of the organization commander concerned.

4. Base Supply Operation.

a. This score will consist of a consolidation of nine separate parts having a bearing on base supply operations. It is possible to earn a total of 100 points which are distributed among the nine separate parts as follows:

(1) (a) Percent of inventory taken.	2
(b) Percent of inventory error.	6
(2) Line items processed per manhour of personnel on duty.	8
(3) Line item backlog per man available	8
(4) Average time for processing on-base issues	2
(5) Average time for processing off-base receipts	2
(6) Number of vouchers out of file over five days	8
(7) (a) Supply Effectiveness (Category A)	30
(b) Supply Effectiveness (Category B)	10
(c) Supply Effectiveness (Total)	
(8) Line items stocked	10
(9) Air Force service store inventory, turnover rate per month	14
TOTAL	100

Each part will be scored by the method prescribed below:

b. Scoring Directions:

	Requirement	Score
(1) (a) Percent of Inventory Taken	(1) Not less than 16 2/3% per month	2
	(2) Less than 16 2/3% per month	0

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Information reported in Item 8, Section VI, Base Supply Report, will determine score. Inventory must be completed once each six-month period to be acceptable. Periods begin in July and January. Since decimals are entered on the report to score for this item, 16.7% of inventory must be accomplished at end of July and January;

33.3% at end of August and February; 50% at end of September and March; 66.7% at the end of October and April; 83.3% at end of November and May; and 100% at end of December and June. For example, 78% reported at end of May would score zero while 85% would score 2 points.

(b) Percentage of Inventory Error	(1) 5% or less	6
	(2) 5.1 - 10%	3
	(3) 10.1 or more	0

Information reported in Item 9, Section VI, Base Supply Report, will determine score. For example, an error percentage of 8%

would be in scoring category (2) 5.1 - 10% and score 3 points.

(2) Line items processed per man-hour of personnel on duty	a. .851 or more	8
	b. .551 - .850	5
	c. .301 - .550	2
	d. .300 or less	0

The number of Line Items processed is reported as Item 7, Section VI, and the average number of personnel on duty daily is Item 3, Section VII, Base Supply Report. Compute monthly manhours on duty by multiplying the number of personnel by the number of work hours in the month. For military personnel, consider a 44-hour

week and for civilians, 40 hours. Legal holidays are excluded (Col 1, 2, and 3 of example). Divide number of line items processed by number of manhours present for duty in base supply during month (Col 5 of example). Determine point score from the table. Example of computation follows par 3. Note Col 5 of table.

(3) Line items backlog per man available	a. 2 hrs. or less	8
	b. 2.1 hrs. - 4.0 hrs.	5
	c. More than 4 hrs. per man on duty	0

Line item backlog is reported as Item 12, Section VI, Base Supply Report. Average number of personnel present for duty is sum of military and civilian personnel reported as Item 3, Section VII, Base Supply Report. Multiply average number of personnel present for duty by number of items processed per manhour (determined for Par (2) above). This product (Col 6 of

example) represents one hour's backlog of work for the personnel present for duty. Divide the Line Item Backlog by the one hour's backlog to determine the hours required to reduce line item backlog to zero. This result (Col 8 of example) is used to determine points according to Item 3 of the scoring table.

Example:

Avg No.	Personnel			Line Items			
	Mnhrs Each	Total Mnhrs	Total Processed	Avg per Mnhr	Processed Per Mnhr	Backlog	Backlog Hrs
1	2	3	4	5	6	7	8
•		Col 1 X	•	Col 4 :	Col 1 X	•	Col 7 :
VII, 3		Col 2	VI, 7	Col 3	Col 5	VI, 12	Col 6
a. Mil 331	180	59580					
b. Civ 122	160	19520					
c. Tot 453		79100	47753	.604	273.6	579	2.1

*Item reference to Base Supply Report

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In this example, the score for Par (2) would be determined by the .6038 (line items per manhour) in Column 5. This would score in the range .551 - .850 of the table for this part and score 5 points. Par

(3) score would be determined by the number in Col 8 which in this instance is less than 4 but more than 2. The score would be 5 points.

	Requirement	Score
(4) Avg time for processing on-base issues	a. 12 hours or less	2
	b. More than 12 hours	0

Average time for processing on-base issues is reported as Item 17, Section VI of the Base Supply Report. For example, a time reported as 12.1 hours would score zero.

(5) Avg time for processing off-base receipts	a. 16 hours or less	2
	b. More than 16 hours	0

Average time for processing off-base receipts is reported as Item 18, Section VI, Base Supply Report. For example, a processing time of 15 hours would score 2.

	Requirement	Score
(6) Nr of vouchers out of file over 5 days	a. 0 - 17	6
	b. 18 - 50	4
	c. 51 - 83	2
	d. 84 or more	0

Number of vouchers out of file over 5 days is reported as Item 4 of Section VI, Base Supply Report. Enter number into table to determine score. Thus, if 21 vouchers

are reported out of file over 5 days, the number would be in the range 18 - 50 of the table and the score would be 4.

(7) Supply Effectiveness (Category A percent requests issued)	a. 87%	30
	b. 67% - 86%	16
	c. 58% - 66%	7
	d. 57% or less	0

(Category B percent requests issued)	a. 91%	10
	b. 73% - 90%	7
	c. 58% - 72%	4
	d. 57% or less	0

Supply effectiveness is determined by the ratio of the total issues (sum of the issues plus the partial issued) to the requests. Category A and Category B will be calculated and scored separately. Number requested is shown in Column C of Section III, Base Supply Reports. Issues and partial issues are shown in Columns D and F.

For example, if Category A requests total 7082, issues 5509, and partial issues 122, issues would be computed as 5509 plus 122 or 5631. Effectiveness equals 5631 divided by 7082 or 80%. The percent of 80% is within the category 67% - 86% with a score of 16 points. Category B is scored in the same way.

(8) Line Items Stocked	a. Less than standard plus 1000	10
	b. Standard plus 1001 - 2000	9
	c. Standard plus 2001 - 3000	8
	d. Standard plus 3001 - 4000	6
	e. Standard plus 4001 - 5000	4
	f. Standard plus 5001 - 10,000	2
	g. Standard plus 10,001 - 15,000	1
	h. Standard plus 15,001 or more	0

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Data required to establish standards for line items stocked at various ADC bases.

This part concerns only those items for which there is a stock record card and thus will not include line items in local purchase store. Ground rules stipulate that POL issues and stock record cardage will

not be included in Base Supply Report, thus they are not included in the scoring. The same is true of Classes 30A and 30F supplies.

The following number of line items is considered as being needed to support the type of activity shown in the table below:

TABLE I
BASIC STANDARDS FOR LINE ITEMS TO BE STOCKED

Basic Line Items		NOTE: The number of basic line items listed to the left include the primary aircraft and air defense group elements at two fighter-interceptor squadron bases. At single fighter-interceptor squadron bases, it includes the combat aircraft plus the entire air defense group organization.
12,500	One Fighter-Interceptor Squadron	
14,000	Two Fighter-Interceptor Squadrons	

TABLE II
ADDITIONAL LINE ITEMS FOR ADMINISTRATIVE AND TRAINING AIRCRAFT

Aircraft	Additional Number of Line Items
T-7, C-47, C-46, C-82, PBV-5	800
B-25, B-26, B-17, T-33, C-54, F-51, B-45	1000
C-97, B-29, C-124	2000
C-119	1500
H-13, H-19	500
T-6, T-28	400
L-4, L-5, L-16, L-20	200
T-11	800 * 200
C-45	800** 400

*When a base has both T-7 and T-11 aircraft, then the added line items of support required is reduced to 200 for the T-11 as 75% of the parts are common to both types.

**When a base has C-45's and T-7's or T-11's, then the added line items of support

required is reduced to 400 for the C-45's as 50% of the parts are common to both types.

Note: Yuma will use basic line items allowed for two fighter-interceptor squadrons. Ent will use basic line items allowed for one fighter-interceptor squadron.

TABLE III

ADDITIONAL LINE ITEMS REQUIRED TO SUPPORT TENANTS (Includes off-base organizations attached for support).

Organization	Line Items
ACW Squadrons	1500
Numbered Air Force Headquarters	500
Major Command Headquarters	1800
Air Transport Wing	2000
Tow Target Squadron	2000
Port of Aerial Embarkation	200
Air Sea Rescue Squadron	1500
Northern US Location	1500*

*Note: For those bases located in the northern part of ZI having winter requirements, an additional 1500 line items of

stock is authorized. Northern part of ZI is as defined in T/A 1-21, zones 6 and 7.

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TABLE IV

TENANTS FOR WHICH ADDITIONAL LINE ITEMS ARE NOT REQUIRED

AAA Battalions
 ROTC Schools
 Civil Air Patrol
 Ground Observer Corps Units
 Filter Control Centers
 Prep School

Example:

Computation of standard for the number of line items stocked at an ADC base having two fighter-interceptor squadrons and the following tenants and administrative and training aircraft:

Computation of a standard is to be made for each base using the criteria set forth in Tables I - IV.

TABLE V

Aircraft	Basic Line Items
F-86, F-89, F-94 Type Combat Aircraft -	14,000
C-47 (2)	800
C-45 (4) *	400
T-7 (2)	800
T-33 (8)	1,000
Tenants	
AAA Battalion	0
Civil Air Patrol	0
ACW Squadrons	1,500
Numbered Air Force Headquarters	500
Aircraft & Tenant	19,000

*Only half of C-45's line items included because T-7 aircraft also assigned.

Scoring Directions, Par 8, Item 1, Section VI, Base Supply Report gives the number of stock record cards. The number of stock record cards minus the **standard for line items stocked** as determined by the above method, determines the number to enter

into the scoring table. For example, if the air defense group for which the standard of 19,000 line items was established above, reported 22,421 stock record cards, the computation of score would be as follows: $22,421 - 19,000 = 3421$; this is within the scoring category d. 3001 - 4000 and is scored 6 points.

	Requirement	Score
(9) Air Force Service Stores Inventory, Turnover Rate Per Month	a. .50 or over*	14
	b. .37 - .49	8
	c. .25 - .36	2
	d. .24 or less	0

*Acceptable ADC standard.

The monthly inventory turnover rate for the Air Force service store will be calculated as follows:

(a) Determine the average of beginning and ending inventories from Air Force Service Store Journal, AF Form 409 (Acct 82195.2).

(b) Obtain total sales from the net total of Column 12 (expense accounts) of Air Force service store journal.

(c) Divide total sales by the average inventory to arrive at turnover rate (re-

sult to 2 decimal places).

Example: Total sales are \$32,000 and average inventory \$113,600.

$$\frac{\$32,000}{\$113,600} = .28 \text{ turnover rate}$$

Rate of .28 is in range .25 - .36 with score of 2.

5. **Clothing Sales Store.** This item will be computed on the basis of an aver-

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age inventory for a given three-month period in relation to total sales for the same period. The quarterly turnover rate will

be computed as shown in a, b, and c below. A score of 100 is possible under this scoring system.

Score for Clothing Sales	a. 1.00 or over	100
Store Inventory Average	b. .90 - .99	70
Turnover Rate for Three-Month Period	c. .55 - .89	50
	d. .45 - .54	30
	e. .44 - or less	0

6. Organization Supply Survey and Rating System. a. This paragraph prescribes a supply survey and rating system designated to insure that organization supply records, supply areas, and personnel utilization and training are maintained at the highest level. This procedure is applicable to all organizations of this command.

(1) The survey procedure and rating system outlined in this paragraph will be used by air defense group staff supply officers in conducting surveys. Commanders of all units not under the jurisdiction of an air defense group will conduct or designate a representative to conduct the surveys of unit supply. Unit supply officers will not be delegated this function.

(2) The supply room and records or each ADC unit supply organization will be

surveyed each 90 days in accordance with these procedures.

(3) Each air defense group supply staff agency involved will establish a schedule of organization surveys and ratings over a 90-day period and on a continuing 90-day cycle thereafter. The time required to survey and rate each organization is approximately eight hours, and when planning the schedule, this figure will be used as a guide.

(4) Each staff will maintain a chart of surveys and ratings which will indicate:

- Date of last survey.
- Date of next survey.
- Rating of the organization.
- Relative ranking position of all organizations, using the numerical rating score.

Example:

Date		Score	Rating	Next Survey
12 March 1954	1st Sq	550	Excellent	12 June 1954
8 March 1954	2d Sq	563	Excellent	8 June 1954
21 March 1954	3d Sq	467	Good	21 June 1954

b. Preparation of Forms. Forms as shown in Figures 4-1 through 4-11 of this volume will be reproduced locally and completed in triplicate. The original and duplicate copy will be signed by the surveying officer or a technically qualified staff airman authorized to conduct the survey in his absence. The space designated in Figure 4-11, example form, "Rated and Approved by," will bear the signature of the air defense group deputy for materiel. The blank spaces on each page of forms reproduced locally will be used for additional items or changes to existing items which will be forwarded periodically from Headquarters ADC. Total points and maximum score will be changed if necessary.

(1) Completed forms will be distributed as follows:

(a) Original signed copy to the squadron commander.

(b) Duplicate copy to the air defense group commander for his review and

action, and then returned to the air defense group supply office for filing.

(c) Triplicate copy held as a suspense copy pending return of duplicate copy and thereafter used as a staff work copy.

c. Procedure. The following instructions will be used in conducting surveys and in scoring the various sections:

(1) Staff personnel performing the survey and rating will review the functional area covered by each question. Depending upon the conditions found, a check will be noted in either Column A, YES, or Column B, NO, of applicable form.

(2) Columns C through F of rating forms are the ratings which will be applied to the functional areas. The rating which best fits the condition found at the time of inspection will then be circled. To illustrate the method of scoring, several examples are shown below:

- Reference Item 6, Section 1.

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Condition found: AFR 67-10 was available and neatly filed. There was no evidence either by signature or initial that

all organization supply personnel had read it. The supervisor, however, claimed that all personnel had read it.

Scoring

YES	NO	EXC	GOOD	FAIR	UNSAT
A	B	C	D	E	F
x		6	4	②	0

Analyzing the scoring: The "YES" is checked as the regulation was on hand and filed. The "FAIR" rating was given because only verbal evidence was available that all personnel had read it.

(b) Reference Item 6, Section II.

Condition found: A check of administrative type supplies revealed a third of the items stocked were in excess of a 30-day quantity; however, they were neatly stacked and labeled properly.

Scoring

YES	NO	EXC	GOOD	FAIR	UNSAT
A	B	C	D	E	F
	x	6	4	②	0

Analyzing the scoring: The "NO" is checked as careful control is not being maintained over the items. The "FAIR" rating is given because two thirds of the items were within the 30-day level. As another example, take the same question

but assume that 70% of the items are within the 30-day level and the remaining 30 are over only small quantities of relatively inconsequential items. The scoring could then be:

Scoring

YES	NO	EXC	GOOD	FAIR	UNSAT
A	B	C	D	E	F
	x	6	④	2	0

(3) The scoring method is very flexible and depends upon the exact condition found at the time of survey. The surveying officer or airman must be qualified in supply and have complete knowledge of squadron supply room functions. Other factors which should also be considered in scoring are:

- (a) Available storage area.
- (b) Type and condition of structure in which the supply room is located.
- (c) Weather conditions affecting storage or cleanliness of supply areas (extremely dry or rainy locations).
- (d) Is a reorganization under way?
- (e) Other conditions resulting from an order from higher authority which would temporarily render the organization

unfit for survey purposes. (In this case, the survey should be performed at another time, using the order from higher authority as a delay factor.)

(4) When all sections of rating form have been completed, the circled scores will be totaled by sections and recorded on both the section sheets and on Fig 4-11 (example form) Scoring and Rating Form.

(5) Any item which is scored in Columns E or F will be circled in red indicating that this is an area which requires immediate attention.

(6) Each section will be scored independently to allow commanders to check and correct weak areas. The final scoring on the last page will rate the complete squadron supply operation as one function.

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This will be the scoring which will be used to rate all squadrons on a comparative basis. The maximum score for each section is represented by the total points in Column C. The totals in Columns D, E, and F are for use as a guide only.

(7) Points for new or revised items will be scored according to their relative importance to an efficient supply operation.

d. Analysis. Squadron commanders will review the inspection form, placing particular emphasis on weak areas circled in red. These represent areas which need immediate attention and corrective action can be clearly directed as a result of emphasizing the problem in this manner.

(1) Supply officers will take immediate action to correct problem areas circled in red. As the ADC minimum rating for the entire supply function exceeds the to-

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tal scoring for Column D of all sections (417 points), it means that scores of excellent must be obtained in a number of areas.

(2) Staff materiel and supply officers will use the previous survey form when conducting any current survey. This will allow them to check the previous problem areas and definitely determine if corrective action was taken. All squadrons will be required to attain a minimum score of 450 points.

(3) Inspector general, air division, air defense force and Headquarters ADC command supply teams will insure that these procedures are being complied with. A check will be made of a selected number of squadron supply activities to determine the accuracy of scoring and competency of surveys.

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ORGANIZATIONAL SUPPLY SURVEY AND RATING (CONTINUED)						PAGE NO.	NO. OF PAGES	
						2	11	
SECTION II - SECURING OF SUPPLIES								
YES	NO	EXC	GOOD	FAIR	UNSAT	ITEM		
A	B	C	D	E	F	G		
		3	2	1	0	1. Has the supply officer officially designated personnel to sign for supplies in his name? (Sec 4, Vol IV, AFW 67-2)		
		3	2	1	0	2. Does each one have a signature card, AF Form 93, on his person? (Sec 4, Vol IV, AFW 67-1)		
		6	4	2	0	3. Do personnel know how to properly prepare and process an Issue Slip, AF Form 446, for all types of property? (Sec 4, IV, AFW 67-1)		
		3	2	1	0	4. Do personnel know the procedure for requesting special issue equipment? (Sec 4, Vol IV, AFW 67-1)		
		6	4	2	0	5. Are there excesses of local purchase type items obtained from the Air Force sales store in the supply room?		
		6	4	2	0	6. Is the supply officer carefully controlling expendable administrative type items so that a 30-day quantity or less is on hand?		
		3	2	1	0	7. Are issue slips vouchered, using an organization control number? (Sec 4, Vol IV, AFW 67-2)		
		5	4	2	0	8. Is the Control Register, AF Form 115A, neat, accurate and up-to-date? (Sec 4, Vol IV, AFW 67-1)		
		4	3	2	0	9. Are personnel familiar with supply codings on AF Form 446 so that they know what the status of each item is? (Sec 4, Vol IV, AFW 67-1)		
		5	4	2	0	10. Are the suspense copies of issue slips neatly filed in proper order?		
		6	4	2	0	11. Is a record of follow-up on suspense copies over 30 days old maintained? Is it legible, accurate, easily identified and accessible to personnel?		
POINTS		50	35	18	0	MAXIMUM	50	ATTAINED

FIGURE 4-2

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ORGANIZATIONAL SUPPLY SURVEY AND RATING (CONTINUED)						PAGE NO.	NO. OF PAGES	
SECTION V - MAINTENANCE OF FILES, DOCUMENTS AND CATALOGS						5	11	
YES	NO	EXC	GOOD	FAIR	UNSAT	ITEM		
A	B	C	D	E	F	G		
		6	4	2	0	1. Are the following documents filed together in a separate binder or series of binders: a. Activation orders and reorganization orders, if applicable. b. Latest approved Tech Orders and revisions thereto. c. All applicable ECL and latest revisions. d. All applicable T/A's. e. Certificates of transfer of accounts of all previous supply officers by name, grade and service number and dates they both assumed and relinquished responsibility. f. Any special letter applicable to the equipment authorization, T/O or TD structure of the organization. (Sec 7, Vol IV, AFM 67-1)		
		4	3	2	0	2. Is the "Unit Allowance List" on file with copies of change requests.		
		3	2	1	0	3. Is there a current list of airmen personnel authorized to draw property for the supply officer readily available?		
		3	2	1	0	4. Are catalogs neatly filed and sufficient in class scope for the needs of the organization?		
		4	3	2	0	5. Are all regulations and directives filed in numerical sequence in properly marked binders and neatly displayed?		
		4	3	2	0	6. Has the annual physical check of reference files been made as prescribed in TO 00-5-13?		
		4	3	2	0	7. Are documents, regulations, file catalogs, etc., in binders, neatly lettered and identified and all grouped together in one area for ease in locating and used?		
		6	4	2	0	8. Are issue slips and turn-in slips neatly filed in control number sequence and readily available for research, review and inspection?		
		8	6	4	0	9. Is there an accurate, neat and up-to-date suspense file of open issue slips? (Sec 4, Vol IV, AFM 67-1)		
		8	6	4	0	10. Is the organizational Control Register, AF Form 115A neatly maintained and all columns posted?		
POINTS		50	36	22	0	MAXIMUM	50	ATTAINED

FIGURE 4-5

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ORGANIZATIONAL SUPPLY SURVEY AND RATING (CONTINUED)						PAGE NO.	NO. OF PAGES	
						6	11	
SECTION VI - UAL ACCOUNTING								
YES	NO	EXC	GOOD	FAIR	UNSAT	ITEM		
A	B	C	D	E	F	G		
		5	4	3	0	1. Has the previous UPREAL been officially closed out as required by, AFM 67-1 and AFM 181-5?		
		5	4	3	0	2. Spot check 20 variable item authorizations to determine accuracy.		
		6	4	2	0	3. When a shortage is shown in the UME or USF column, is there an issue slip to cover it? If not, then is there a letter or directive stating the item is an authorized shortage?		
		8	6	4	0	4. Spot check 10 or more shortages and see if issue slips are up-to-date either by date of preparation or latest date of organizational follow-up to have supply.		
		4	3	2	0	5. Are there excess items recorded on the UAL that have not been turned in?		
		6	4	2	0	6. Are there overages on order, as a result of ECL changes, which have not been cancelled?		
		6	4	2	0	7. Spot check the latest ECL changes to insure that they are entered in the current UAL.		
		8	6	4	0	8. From a spot check of not less than 50 line postings, is the UAL record accurate, neat and current.		
		8	6	4	0	9. Spot check the location entries on at least ten line items. Are they correct and current?		
		3	2	1	0	10. Have physical inventories been conducted each six months? (Vol IV, AFM 67-1)		
		3	2	1	0	11. Are those items exempted from drapage allowance clearly identified, using a check mark?		
		3	2	1	0	12. Do items have a unit cost recorded?		
		3	2	1	0	13. Are substitute items properly recorded as shown in Figure 7-1, Volume IV, AFM 67-1?		
		3	2	1	0	14. Have unauthorized items been properly deleted as illustrated in Item 2, Figure 7-1, Volume IV, AFM 67-1?		
		8	6	4	0	15. Pick not less than twenty items which show a balance in the supply room and determine the inventory accuracy.		
		3	2	1	0	16. Is the completed certificate of inventory filed in conjunction with AF Form 1120 as required by, Section 7, Volume IV, AFM 67-1?		
		6	4	2	0	17. Are weapons and ammo controlled by serial number and lot number on both the custody receipt and the UAL records.		
		6	4	2	0	18. Has a separate custody receipt jacket file been established for each individual or organization component having such property in use?		
		3	2	1	0	19. Is there a custody receipt account code on file (preferably in front of the 1120 file) to identify each location reference?		
POINTS	97	69	41	0		MAXIMUM	97	ATTAINED

FIGURE 4-6

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ORGANIZATIONAL SUPPLY SURVEY AND RATING (CONTINUED)						PAGE NO.	NO. OF PAGES		
						7	11		
SECTION VII - UNIT ALLOWANCE LIST RECORDS									
YES	NO	EXC	GOOD	FAIR	UNSAT	ITEM			
A	B	C	D	E	F	G			
		3	2	1	0	1. Are the AF Forms 1120's filed in proper stock number sequence? (Par 58 (1) Vol IV, AFM 67-1)			
		6	4	2	0	2. Spot check at least 25 items on the UAL. Have 1120's been prepared, posted and filed?			
		10	8	6	0	3. Spot check at least 25 postings on the 1120's with the actual documents. Are they accurate?			
		5	4	3	0	4. Is there a custody receipt jacket file for each individual or organization component having Category II property in its possession?			
		3	2	1	0	5. Is each account assigned a code and is there a current list of the assigned codes on file showing the individual or components name and location?			
		6	4	2	0	6. Are there items on order which are not authorized on the UAL?			
		3	2	1	0	7. Locate the last inventory and check to see if it is posted to the 1120's.			
		10	8	6	0	8. Are there any items on the USE column which are short on the UME column.			
		4	3	2	0	9. Is there any evidence of commingling of USE and UME property? (1120's Vol IV, AFM 67-1)			
		3	2	1	0	10. Has the UAL been inventoried within the last year? (Vol IV, AFM 67-1)			
POINTS		53	39	25	0	MAXIMUM	53	ATTAINED	

FIGURE 4-7

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ORGANIZATIONAL SUPPLY SURVEY AND RATING (CONTINUED)						PAGE NO.	NO. OF PAGES	
						8	11	
SECTION VIII - AF FORM 538 RECORDS								
YES	NO	EXC	GOOD	FAIR	UNSAT	ITEM		
A	B	C	D	E	F	G		
		6	4	2	0	1. Is an AF Form 538 and 538a established for each officer, warrant officer and airman (male and female) of the Regular Air Force, Air Force Reserve personnel?		
		8	6	4	0	2. Is organizational and flying clothing and equipment issued to individuals recorded on the AF Form 538 or on hand receipts? (par 7, Sub-sec A, Sec 7, Vol II ADCM 67-1)		
		6	4	2	0	3. Are field jackets (shells only) and barracks bags issued to individuals accounted for on the reverse side under remarks of the AF Form 538?		
		4	3	2	0	4. Are tags, identification and necklace being recorded on the space provided on the reverse of AF Form 538?		
		6	4	2	0	5. Have erasures been made on AF Form 538? Corrections, if necessary, must be made in accordance with paragraph 16, AFR 67-81.		
POINTS		30	21	14	0	MAXIMUM	30	ATTAINED

FIGURE 4-8

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ORGANIZATIONAL SUPPLY SURVEY AND RATING (CONTINUED)						PAGE NO.	NO. OF PAGES
						9	11
SECTION IX - STORAGE OF SUPPLIES						ITEM	
YES	NO	EXC	GOOD	FAIR	UNSAT		
A	B	C	D	E	F	G	
		4	3	2	0	1. Are major storage areas identified by assignment of an alphabetical code with a numerical suffix to denote the storage unit within the area - i.e., A-1, A-2, B-1, B-2, etc? (Vol IV, AFM 67-1)	
		3	2	1	0	2. Is a diagram of the storage area available and displayed in a prominent place? (Vol IV, AFM 67-1)	
		6	4	2	0	3. Spot check and determine if the diagram is up-to-date? (Vol IV, AFM 67-1)	
		8	6	4	0	4. In general, is the available space being efficiently used? (Vol IV, AFM 67-1, Section I and sub-sections. Vol II ADCM 67-1)	
		4	3	2	0	5. Are bins numbered alphabetically from bottom to top and numerically from left to right as illustrated in Figure 8-1, Section 8, Volume IV, AFM 67-1?	
		4	3	2	0	6. Are oldest shelf stocks being issued first? Vol IV, AFM 67-1, Sec 1, Vol II, ADCM 67-1)	
		4	3	2	0	7. Are bulk stocks stored separately so as to aid in control and inventory of items?	
		6	4	2	0	8. Are bulk stock containers broken open for issue from the bulk area, which is contrary to sound warehousing practices? (Vol IV, AFM 67-1)	
		6	4	2	0	9. If space permits, are warehouse bins placed at right angles to the main aisle for efficient use of storage area? (Vol IV, AFM 67-1)	
		6	4	2	0	10. Are paints, solvents, gases, ammo, greases, acids and other hazardous or flammable materials stored adjacent to common supplies in violation of AF warehousing practices? (Vol IV, AFM 67-1)	
		4	3	2	0	11. Are "No Smoking" signs prominently displayed in all areas where smoking is not authorized? (Vol IV, AFM 67-1)	
		3	2	1	0	12. Are covered cans available for depositing rubbish and are they emptied daily? (Vol IV, AFM 67-1)	
		5	4	3	0	13. Are bin compartments properly labeled or tagged with the part or stock number, nom, unit of issue and cost of the item? (Vol IV, AFM 67-1)	
		4	3	2	0	14. Are metal waste cans with self-closing covers provided for oily rags and waste and are they located in a well ventilated cool area? Vol IV, AFM 67-1)	
		6	4	2	0	15. Is outside storage planned by areas and blocks in the same manner as inside storage? (Vol IV, AFM 67-1)	
		6	4	2	0	16. Is a good stock locator system in use for both inside and outside storage areas? (Vol IV, AFM 67-1)	
		5	4	3	0	17. Is dunnage used to keep equipment and supplies off the ground in event of inclement weather? (Vol IV, AFM 67-1)	
		8	6	4	0	18. Are outside supplies adequately packed, preserved and protected for such storage? (Vol IV, AFM 67-1)	
		5	4	3	0	19. Are issue counters efficiently used in the organizational supply room and are they clean and uncluttered?	
		3	2	1	0	20. Is there a special area for handling laundry and dry cleaning services? This is a good practice.	
POINTS		100	72	44	0	MAXIMUM	100
							ATTAINED

FIGURE 4-9

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ORGANIZATIONAL SUPPLY SURVEY AND RATING (CONTINUED)			PAGE NO.	NO. OF PAGES
			11	11
SECTION XI - SCORING AND RATING				
SECTION	MAXIMUM	ATTAINED	SURVEY DATES	
			LAST	PRESENT
I	40			
II	50			
III	30		SURVEY RATINGS	
IV	35		LAST	PRESENT
V	50			
VI	97		SCORE	RATING
VII	53		535 or higher	EXCELLENT
VIII	30		465 - 534	GOOD
IX	100		402 - 464	FAIR
X	100			
TOTAL	585		401 or below	UNSATISFACTORY
			MINIMUM ADC SCORE 465	
SURVEY CONDUCTED BY:			RATED AND APPROVED BY:	
REMARKS				

FIGURE 4-11

TRAINING

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AIR DEFENSE COMMAND MANUAL

444

**ADMINISTRATION
OF
On-the-Job Training**

1 SEPTEMBER 1954

AIR DEFENSE COMMAND

PRINTED AT WRIGHT AIR FORCE BASE (2,500)
DPS, Dayton, Ohio (REPRINT)

ADC MANUAL)
52-1)

ADCM 52-1
HEADQUARTERS AIR DEFENSE COMMAND
Ent AFB, Colorado Springs, Colo.
1 September 1954

FOREWORD

1. **Purpose.** This Manual establishes the standard procedures and controls to be used in the administration of on-the-job training programs conducted within all units of this command. Publication of additional implementing directives at intermediate echelons is considered unnecessary.
2. **Scope.** The procedures and controls outlined in this Manual will be used by all units of the Air Defense Command and are concerned only with planned on-the-job training programs which result in the change of an airman's AFS or AFS suffix.
3. **References.** In order for command and supervisory level personnel to operate the on-the-job training programs in consonance with good management principles, it is necessary that they have knowledge of the following references:
 - a. AFR 52-2, On-the-Job Training
 - b. AFM 30-3, Orders Manual
 - c. AFM 35-1, Warrant Officer and Airman Classification Manual
 - d. AFM 35-8, Air Force Personnel Evaluation Manual
 - e. Letter, Headquarters USAF, AFPMP, subject: "Project Guidance"
 - f. USAF Technical Training Program (PTT)
 - g. ADCR 52-1, On-the-Job Training
4. **Changes to Manual.** Proposed changes to this Manual will be submitted through channels to the Director of Personnel Training, Headquarters Air Defense Command, Ent Air Force Base, Colorado Springs, Colorado.

BY ORDER OF THE COMMANDER:

OFFICIAL:

WALTER W. ROBINSON
Colonel, USAF
Command Adjutant

GEORGE F. SMITH
Major General, USAF
Chief of Staff

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BASIS OF ISSUE:

Hq ADC	100
Air Def Forces	50
Air Divs (Def)	10
Wings	10
Groups	5
4602d AISS	21
Fl Sqs	10
AC&W Sqs	7
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SECTION I
GENERAL

1. **Relationship of On-the-Job Training to the Air Force Mission.** A very important mission of the Air Force is to train individuals and units of the Air Force to the highest degree of combat readiness. Training cannot be divorced from the tactical or support portion of the mission.

a. Each and every unit within the Air Force is organized for a specific purpose and is authorized resources to achieve that purpose. The most critical of these resources is manpower, which is allocated not only in numbers but in skill qualifications. All individuals in a unit must be trained through the development of skills and knowledge to perform assigned tasks efficiently.

b. The ultimate objective of all training is operational readiness. This objective is accomplished only when individual skills within an organization have been blended by means of teamwork, or unit training. Operational readiness in a unit is the result of progressive training as well as proper manning and equipping. The commander at each echelon must point the training of his organization toward the fulfillment of the unit mission. It is the unit that does the job rather than the individuals working independently. The administrative section, combat crews, food service, supply, maintenance, and all other activities must be integrated into a smooth functioning team if the unit they comprise is to do its job. The failure of any activity to accomplish its task may well result in the failure of the unit to carry out its mission.

c. All training is a continuous process. Although individuals, units, and systems may attain an acceptable degree of proficiency, training must continue in order to insure that standards are not only maintained, but improved. Therefore, it is required that each commander establish the best possible program of OJT for all personnel in his command who have not reached the highest level of proficiency. These programs must provide instruction to increase the proficiency of all airmen and qualify those having the ability to progress from the helper to the apprentice, to the specialist, to the supervisor-technician level of skill.

d. This Manual has been written at Air Defense Command Headquarters by personnel training representatives from the air defense forces, air divisions (defense), and defense wings. It establishes the standard administrative procedures and controls necessary to insure that OJT programs conducted within units of Air Defense Command are systematic and effective.

2. **Explanation of Terms and Procedures.**

a. **On-the-Job Training.** On-the-Job Training is that planned training program designed to qualify a person, through supervised instruction, in the performance of the duties of a given AFS (or MOS for SCARWAF personnel) while he is working in a duty assignment of the career field ladder. The training is not OJT unless the airman spends a portion of his time in a productive capacity on the job. Training, conducted within the unit of assignment for any purpose other than to qualify an airman for change of AFS or AFS suffix, is no longer identified as OJT and will be covered in another directive.

b. **On-the-Job Training Program.** An OJT program that is planned and conducted to qualify an airman for career progression must meet certain requisites:

(1) A trainee who possesses the potential to progress.

(2) An on-the-job trainer who possesses the specialty knowledge and ability to instruct the trainee in the AFS for which he is being trained.

(3) Developed training materials such as Department of the Air Force (DAF) OJT Programs, OJT Program Outlines and Training Standards, and checklists predicted upon the training required to become proficient in the specific position assignment and subsequently in the AFS.

c. **Personnel Training Officer.** A designated officer responsible to the commander for administering the unit personnel training programs.

d. **Training Project Officer.** A technically qualified officer appointed at group or higher level to provide specialized assistance in implementing an OJT program which requires standard application in more than one unit.

e. **Section OIC.** The officer responsible for an individual section, such as: the aircraft maintenance officer, the supply officer, the adjutant, or the radar maintenance officer.

f. **Section Supervisor.** The section supervisor is defined as the noncommissioned officer responsible for the over-all management of a section, such as: the line chief of an aircraft maintenance section; the supply sergeant of a unit supply; the first sergeant of an orderly room; or the radar maintenance supervisor of a radar maintenance section.

g. **Immediate Supervisor.** The immediate supervisor is defined as the senior or

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supervisor-technician level noncommissioned officer or airman responsible to the section supervisor for the direct supervision and management of the trainee, such as: a flight chief within an aircraft maintenance section; an organizational supply specialist within a unit supply; a personnel specialist within an orderly room; or a radar maintenance repairman within a radar maintenance section.

h. **On-the-Job Trainer.** Any qualified officer, airman, or civilian selected to instruct trainees in the techniques and work steps of a given AFS, while the trainee is working in a duty assignment of the career field ladder.

i. **On-the-Job Trainee.** Any airman placed in an OJT program within his unit of assignment. Such training includes:

- (1) Training from the "1" (Helper) level to the "3" (Apprentice) level.
- (2) Training from the "3" (Apprentice) level to the "5" (Specialist) level.
- (3) Training from the "5" (Specialist) level to the "7" (Supervisor-Technician) level.
- (4) Training to a new AFS which is not in the airman's career ladder or for a different suffix to his present AFS.

j. **Department of the Air Force (DAF) On-the-Job Training Programs.**

(1) At the time this Manual is being published, it is planned that the Air Training Command will prepare DAF OJT Programs for 184 Air Force Specialties. Some of these DAF OJT Programs have been distributed to units of this command and others will be distributed in the near future. When these programs are available for an Air Force Specialty, they

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will be used as the standard OJT program.

(2) Each DAF OJT Program contains an "OJT Program Outline and Training Standard" which is coded to show the degree of training required for both the apprentice and specialist skill levels. In addition they contain the job knowledge, work experiences, references, and guidance necessary to develop the required proficiency in the Air Force Specialty covered. These DAF OJT Programs will be listed in the USAF Training Prospectus as they become available.

k. **Request for OJT (ADC Form 192).**

This form was designed to establish a standard procedure for entering airmen into, or removing them from, OJT. It provides a checklist of the basic steps necessary to insure that the requisites of any OJT program are met. It specifically provides sufficient personnel data to permit the personnel training officer to:

- (1) Review the trainee's potential to successfully complete the program.
- (2) Insure that suitable training materials are available.
- (3) Insure that qualified trainers are selected to conduct the program.
- (4) Review the correctness of the OJT assignment relative to "Project Guidance," USAF Program Technical Training, and other directives, prior to publication of required PERAM's.

3. **Records Disposition.** Records created incident to the OJT program will be disposed of under AFR 31-9 and AFM 181-5.

SECTION II

OJT POLICY

4. **Responsibility of Commanders.** Each commander will implement an OJT program for each AFS authorized within his organization. These programs will include both existing and projected authorizations.

5. **Project Guidance.** Personnel will not be entered into OJT contrary to the provisions of letter, Headquarters USAF, AFPMP, Subject: "Project Guidance" and USAF Program Technical Training (PTT), except with prior approval of Headquarters USAF.

6. **Personnel to Receive OJT.** Person-

nel will be entered into OJT for change of AFS or AFS suffix as follows:

a. All helper (1) level airmen who are received with a "directed duty assignment" will be entered in OJT for the indicated apprentice (3) level AFS. "Directed duty assignment" for helper level airmen is indicated by a 3-level duty AFSC in Item 29 of DA Form 20.

b. Those helper (1) level airman who are received without a "directed duty assignment" but who demonstrate the capacity to

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receive training may be entered into OJT only with prior approval of Headquarters USAF.

c. All apprentice (3) level airmen assigned duty within the career ladder of their primary AFSC will be entered into OJT for the specialist (5) level AFS of the career ladder of their primary AFSC.

d. A sufficient number of specialist (5) level airmen will be entered into OJT for the supervisor-technician (7) level to fill existing and projected manning document vacancies.

e. All airmen who are assigned duty in a career ladder other than that of their primary AFSC will be entered into OJT for the duty AFSC. This does not apply to an airman who is temporarily assigned duty to relieve a personnel overage or shortage.

7. **Withdrawal of Airmen from OJT.** An airman will be removed from OJT when it is determined that he is not capable of completing the program. Reclassification action will be in accordance with AFM 35-1.

SECTION III RESPONSIBILITIES

8. **Commanders.** Commanders at all levels are responsible for the staff, supervisory, and operational functions and procedures necessary to accomplish the training requisite to the success of their mission and to the aims of the Air Force. This is achieved by:

a. Selecting and assigning a capable personnel training officer. This assignment will be effected by the use of PERAM.

b. Lending his whole-hearted support to OJT programs and the personnel assigned to plan, direct, supervise, and conduct them.

c. Emphasizing to all staff and management level personnel the importance of well-planned, organized, supervised OJT programs.

d. Ascertaining that the provisions of "Project Guidance" are not violated.

9. **Staff Personnel Training Officer.** The staff personnel training officer is responsible for administering, monitoring, and supervising the personnel training programs within the command. To achieve this, he will:

a. Advise the deputy for personnel and commanders concerning the status of personnel training programs within the command.

b. Coordinate with other members of the personnel staff section to insure that personnel training programs are consistent and within the limitations of the airmen classification system.

c. Requisition and distribute standardized OJT program outlines, training standards, and DAF OJT programs as required by subordinate units.

d. Monitor individual units to evaluate OJT programs and render assistance where required.

e. Evaluate and consolidate requests for technical and special training courses.

f. Assign quotas to subordinate units for technical and special training courses.

g. Assist commanders in evaluating present and projected formal courses and OJT requirements.

h. Monitor the assignment and utilization of technical instructors.

i. Coordinate with all staff agencies at related command levels to insure maximum effort to meet current and projected training requirements.

j. Monitor "Project Guidance" and USAF Program Technical Training and take necessary action to achieve compliance with its provisions.

k. Evaluate and analyze the OJT report required by this Manual and coordinate corrective actions.

10. **Unit Personnel Training Officer.** The unit personnel training officer's responsibilities are as follows:

a. Maintain active supervision of all OJT conducted within the unit.

b. Conduct training programs for supervisory personnel to improve the OJT program.

c. Advise commanders of the status of all OJT, both present and projected.

d. Assist section supervisors in determining requirements for standardized training materials.

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- e. Obtain, distribute, and account for OJT material.
- f. Monitor the maintenance of personnel training forms and records.
- g. Prepare and authenticate the OJT report required by this Manual.
- h. Insure that training records reflect an accurate picture of the training being conducted.
- i. Monitor requests for classification action which result from training.
- j. Advise and assist unit commander in the proper utilization of technical instructors (contact).

11. **Section OIC.** The Section OIC is responsible for the following:

- a. Actively supervising the OJT program within the section.
- b. Coordinating all matters pertaining to OJT programs with the unit personnel training officer.
- c. Initiating formal requests for PER-AM's for entry, completion, or withdrawal from a training status.
- d. Certifying satisfactory completion of OJT programs as the responsible training officer in accordance with paragraph 9c, AFR 52-2.

12. **Section Supervisor.** The section supervisor will assist the section officer-in-charge in the above listed responsibilities.

13. **Immediate Supervisor.** The immediate supervisor's responsibilities are as follows:

- a. Indoctrinating trainees into OJT programs by:
 - (1) Finding out how much the trainee knows about the job.
 - (2) Telling him what is expected of him and why.

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(3) Teaching him how to use the appropriate OJT Program Outline and the DAF OJT Program.

b. Selecting and indoctrinating on-the-job trainers.

c. Maintaining and authenticating AF Forms 623.

d. Evaluating trainees' progress by use of oral, written, and practical examinations.

e. Initiating and coordinating the following actions with the section supervisor:

(1) Advising section supervisors when airmen have completed training programs.

(2) Recommending withdrawal of airmen from training programs when it is evident that they cannot progress.

(3) Practicing good personnel management in assigning a minimum number of trainees to each trainer.

14. **On-the-Job Trainer.** The On-the-Job Trainer will:

a. Use a "job breakdown" to reduce the job to its simple steps.

b. Explain to the trainee what steps are to be taken to accomplish the job and why each step is taken.

c. Show him what tools to use, and explain the safety factors involved.

d. Have the trainee do each step of the job. Correct his errors. Have him demonstrate key points which involve DOING. Have him go through the procedure until you know that he knows and CAN DO. This takes time, but it makes for more effective learning. **REMEMBER:** Learning comes from telling, showing, and DOING. The trainer does the telling and showing while the trainee is DOING. Of these, telling is the least effective, except as a general briefing. Showing has merits, but DOING CLINCHES THE LEARNING.

SECTION IV

TRAINING MATERIALS

15. **Department of the Air Force (DAF) OJT Programs.** When a DAF OJT Program has been published, it will be used as the standard OJT program for the AFS covered. It is expected that approximately 65 of these programs will be distributed by 31 July 1954

and that a total of 184 will be available by 1 July 1955. Attachment 1 is a list of the planned programs and their expected dates of availability.

16. **OJT Program Outlines and Training Standards.** During the interim while the DAF

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OJT Programs are being prepared, "OJT Program Outlines and Training Standards" for several AFS's are being distributed to units of this command. Attachment 2 is a list of those that have been distributed. These outlines will be used as the standard guide in conducting the OJT Programs for the AFS's covered until they are replaced by the DAF OJT Programs. Until the DAF OJT Program or the OJT Program Outline and Training Standard is received for an AFS, it will remain necessary for each unit to prepare or procure training materials to the best of its ability, to meet its own needs. In many Air Force Specialties, the need for OJT programs can best be met through the coordinated efforts of unit and staff operating sections. This system of development is encouraged and should be

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implemented at all echelons of the Air Defense Command whenever the requirement exists for OJT material in sufficient quantity to warrant publication by group or higher headquarters.

.17. **OJT Materials Developed Within the Command.** In those areas where the DAF OJT Programs are not being planned or prepared, this command will prepare a similar program for distribution to all units. This is a long range program and will require considerable time for completion. During the period these programs are being developed, it will be necessary for units to use the interim materials discussed above. In no event can the lack of the standardized training materials be used as an excuse for failure to conduct OJT.

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SECTION V
ADMINISTRATIVE PROCEDURES

18. **Initiation of Request for OJT (ADC Form 192).** Upon determination by the Section OIC that the requisites of an on-the-job training program for change of AFS or AFS

suffix can be met, Section I of ADC Form 192 will be completed and forwarded to the unit personnel training officer in duplicate.

REQUEST FOR ON THE JOB TRAINING Section I		Date
TO: Unit Personnel Training Officer (Org & Sta) 437th FI Sq, Otis AFB, Mass	FROM: (Section, Orgn & Sta) Supply Section, 437th FI Sq Otis AFB, Mass	
Request Authority to Place (Name, Grade & AFSC) Howard A. Smith, A/3C, AF14775634	On-the-Job Training or AFSC Org Sup Spec 64151	Present AFSC's Primary 64131 Duty 64131
An Authorized Position Vacancy (Does EXIST Exist)	Recommended Duration of On-the-Job Training 4 Months	
The Immediate Supervisor for this Airman will be (Last Name, First Name, Middle Initial) JACKSON, HAROLD L.	GRADE A/3C	PAFSC 64151
Remarks of Supervisor This man is a graduate of the Organizational Supply Course, AB 64151, at F. E. Warren AFB, Wyoming		
Name and Grade of Section OIC or Supervisor MORTON K. SNEEDY, M/Sgt, USAF	Signature Morton K Sneedey	

Section I, ADC FORM 192

19. **Section II of Request for OJT (ADC Form 192).** When the unit personnel training officer receives ADC Form 192, he will recommend approval or disapproval, complete Section II, and forward the form to the unit personnel officer.

a. His recommendations for approval will be based upon:

(1) An evaluation of the selected trainee's ability to progress. (The trainee's DA Form 20 should be checked as an initial step in arriving at this conclusion.)

(2) The section's ability to conduct the training.

(3) The availability of developed OJT material.

b. Approval will be recommended if all three of the above requisites are met.

c. In the event any of the three requisites outlined above is not met, the unit personnel training officer will recommend disapproval, stating reasons why, and forward ADC Form 192 to the unit personnel officer.

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Section II	
TO: Unit Personnel Officer	FROM: Unit Personnel Training Officer
<input checked="" type="checkbox"/> Recommend approval. I certify that necessary materials are available to conduct the training and request Personnel Action Memorandum be published placing subject airman in an OJT status.	
<input type="checkbox"/> Recommend disapproval for the following reasons:	
Name and Grade of Unit Personnel Training Officer	Signature
MACK U. SMART, Capt, USAF	<i>Mack U. Smart</i>

Section II, ADC FORM 192

20. Section III of Request for OJT (ADC Form 192). When the unit personnel officer receives ADC Form 192, he will make certain that the requested action is in accordance with existing career progression directives. AFM 35-1, the appropriate AFR from the 35-400 series, and "Project Guidance" will be consulted to insure compliance before action is taken to approve or disapprove the request.

a. The following steps are taken when the ADC Form 192 is approved:

(1) A PERAM is published in accordance

with AFM 30-3, placing the airman in OJT.

(2) Entries will be made on AF Form 183, Morning Report, in accordance with AFM 171-6; DA Form 20, Airman's Qualification Card, in accordance with AFR 35-500, and unit C&A Roster in accordance with current directives.

(3) The unit personnel officer will complete Section III of ADC Form 192 and attach a copy of the PERAM to the original copy and return it to the section OIC through the unit personnel training officer.

Section III	
TO: Unit Personnel Training Officer	FROM: Unit Personnel Officer
<input checked="" type="checkbox"/> Approved. Personnel action concerning this request accomplished by Par. 2 PERAM 111 dated 24 May 54 which is attached	
<input type="checkbox"/> Disapproved for the following reasons:	
Name and Grade of Unit Personnel Officer	Signature
WILLIE B. REDDY, 1st Lt, USAF	<i>Willie B. Reddy</i>

Section III, ADC FORM 192

b. In the event of disapproval the unit personnel officer will give reasons therefor in Section III, ADC Form 192 and return the original to initiating section OIC through the

unit personnel training officer. The copy will be filed in the airman's Field Personnel Records Group (201 File).

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Section IV	
TO: (Section, Orgn & Site)	Initials of Unit Personnel Training Officer
Supply Sec, 437th FI Sq, Otis AFB, Mass	M. Z. S.

Section IV, ADC FORM 192

21. **AF Form 623.** Upon receipt of approved Request for OJT (ADC Form 192) by the section OIC, entries will be made on AF Form 623, Formal On-the-Job Training Record, in accordance with instructions contained in AFR 52-2, which are supplemented as follows:

a. Section I. Item 9 will contain the paragraph numbers and PERAM as identification of authority for training. When the training starts, the trainee will sign his name in Item 11. Specific instructions, included as part of the form, will govern all other items that are not self-explanatory.

b. Section II: Each major phase of training toward the OJT objective will be en-

tered separately. Entries will be determined from Department of the Air Force OJT Program, "On-the-Job Training Program Outline and Training Standard," as developed from the current AFS job description from AFM 35-1 or AFR 35-400 series. The date the total training is completed, the signature of the responsible training officer will be entered at the end of Section II. The trainee will be required to initial in the "date satisfactorily completed" column for each phase of training to signify that he knows he has completed the training. If additional space is required for entering the phases of training, an extension sheet may be firmly fastened to the printed form.

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FORMAL ON-THE-JOB TRAINING RECORD			
ON-THE-JOB TRAINING OBJECTIVE Enter the training objective. <i>Examples:</i> 1. Qualify helper level airman at apprentice level in AFSC 75230. 2. Qualify apprentice level airman at senior level in AFSC 70250. 3. Qualify airman in suffix "A" to AFSC 43152 presently qualified in suffix "B." 4. Qualify senior level airman at advanced level, AFSC 42371. 5. Qualify airman if AFSC 75230 presently qualified in AFSC 70230.		INSTRUCTIONS SECTION II COLUMN A. —Phases of training will be determined from the ATRC OJT Program Outline. Where this outline is not available for an AFS, phases of training will be developed from the current AFS job description. Additional training shown in item 22, DA AGO Form 20 will not be listed in this section. COLUMN B. —Enter date training started for each phase. COLUMN C. —Enter date each phase of training was satisfactorily completed, based upon the trainer's judgment that airman can effectively perform duties encompassed within each phase. COLUMN D. —Trainer will authenticate entries in columns A through C by signing column D (<i>Name and grade</i>). When training is completed, the signature of the responsible training officer will complete this section.	
SECTION I <i>Item 5.</i> —Enter grade held during this training. <i>Item 8.</i> —Enter training started as verified by entry to item 9. <i>Item 9.</i> —Paragraph and number of personnel action memorandums. <i>Item 10.</i> —Enter estimated completion date for purposes of planning and programming the training. <i>Item 11.</i> —Signature of trainee, when training starts. Other items are self-explanatory.		SECTION III When applicable enter in Test Result column the word "passed" or "failed". SECTION IV When applicable enter in Action column, the word "favorable" or "unfavorable".	
ON-THE-JOB TRAINING OBJECTIVE Organisational Supply Specialist (64151)			
I. PERSONNEL DATA			
1. LAST NAME—FIRST NAME—MIDDLE INITIAL	2. PRIMARY AFSC	3. UTILIZATION AFSC	4. DUTY AFSC
SMITH, HOWARD A.	64131	64131	64151
5. GRADE AND SERVICE NO.	6. SQUADRON AND STATION	7. DUTY SECTION	8. DATE TRAINING STARTED
A/3C AF 14775634	437th FI Sq Otis AFB, Mass	A	24 May 54
9. AUTHORITY	12. NAME AND GRADE OF IMMEDIATE SUPERVISOR		
Par 2 PAM III	HOWARD L. JACKSON, A/1C		
10. ESTIMATED COMPLETION DATE	11. SIGNATURE OF TRAINEE		
23 Sep 54	Howard A. Smith		
II. TRAINING DATA			
PHASE OF TRAINING (A)	DATE STARTED (B)	DATE SATISFACTORILY COMPLETED (C)	TRAINER AUTHENTICATION (Name and grade) (D)
Property Records	5 Jun 54	15 Sep 54	Harold L. Jackson, A/1C
Requisitioning Procedure	10 Jun 54	1 Jul 54	Gerald P. Doos, 1st Lt
Receiving Procedure	24 May 54	15 Jun 54	Harold L. Jackson, A/1C
Issue and Transfer Procedure	12 Jul 54	10 Aug 54	Morton K. Sneezy, M/Sgt
Turn-In Procedure	23 Jul 54	13 Aug 54	Harold L. Jackson, A/1C
Inventory Procedure	17 Jun 54	10 Aug 54	Morton K. Sneezy, M/Sgt
Accounting for Lost, Damaged, or Destroyed Property	11 Sep 54	15 Sep 54	Harold L. Jackson, A/1C
Storage of Organisational Property	24 May 54	15 Sep 54	Morton K. Sneezy, M/Sgt
Individual Clothing	28 May 54	5 Jun 54	Harold L. Jackson, A/1C
(Cont'd)			

AF FORM 623 FEB 54 Previous editions of this form are obsolete.

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Section II, AF Form 623 (Contd)

ii. TRAINING DATA (Continued)			
PHASE OF TRAINING (A)	DATE STARTED (B)	DATE SATISFACTORILY COMPLETED (C)	TRAINER AUTHENTICATION (Name and grade) (D)
Flyaway Kits	17 Jun 54	21 Aug 54	Harold L. Jackson, A/1C
Supply Procedures for Detached Organisations	15 Jul 54	21 Jul 54	Gerald P. Doos, 1st Lt
Supply Procedures for Deactivation of an Organization	1 Sep 54	15 Sep 54	Gerald P. Doos, 1st Lt
Supervision and Training of Organizational Supply Personnel	22 Jun 54	20 Sep 54	Morton E. Spesdy, M/Sgt
DATE TOTAL TRAINING COMPLETED	SIGNATURE OF TRAINING OFFICER		
15 September 1954	<i>W. H. John Doe</i>		

Note: Authentication in column D, of the above form will be hand written signatures - NOT typed.

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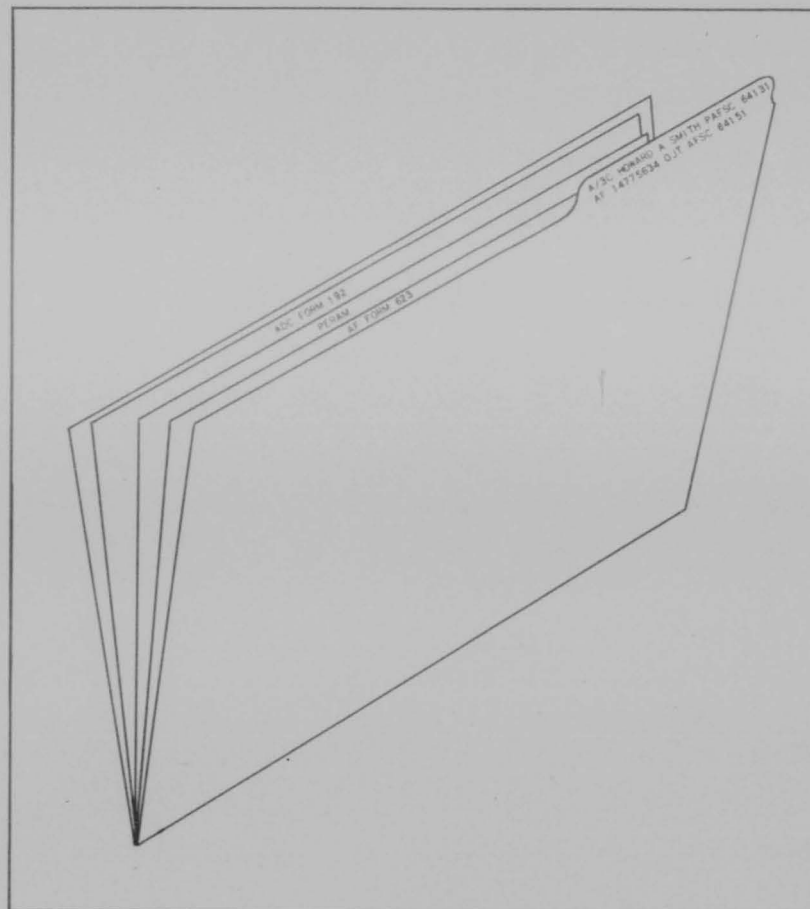
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NOTE: The responsible training officer, whose signature appears in Section II of AF Form 623 upon completion of OJT, is defined as the section OIC.

will be maintained within the trainee's section. It will contain, but is not limited to:

22. **Training Folders.** A training folder

- a. Request for OJT, ADC Form 192.
- b. PERAM.
- c. AF Form 623.



SAMPLE TRAINING FOLDER

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1 September 1954

HEADQUARTERS
437TH FIGHTER INTERCEPTOR SQUADRON (ADC)
Otis Air Force Base
Falmouth, Mass.

PERSONNEL ACTIONS MEMORANDUM)
NUMBER 1111)

24 May 1954

1. Folg amn, this sq, this sta, are asg OJT to AFSC indicated. No change in DAFSC or UAFSC:

	PAFSC	OJT-AFSC	ANTICIPATED DT OF COMPL OF TNG
A/1C John J. Jones, AF 12123456	70230	70250	Sep 54
S/Sgt Robert L. Cannes, AF 61234568	43151H	43171H	Nov 54
A/2C Albert M. Appleby, AF 21123456	32230D	32250D	Nov 54
T/Sgt Allen H. O'Rourke, AF 32123456	20430	20450	Nov 54
A/3C Ronald K. Roland, AF 22123456	27350	27370	Oct 54

2. Folg amn, this sq, this sta, are asg OJT to AFSC indicated. Anticipated date of compl of tng, 23 Sep 54. DAFSC and UAFSC changed as indicated:

	PAFSC	OJT AFSC	NEW DAFSC	NEW UAFSC
A/3C Dean C. Martin, AF 22123456	73010	73231	73231	73231
A/2C Ralph D. Dillon, AF 19123456	64131	64132	64132	64132
A/3C Howard A. Smith, AF 14775634	64131	64151	64151	64131

3. A/2C William A. Ash, AF 19123456, PAFSC 70230, this sq, this sta, is rel fr dy w/Unit Supply and asg dy w/Acft Maint as Chief Clerk for OJT in AFSC 70250. Anticipated date of completion of tng, 23 Sep 54. DAFSC changed to 70250. No change in UAFSC.

4. A/3C Thomas L. Thomas, AF 21123456, PAFSC 70230, this sq, this sta, is rel fr dy w/Operations and asg dy w/Unit Pers as Correspondence Clerk for OJT in AFSC 70250. Anticipated date of compl of tng, 23 Sep 54. No change in DAFSC or UAFSC.

BY ORDER OF THE COMMANDER:

OFFICIAL:

HERBERT H. HARVEY
1st Lt USAF
Pers Off

HERBERT H. HARVEY
1st Lt USAF
Pers Off

DISTRIBUTION:
1 - Ea indiv
2 - M/R Clk
20 - Pers Sec
1 - File

EXAMPLE

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23. **Section V of Request for OJT (ADC Form 192).** Upon completion of, or withdrawal from a training program, the section supervisor will complete Section V of ADC Form 192, attach the applicable AF Form 623, and forward to the unit personnel training officer.

a. OJT leading to a change of AFS or AFS suffix includes all of the items coded "M" and at least 50% of the other items on the

"OJT Program Outline and Training Standard" of the **DAF OJT Program**. The section supervisor and section OIC are responsible for determining that an airman has completed an OJT program.

b. When an airman is reassigned or when it has been determined that he does not have the aptitude to complete the OJT program, he will be withdrawn from training.

Section V		
TO: Unit Personnel Training Officer	FROM: (Section, Orgn & Sta.) Supply Section, 437th FI Sq Otis AFB, Mass	Date 16 Sep 54
Request (Last Name, First Name, Middle Initial) Howard A. Smith	Be Removed from OJT As AFS AFSC Org Sup Spec 64151	AFSC's Primary Duty 64131 64151
For the Following Reason:		
<input checked="" type="checkbox"/> Completed Training Program <input type="checkbox"/> Reassigned <input type="checkbox"/> Medical Reason (Explain) <input type="checkbox"/> Inaptitude <input type="checkbox"/> Other (Explain)		
Name and Grade of Section OIC or Supervisor MORTON K. SNEEDY, M/Sgt, USAF	Signature <i>Morton K Sneedey</i>	

Section V, ADC FORM 192

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24. **Section VI of Request for OJT (ADC Form 192).** Upon receipt of the subject forms the unit personnel training officer will extract any desired information, complete Section VI

of ADC Form 192, and forward it and the attached AF Form 623 to the unit personnel officer.

Section VI	
TO: Unit Personnel Officer	FROM: Unit Personnel Training Officer
Remarks:	
This airman is considered ready to take the APT for AFSC 64151	
<small>Initials of Unit Personnel Training Officer</small> <i>M.T.S.</i>	

Section VI, ADC FORM 192

25. **Sections III and IV, AF Form 623.** Upon receipt of subject forms the unit personnel officer will take the following actions:

a. If the forms indicate that the airman has successfully completed the OJT Program, he will arrange for testing and classification action and complete Sections III and IV

of AF Form 623. The APT may be administered prior to completion of OJT (AFM 35-8).

b. If the forms indicate other than successful completion of the OJT program, he will publish a PERAM withdrawing the airman from OJT.

III. TEST ACTION			
DATE OF AFJKT OR APT (A)	TEST SCORE (B)	TEST RESULT (C)	
APT 64151	27 Sep 54	112	Passed
IV. CLASSIFICATION ACTION			
DATE OF BOARD ACTION (A)	ACTION (B)	AFSC AWARDED (C)	PAM NUMBER AND HQ (D)
30 Oct 54	Recommend award of PAFSC 64151	64151	PAM 216, Par 1, 437th PI Sq, Otis AFB, Mass

Sections III and IV, AF FORM 623

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c. When an airman completes, or is withdrawn from OJT, his AF Form 623 will be placed in his permanent Field Personnel Records Group (201 File).

Section VII	
Action as requested above accomplished by Par. 1 PERAM 216 dated 2 Nov 54	
Initials of Unit Personnel Officer	
W.B.R.	

Section VII, ADC FORM 192

HEADQUARTERS
437TH FIGHTER INTERCEPTOR SQUADRON (ADC)
Otis Air Force Base
Falmouth, Mass.

PERSONNEL ACTIONS MEMORANDUM)
NUMBER 216)

2 November 1954

1. UP AFM 35-1, A/3C Howard A. Smith, AF 14775634, this sq, this sta, is awarded ch of PAFSC from 64131 to 64151. UAFSC is ch to 64151.
2. A/3C Jamie T. Bosch, AF 22123456, this sq, this sta, is w/drawn fr OJT to AFSC 27350 by reason of inaptitude. No ch in UAFSC. DAFSC ch to 27330.
3. A/1C William R. Shock, AF 18241094, this sq, this sta, is w/drawn fr OJT to AFSC 43151H by reason of reassignment.

BY ORDER OF THE COMMANDER:

OFFICIAL:

HERBERT H. HARVEY
1st Lt USAF
Pers Off

HERBERT H. HARVEY
1st Lt USAF
Pers Off

DISTRIBUTION:

- 1 - Ea indiv
- 2 - M/R Clk
- 20 - Pers Sec
- 1 - File

EXAMPLE

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SECTION VI
REPORTS

26. **General.** A monthly Unit Report of OJT, ADC Form 191, will be submitted by each unit to the next higher echelon of command. These reports will be kept on file at the headquarters designated as the action headquarters for the Technical Training Program by Air Defense Command headquarters (wings within EADF, air divisions (defense) within CADF and WADF).

a. Reports will be prepared on ADC Form 191. (See page 17)

b. Unit reports will be routed through channels.

c. Unit reports will not be consolidated.

d. Unit reports will be forwarded to the next higher headquarters attached to one letter of transmittal.

e. Report will be as of the 15th calendar day of the month.

f. Due dates will be at the direction of the action headquarters as prescribed by local conditions.

27. **Instructions.**

a. Column 1. List in numerical order the AFSC's for which airmen are undergoing OJT (20450, 20470, 30150, 30170, 73251, 73270, etc.).

b. Column 2. Enter total number of airmen undergoing OJT for the AFSC shown in Column 1.

c. Column 3. Enter the various PAFSC's of airmen undergoing training in the AFSC shown in Column 1.

d. Column 4. Enter the total number of airmen with each PAFSC shown in Column 3.

e. Column 5. Enter the total number of airmen with PAFSC shown in Column 3 entered into OJT during the reporting period.

f. Column 6. Enter the total number

of airmen with PAFSC's shown in Column 3 who completed OJT and were upgraded during the reporting period.

g. Column 7. Enter the total number of airmen with PAFSC's shown in Column 3 who have completed OJT but have not been upgraded. This is a cumulative figure without regard to the reporting period.

h. Column 8. Enter the number of airmen with PAFSC's shown in Column 3 who were withdrawn from OJT during the reporting period. This does not include those completing OJT.

i. Column 9. Enter the estimated number of airmen with PAFSC's shown in Column 3 who will complete OJT within thirty days.

j. Column 10. Enter the estimated number of airmen with PAFSC's shown in Column 3 who will complete OJT within 90 days.

k. Column 11. Enter the estimated number of airmen with PAFSC's shown in Column 3 who will complete OJT within one hundred eighty days.

28. **Utilization.** The Unit Report of On-the-Job Training will be used by all echelons of command to monitor the on-the-job training programs of the unit:

a. To determine compliance with "Project Guidance."

b. To determine that proper and sufficient personnel are entered into OJT.

c. As basis for corrective action.

29. **Supply of Forms.** Initial distribution of ADC Form 192, Request for On-the-Job Training and ADC Form 191, Unit Report of On-the-Job Training will be made by Air Defense Forces. Resupply will be in accordance with ADCR 9-3.

2 Attachments

1. List of DAF OJT Package Programs
2. List of OJT Program Outlines and Training Standards

1 September 1954

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UNIT REPORT OF ON-THE-JOB TRAINING								Date <u>15 June 1954</u>		
Unit <u>437th FI Squadron</u>								RCS:		
1	2	3	4	5	6	7	8	9	10	11
AFSC for which Training	Tot No. in OJT	PAFSC	Tot No. with PAFSC	Tot No. entered OJT this period	Tot No. Compl OJT and Upgraded this pd.	Tot No. by PAFSC Compl OJT and not upgraded	Tot No. by PAFSC withdrawn in OJT during rept pd	Will Compl 30 days	Will Compl 90 days	Will Compl 180 days
43170	10	43151H 43153 43156	4 4 2	1	1	1		2	2	3 2
70250	3	70230	3	1				1	1	1
70270	1	70250	1						1	
73270	1	73251	1	1						1
TOTALS	15		15	3	1	1	0	3	4	7
Name: (Unit Training Officer) WILLIE B. QUICK, Capt, USAF						Signature <i>Willie B. Quick</i>				
ADC FORM 191 DATE 1 Sept 54										

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ATTACHMENT 1

List of DAF OJT Programs

1 September 1954

1. This attachment lists the Department of the Air Force (DAF) OJT Programs that are presently planned for preparation and distribution to units of the Air Force. The monthly revisions to the USAF Training Prospectus will list the completed programs that are available for distribution.

2. DAF OJT Programs are now planned, being prepared, or completed for a total of 184 Air Force Specialties. These programs are divided into three categories for priority of completion.

a. Priority I lists the programs for train-

ing airmen to the specialist (5) level. Tentative date of availability or an appropriate remark has been indicated for each program.

b. Priority II lists the programs for training airmen to the apprentice (3) level. No tentative dates of availability have been indicated, but these programs will be completed shortly after Priority I. In a few instances they are being prepared at the present time.

c. Priority III lists the programs for training airmen to the supervisor-technician (7) level. Preparation of these programs will probably begin in April 1956.

PRIORITY I

(Available as Indicated)

OJT Programs for Training to the Senior Level

AFS	OJT PROGRAM NO.	DATE
1. Senior Airborne Electronic Equipment Repairman	P30150	1 Sep
2. Senior Airborne Electronic Navigation Equipment Repairman	P30151	25 Apr
3. Senior Electronic Countermeasures Equipment Repairman	P30250	15 Sep
4. Senior ATC Radar Repairman	P30351	10 Sep
5. Senior AC&W Radar Repairman	P30352	1 Oct
6. Senior Automatic Tracking Radar Repairman	P30353	1 Oct
7. Senior Ground Radio Repairman	P30450	1 Sep
8. Senior "K" Series System Mechanic	P32150E	25 Aug
9. Senior Q-24 System Mechanic	P32150F	1 Sep
10. Senior "E-1" Series System Mechanic (Class-CONFIDENTIAL)	P32250A	15 Aug
11. Senior Sighting System Mechanic	P32250B	30 Aug
12. Senior "E-4, -5, -6" Series System Mechanic (Class-CONFIDENTIAL)	P32250D	Printed
13. Senior Turret System Mechanic (B-36)	P32350A	20 Aug
14. Senior Gunlaying System Mechanic (B-36, B-50)	P32350B	25 Aug
15. Senior Gunlaying System Mechanic (B-45, B-47)	P32350C	1 Sep
16. Senior Communication Machine Repairman	P36350	10 Sep
17. Senior Office Machine Repairman	P40150	10 Oct
18. Senior Tabulating Equipment Repairman	P40250	Abeysance
19. Senior Camera Repairman	P40350	1 Aug
20. Senior Watch & Clock Repairman	P40451	1 Oct
21. Senior Mechanical Instrument Repairman	P40452	Abeysance
22. Senior Electrical Instrument Repairman	P40453	Abeysance
23. Senior Medical Equipment Repairman	P40550	1 Oct
24. Senior Aircraft Fuel Metering Component Repairman	P42250	10 Sep
25. Senior Aircraft Propeller Mechanic	P42350	Printed
26. Senior-Mechanical Accessories & Equipment Repairman	P42450	1 Sep
27. Senior Aircraft Hydraulics Mechanic	P42550	15 Jul
28. Senior Rotary Wing Mechanic	P43150	15 Sep
29. Senior Aircraft Mechanic (HB & Equiv Cargo Version, etc)	P43151A	15 Sep
30. Senior Aircraft Mechanic (MB & Equiv Cargo Version, etc)	P43151B	1 Sep
31. Senior Aircraft Mechanic (HT & TP Car, etc)	P43151C	1 Sep

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	AFS	OJT PROGRAM NO.	DATE
32.	Senior Aircraft Mechanic (MT & TP Car & Assoc Glider, etc)	P43151D	1 Sep
33.	Senior Aircraft Mechanic (Admin Trainer & Liaison, etc)	P43151E	1 Sep
34.	Senior Aircraft Mechanic (Light Jet Bomber, etc)	P43151G	10 Oct
35.	Senior Aircraft Mechanic (Jet Fighter, etc)	P43151H	1 Sep
36.	Senior Aircraft Mechanic (Medium Jet Bomber B-47)	P43151J	Oct
37.	Senior Aircraft Mechanic (Light Jet Bomber B-45)	P43151K	Oct
38.	Senior Aircraft Mechanic (Flight Mechanic)	P43151W	10 Sep
39.	Senior Aircraft Reciprocating Engine Mechanic (R4360)	P43152A	Printed
40.	Senior Aircraft Reciprocating Engine Mechanic (R3350)	P43152B	Printed
41.	Senior Aircraft Reciprocating Engine Mechanic (R2800)	P43152E	Printed
42.	Senior Jet Engine Mechanic	P43153	Printed
43.	Senior Aircraft Instrument Mechanic	P43156	1 Sep
44.	Senior Intelligence Operations Specialist	P20450	1 Jul
45.	Senior Photo Interpretation Specialist	P20451	1 Sep
46.	Senior Weather Equipment Operator Repairman	P25150	15 Sep
47.	Senior Weather Observer	P25250	15 Sep
48.	Senior Air Traffic Control Operator	P27250	15 Sep
49.	Senior Control Tower Operator	P27251	1 Jul
50.	Senior Aircraft Landing Control Operator	P27252	1 Sep
51.	Senior Vehicle & Motorized Equipment Engine Mechanic	P47154	1 Sep
52.	Senior Parachute Rigger	P58150	15 Aug
53.	Senior Disbursing Clerk	P81150	Printed
54.	Senior Accounting Clerk	P81250	15 Jul
55.	Senior Statistical Specialist	P83150	Printed
56.	Senior Communications Center Specialist	P29150	30 Aug
57.	Senior Photographer	P23150	30 Aug
58.	Senior Ground Radio Operator	P29351	15 Jul
59.	Senior Radio Intercept Operator	P29352	1 Oct
60.	Senior Airborne Radio Operator	P29353	1 Oct
61.	Senior Installer Cableman Repairman	P36150	1 Sep
62.	Senior Central Office Equipment Mechanic	P36250	15 Sep
63.	Senior Carrier Repeater Mechanic	P36251	1 Sep
64.	Senior Aircraft Munitions	P46150	1 Aug
65.	Senior Weapons Mechanic	P46250	1 Jul
66.	Senior Petroleum Lab Specialist (Apprentice training by Army)	P64351	1 Sep
67.	Senior Machine Accountant	P83250	25 Aug
68.	Senior Construction Equipment Mechanic	P47150	25 Aug
69.	Senior Automotive Mechanic	P47151	15 Sep
70.	Senior Special Vehicle Mechanic	P47152	20 Aug
71.	Senior Vehicle & Motorized Equipment Electrician	P47155	Printed
72.	Senior Cook	P62250	1 Aug
73.	Senior Airframe Repairman	P53450	1 Oct
74.	Senior Machinist	P53150	1 Oct
75.	Senior Sheet Metal Worker	P53350	1 Nov
76.	Senior Metal Processing Specialist	P53250	1 Oct
77.	Senior Cartographic Specialist (Apprentice training by Army)	P22150	1 Aug
78.	Senior Photogrammetrist (Apprentice training by Army)	P22151	1 Oct
79.	Senior Surveyor (Apprentice training by Army)	P22250	25 Aug
80.	Senior Electrician	P56150	1 Sep
81.	Senior Water Supply & Sanitation Specialist	P56350	25 Aug
82.	Senior Refrigeration Specialist	P56650	15 Sep
83.	Senior Photographer	P23250	Printed
84.	Senior Motion Picture Specialist	P23351	1 Oct
85.	Senior AC&W Operator	P27350	Unknown
86.	Senior Roads & Grounds Specialist	P55150	1 Sep
87.	Senior Woodworker	P55250	1 Sep
88.	Senior Painter	P55251	25 Aug
89.	Senior Career Guidance Specialist	P73250	1 Oct

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1 September 1954

	AFS	OJT PROGRAM NO.	DATE
90.	Senior Personnel Specialist	P73251	1 Oct
91.	Senior Procurement Specialist (Apprentice training by AFIT & AMC)	P65150	30 Jul
92.	Senior Warehousing Specialist	P64150	1 Jul
93.	Senior Organizational Supply Specialist	P64151	20 Aug
94.	Senior Supply Records Specialist	P64152	20 Aug
95.	Senior Petroleum Supply Specialist	P64350	1 Sep
96.	Senior Passenger Traffic Specialist	P60250	Printed
97.	Senior Freight Traffic Specialist	P60251	Printed
98.	Senior Automotive Body Repairman	P47153	Printed
99.	Senior Firefighter	P95150	1 Sep
100.	Senior Air Policeman	P96150	10 Oct
101.	Senior Baker	P62150	1 Aug
102.	Senior Meat Cutter	P62250	1 Aug
103.	Senior Vehicle Operator	P60350	Printed
104.	Senior Plumber	P56450	1 Sep
105.	Senior Heating Specialist	P56550	1 Sep
106.	Senior Clerk	P70250	Printed
107.	Senior Stenographer	P70252	1 Sep
108.	Senior Key Punch Operator	P83251	Printed
109.	Senior Fabric & Leather Worker	P58151	10 Aug
110.	Senior Rubber Products Repairman	P58250	Printed
111.	Senior Laundry Machine Operator (Apprentice training by Army)	P64450	10 Oct
112.	Senior Information Specialist	P72150	20 Aug
113.	Senior Welfare Specialist	P70350	15 Sep
114.	Senior Athletic Specialist (Apprentice training by Army)	P74150	1 Sep
115.	Senior Recreation Specialist (Apprentice training by Army)	P74151	1 Sep
116.	Senior Vehicle Dispatcher	P60351	15 Jul
117.	Pharmacy Specialist	JP90550	Oct
118.	Vetern. Specialist	JP90850	1 Sep
119.	Aero Medical Specialist	JP90150	Oct
120.	Dental Laboratory Specialist	JP90951	Oct
121.	Neuropsy Specialist	JP90251	Oct
122.	Medical Services Specialist	JP90250	1 Oct
123.	Radiological Specialist	JP90350	15 Oct
124.	Laboratory Specialist	JP90450	15 Aug
125.	Medical Material Specialist	JP90650	15 Sep
126.	Prevent. Med. Specialist	JP90750	15 Aug
127.	Medical Admin. Specialist	JP90651	1 Sep
128.	Dental Specialist	JP90950	Oct
129.	Sen. Acft. Elec.	JP43154	10 Jul
130.	Mech. Inst. Trainer Spec. (ANT-18 & C-8)	JP34150	1 Sep
131.	Elec. Inst. Trainer Spec. (C-11)	JP34151A	Oct
132.	Elec. Inst. Trainer Spec. (P-2)	JP34151B	Oct

Total (5) level Programs 132

1 September 1954

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PRIORITY II

Apprentice OJT Program

	AFSC	AFS	FORMAL COURSE NO.	OJT PROGRAM NO.
1.	29331	Apprentice Aircraft Ground Radio Operator	29351	F29351
2.	27330	Apprentice Aircraft Control & Warning Operator	27350	F27350
3.	55231	Apprentice Painter	55251	F55251
4.	64131	Apprentice Organizational Supply Specialist	64151	F64151
5.	64330	Apprentice Petroleum Supply Specialist	64350	F64350
6.	60130	Apprentice Air Passenger and Operations Specialist	60150	F60150
7.	95130	Apprentice Firefighter	None	F95150
8.	96130	Apprentice Air Policeman	96150	F96150
9.	47130	Apprentice Construction Equipment Mechanic Army	5-E-12	F47150
10.	70230	Apprentice Clerk	70250 Standby	F70250
11.	60330	Apprentice Vehicle Operator	None	F60350
12.	58131	Apprentice Fabric and Leather Worker	58151	F58151
13.	60331	Apprentice Vehicle Dispatcher	None	F60351

Total (3) level Programs 13

NOTE: No completion dates are listed for these (3) level programs. Preparation has started on some. No dates are available.

PRIORITY III

Advanced OJT Program

	AFSC	AFS	OJT PROGRAM NO.
1.	32171F	Q-24 System Technician (Available on Standby)	F32171F
2.	32270	Fire Control Systems Supervisor	F32270
3.	32371C	Turret System Technician (B-45, B-47)	F32371C
4.	36370	Communications Machine Maintenance Supervisor	F36370
5.	40370	Camera Repair Technician	F40370
6.	42371	Aircraft Propeller Technician	F42371
7.	42571	Aircraft Hydraulics Supervisor	F42571
8.	42671	Aircraft Electrical Accessories Technician	F42671
9.	43171M	Aircraft Maintenance Technician (Helicopter)	F45171M
10.	43171A	Aircraft Maintenance Technician (HB & Equivalent Version, etc)	F43171A
11.	43171B	Aircraft Maintenance Technician (MB & Equivalent Cargo)	F43171B
12.	43171D	Aircraft Maintenance Technician (MT & TC & Assoc. Glider)	F43171D
13.	43171C	Aircraft Maintenance Technician (HT & TC)	F43171C

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AFSC	AFS	OJT PROGRAM NO.
14. 43171E	Aircraft Maintenance Technician (Admin Trainer Liaison)	F43171E
15. 43171G	Aircraft Maintenance Technician (LB - B-26)	F43171G
16. 43171H	Aircraft Maintenance Technician (Jet Fighter)	F43171H
17. 43171J	Aircraft Maintenance Technician (Medium Jet Bomber)	F43171J
18. 43171K	Aircraft Maintenance Technician (Light Jet Bomber)	F43171K
19. 29270	Crypto Operator Supervisor	F29270
20. 29271	Communication Procedures Technician	F29271
21. 29170	Communications Center Supervisor	F29170
22. 29370	Radio Operator Supervisor	F29370
23. 29373	Airborne Radio & ECM Operator Technician	F29373
24. 36170	Wire Maintenance Supervisor (Outside Plant)	F36170
25. 36270	Wire Maintenance Supervisor (Inside Plant)	F36270
26. 46170	Munitions Supervisor	F46170
27. 92171	Rescue and Survival Technician	F92171
28. 53471	Airframe Repair Technician	F53471
29. 22170	Cartographic Supervisor (Apprentice training by Army)	F22170
30. 56170	Electrical Supervisor (Apprentice training by Army)	F56170
31. 27370	AC&W Supervisor	F27370
32. 60270	Traffic Supervisor	F60270
33. 93170	Ground Safety Technician	F93170
34. 60170	Air Transportation Supervisor	F60170
35. 73170	First Sergeant	F73170
36. 56470	Plumbing Supervisor (Apprentice Training by Army)	F56470
37. 56570	Heating Supervisor	F56570
38. 34270B	Flight Simulator Maint Tech. (B-47)	JA34270B
39. 34270D	Flight Simulator Maint Tech. (F-86)	JA34270D

Total (7) level advanced programs 39

NOTE: Advanced (7) level programs to be started after completion of (5) and (3) level programs (Sometime in last quarter of FY 55).

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ATTACHMENT 2

List of OJT Program Outlines and Training Standards

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The following is a list of OJT Program Outlines and Training Standards which have been distributed to units of ADC.

20450	Sr Intelligence Operations Specialist
20451	Sr Photo Interpretation Specialist
22150	Sr Cartographic Specialist
22250	Sr Surveyor
23250	Sr Photographer
23351	Sr Motion Picture Specialist
27350	Sr Aircraft Control and Warning Operator
29150	Sr Communications Center Specialist
29351	Sr Ground Radio Operator
29353	Sr Airborne Radio Operator
30150	Sr Airborne Electronic Communication Equipment Repairman
32150A	Sr M-Series Bomb Sight Mechanic
30151	Airborne Electronic Navigation Equipment Repairman
30250	Sr Electronic Counter Measures Repairman
32250B	Sr Sighting System Mechanic
32250D	Sr E-4, E-5, E-6 Series System Mechanic
36150	Sr Installer Cableman
36250	Sr Central Office Equipment Mechanic
36251	Sr Carrier Repeater Mechanic
36350	Sr Communications Machine Repairman
40350	Sr Camera Repairman
40450	Sr Optical Instrument Repairman
42350	Sr Aircraft Propeller Mechanic
42450	Sr Mechanical Accessories & Equipment Repairman
42550	Sr Aircraft Hydraulics Mechanic
42650	Sr Aircraft Electrical Accessories Repairman
43151H	Sr Jet Fighter Mechanic
43151W	Sr Flight Mechanic
43152A	Sr Aircraft Reciprocating Engine Mechanic R-4360
43152B	Sr Aircraft Reciprocating Engine Mechanic R-3350
43152E	Sr Aircraft Reciprocating Engine Mechanic R-2800
43153	Jet Aircraft Engine Mechanic
43154	Sr Aircraft Electrician
47150	Sr Construction Equipment Mechanic
47151	Sr Automotive Mechanic
47152	Sr Special Vehicle Mechanic
47153	Sr Automotive Body Repairman
47154	Sr Vehicle and Motorized Equipment Mechanic
47155	Sr Vehicle and Motorized Equipment Electrician
55150	Sr Roads and Grounds Specialist
55250	Sr Woodworker
55251	Sr Painter
56150	Sr Electrician
56350	Sr Water Supply and Sanitation Specialist
56450	Sr Plumber
56550	Sr Heating Specialist
56650	Sr Refrigeration Specialist
58151	Sr Fabric and Leather Worker
58250	Sr Rubber Products Repairman
60150	Sr Air Transportation Specialist
60250	Sr Passenger Traffic Specialist
60251	Sr Freight Traffic Specialist
60230	Sr Vehicle Operator
60370	Motor Transportation Supervisor
60351	Sr Vehicle Dispatcher

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62150	Sr Baker
62250	Sr Cook
62350	Sr Meat Cutter
64150	Sr Warehousing Specialist
64151	Sr Organizational Supply Specialist
64152	Sr Supply Records Specialist
65150	Sr Procurement Specialist
70250	Sr Clerk
70252	Stenographic Specialist
72150	Sr Information Specialist
73250	Sr Classification Specialist
73251	Sr Personnel Specialist
73270	Personnel Technician
79150	Sr Welfare Specialist
81150	Sr Disbursing Clerk
81250	Sr Accounting Clerk
83150	Sr Statistical Specialist
83250	Sr Machine Accountant
83251	Sr Key Punch Machine Operator
90650	Sr Medical Materiel Specialist
90651	Sr Medical Administrative Specialist
92250	Survival Training and Personal Equipment Specialist

TRAINING

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AIR DEFENSE COMMAND MANUAL

445

**EVALUATION
OF
ON-THE-JOB TRAINING**

1 APRIL 1955

AIR DEFENSE COMMAND

ENT AIR FORCE BASE
DPS, Ogden, Utah 123501

ADC MANUAL)
52-2)

ADCM 52-2
HEADQUARTERS AIR DEFENSE COMMAND
Ent AFB, Colorado Springs, Colorado
1 April 1955

FOREWORD

1. **Purpose.** This Manual establishes a standard method of evaluating the proficiency of airmen in certain career ladders and determines what further training is necessary.

2. **Scope.** The procedures outlined in this Manual will be used by all units of the Air Defense Command. This Manual includes the instructions for the control, administration, and use of Training Needs Tests (TNTs) for improving training accomplishment. TNTs do not in any way replace or transcend the Air Force Classification Testing Program and will not be used to determine an airman's qualification for the award of an AFS.

3. **References.** In order for training personnel to use these tests to the best advantage, it is necessary that they have a comprehensive knowledge of the following references:

- a. AFR 52-2, On-the-Job Training
- b. AFM 35-1, Warrant Officer and Airman Classification Manual
- c. AFM 35-8, Air Force Personnel Evaluation Manual
- d. ADCR 52-1, On-the-Job Training
- e. ADCM 52-1, Administration of On-the-Job Training

4. **Changes to Manual.** Proposed changes to this Manual will be submitted through channels to the Director of Requirements and Training, Headquarters Air Defense Command, Ent Air Force Base, Colorado Springs, Colorado.

BY ORDER OF THE COMMANDER:

GEORGE F. SMITH
Major General, USAF
Chief of Staff

OFFICIAL:

WALTER W. ROBINSON
Colonel, USAF
Command Adjutant

DISTRIBUTION:

Hq ADC	100
Air Def Forces	50
Air Divs (Def)	10
Wings	10
Groups	5
4602nd AISS	21
Squadrons	5
Det 1	5
Maj Air Comds	2
Hq USAF	2

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SECTION I

GENERAL

1. **Training Needs Tests (TNTs) and On-the-Job Training Responsibilities.** The efficiency of an operational unit is a direct result of the trainees' proficiency. One of the new concepts resulting from the need for better on-the-job training programs has been the development of a series of Training Needs Tests (TNTs). These tests can be used as standard instruments for evaluating a trainee's knowledge of his job. They are designed to point out those job areas within an Air Force Specialty in which the airman is most informed and those in which he needs further training. With this information, a trainer can concentrate his attention on further training in the airman's weak areas.

a. This Manual has been prepared to standardize the use of the Training Needs Tests. It presents information to personnel training officers and supervisors so they can make efficient use of the tests in improving the training program. These tests are described and suggestions for their use are presented along with an explanation of on-the-job training responsibilities for concerned personnel. It is emphasized that these tests were not designed for use as selection devices for upgrade actions or in determining eligibility for promotion. They are purely aids for improving on-the-job training programs and their use will incorporate this concept. The written diagnostic tests covered by this Manual are designed for two purposes:

(1) To assist in determining what training is required to bring the proficiency of the airman to the desired level in his present AFS.

(2) To assist in determining what training is required to qualify an airman for the award of a new AFS or AFS Suffix.

b. The TNTs have been developed and are being made available for selected AFSs to improve the on-the-job training program in those AFSs. Procurement or preparation of the TNTs will be accomplished at command level; however, the unit commander is responsible for their immediate application to on-the-job training programs. Recommendations for TNT coverage of additional AFSs should be forwarded through channels to this headquarters, ATTN: Director of Requirements and Training.

2. **Description and Uses of the TNTs.**

The TNTs are objective type written tests of job information, composed of multiple-choice questions. Each test is designed to cover the technical aspects of a particular Air Force Specialty. These tests are divided into parts, with each part covering a distinct job area or item of equipment, so that it is possible to obtain scores for single job areas within an Air Force Specialty as well as total score evaluation of the entire Air Force Specialty. The length of these examinations varies but the administration for any test will not require more than approximately three and one half hours. To control the memory factor in re-testing, two forms of TNTs will be developed for each Air Force Specialty covered. At the present time, only a small number of Air Force Specialties are covered by these tests. Tests which are available are listed in Attachment 1 of this manual.

a. The TNTs are designed as training aids for use by supervisors and training officers. Their results aid the supervisor and training officer in their training planning by:

(1) Indicating an airman's specific training needs by showing those areas of his job in which he is not proficient.

(2) Increasing interest and motivation by showing the airman specific parts of his job in which he is proficient as well as indicating those areas in which he requires further training.

(3) Providing information which may be used toward the more effective utilization of manpower and training time by organizing training to eliminate undesirable repetition.

(4) Evaluating the achievement of individuals in a training program.

(5) Evaluating the effectiveness of the training program itself.

(6) Providing commanders with an instrument for comparing their units, in terms of training level, with a command-wide standard.

These applications do not exhaust the possibility for uses of the TNTs, but should serve as an indication of their potential value.

3. **Records Disposition.** Records created incident to the TNT Program will be disposed of under AFR 31-9 and AFM 181-5.

4. **Supply of ADC Form 224.** Air defense forces will print and make initial

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distribution to their subordinate units in accordance with paragraph 5a, ADCR 9-3.

This headquarters will make initial distribution and resupply separate units assigned to ADC.

SECTION II

ADMINISTERING TRAINING NEEDS TESTS

5. **Control of TNTs.** TNTs are controlled in the same manner as the Airman Proficiency and Job Knowledge Tests prescribed in AFR 9-3 and AFM 35-8. The procurement, storage, administration, and scoring of these tests is the responsibility of the unit personnel training officer. A supervisor should not be allowed access to the test items in adapting his training program. The TNTs have been developed in accordance with the same job description (AFM 35-1) from which the training programs are developed.

6. **Printing and Distribution of TNTs.** A sufficient number of each TNT will be reproduced by Headquarters Air Defense Command to satisfy the needs of all units. These tests will be furnished to each air defense force for redistribution to all units under its command. The separate units of Air Defense Command will receive distribution directly from Headquarters Air Defense Command. Letter requisitions may be submitted, through channels, for additional copies only when sufficient copies are not available to satisfy the needs of the unit. In most cases three to five copies of each form of a test will be sufficient for each AFS or career ladder.

7. **When Tests Will Be Administered.** TNTs for specific career ladders will be available so that tests may be administered to individuals or groups at any time.

a. When a helper level airman with a "directed duty assignment" for training to the 3-level is received, he will be tested as soon as practical (within thirty days).

b. Any apprentice (3) level airman who is entered in OJT for the 5-level will be tested as soon as practical.

c. Any specialist (5) level airman who is entered in OJT for the 7-level will be tested as soon as practical.

d. Each airman above the helper level will be tested as necessary to determine his proficiency within his present AFS.

e. The alternate form of the test will be given when an airman is considered to have completed his training program.

f. The unit training officer will initiate the action to test all airmen in his

unit in accordance with the preceding subparagraphs.

g. TNTs will not be scheduled to interfere with the AFJKT or APT program.

h. It is the responsibility of each supervisor to arrange for testing of eligible airmen under his supervision and to use the test results to the fullest possible extent in improving training. The unit personnel training officer, through coordination with the supervisor, is responsible for insuring that all eligible airmen are tested. Since the purpose of TNTs is to establish the training requirement for the individual airman and thereby increase the effectiveness of the unit training program, the unit personnel training officer is responsible for their implementation and continued use.

8. **Re-Testing.** When the supervisor has completed the training of an airman and has determined that the individual is qualified, he will report the airman to the unit personnel training officer who will schedule the airman to take the alternate form of the appropriate TNT.

9. **Scoring Tests.** The unit personnel training officer is responsible for administering the appropriate test and checking and scoring the answer sheets in accordance with the instructions included with the test for each career ladder or AFS. Accuracy of scoring, conversion of scores, and maintenance of test security are the responsibility of the unit personnel training officer.

10. **Conversion of Test Scores.** The unit personnel training officer is responsible for converting the test results, both total and part, to a stanine score. The meaning of a stanine is explained in SECTION III.

11. **Reporting Test Results.** Test results will be recorded in duplicate. (Figure 1 is an example of ADC Form 224 which is used for this purpose.) The original copy of the form is retained and filed by the unit personnel training officer and the duplicate copy is delivered to the airman and his supervisor. The unit person-

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nel training officer will arrange a meeting with the airman (trainee) and his supervisor. The test results are analyzed and discussed. At this time the appropriate Department of the Air Force (DAF) OJT Program, if one is available for the AFS, is adapted to the needs of the individual

airman. If a DAF OJT Program or an ADC OJT Program is not available, a locally procured or prepared program will be used. Here it is emphasized that training must be concentrated on the individual airman's weaknesses.

TRAINING NEEDS TEST RECORD									
Hittle		Ralph		L.		A/3e		17 231 904	
LAST NAME		FIRST NAME		M. I.		GRADE		AFSN	
70230		70250		93d FIS		Orderly Room			
PRIMARY AFSC		DUTY AFSC		ORGANIZATION & UNIT		OFFICE OR OTHER LOCATION			
SUPERVISOR									
Adair		Toby		Capt.		Adm. Spec.		A 21 Dec 54	
LAST NAME		FIRST NAME		GRADE		NAME OF TEST		FORM DATE	
AREA OF JOB	BELOW AVERAGE			STANINE* AVERAGE			ABOVE AVERAGE		
	1	2	3	4	5	6	7	8	9
1. Correspondence						X			
a. Mil. Ltrs.						X			
b. Non-Mil. Ltrs.						X			
and Office Forms									
c. Messages					X				
2. Security			X						
3. Records/Maintenance		X							
4. Postal		X							
5. Orders									X
TOTAL SCORE (WHERE APPROPRIATE)									
REMARKS (IF MORE SPACE IS REQUIRED, CONTINUE ON REVERSE SIDE)									
Average Stanine - 5									
* A STANINE IS A SCALE FOR REPORTING TEST SCORES WITH A LOW OF ONE, A HIGH ON NINE, AN AVERAGE OF FIVE.									

FORM 224
15 MAR 55

FIGURE 1

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SECTION III

INTERPRETING TRAINING NEEDS TEST RESULTS

12. **Explanation of Stanine Scoring.** The TNT results are reported on the TNT record, as indicated in Figure 1, in stanine scores. The use of the stanine score in reporting test results on this record is a

standard practice in Air Force testing procedure. As previously stated, this procedure provides for uniformity in reporting and effects efficient utilization of information obtained.

STANINE SCALE

	BELOW AVERAGE OR UNSATISFACTORY			GENERAL AVERAGE		ABOVE AVERAGE			
					EXACT AVERAGE		VERY GOOD	EXCELLENT	SUPERIOR
STANINE	1	2	3	4	5	6	7	8	9

Figure 2

a. The stanine score is simply a nine point scale used to convert the initial or raw scores which an airman makes on a test to a standard score which is comparable to any other test which has been converted. If an individual has a high raw score on the test, then his score on the stanine scale will also be high, that is: either a seven, eight, or nine. If he has a low raw test score his resultant stanine score will also be low, a one, two or three. An airman who is typical or average in test performance will receive a stanine score of five. A stanine score of four or six signifies performance which is slightly below or slightly above average. The results of any test can be converted to the "Stanine Scale."

b. When we discuss test scores in terms of above or below average, we are making a comparison with the average. In the instance of Figure 1 we are comparing an individual with the entire group of

airmen in his same Air Force Specialty who have taken the TNT for Administrative Specialist. The test has been given to a group of airmen who are considered well-qualified in the AFS. Their test results have been analyzed and a chart made to give a stanine value to each raw score made. This is called a conversion chart or conversion scale. In order to find how this airman ranks with the well-qualified group we merely look at his stanine score. If it is a 9, 8, or 7 we know he is above average; if it is a 6, 5, or 4 we know he is average; and if it is 3 or below we know that he is below average or unsatisfactory. The information contained on TNT records may be used with confidence because the airmen tested will have been compared with proficient airmen in the command who hold the same Air Force Specialty. Figure 3 is an example of a stanine conversion chart.

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EXAMPLE OF A STANINE CONVERSION CHART

ADMINISTRATIVE SPECIALIST - SECTION 1 - CORRESPONDENCE				
NO. OF CORRECT RESPONSES				
3-LEVEL	5-LEVEL	7-LEVEL	STANINE	
RAW SCORE	RAW SCORE	RAW SCORE	SCORE	
54 - 69	63 - 69	68 - 69	9	
46 - 53	62 - 63	65 - 67	8	
42 - 45	57 - 61	62 - 65	7	
38 - 41	52 - 56	58 - 61	6	
32 - 37	45 - 51	53 - 57	5	
27 - 31	37 - 44	45 - 52	4	
17 - 26	32 - 36	38 - 44	3	
13 - 16	23 - 31	34 - 37	2	
0 - 12	0 - 22	0 - 33	1	

TOTAL QUESTIONS 69

FIGURE 3

A study of the above conversion chart reveals that a raw score of 35 on Section I of the Administrative Specialist TNT is a stanine score of "5" for the apprentice (3) level airman, a stanine of "3" for the specialist (5) level airman, and a stanine score of "2" for the supervisor (7) level airman.

13. **Analyzing the TNT Record.** To gain experience in interpreting the TNT records, look at the TNT record in Figure 1. This is an illustration of the results of the Administrative Specialist Training Needs Test which was administered to A/3C Ralph Hittle. You will note that to the left of the page under "Area of Job" there are listed a number of job areas in the administrative field. Five major areas are listed with three sub-areas under Area No. 1. The stanine scores for each of the job areas and sub-areas have been derived from Airman Hittle's scores on the TNT for the Administrative Specialist career field. The stanine which indicates average performance is 5. We note that this airman's profile shows him to be slightly above average in correspondence including military letters, nonmilitary letters, and office forms. He is average in messages. He has low stanines in security, records maintain-

ance and postal. He is extremely high in orders. The test results reveal that his primary need for training is in the security, records maintenance, and postal areas. Since he displays adequate knowledge in the other areas, further training in them is not considered necessary.

14. **Adapting the Training Program to the Individual.** A DAF OJT Program is available for training airmen in the AFSC 70250, Administrative Specialist. The proper sections of the DAF OJT Program will be assigned to A/3C Hittle for his study in those job areas where he is below average. It is well at this point to survey the capability of the unit for moving A/3C Hittle into as many different job assignments within his AFSC as is possible. An excellent approach toward OJT is made by rotating an airman through the various positions of his Air Force Job Description. This type of training takes the ultimate advantage of the practical application technique and is, therefore, very effective. The training program of the individual airman must include and emphasize all those job areas where the TNT indicates that he is weak.

SECTION IV

APPLYING TRAINING NEEDS TEST RESULTS

15. **Presenting TNT Results to the Trainee.** The method for interpreting TNT results is given in SECTION III of

this Manual. In order to understand the significance of the test results, let us look at some of the possibilities for individual

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and group application. After reviewing the TNT records for the airmen assigned to a section, it is the supervisor's responsibility to carry out or make arrangements for the appropriate remedial training as agreed upon with the unit personnel training officer. This training may take whatever form or procedure is considered most effective for the particular situation. It is suggested, however, that a standard method of presenting the results of a TNT to an individual be utilized. This will insure that the airman will receive all the information he needs to attain full knowledge from the newly oriented training program. It will also provide the opportunity for better relations between the supervisor and subordinate on the basis of mutual understanding of the subordinate's training needs.

a. Under ordinary circumstances a thirty minute interview will be sufficient to discuss the airman's training needs and the adaptation of a training program for him. First, the purpose of the interview should be explained and then the supervisor should show the trainee a blank TNT record. After a brief explanation of the job areas and the stanine scoring system, the trainee should be asked to indicate how competent he believes himself to be in each job area. The trainee accomplishes this rating by marking an "X" at the appropriate point on the stanine scale after each job area. The trainee will then compare his own estimate with the actual results of his TNT scores and discuss the differences with his supervisor. The aim here is to get the trainee to recognize his areas of strength and weakness and to actively share with the supervisor the problem of organized training to eliminate the weaknesses. The supervisor will work out a training program with each trainee which will give the individual the maximum opportunity to get the job experience, instruction, and self-study necessary to improve his job knowledge and proficiency. The supervisor must be certain that the trainee understands his own responsibilities for self-improvement as well as the definite steps being taken to help him progress. Interviews with airmen will normally be completed within three days after receipt of the TNT scores from the unit personnel officer.

16. **Group Instruction.** a. TNT results can be effectively used to identify job areas in which individuals and groups need training. Commonly, large groups are trained according to a standard curriculum which does not consider the training

needs of the individual. When TNTs are administered to more than a few airmen, an analysis may be made which groups the men by their training needs. A decision can be made as to whether group training is worthwhile to "train out" the deficiencies of a particular group. This does not necessarily require revising the content of the training curriculum for each group. A shift in emphasis and in allotted time for practice in the subject matter areas is often sufficient. Studies have demonstrated that a significantly greater increase in over-all group proficiency occurs when the group receives training in a curriculum tailored to fit its own training needs.

b. If several trainees in the same AFS need similar or identical instruction, it can be given to the entire group at the same time. The trainee must be informed of any group instruction he is to attend. It will be explained that the trainee should feel free to speak to the supervisor about any problems relating to his training, that checks on his progress will be made, and that at the end of his training program he will be given another form of the TNT. The scores on the second TNT will be compared with his scores on the first test.

17. **Determining the Training Needs of a Group.** A graphic comparison of area stanine averages and frequency distributions of stanine scores is considered to be the most descriptive method of analyzing a group's training needs. This method shows the stanine averages for the group in each of the job areas and also presents a picture of the score frequency in each stanine category. Figure 4 is an example of a form which can be used in displaying this information. Note that this form is filled out with data obtained from the TNT. His scores on the second TNT fense group that took Form A of the Administrative Specialist TNT.

a. If there are five or more men who need instruction in the same job area, a program of group training may be desirable. A definite time and place for this instruction should be scheduled, so that supervisors can plan their work schedules to permit their men who need the training to attend. A supervisor who is competent to instruct in a job area will be chosen to conduct the training and will be charged with the responsibility of preparing the necessary lesson plans. Where there are a number of job areas in which five or more men need training, the supervisor's instruction load can be distributed for more

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effective use of training effort. The assistance that technical representatives and technical instructors can give should be used to the fullest possible extent.

b. The task of making up a Group Analysis of Training Needs from the TNT records necessarily falls to the training officer. This is accomplished by completing a tally count of the stanines for each test area score. From this the average stanine

is determined for each job area, as well as the number of individuals with each stanine level within that job area. Personal attention to this Group Analysis of Training Needs by the training officer is important since a first hand review of the TNT records is an excellent method for determining individual capabilities and observing trends in training.

GROUP FREQUENCY CHART											
DATE <u>15 January 1955</u>					NUMBER OF AIRMEN TAKING TEST <u>42</u>						
AFSC'S <u>70230, 70250, 70270, _____</u>											
CAREER FIELD LADDER <u>Administrative Specialist</u>											
JOB AREAS		NO OF CASES BY STANINE								GP AVG	
NUMBER	TITLE	1	2	3	4	5	6	7	8	9	STANINE
1	Correspondence	1	2	2	4	4	8	6	7	8	6
1a	Military Letters	0	0	1	4	2	12	7	9	7	7
1b	Nonmilitary Letters and Office Forms	2	3	7	6	4	7	6	3	4	5
1c	Messages	0	0	0	0	3	5	7	11	16	8
2	Security	0	3	2	6	6	4	5	9	7	5
3	Records Maintenance	0	4	1	5	10	9	5	3	5	6
4	Postal	2	4	4	4	13	7	5	2	1	6
5	Orders	7	5	9	8	1	5	4	2	1	4

Figure 4

18. **Explanation of the Group Frequency Chart.** The preceding chart is an example which can be used to determine the number of individuals who make each stanine score on a TNT for any AFSC or career ladder. The preceding example was made from the results of 42 airmen who took the TNT for all three levels of the 702-0 career ladder.

a. There are two basic reasons why the training officer would prepare a Group Frequency Chart:

(1) To determine the feasibility of holding group instruction for specific job areas or sub-areas. The number of individuals who need specific training and the methods by which the subject matter is best taught should both be considered. Subject matter which is best taught by coach and pupil or individual methods should not be taught in groups.

(2) To get a graphic portrayal of the training needs of the airmen in the unit. If the group Average, the extreme

right hand column, is below "5" the personnel training officer immediately knows that the group is below average. Although the primary purpose of the TNT program is to determine the training needs of each individual airman, the tests are very effective for analysis and comparison of groups.

b. The preceding chart is merely an example and may be modified to suit the desires of the unit. Columns one and two list the number and name of the job area and sub-area from the TNT. This information is also shown on ADC Form 224 for each individual. The next nine columns show the number of airmen who make each of the nine possible stanine scores on each part of the test. The figures under each stanine score are gained by consolidating the information from the ADC Form 224 of each individual who took the test. The figures in the extreme right hand column are found by taking a simple average of the scores made by the group on each job area or sub-area of the test. For

ADCM 52-2

instance, on job area 5, Orders, only one airman made a stanine score of "9," two made a score of "8," four made a score of "7," five made a score of "6," one made a score of "5," etc. The total of the collective scores is 164. The average is 164 divided by 42, the number of airmen taking the test. The average stanine score is "4." The group average stanine of "4" indicates that the group is below average and needs further training in Orders. Further analysis indicates that 21 airmen are unsatisfactory and 8 more are slightly below average. Since a total of 29 airmen need further training in Orders, the personnel training officer should establish group instruction periods if the subject matter is compatible with group instructional methods.

c. The analysis and comparison of TNT results can be carried further to determine the average stanine score of the group for the overall career ladder. The average stanine score is a rather strong indication of the capability of the unit in the particular career ladder.

1 APRIL 1955

19. Availability of TNT Results for Maximum Use. Information has now been given on the TNT as a whole, on the interpretation of the results and methods for individual and group analysis of training needs. One further point to discuss is a procedure whereby the training officer makes the individual results and the group analysis available for maximum use. The following steps for the training officer are suggested:

- a. Make the group training needs analysis from the individual TNT records.
- b. Arrange the TNT records according to the supervisors for whom the airmen work.
- c. Determine how to assist each supervisor in planning on-the-job training for his airmen.
- d. Call a meeting of supervisors within each career field to discuss the training needs for the unit and assist each supervisor in adapting or developing an OJT program to fill the needs of his section.

1 APRIL 1955

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ATTACHMENT 1
LIST OF TRAINING NEEDS TESTS

The following list of Training Needs Tests will be printed and distributed on the dates indicated. This list will be amended as new tests are prepared and published.

AFSC	DESCRIPTION OF TEST	DATE OF AVAILABILITY
70230/50/70	All levels of 702-0 career ladder	May 55
64131/51/73	All levels of Organizational Supply career ladder	May 55
73230/50/70	All levels of 732-0 career ladder	May 55
43151C/71C(F-86D)	Five and seven levels of Jet Fighter Aircraft Mechanics assigned duty on the F-86D	May 55
43151C/71C(F-94C)	Five and seven levels of Jet Fighter Aircraft Mechanics assigned duty on the F-94C	May 55
43250/70(F-86D)	Five and seven levels of Jet Engine Mechanics assigned duty on the J-47 engine	May 55
43250/70(F-94C)	Five and seven levels of Jet Engine Mechanics assigned duty on the J-48 engine	May 55
42152/72	Five and seven levels of 421-2 career ladder	May 55
42350/70	Five and seven levels of 423-0 career ladder	May 55
64330/50/70	All levels of 643-0 career ladder	May 55

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*ADCR 50-9

ADC REGULATION)
50-9)

HEADQUARTERS AIR DEFENSE COMMAND
Ent AFB, Colorado Springs, Colo.
15 July 1955

TRAINING

Mobile Training Detachments

1. Purpose. This Regulation supplements AFRs 50-29 and 50-6 and establishes command policies and procedures concerning movement and utilization of Mobile Training Detachments (MTDs).

2. Scope. This Regulation applies to all fighter-interceptor squadrons, AEW&C squadrons and all Air Defense Command bases concerned with the assignment and utilization of Mobile Training Detachments.

3. Definitions. a. Mobile Training Unit: All equipment and training aids less instructor personnel.

b. Mobile Training Detachment: All equipment and training aids plus instructor personnel.

4. General. Mobile Training Detachments are designed to train and assist in raising the skill level of aircrew and maintenance personnel within fighter-interceptor and AEW&C squadrons, and maintenance personnel in materiel or maintenance squadrons on new items of equipment during conversion or activation periods or as otherwise needed. The fact that personnel have previously completed an MTD course does not preclude their attendance again to secure up-to-date information on new equipment, changes etc. Mobile training detachments are under the administrative control of Air Training Command, and close coordination must be exercised between the ADC commanders concerned and the MTD commander.

5. Facilities Required. The facilities required to house an MTD are listed in Section V, USAF Training Prospectus.

6. Request for Assignment of MTD. Commanders desiring that an MTD be assigned to their unit will request same by message through channels to this headquarters. The request will include the following information:

a. Type MTD desired, e.g., F-86-D.

b. Unit(s) to be trained.

c. Aircraft series, e.g., F-86-D-40. (In the event more than one series of aircraft is assigned to the unit(s) to receive training, all series will be included in the request.)

*This supersedes ADCR 50-9, 23 January 1952.

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ADCR 50-9

d. Number of aircrew members and maintenance personnel to be trained.

e. Skill level of personnel to be trained, e.g., all skill levels, mainly supervisory personnel, mainly 3-level personnel, etc.

f. Date MTD desired. Request must be transmitted to arrive in this headquarters 60 days before MTD is desired. Waiver to this requirement will not be granted due to planning and action necessary at this headquarters, USAF, and ATC. (Upon the arrival of an MTD and implementation of training, the receiving ADC commander will inform this and all intermediate headquarters, by message, of the date the MTD departed the prior station, the arrival date at the present station, and the date training commenced.)

g. Estimated length of time MTD will be required to complete desired training.

h. Brief summary of facilities available to house MTD.

i. Name of the MTD project officer (see paragraph 9).

j. Will airlift assistance be required to move MTD? (This item to be answered by the respective air defense force if unknown at the lower echelons.)

7. Utilization of MTDs. MTDs represent a considerable expenditure of funds, effort, and training; therefore, maximum utilization of their capabilities is imperative. This headquarters accepts 3,500 student hours of instruction per month as the minimum utilization figure per MTD. When the utilization of an MTD falls below the above figure, the ADC commander concerned will explain low utilization in the remarks section of the Mobile Training Detachment Report, RCS: 1-AF-T4.

8. Scheduling Students. Insofar as the unit mission will permit, students scheduled to attend an MTD class will not be withdrawn from classes for any reason. Duty periods, base details, leaves, etc, will be scheduled to provide maximum continuity of training.

9. Project Officer. Upon determination that an MTD is required, the applicable commander (squadron commander on bases with one squadron; group, wing or air division commander on bases with more than one squadron) will appoint an MTD project officer. The project officer will conduct the necessary liaison between the MTD commander and the ADC commander. Care should be taken to appoint an officer who will have sufficient time to devote to the job and will be available on the base for the entire period the training is required.

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10. Qualification of MTD Personnel. a. The unit to which an MTD is attached will provide the MTD commander with sufficient flying time in UE aircraft to remain proficient and comply with AFR 60-2. This policy will be adhered to so long as it does not interfere with the unit mission.

b. The unit to which an MTD is attached will permit MTD instructors to use UE aircraft and equipment to remain proficient on serviceable and repairable components. This policy will be adhered to so long as it does not interfere with the unit mission.

11. Support. a. Logistical support of MTDs is the responsibility of the Air Defense Command unit or base commander where an MTD is assigned as delegated by AFR 50-29. Administrative equipment as listed in Attachments 1 and 2 will be made available to the MTD upon its arrival on the base of assignment. Action to get the applicable equipment authorized on the UAL of the unit receiving training should be initiated concurrent with the request for an MTD.

b. Due to shipping limitations and the amount of equipment required to conduct training, there are items of equipment that are not included in the detachment's inventory. Therefore, the unit receiving training will make available unit equipment to be used in the training program so long as it does not interfere with the unit mission.

12. Housing. In compliance with local regulations and policies, MTD personnel who are assigned to an ADC base in a PCS status will be integrated into the waiting list for government or Wherry housing as applicable.

13. Finance. Due to frequent and short notice moves necessary, MTD personnel require advance payments of travel funds as provided for in applicable directives. The ADC commanders concerned will make certain that ADC finance officers understand this problem and cooperate in the payments required. On bases belonging to other major air commands, the ADC commander concerned will coordinate with the base finance officer to insure complete cooperation.

14. Base Details. MTD personnel will not be detailed as kitchen police, interior guard, etc. However, there is no objection, with cooperation of the MTD commander, in utilizing MTD personnel in base alert plans and during emergency exercises. Participation in retreat ceremonies, parades, and formations will be at the discretion of the ADC commander in cooperation with the MTD commander so long as it does not interfere with the detachment's mission.

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15. Termination of Training. The commander of the ADC unit to which the MTD is attached will notify this headquarters direct, by message, thirty days prior to the time that required training is completed, with information copies to each intermediate echelon. This notification will include:

- a. MTD designation.
- b. Date training will be terminated.
- c. Any remarks deemed pertinent.

d. Upon receipt of the information message of termination of training, the air defense force commander will inform this headquarters if airlift assistance is necessary to move the MTD.

16. Office of Interest. The responsibility for MTDs lies within the Training Evaluation and Control Branch, Training Division, Directorate of Requirements and Training, DCS/Personnel, this headquarters. It is requested that all lower echelons of this command assign this activity in a like manner.

17. Reports.

a. General.

- (1) A report will be submitted on ADC Form 232, provided any amount of training is conducted during the reporting period.
- (2) Negative reports are not required.
- (3) For the purpose of this report, the ADC commander concerned will be the commander of the highest ADC echelon stationed on the base where an MTD is operating. This does not include air defense force headquarters.

b. Preparation Instructions.

- (1) Items (1) through (15) with the exception of item (2) will be prepared and authenticated by the MTD commander.
- (2) Items (2), (16) and (17) will be prepared and authenticated by the ADC commander concerned.
- (3) Item (2). Enter each headquarters that receives an information copy of the report.

ADCR 50-9

- (4) Item (5). Enter scheduled date of termination at current station. If the MTD was assigned PCS to the current station, enter PCS.
- (5) Item (7). Enter each unit that furnished students during the reporting period and the total student hours per unit.
- (6) Item (13). Enter in this item the maximum number of students and student hours that the MTD could have handled at optimum utilization. Take into consideration the optimum number of students and student hours each available instructor could effectively handle, the optimum number of classes the MTD could conduct and the number of training days available. Keep in mind the variance of the above considerations with respect to the complexity and peculiarities of each particular course.
- (7) Item (15). The MTD commander may use this item for any remarks he deems pertinent to the mission of his detachment.
- (8) Item (17). The ADC commander concerned may use this item for any remarks he deems pertinent to the mission of the MTD or the mission of the ADC unit(s) being trained. If there are any facilities that are checked "Poor" in item 14, corrective action taken will be explained in this item.
- (9) All other items are self-explanatory.

c. Reporting Data.

- (1) Frequency: Reports will be prepared each month by the MTD commander and the ADC commander concerned.
- (2) "As of" Date: "As of" the end of the month.
- (3) Due Date: Forwarded direct to arrive Headquarters ADC not later than the sixth calendar day following the end of the month being reported.
- (4) Method of Transmission: Mail - airmail will be used where necessary.
- (5) Security Classification: Unclassified.

ADCR 50-9

- (6) Requiring Headquarters Staff Agency: Directorate of Requirements and Training, DCS/Personnel.
- (7) Number of Copies: Report will be submitted to Headquarters ADC in two copies.
- (8) Information Copies: Information copies of the report will be submitted to each intermediate ADC echelon of command and the Commander, 3499th Mobile Training Wing, Chanute Air Force Base, Illinois. One copy of the report to each information addressee is considered sufficient and will be mailed direct.

d. Records Disposition: Destroy reports after one year or upon discontinuance of activity, whichever is sooner, in accordance with paragraph 679, AFM 181-5.

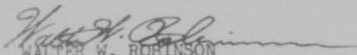
18. Supply of Forms. Initial supply of ADC Form 232 has been distributed to MTD commanders. Additional requirements will be obtained direct from Headquarters ADC in accordance with provisions of paragraph 3d, ADCR 9-3.

19. Reports Control Symbol. 1-AF-T4.
(ADPRT)

BY ORDER OF THE COMMANDER:

OFFICIAL:

GEORGE F. SMITH
Major General, USAF
Chief of Staff


WALTER W. ROBINSON
Colonel, USAF
Command Adjutant

3 Attachments:

1. FB6D, FB9H, F101, F102
Support Equip Rqmts
2. RC 121 Support Equip Rqmts
3. ADC Form 232

DISTRIBUTION:

A, plus
MTD commanders

6

(AF-ADC, Colorado Springs, Colo.)

F86D, F89H, F101, F102
SUPPORT EQUIPMENT REQUIREMENTS

a. Desk, Executive 63 x 37 x 33"	1 each per detachment
b. Desk, Typist 63 x 33 x 36"	2 each per detachment
c. Typewriter, 14" carriage	2 each (1 per typist desk)
d. Chair, Executive	1 each (1 per executive desk)
e. Chair, Typist	2 each (1 per typist desk)
f. Tray, Desk	6 each (2 per desk)
g. Machine, paper fastening	1 each per detachment
h. Perforator, 3 hole adjustable	1 each per detachment
i. Receptacle, waste paper	3 each (1 per desk)
j. Cabinet, filing steel 5 drawer	1 each per detachment
k. Machine, pencil sharpening	1 each per detachment
l. Chair, folding	1 each per instructor 30 each per projection room
m. Chair, student arm	20 each per classroom
n. Table, office	2 each per detachment
o. Table, projector	1 each per detachment
p. Bucket, mop w/wringer	2 each per detachment
q. Can, GI w/cover	2 each per detachment
r. Costumer	1 each per classroom 1 each per office

Attachment 1, ADCR 50-9,15 July 1955.

RC 121
SUPPORT EQUIPMENT REQUIREMENTS

a. Desk, Executive 63 x 37 x 33"	1 each per detachment
b. Desk, typist 63 x 33 x 36"	2 each per detachment
c. Typewriter, 14" carriage	2 each (1 per typist desk)
d. Chair, executive	1 each (1 per executive desk)
e. Chair, typist	2 each (1 per typist desk)
f. Tray, desk	6 each (2 per desk)
g. Machine, paper fastening	1 each per detachment
h. Perforator, 3 hole adjustable	1 each per detachment
i. Receptacle, waste paper	3 each (1 per desk)
j. Cabinet, filing steel 5 drawer	1 each per detachment
k. Machine, pencil sharpening	1 each per detachment
l. Chair, folding	1 each per instructor 30 per projection room 15 per cruise control room
m. Chair, student arm	20 each per classroom
n. Table, office	2 each per detachment 6 per cruise control room
o. Table, projector	1 each per detachment
p. Bucket, mop w/wringer	2 each per detachment
q. Can, GI w/cover	2 each per detachment
r. Costumer	1 each per classroom 1 each per office

Attachment 2, ADCR 50-9, 15 July 1955.

MONTHLY REPORT OF MOBILE TRAINING DETACHMENTS				FOR MONTH OF (3)	REPORTS CONTROL SYMBOL IAF-T4
TO: COMMANDER AIR DEFENSE COMMAND 847 AFB COLORADO SPRINGS, COLO. ATTENTION: ACC314		WFO COPIES TO: EACH HIGHER ECHELON OF COMMAND (4)		FROM: (WFO TYPE, NUMERICAL DESIGNATION, LOCATION) (5)	
				DATE OF ARRIVAL AT CURRENT STATION (6)	SCHEDULED DATE OF TERMINATION AT CURRENT STATION (7)
8. TYPE OF TRAINING ACCOMPLISHED DURING MONTH			9. UTILIZATION (BY ORGANIZATION)		
NUMBER OF STUDENTS			TOTAL STUDENT HOURS ACCUMULATED		
ENTERED (1)			IN TWO (2)		ORGANIZATION
DEPARTED (3)			WFO (4)		TOTAL STUDENT HOURS
A. AIRCRAFT					
B. MAINTENANCE					
C. TOTALS					
10. TRAINING AUTHORIZED BUT NOT ASSIGNED			11. INSTRUCTOR PERSONNEL AUTHORIZED BUT NOT ASSIGNED		
A.			A. NO. AFSC		
B.			B. NO. AFSC		
C.			C. NO. AFSC		
12. NUMBER OF AUTHORIZED INSTRUCTORS ASSIGNED			13. NUMBER OF INSTRUCTOR PERSONNEL ASSIGNED UNDERGOING OJT PRIOR TO ASSIGNMENT TO ANOTHER WTD		
A. FULLY QUALIFIED			B. NOT FULLY QUALIFIED		TOTAL
14. TRAINING DAYS AVAILABLE AND UTILIZED			15. MAXIMUM CAPACITY DURING MONTH		
A. NO. OF TRAINING DAYS AVAILABLE			B. NO. OF TRAINING DAYS CLASSIFIED AS CONDUCTED		
C. NO. OF STUDENTS			D. NO. OF STUDENT HOURS		
16. ADEQUACY OF TRAINING FACILITIES (IF FORM 8 CHECKED EXPLAIN IN REMARKS)			17. REMARKS		
FACILITY			RATING (CHECK ONE)		
LOCATION			POOR SATISFACTORY SUPERIOR		
SPACE					
POWER					
HEATING & VENTILATION					
LIGHTING					
NOISE LEVEL					
OTHER - EXPLAIN					
OTHER - REMARKS					
AUTHENTICATION BY WTD COMMANDER					
TYPE NAME AND GRADE				SIGNATURE	

FORM 432 1-58-7-53

ATTACHMENT 3, AFM 70-1, 15 July 1955.

SECTION III - COMMENTS BY ADC COMMANDER CONCERNED	
16. ADEQUACY OF TRAINING	
17. REMARKS	
AUTHENTICATION BY ADC COMMANDER CONCERNED	
TYPED NAME AND GRADE	SIGNATURE

Page 2, Attachment 3, AUC: 50-9, 25 July 1955.

1192

CONFIDENTIAL

4448

26 APR 1955

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15a

Mr. Tolson	
Mr. Boardman	
Mr. Nichols	
Mr. Belmont	
Mr. Ladd	
Mr. Clegg	
Mr. Glavin	
Mr. Harbo	
Mr. Rosen	
Mr. Tracy	
Mr. Egan	
Mr. Gurnea	
Mr. Hendon	
Mr. Pennington	
Mr. Quinn	
Mr. Nease	
Miss Gandy	

ADHPCG

SUBJECT: (UNCL) Operational Plan, Semi-automatic Ground Environment System for Air Defense (SAGE)

COMEBACK COPY

TO: Chief of Staff
Headquarters USAF
Washington 25, D. C.

Not requested, not furnished.
If furnished, (Date) (Initials)

1. Twenty-five copies of the Operational Plan, Semi-automatic Ground Environment System for Air Defense (SAGE), 7 March 1955, were forwarded to your headquarters on 30 April 1955. A draft copy of this plan was published in September 1954 and coordinated with all interested commands and agencies; applicable comments and recommendations have been incorporated in the final publication. In anticipation of your concurrence with the finalized plan, limited distribution has been made to those commands and agencies requiring the information for immediate action. Additional distribution is being withheld pending your formal approval.

2. The majority of the elements of this plan were individually approved by your headquarters as the program developed. One portion, not previously presented in detail, is covered in Chapter VII, Computer Programming for Air Defense. Responsibilities for computer programming functions have been established. Command requirements for support of these responsibilities are being submitted separately and with the coordination of the ADMS Project Office (USAF).

3. Implementation of the SAGE System is presently progressing in accordance with the schedules and policies outlined in the operational plan. To insure that this program schedule is maintained, it is imperative that the operational plan be approved by your headquarters. I urge that review of the plan be expedited and that it be approved as written.

Col O T Halley, Jr./mm
2441-31401
22 Apr 55
Commander AADC
ADMS Proj Off

B. W. CHIDLAW
General, USAF
Commander

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pdj

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This correspondence is classified _____ in accordance with _____
APR 20-1, 13 Dec 53, or for the reason (s) stated.

MEMORANDUM FOR THE DIRECTOR

22 April 1955

The SAGE Operational Plan was started in July 1954. A draft was jointly prepared by the SAGE Project Group in this headquarters and Division 3 of the Lincoln Laboratory. Extensive coordination of this draft was accomplished with ANEC, AEC, Western Electric Co. (AWES), IBM Corporation by Lincoln, the USAF and the entire ADC staff. Most comments received were incorporated in the final plan which was presented to the Command Council of ADC on 7 March and was approved for final publication and distribution.

Authority for initial distribution was received from Headquarters USAF in their message AFDDP-OP-D 42488. Approximately 375 copies of the plan in its present form have been distributed within this authority. Complete distribution list is on file in 22.

It is anticipated that specific actions required for ADC support of the computer programming responsibilities will be coordinated through the staff and with the Command Council during the first week of May.

W. T. Halliday Jr.
W. T. HALLIDAY JR.
Colonel, USAF
Director, SAGE Proj. Group

DOCUMENT NO. 449

THIS DOCUMENT HAS BEEN FORWARDED TO THE HISTORICAL
DIVISION OF THE AIR UNIVERSITY ON SEPARATE DISTRIBUTION.

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- Comdr
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- CsTS
- Comd Adj
- Hist
- Pub
- Comd Sura
- Comd Stf JA
- IG
- Insp Svs
- PM
- PIO
- DCS/C
- Bud
- Fin
- Mgt Anlys
- Stat
- DCS/P
- Chap
- Civ Pers
- Mil Pers
- Ann Div
- OR Div
- GS
- Pers Sv
- PP
- WAF
- Eng
- DCS/I
- C&D
- RAE
- DCS/O
- Asst Prog
- CCA
- Comm & Elect
- M&O
- OCD
- Cps Anlys
- C&I
- P&E
- Req O
- DCS/M
- Act
- Elect
- Gn Sup & Svs
- Instl
- Log Plans
- PQ COMUT

GENERAL AND EXT AFB COLORADO SPRINGS GOLF

Require operation of completely new installation. e. Sioux City is more advantageous from comm viewpoint, in that it is centrally located within subsector and near good coal tall pass, thus affording saving in leased line rentals and termination charges. In view of above, this hq strongly recom Direction Com previously approved for Sioux Falls Mani be changed to Sioux City Mani Aprt, Iowa. Action is being taken by hq to furn line item for requirements for Sioux City Mani Aprt to this will be handcarried concurrently with FY-57 P&E items (2nd) your hq by 15-Feb. Concurrence of your hq requested for change in this Direction Com loc and adjustment of items requested in FI-56 P&E from Sioux Falls Mani Aprt, S.D., to Sioux City Mani Aprt, Iowa.

COMB ADC

card Evaluation
 Permanent -----
 Temporary -----
 Initial -----
 Title Confirmed
 Std Publication
 m Under par 3a,
 CSW 5-3 -----
 prepared by -----
 telephone -----

J. B. FILLNER, CAPT, USAF

This correspondence is classified in accordance with
 Par 2-2.2, AFR 205-1, Jul 57, or for the reason(s) stated.

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 Sec 100

COMER ADC

ROUTINE ROUTINE

CR ARMS PROJ OFFICE USAF
230 CHURCH ST NYK

X

COMER CANV GRANDVIEW AFB ND

MCPT-3-88-1

CONFIDENTIAL

COMER WAFB HAMILTON AFB CALIF

COMER RAAF STEWART AFB NEWBURGH NY

(SECRET) ARMPG 8944. REF COMF HQS MCPT-3-88-1. HQ USAF

has AFPR the FOL for inclusion in the FT-88 PUP for SAGE:

Technical FACS for all sites indicated as priority 8 through 20

and SPT FACS for all sites indicated as priority 1 through 16.

The FOL sites have full USAF AFPR: McGuire AFB, Stewart AFB,

Syracuse AFB, Ft Lee, FT Custer, Trux AFB, Baluth HAWI APRT,

McChord AFB, Camp Adair, Larson AFB, Pendleton HAWI APRT, Beale

AFB and Hamilton AFB. Expect that USAF will AFPR Grand Forks

AFB HBAK as the site for the DIR CEN within the Farge subsector

in near future. This HQ has also RECM that the DIR CEN LOC

within Sioux Falls subsector be changed from Sioux Falls HAWI

APRT, HBAK to Sioux City HAWI APRT, Iowa. USAF decision expected

within 3 WKS. This HQ understands that decision on Brunswick

1 2

Maj F. Martely/um

USAF
Asst Command Adj

Will be Confirmed in
of Publication Form
under per Sec. AFCS

Approved by _____
Signature _____
Date _____

ADJ-1

ADJ-1

This correspondence is classified _____ in accordance with
Par 3441-8443 Dec 53, or for the reason (s) stated.

SECRET

SECRET

(SECRET) **AMPS** C-944 (CONT'D)

- Mr. Tolson
- Mr. Boardman
- Mr. Nichols
- Mr. Belmont
- Mr. Ladd
- Mr. Clegg
- Mr. Glavin
- Mr. Harbo
- Mr. Rosen
- Mr. Tracy
- Mr. Egan
- Mr. Gurnea
- Mr. Hendon
- Mr. Pennington
- Mr. Quinn
- Mr. Nease
- Mr. Gandy
- Mr. Mohr
- Mr. Winterrowd
- Mr. Holloman
- Mr. Casper
- Mr. Callahan
- Mr. Connelley
- Mr. Felt
- Mr. Gale
- Mr. Rosen
- Mr. Sullivan
- Mr. Tavel
- Mr. Trotter
- Mr. Tele. Room
- Mr. Holmes
- Miss Gandy

site has been made. Will advise when formal notification is
 HQ. Cadillac site is not received. HQ USAF has indicated that
 a recheck of this LOC may be HQ. Assistance of your office
 may be HQ. Will advise. REQ that this HQ and each Air HQ
 HQ be advised ASAP of the STS that the AFIR siting teams plan
 to visit the various FACS so that plans for appropriate
 representation can be made.

MESSAGE TRANSMITTED
 WITH FOLLOWING DATE TIME GROUP
B-18-17 170353Z

PARAPHRASE NOT REQUIRED
 SLE CRYPTO SECTION
 BEFORE DECLASSIFYING

Page 2 of 2 Pages

Approved by M. J. Mertely/mm
 2441-3
 17 Mar 55

This correspondence is classified **SECRET** in accordance with
 Par 2.4, APR 205-1, 15 Dec 53, or for the reason (s) stated.

V696-2x

SECRET

FILE NUMBER 107.9
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SUBJECT: (UNCL) Selection of SAGE System Direction Center and Control Center Locations

**TO: Deputy Chief of Staff, Operations
Headquarters USAF
Washington 25, D. C.**

1. References.

a. Transition System Program, Headquarters AEC, 10 January 1954.

b. Letter, Headquarters AEC, Subject: (UNCL) Sub-center Priorities of the Transition System, 1 July 1954.

c. Letter, Headquarters AEC, Subject: (UNCL) Selection of Transition System Direction Center and Control Center Locations, 1 October 1954.

2. Based upon the revised subcenter arrangement (reference 1-b. above) the following sites in order of installation priority are recommended as the most desirable Direction Center and Control Center locations within Substructure 17-50.

Recommended Installation Priority	Facility	Location	Sub-Structure
21	Direction Center	Shafter Airport (Formerly Shafter AAF Subairfield Calif.)	17
22	Direction Center	Barton AFB, Calif.	18
23	Direction Center	Stead AFB, Nev.	19
24	Direction Center	Hunt AFB, N. D.	21
25	Control Center	Hunt AFB, N. D.	22
26	Direction Center	Great Falls AFB, Mont.	23
27	Direction Center	Page AFB, N. C.	24
28	Direction Center	Greiner Cincinnati AFB, Easton Co., Ky.	25
29	Control Center	Fort Rucker, Ky.	26
30	Direction Center	Fort Rucker, Ky.	26
31	Direction Center	Robbins AFB, Ga.	24
32	Direction Center	Center AFB, Ala.	28

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This correspondence is classified _____ in accordance with Par _____, AFR 205-1, 15 Dec 53, or for the reason (s) stated.

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Spv Anlys
O&T
P&E
Wes D
DCL/N
Auth
Dist
Op Sup & Sec
Inst
Log Plans
Mg Is Sec
PCBA
CAA

Re: AFB, Subj: (S) Selection of R&E System Direction Center and Control Center Locations

2. The evaluation of sites was completed jointly by the Air Defense Command and the Air Force Control Center (AFCCC) following the criteria outlined for providing R&E System site locations. Two detailed data concerning the recommended site locations are contained in the attached enclosures.

3. Every effort was made to locate these facilities on active military bases. However, the absence of existing military facilities meeting the site selection criteria in certain instances, necessitated the recommendation of several locations not under civil control. During the site evaluation it was apparent that the commands having jurisdiction over the recommended civil locations were unable to see facilities of this type located near their sites. No difficulty is reported in acquiring such sites and certain waste facilities in the majority of the sites falling in this category.

4. Necessary coordination has been effected for the conduct of the preliminary site evaluations with the Air Force agencies concerned. The desire to submit site recommendations to your headquarters as soon as possible, has precluded this command from obtaining command concurrence for utilization of the following bases:

- | | |
|--------------------------------|-----|
| a. Norton AFB, and Robbins AFB | AFB |
| b. Great Falls AFB | AFB |
| c. Pope AFB | AFB |
| d. Good AFB | AFB |
| e. Carter AFB | AFB |

To expedite this matter the commands concerned are being furnished with a copy of this letter and are being requested to furnish their comments regarding the operational feasibility of accommodating direction centers on bases under their jurisdiction, directly to your headquarters.

5. Request that the site recommendations and installation priorities contained in paragraph 2 be approved. Since

Will be Confirmed in
3rd Publication Form
Under per Dr. ADCS

3-3 _____
Prepared by _____
Telephone _____
Date _____
Editorial and No _____

ADC NO 212, 11

This correspondence is classified **SECRET** in accordance with
Par _____, AFR 205-1, 15 Dec 53, or for the reason (s) stated.

V-577-2

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FILE NUMBER 107.9
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- Sec 1
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- Sec 50

GENERAL ABC

ROUTINE

OWFS HQ USAF WASHDC

X

X

(SECRET) **AMPS 0909** . FOR AFOSIP-OF-D. REF Radiote 7
 MAR 55, COL Newbury to COL O. T. Halley and COL J. C. Hoyer.
 All sites HNSC in above REF meet ABC operational RQR for the
 interceptor base and the direction CHN. To achieve savings in
 FMS, FMS and overall OWFS costs the SAGE direction CHN must
 be located on the interceptor base. For your INFO a master
 plan is presently being FMSD by architect HNSR CENTER for
 Cadillac. Change in LOC at this time will result in loss of
 planning funds and delay in CONUT.

MESSAGE TRANSMITTED
 WITH FOLLOWING DATE-TIME-GROUP
 120009Z B-5-12

Not requested, not furnished,
 HRE. Furnished 11 Nov 1955
 (Date) (Initial)

PARADISE NOT REQUIRED
 BEFORE DECLASSIFICATION

1 1

It is Confirmed in
 Publications Form
 for use in AFOSIP

Approved by
 10 Mar 59 and directly
 Maj F. Martel

AMPS
 V685-1x

This message 2441 2442 SECRET in accordance with
 Par 236 APR 205-1, 15 Dec 53, or for the reason (e) stated.

1203

SECRET

Re ABC, ANEPG, Subj: (UNCLAS) SAGE System

- Comd
- VC
- Head Pwng
- Pln M
- C of S
- Comd Ad
- Pln
- Pub
- Comd Insp
- Comd Inf JA
- Comd Chap
- Comd Hq
- Staff Sec
- Pln
- MO
- MCL/C
- Std
- Pln
- Staff Anlys
- Staff
- CLP
- Civ Pwng
- Staff Pwng
- Asst
- Staff Asst
- Staff Adm
- Staff Insp
- Staff & Recs
- SS
- Staff Sv
- PPS
- WAF
- Trg
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- IR
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- Staff & Sec
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- Log Plans
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<u>Facility</u>	<u>Location</u>	<u>Subsector</u>
Direction Center	Redding Hnai Appt, Calif.	13
Direction Center	Larson AFB, Wash.	14
Direction Center	Pondleton Hnai Appt, Ore.	15
Direction Center	Beale AFB, Calif.	16
Combat Center	Hamilton AFB, Calif.	16

The locations for these facilities in the remaining subsectors have not yet been selected.

5. A draft of the operational plan for the SAGE System is currently being revised and edited and is expected to be published in final form in the near future. Your headquarters has been added to the distribution list for this document.

FOR THE COMMANDER:

- Incls**
1. Trans Sys Prog (S)
 2. SAGE Sys Darys (S)
(S cya)

Incls not required for Comd Adj files.

Continued in
Attachment Form
per Do. 10000

J.H. Fillmen
Capt J.H. Fillmen/mm
2441-3
3 JAN 55

HPG

1/15/55

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1577

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455

(UNCL) FY-57 Public Works Program for
Operations Building Extensions

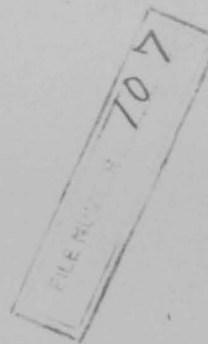
ADMIS

DC&E-AL

4 Feb 55
Maj BPatterson/2643/hb

The following sites will require FY-57 Public Works Program funds for construction of operations building additions (3063 sq ft) for SAGE. These extensions are in addition to the list submitted in our DF of the same subject, 17 Jan 55. No required BO date is given since these dates are subject to change until SAGE subsector boundaries are firm. When these boundaries are definitely established, you will be sent a revised list of required BO dates.

<u>Site</u>	<u>Location</u>
P-47	Hutchinson NAS, Kansas
P-71	Omaha AFB, Nebr.
P-77	Bartlesville AFB, Okla.
P-79	Ellington AFB, Tex.
M-92	Tucson, Ariz.
M-95	Las Cruces, N. M.
M-111	Dobbins AFB, Ga.
M-112	Hunter AFB, Ga.
M-113	No. Charleston, S. C.
M-114	Jacksonville NAS, Fla.
M-126	Houma NAS, La.
SM-133	Hastings NAD, Nebr.
SM-134	Lake Andes, S. D.
SM-143	Walnut Ridge, Ark.
SM-144	Union City, Tenn.
SM-145	Joelton, Tenn.
SM-149	Baker, Ore.
SM-151	Geiger Field, Wash.
SM-159	Aiken, S. C.
SM-165	Chattanooga, Tenn.
TM-180	Klamath Falls, Ore.
TM-182	Nogales, Ariz.
TM-183	Douglas, Ariz.
TM-184	Valentine, Tex.
TM-186	Pyote, Tex.
TM-187	Ozona, Tex.
TM-188	Eagle Pass, Tex.
TM-189	Lapata, Tex.
TM-190	Port Isabel, Tex.
TM-191	Rockport, Tex.



3-29

158

(UNCL) FY-57 Public Works Program for
Operations Building Extensions

ADMIS

DC&E-L

4 Feb 55

Maj BPatterson/2643/hb Contd

Site

Location

TM-194
TM-196
TM-198
TM-200

Lake Charles AFB, La.
Foley, Ala.
Tyndall AFB, Fla.
Cross City, Fla.

WILLIAM A. LAFRENE
IA Colonel, USAF
Chief, Plans & Proj Div
Ext 2411/2643

HASKELL E. NEAL
Colonel, USAF
Dir of Comm & Elect
Ext 2228/2229

Info cys:
ADCS
ADCS E-E
OBT-C
ADMEL

1 Attachment (for info adces only)
DF to ADMIS, 17 Jan 55,
subj as above

V-801-2

1207

COPY

COPY

SUBJECT: (UNCL) FY-57 Public Works Program for Operations
Building Extensions

TO: ADMIS

FROM: DC&E-A

17 Jan 55

Maj BPatterson/2643/ld

1. The following sites will require FY-57 Public Works Program funds for construction of operations building additions (3063 sq ft) for SAGE:

<u>Site</u>	<u>For SAGE BO Date</u>
P-2, Cambria AFS, Calif.	1 Jun 58
P-6, Curlew AFS, Wash	1 Mar 58
P-11, Yaak AFS, Mont.	1 Mar 58
P-12, North Bend AFS, Ore.	1 Jan 58
P-15, Santa Rosa Island AFS, Calif.	1 Jun 58
P-24, Cutbank AFS, Mont.	1 Mar 58
P-25, Havre AFS, Mont.	1 Sep 58
P-26, Opheia AFS, Mont.	1 Sep 58
P-27, Fortuna AFS, N. D.	1 Oct 58
P-28, Minot AFS, N. D.	1 Oct 58
P-29, Finley AFS, N. D.	1 Oct 57
P-30, Condon AFS, Ore.	1 Apr 58
P-33, Klamath AFS, Calif.	1 Feb 58
P-37, Pt Arena AFS, Calif.	1 May 58
P-39, San Clemente Island AFS, Calif.	1 Jun 58
P-40, Othello AFS, Wash.	1 Mar 58
P-44, Neah Bay AFS, Wash.	1 Nov 57
P-46, Blaine AFS, Wash.	1 Nov 57
P-53, Rockville AFS, Ind.	1 Jun 57
P-57, Naselle AFS, Wash.	1 Nov 57
P-58, Mather AFB, Calif.	1 May 58
P-60, Colville AFS, Wash.	1 Mar 58
P-64, Kirksville AFS, Mo.	1 Jun 57
P-73, Bellefontaine AFS, Ohio	15 Apr 57
P-74, Madera AFS, Calif.	1 May 58
P-76, Mt Laguna AFS, Calif.	1 Jul 58
P-81, Waverly AFS, Iowa	1 Jun 57
P-85, Hanna City AFS, Ill.	1 Jun 57
M-96, Almaden, Calif.	1 May 58
M-97, Ellsworth AFB, S. D.	1 Oct 58
M-98, Miles City, Mont.	1 Sep 58
M-99, Gettysburg, S. D.	1 Oct 57
M-100, Mt Hebo, Ore.	1 Jan 58
M-110, Bucks Harbor, Me.	1 Jun 57
M-118, Burns, Ore.	1 Apr 58
M-127, Winnemucca, Nev.	1 Apr 58
M-128, Kingman, Ariz.	1 Jul 58
SM 2, Baudette, Minn.	1 Oct 57

Attachment 1
801

1208

**SUBJECT: (UNCL) FY-57 Public Works Program for Operations Building Extensions
(Contd)**

<u>Site</u>	<u>For SAGE BO Date</u>
SM-138, Grand Rapids, Minn.	1 Sep 57
SM-139, Wilmar, Minn.	1 Oct 57
SM-147, Great Falls AFB, Mont.	1 Sep 58
SM-150, Cottonwood, Idaho	1 Apr 58
SM-156, Fallon, Nev.	1 Aug 58
SM-157, Red Bluff, Calif.	1 Feb 58
SM-162, Tusa AFB, Ariz.	1 Jul 58
SM-163, Las Vegas, Nev.	1 Aug 58
SM-164, Tonopah, Nev.	1 Aug 58
TM-177, Dickinson, N. D.	1 Oct 58
TM-178, Lewiston, Mont.	1 Sep 58
TM-179, Kalispell, Mont.	1 Mar 58
TM-201, Sundance, Wyo.	1 Oct 58

2. The following sites will require FY-57 Public Works Program funds for construction of operations building additions (1913 sq ft) for SAGE. The manual addition (1150 sq ft) for these sites was included in FY-56 PWP funds.

<u>Site</u>	<u>For SAGE BO Date</u>
P-1, McChord AFB, Wash.	1 Nov 57
P-16, Calumet AFB, Mich.	15 Apr 57
P-17, Wadena AFB, Minn.	1 Oct 57
P-18, Chandler AFB, Minn.	1 Oct 57
P-19, Antigo AFB, Wis.	1 Aug 57
P-20, Selfridge AFB, Mich.	15 Apr 57
P-34, Empire AFB, Mich.	1 Aug 57
P-35, Osceola AFB, Wis.	1 Sep 57
P-38, Mill Valley AFB, Calif.	1 May 58
P-59, Boron AFB, Calif.	1 Jun 58
P-61, Port Austin AFB, Mich.	15 Apr 57
P-62, Brookfield AFB, Ohio	15 Apr 57
P-66, Sault Ste Marie AFB, Mich.	1 Aug 57
P-67, Ft Custer, Mich.	15 Apr 57
P-69, Finland AFB, Minn.	1 Sep 57
P-31, Williams Bay AFB, Wis.	1 Jun 57

SUBJECT: (UNCL) FY-57 Public Works Program for Operations Building Extensions
(Contd)

3. These buildings are phased to meet the installation and delivery schedules of the AN/FBQ-7's in the various subsectors.

a. The 3063 sq ft addition is necessary to house the following equipment which is required in the time period indicated:

- (1) Fine Grain Data Processing and Transmission Equipment (including Video Mapping Equipment).
- (2) Radar Height Data Processing and Transmission Equipment.
- (3) Flight Size Display Equipment.
- (4) IFF Data Processing and Transmission Equipment.
- (5) Telephone terminal, including modulators and demodulators.
- (6) Remote Performance Monitoring and Control Equipment.
- (7) Problem Reproduction Equipment.
- (8) Slowed Down Video Equipment, AN/FSA-8.
- (9) One Control Console, AN/UFA-35.
- (10) Computer Components of AN/GPA-37.
- (11) Selective Identification Equipment, part of IFF, AN/GPA-16.
- (12) Video Combiner, AN/FSA-10.

b. The 1913 sq ft additions will house:

- (1) Problem Reproduction Equipment.
- (2) Slowed Down Video Equipment.
- (3) Control Console, AN/UFA-35.
- (4) Computer Components of AN/GPA-37.

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SUBJECT: (UNCL) FY-57 Public Works Program for Operations Building Extensions
(Contd)

- (5) Selective Identification Equipment, part of IFF, AN/GPA-16.
- (6) Video Combiner, AN/FSA-10.

WILLIAM A. LAFRENZ
Lt Colonel, USAF
Chief, Plans & Proj Div
Ext 2411/2643

HASKELL E. NEAL
Colonel, USAF
Dir of Comm & Elect
Ext 2228/2229

1-801-6X

1211

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- Mr. Tolson
- Mr. Boardman
- Mr. Nichols
- Mr. Belmont
- Mr. Ladd
- Mr. Clegg
- Mr. Glavin
- Mr. Harbo
- Mr. Rosen
- Mr. Tracy
- Mr. Egan
- Mr. Gurnea
- Mr. Hendon
- Mr. Pennington
- Mr. Quinn
- Mr. Nease
- Miss Gandy

FILE NUMBER 107.1

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IN THE AIR FORCE CENTER
AND CENTER OF THE

SECRET

13 JAN 1955

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HPG-1-4-2 SECRET

SECRET) HPG 1068 . THIS HPG-1-4-2, SENS Reevaluation
of HPG-7 planned for HNS. The operational urgency of maintain-
ing the SECRET HNS is dictated by the FUL: A. The present
HNS portion of the air HNS HNS is not capable of effectively
dealing with the SECRET HNS Soviet air threat to this nation. B.
Planned interim improvements prior to HNS will not offset the
rapidly growing Soviet air arm. C. Present and interim im-
proved HNS will not be capable of effectively employing large
amounts of in being and programmed high performance HNS. Operational
urgency is further substantiated by: A. ABC 2800 214, Air HNS
24-25, HNS 1 JUL 54 and Special HNS HNS 11-25-54, HNS
24-25. Every effort should be expended to not only meet
planned HPG-7 HNS but to better than where possible.

COMEBACK COPY

In Compliance with
Publication Form
or per FOIA, HNS

No
File (A)

HPG 11/155 [Signature]

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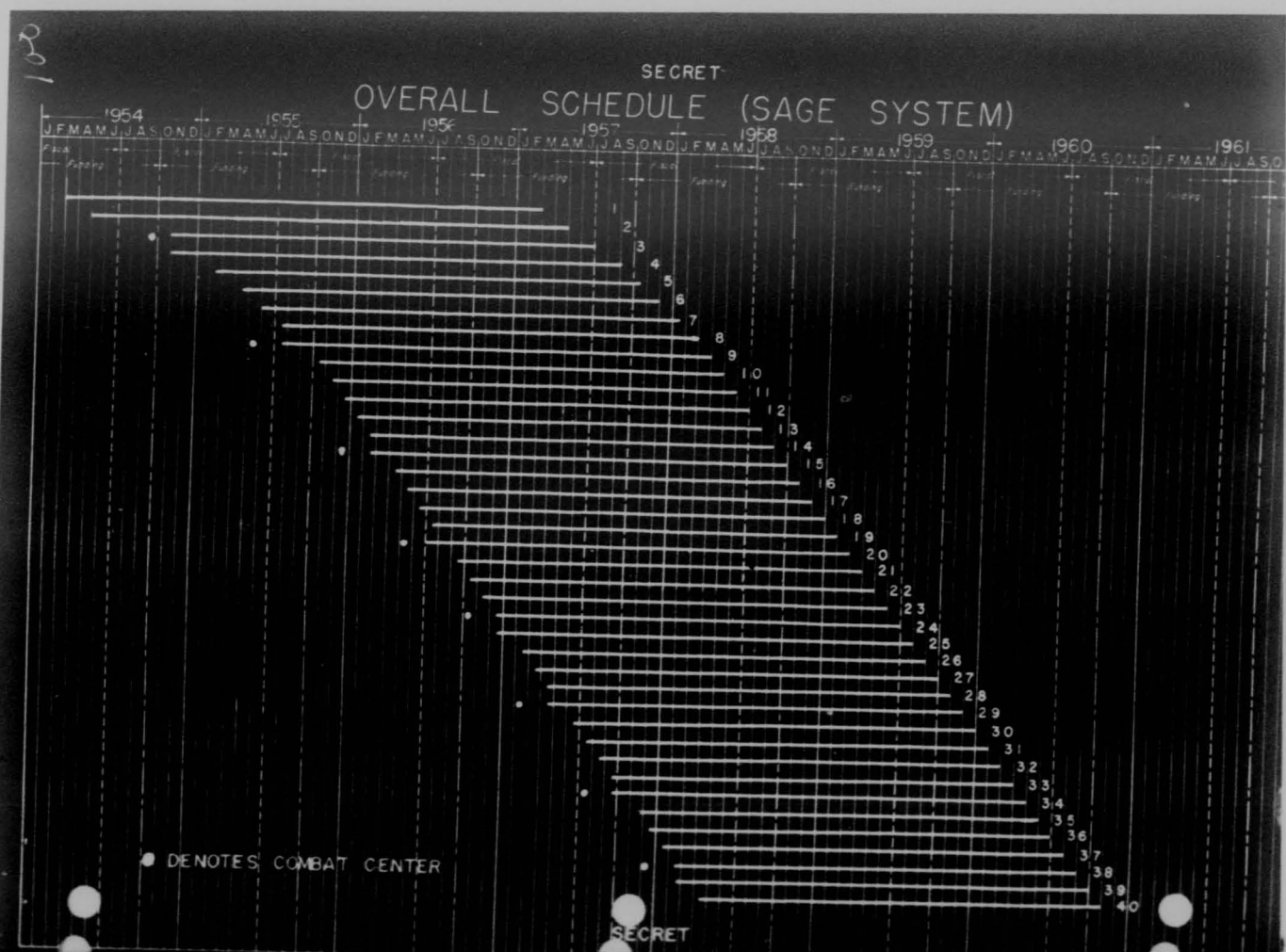
Mr. [Name]

1068-1068

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Per [Code], APR 1953, 18 Dec 54, or for the reason stated

DISPOSITION FORM		SECURITY CLASSIFICATION (U) SECRET
		FILE NUMBER 107.1 <i>slm</i>
FILE NO. 457	SUBJECT 66a	
Air Defense Boundaries (SAGE)		
TO Chief of Staff	FROM ADES	DATE 31 Jan 55 COMMENT NO. 1
<p>1. The attached revision of SAGE boundaries and program schedule (Incls 1 & 2) are forwarded for your information and retention. In addition to the inclosures listed above, the following data is also attached:</p> <p>a. The P, M, SM and TM radar sites reporting to each subsector. (Incl #3)</p> <p>b. The 20 heavy radar sites which will be either deleted or change function to an automatic gap filler during the SAGE era. (Incl #4)</p> <p>2. Command Council approval was granted on 24 January 1955 and USAF approval was requested by ADC letter, dated 29 January 1955, Subject: Readjustment of SAGE Boundaries and Reduction of Sectors and Subsectors."</p> <p>3. Copies of the above data have also been forwarded to EADF, CADF and WADF with specific actions requested of each.</p> <p>4. In anticipation of early USAF approval the revised SAGE boundaries and program schedule are being used for all actions and planning required.</p>		
<i>O. T. Halley Jr.</i> OSCAR T. HALLEY JR. Colonel, USAF Director, ADES 1 FEB 1955 Ext 2441-2443		
4 Incls 1. New Bdrys, 24 Jan 55(1 cy) 2. Program Schedule (1 cy) 3. Radar Sites by Subsector (1 cy) 4. Radars Deleted (1 cy)		
SECRET		
0.5.34 DD FORM 96 FEB 50 REPLACES USE FORM 8, 1 OCT 48, WHICH MAY BE USED 19-1		





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INSTL PRIORITY	FACILITY	SECTOR OR SUBSECTOR	PUBLIC WORKS FISCAL YEAR	
			TECH. FAC.	SPT. FAC.
1	D.C.	McGuire	FY-55	FY-56
2	D.C.	Stewart	FY-55	FY-56
3	C.C.	26th A.D.	FY-55	FY-56
4	D.C.	Syracuse	FY-55	FY-56
5	D.C.	Fort Lee	FY-55	FY-56
6	D.C.	Brunswick	FY-55	FY-56
7	D.C.	Ft Custer	FY-56	FY-56
8	D.C.	Truax	FY-56	FY-56
9	C.C.	30th A.D.	FY-56	FY-56
10	D.C.	Cadillac	FY-56	FY-56
11	D.C.	Duluth	FY-56	FY-56
12	D.C.	Fargo	FY-56	FY-57
13	D.C.	Sioux Falls	FY-56	FY-56
14	D.C.	McChord	FY-56	FY-56
15	C.C.	25th A.D.	FY-56	FY-56
16	D.C.	Adair	FY-56	FY-56
17	D.C.	Larson	FY-56	FY-57
18	D.C.	Pendleton	FY-56	FY-57
19	D.C.	Beale	FY-56	FY-57
20	C.C.	28th A.D.	FY-57	FY-57
21	D.C.	Bakersfield	FY-57	FY-57
22	D.C.	Norton	FY-57	FY-57
23	D.C.	Stead	FY-57	FY-57
24	C.C.	29th A.D.	FY-57	FY-57

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<u>INSTL PRIORITY</u>	<u>FACILITY</u>	<u>SECTOR OR SUBSECTOR</u>	<u>PUBLIC WORKS FISCAL YEAR</u>	
			<u>TECH. FAC.</u>	<u>SPT. FAC.</u>
25	D.C.	Minot	FY-57	FY-57
26	D.C.	Great Falls	FY-57	FY-57
27	D.C.	Pope	FY-57	FY-57
28	D.C.	Fort Knox	FY-57	FY-58
29	C.C.	32nd A.D.	FY-57	FY-58
30	D.C.	Robins	FY-57	FY-58
31	D.C.	Gunter	FY-57	FY-58
32	D.C.	Phoenix	FY-58	FY-58
33	D.C.	Albuquerque	FY-58	FY-58
34	C.C.	34th A.D.	FY-58	FY-58
35	D.C.	San Angelo	FY-58	FY-58
36	D.C.	San Antonio	FY-58	FY-58
37	D.C.	Shreveport	FY-58	FY-58
38	C.C.	33rd A.D.	FY-58	FY-58
39	D.C.	Oklahoma City	FY-58	FY-58
40	D.C.	St. Louis	FY-58	FY-59

SECRET

103

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RADAR SITES BY SUBSECTOR

26TH AIR DIVISION - SYRACUSEMcGuire Subsector

P-9
P-45
P-54
2 Texas Towers
1 AEW

Stewart Subsector

P-10
P-50
2 Texas Towers
1 AEW

Syracuse Subsector

P-21
P-50
P-49
P-63

Fort Lee Subsector

P-55
P-56
M-117
M-121
1 AEW

Brunswick Subsector

P-13
P-14
P-65
P-80
M-103
M-110

30TH AIR DIVISION - TRUAXFt. Custer Subsector

P-20
P-61
P-62
P-67
P-73

Truax Subsector

P-31
P-53
P-64
P-81
P-85

Cadillac Subsector

P-16
P-19
P-34
P-66

Duluth Subsector

P-35
P-69
SM-132
SM-138

32nd AIR DIVISION - FORT KNOXPope Subsector

M-113
M-115,
M-116
M-130

Ft Knox Subsector

P-42
P-43
P-82
SM-145
SM-165

Robins Subsector

M-111
M-112
M-114
M-129
SM-159
TM-200

INCL #3

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Gunter Subsector

M-126
TM-195
TM-196
TM-197
TM-198
TM-199

33D AIR DIVISION - OKLAHOMA CITY

Shreveport Subsector

P-79
M-91
M-125
TM-194
TM-193

Oklahoma City Subsector

P-47
P-52
P-72
P-77

St. Louis Subsector

P-68
P-70
SM-143
SM-144

29TH AIR DIVISION - MINOT

Fargo Subsector

P-17
P-29
M-99
SM-139

Sioux Falls Subsector

P-18
P-71
SM-133
SM-134

Minot Subsector

P-27
P-28

Minot (Cont'd)

M-97
TM-177
TM-201

Great Falls Subsector

P-24
P-25
P-26
M-98
SM-147
TM-178

25TH AIR DIVISION - McCHORD

McChord Subsector

P-1
P-44
P-46
P-57
1 AEW

Adair Subsector

P-12
P-33
M-100
TM-130
2 AEW

Larson Subsector

P-6
P-11
P-40
P-60
SM-151
TM-179

Pendleton Subsector

P-32
M-118
SM-149
SM-150

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28TH AIR DIVISION - HAMILTON

34TH AIR DIVISION - ALBUQUERQUE

Beale Subsector

P-37
P-38
P-58
M-96
SM-157
2 AEW

Phoenix Subsector

M-92
M-93
TM-181
TM-182

Bakersfield Subsector

P-2
P-15
P-39
P-59
P-74
2 AEW

Albuquerque Subsector

P-7
P-8
P-51
M-94
M-95
TM-183

Norton Subsector

P-76
M-128
SM-160
SM-162
2 AEW

San Angelo Subsector

M-88
M-89
M-90
TM-184
TM-186
TM-187
TM-188

Stead Subsector

M-127
SM-156
SM-164
SM-163

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HEAVY RADARS DELETED

M-101 - Rochester, Minnesota
M-104 - Fort Dearborn, N. H.
M-105 - Alpena, Michigan
M-106 - Two Creeks, Wisconsin
M-107 - Elizabethtown, Pa.
M-108 - Bolling Green, Missouri
M-109 - Grand Marais, Michigan
M-122 - Dallas Center, Iowa
M-123 - Berlin, Maryland
M-124 - Pope AFB, N. C.
M-131 - Owingsville, Kentucky
SM-137 - Carmi, Illinois
SM-140 - Sioux City, Iowa
SM-141 - Fall City, Nebraska
SM-142 - Nevada, Missouri
SM-148 - Robins AFB, Georgia
SM-158 - Ferndale, California
SM-161 - Shafter, California
TM-176 - Andover, S. D.
TM-185 - Castolon, Texas

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ADHFG

29 January 1955

SUBJECT: (Uncl) Readjustment of SAGE Boundaries and Reduction
of Sectors and Subsectors

TO: Director of Operations
Headquarters USAF
Washington 25, D. C.

1. References.

- a. ADC letter, dated 30 April 1954, subject: Selection of Transition System Direction Center Locations.
- b. ADC letter, dated 31 August 1954, subject: (Uncl) Air Defense Transition System (Air Division Combat Center, Air Defense Force and Air Defense Command Combat Operations Centers).
- c. ADC letter, dated 12 January 1955, subject: (Uncl) Selection of SAGE System Direction Center and Combat Center Locations.

2. The primary criteria used for determination of SAGE System Sector and Subsector boundaries were the radar deployment as outlined in ADR 54-60, dated 1 July 1954 and the working agreements with RCAF-ADC. Since the approval of the original sector and sub-sector boundaries (Incl #1) significant changes have been made in the two basic criteria.

- a. The ADR 54-60 radar deployment was originally based upon estimated coverage required. More accurate information is now available through site surveys conducted on exact locations for the first, second and third phase semi-mobile radar programs. Some of the sites have been deleted entirely, others will be replaced by the automatic gap filler type radars in the SAGE era. Due to construction commitments and the manual system's requirements some of the planned gap filler locations will use heavy radars on an interim basis; however, these heavy radars will be converted to a gap filler function when the SAGE System is placed in. This results in a deletion of 20 heavy radars from consideration in the planning for the SAGE Boundaries. (Incl #2)

SECRET

Hq ADC, Subj: (Uncl) Readjustment of SAGE Boundaries and Reduction of Sectors and Subsectors

b. No governmental agreements have been consummated concerning SAGE equipment or an integrated command structure between the U.S. and Canada. The working agreements with the RCAP-ADC are not acceptable for use in implementing sector or subsector boundaries. Therefore, the present boundaries must be changed to include the U.S.-Canadian border. This primarily affects subsector 38 which possessed radars on both sides of the border and also affects the sector arrangement which inferred the Canadian subsectors 37, 38, 39 and 40 were under the operational control of U.S. sectors.

3. Consideration of the new factors above clearly pointed out that the distribution of subsectors was out of balance with the number of radar inputs. For example, to include the area below the border of subsector 38 into the area of subsector 10 would provide for 7 heavy radars and 12 automatic gap filler inputs when the allowable is only 5 heavy radars and 12 automatic gap fillers. Conversely, deletion of radar M-124 in subsector 22 reduced the number of heavy radar inputs to three. In this case a Direction Center could hardly be justified for such a small number of inputs. The results of bringing this factor back into balance while maintaining cognizance of all other factors affecting boundaries, are shown as new Air Defense Boundaries (SAGE), Inclosure #3.

4. The effect of this realignment is the reduction of eight subsectors (4 Canadian and 4 U.S.) and one sector (U.S.). This results in a total of 34 subsectors (2 manual) and 8 sectors as compared to the original 42 subsectors (2 manual) and 9 sectors. Savings realized by this reduction are approximately 4,000 personnel and 200,000,000 million dollars (capital costs). The program will now be completed by October 1960 instead of August 1961.

5. Early consideration of the recommendations in this letter by your headquarters is imperative so that necessary adjustments may be made as soon as possible to the current SAGE program. Copies of the new boundaries and the revised program schedule (Incl #4) have been forwarded to all interested agencies for planning purposes. This will minimize conflicts with budgetary time scheduled procedures and minimize lost motion on the part of many people now working on the basis of the former boundaries. This is especially true for communication requirements and the determination of the remaining Direction Center and Combat Center locations.

6. Anticipating your early approval the following ADC actions are in progress:

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Hq ADC, Subj: (Uncl) Readjustment of SAGE Boundaries and Reduction of Sectors and Subsectors

a. The Direction Center proposed for Redding Municipal Airport is being deleted and all facilities and equipment programmed for this site in FY-56 is being transferred to the Fargo subsector. A specific location is being determined for the Fargo subsector.

b. The proposed Direction Center at Greater Cincinnati Airport is being deleted.

c. All installation priorities subsequent to priority #11 are being adjusted.

d. The proposed Direction Center location at Gunter AFB is being re-examined in view of the change in configuration of this subsector.

7. To insure that the planning for the SAGE System implementation can continue as presently scheduled, it is requested your headquarters approve the following:

a. The new boundary arrangement.

b. The adjusted program.

c. The adjusted installation priorities.

d. The adjustment of the FY-56 PMP items programmed for Redding Municipal Airport, California to the Fargo subsector.

/s/ FREDERIC R. SMITH, JR.
Major General, USAF
Vice Commander

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON 25, D. C.

459

3 MAR 1955

SUBJECT: (U) Readjustment of SAGE Boundaries and Reduction of Sectors and Sub Sectors

TO: Commander
Air Defense Command
Ent Air Force Base
Colorado Springs, Colorado

FILE NUMBER... 107.11
44

1. References:

- a. ADC letter, dated 29 January 1955, subject as above.
- b. ADC message, AMPO 0699, dated 15 February 1955.

2. This Headquarters approves the new Air Defense boundary arrangement for the SAGE System as proposed in your letter referenced above. This Headquarters further approves the adjustment program of installation priorities and the overall schedule as shown on inclosure #4 to your letter.

3. The public works fiscal year program for technical facilities for installation priorities one through 20 and for support facilities for installation priority one through 16 as listed in inclosure #1 is approved. This is in slight variance with your program; however, it is in consonance with current planning at this Headquarters. This Headquarters further approves, for planning purposes, your public works fiscal year program for all installation priorities subsequent to those listed in inclosure #1.

4. The Secretary of the Air Force has directed that the move of the Direction Center from Sioux Falls, South Dakota, to Sioux City, Iowa be re-evaluated. This Headquarters desires that a complete reevaluation be made of the two locations and detailed justification for site change be submitted to this Headquarters not later than 15 March 1955.

5. Your proposal to replace certain heavy radar with automatic gap filler radars in the SAGE era is approved. Construction contracts for M-124, Pope AFB, North Carolina, and SM-148, Robins AFB, Georgia, have not been awarded and, since radars belonging to TAG at these locations are presently operating in the manual system, it will be difficult to justify construction of these two sites. This Headquarters therefore desires consideration be given to the deletion of M-124 and SM-148.

BY ORDER OF THE CHIEF OF STAFF:

14 45.22
RECEIVED
HQ VDC VVB
R. E. ROON
Brig. General, USAF
Deputy Director of Operations

1 Encl
Dist priorities
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cc: ADC Liaison Officer, Lincoln Lab.

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Inclosure #1

<u>INBT PRIORITY</u>	<u>FACILITY</u>	<u>SECTOR OR SUB SECTOR</u>	<u>PUBLIC WORKS TECHNICAL FACILITY</u>	<u>FISCAL YEAR SPT FACILITY</u>
1	DC	McGuire	FY 55	FY 56
2	DC	Stewart	FY 55	FY 56
3	CC	26th A.D.	FY 55	FY 56
4	DC	Syracuse	FY 55	FY 56
5	DC	Port Lee	FY 55	FY 56
6	DC	Brunswick	FY 55	FY 56
7	DC	Ft. Custer	FY 55	FY 56
8	DC	Trux	FY 56	FY 56
9	CC	30th A. D.	FY 56	FY 56
10	DC	Cadillac	FY 56	FY 56
11	DC	Daluth	FY 56	FY 56
12	DC	Fargo	FY 56	FY 56
13	DC	Sioux Falls	FY 56	FY 56
14	DC	McChord	FY 56	FY 56
15	CC	25th A. D.	FY 56	FY 56
16	DC	Adair	FY 56	FY 56
17	DC	Larson	FY 56	FY 56
18	DC	Pendleton	FY 56	FY 56
19	DC	Beale	FY 56	FY 56
20	CC	28th A.D.	FY 56	FY 56

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DISPOSITION FORM

TITLE	SUBJECT	ACTION
Least for F2B Safety	Personnel Requirements for Staff	
Least for Programming		
Least for ADSS		
Least (Captain)		
DD/1		
DD/2		
DD/3		
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1. During the latter part of November 1974, personnel requirements tables for an air division (defense level) and air defense wing (operational level) for use with the ADSS Defense Tables were developed. Staff positions concerning these tables have been reviewed. As a result of these reviews and consultations with interested staff members these tables have been revised. Efforts have been made to incorporate all staff comments insofar as possible and still generally follow approved working standards.

2. As pointed out in the original by distributing the tables for comment, they are tailored for the larger divisions and wings. Staff positions first write programmed for activities are in this category. Certain positions such as captain, medical, civilian defense, etc., will vary from unit to unit due to varying workload factors. However, it is not possible to estimate for programming use it is desirable to use average working standards for these positions. This has been done in the new tables. Further, programmed air divisions (defense) and air defense wings which have smaller operational workloads than the first large units will not require the same amount of staffing as is provided in these tables. In these cases reductions will be in order; however, insufficient data exists at this time to make any specific reductions.

3. These new tables, as did the initial ones, reflect the concept that the air division (defense) will exercise only limited staff operational on subordinate units. Support is placed on command and operational control at this level, and many routine staff actions will flow down from air defense wing to air defense force. The large number of units in a division (40-50) and the geographic span of a division, plus the fact that the air defense wing commander is responsible for fighting the air battle in his division it is desirable that the wing be provided a full staff. These are

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DISPOSITION FORM		SECURITY CLASSIFICATION OF INFO	
FILE NO.	SUBJECT	FILE NUMBER 107-1-54	
Personal Requirements for SAGE System			
TO	FROM	DATE	COMMENT NO. (Cont'd)
<p>two exceptions to this — the first concerns staffing for supervision of electronic support bases. Due to the proposed location of electronic support bases it appears desirable to supervise this function from division, rather than wing level. The second concerns medical staffing. Due to the requirement for supervising medical care for ACMW sites it appears that supervision of this function can best be done at division level (there is an average of only five ACMW sites per wing). Accordingly, these tables reflect an increased staffing at division level for these two functions.</p> <p>4. Your comments and recommendations concerning these revised tables are invited.</p> <p>2 Incls 1. UMD for a SAGE Air Div (Def) 2. UMD for a SAGE Air Def Wg</p> <p>MEO ADHCH 11 Apr 55 2</p> <p>Concur.</p> <p>2 Incls: n/c</p> <p>105-1</p> <p>2</p> <p>JAMES R. WEEGLIN Colonel, USAF Director, MEO Ext 2237/2258</p> <p>WILLIAM W. SISSEL Chaplain (Col), USAF Command Chaplain Ext 2532/2773</p>			
DD FORM 96 1 FEB 54 REPLACES AND FORM NO. 1 OCT 48 WHICH MAY BE USED			
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AIR DEFENSE COMMAND COUNCIL MEETING REPORT

I. Subject considered.

A. ORGANIZATION OF SAGE SYSTEM

FILE NUMBER 107.11
SV

1. A meeting of the Air Defense Command Council was held at 0800, 18 April 1968, in the Commander's Conference Room.

2. The following members were present:

Major General Frederic H Smith, Jr (Chairman)
Major General George F Smith, Chief of Staff
Major General Kenneth P. Bergquist, DCS/Operations
Major General Marshall S Roth, DCS/Material
Brig General Woodbury M Burgess, DCS/Intelligence
Brig General Robert Macrum, DCS/Comptroller
Brig General Emmett Yeat, Inspector General
Colonel Henry L. Crouch, representing DCS/P

The following interested persons were present:

Brig General A. E. Schwilkenberg, Comd Surgeon
Colonel J. C. Meyer, G&T
Colonel Robert Hughes, P&R
Colonel H. E. Green, G&T
Colonel J. R. Wergin, M&O
Colonel J. F. Kirkendall, P&R
Colonel S. S. Manry, Staff Judge Advocate
Colonel E. J. Friedman, DCS/Comptroller
Colonel W. W. Robinson, Comd Adjutant
Lt Colonel A. W. Lewis, M&O
Lt Colonel E. J. Mauer, Off of Asst for Programming
Mr. L. Gilguff, Civilian, DCS/Comptroller

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2. ORGANIZATION OF SAGE SYSTEM. Introductory remarks were made by Colonel Worgan, Director of Manpower and Organization. Following is a brief resume of the presentation:

a. By use of charts and prepared commentary, a brief review of organization objectives and principles was given followed by a resume of how our current organization was arrived at, including a look at other types of organization considered.

b. Our present organization was discussed and in a series of charts, the organization of ADC at the end position of each Fiscal Year from 1955 through 1961 (based on our present concept of organization) was presented graphically with a map showing geographical boundaries for the appropriate time period. Major changes and problem areas were pointed out.

c. Four reorganizational proposals were presented next, one from each of our three Air Defense Forces and one from Colonel Friedman, the Assistant DCE/Comptroller. Charts were also shown on effect of making wings operational only and upon of control of ADC without Air Defense Forces.

d. The method utilized in arriving at our present SAGE manning documents was explained with a brief look at placement of functions. Charts showing the composition of proposed SAGE Combat Centers, Direction Centers and Radar Squadrons was presented. In the summary a chart showing the time element of reorganization was discussed.

e. Next problem areas and recommended solution of these problems were covered. Specifically discussed were:

(1) Taking operating functions out of Headquarters at Division level and above. This would include COCs, Flight Sections, Communications Centers, mess personnel, Air Police, HQ Squadron personnel, installations personnel, etc. These functions would be placed in a support squadron.

(2) The problem involved in having three Air Defense Wings (Weapons) in the FY 1963 time period was indicated as possibly requiring an Air Defense Division (Weapons) to report directly to this headquarters.

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- (3) With a build-up of ADC units in Canada, the functions of Detachment 1 will require expansion. It was recommended that Detachment 1 be replaced with an Air Defense Wing (Support) and that four Air Defense Groups (support) would report to this wing. Three of the Groups would have all radar squadrons in Canada assigned on a geographic basis, while the fourth Group would be responsible for logistic and administrative support of the ADC portion of the DEW Line.
 - (4) The 8th Air Division has been authorized for retention through FY 1966. By a series of graphed organizations, it was indicated that ADC should attempt to retain the 8th Air Division through FY 1967 to report direct to this headquarters, and that in FY 1968, the 8th Air Division would be placed under EADF to control the Otis and Seymour-Johnson Wings. The McClellan Wing was put under WADF. In FY 1969, the requirement for two Air Divisions (one on each coast) was indicated.
 - (5) The organization problem at Otis AFB was presented as being the most difficult to solve, although also presenting a problem are Hamilton, McChord and Selfridge. By use of charts, the present organization, a proposed Wing re-organization plan, a plan to place AEW&C field maintenance under the 551st Wing, and an organization under SAGE were presented.

4. Council Action.

- a. Our present concept of organization to be retained for the manual system. The requirement for AC&W groups to aid in reducing span of control should be investigated.
- b. The concept of providing an Air Division (Weapons) to control the three Air Defense Wings (Weapons) was approved.
- c. The concept of an Air Defense Wing (Support) to provide support for AC&W and DEW activities in Canada was approved. Time phasing of this requirement was to be investigated and possibility of converting Detachment 1 to this Wing Headquarters was to be followed up by DCS/M

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RECOMMENDATIONS FOR THE AIR DEFENSE GROUPS
AND DIRECTION CENTERS

1. Proposed Structure: Recommend the Air Defense Group be a Major Group, a Maintenance and Supply Group, an Air Base Group and a Technical. All of these units would report to the Air Defense Wing of the station.

2. Proposed Staffing: An Air Defense Wing Headquarters, a Technical Group, a Maintenance and Supply Group, and an Air Base Group would be formed. The Group and the TAF Hospital would be assigned to the Wing. The Wing would have control over only those activities currently under the Air Defense Group of the respective location.

3. The proposed manning for SACR Combat Centers and Direction Centers was not approved. Further study was directed along these lines:

- (1) Reduce Air Defense Forces with possible reduction to two.
- (2) Make Direction Centers (Wings) operational only.
- (3) Place major staff emphasis at Division level.
- (4) Air Defense Groups would be given an area of responsibility. In those areas where there are no Air Defense Groups, an Intermediate Group Headquarters would be formed which would have all ACAW and Fir Squadrons in the area assigned to them.
- (5) Manpower requirements should be determined.

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(C) An alternate solution during Air Defense Force operations
is considered and action recommended.

2. There being no further business to come before the Council, the
meeting adjourned at 2211.

FREDERICK E. SMITH, JR.
Major General, USAF
Vice Commanding
(Chairman, AB Command Council)

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VS22-5X

Mr. Tolson	
Mr. Boardman	
Mr. Nichols	
Mr. Belmont	
Mr. Mohr	
Mr. DeLoach	
Mr. Casper	
Mr. Callahan	
Mr. Conrad	
Mr. Felt	
Mr. Gale	
Mr. Rosen	
Mr. Sullivan	
Mr. Tavel	
Mr. Trotter	
Tele. Room	
Mr. Holloman	
Miss Gandy	

ALWAYS

SUBJECT: (UNCLAS) Training Requirements for Air Force Personnel at XD-1

TO:

Commander
AF Cambridge Research Center
ATTN: Lt Col R. A. Labontagne
230 Albany Street
Cambridge, Massachusetts

1. Reference conversation between Colonel Kelley and Lt Colonel Labontagne concerning the training, housing and messing requirements for Air Force personnel at XD-1. The following information is currently being utilized by this headquarters for planning purposes.

a. The ARES Group (Western Electric Co.) has under study a series of plans for training operations personnel. Review and approval of the final training plans submitted through the AMS Project Office should be completed by this headquarters in the immediate future to provide qualified operators at the Modular Direction Center as per the present schedule.

b. Reference summary report of Engineering Installation Planning Committee Report #6, dated 8 February 1966, Chart "F" and "G" and ARES (Western Electric Co.) Status and Progress Report #14, Section 9, dated 8 February 1966. The present planning for training at XD-1 programs instructor personnel reporting for training during September 1966 with the student operators reporting in October 1966. Based on the schedule for graduating a normal crew of operators (approximately 46) three and one half months before the operational date of the subsector and the remaining four crews being graduated and on site 30 days before the operational date, a requirement for training, housing and messing approximately 50 officers and 160 airmen is generated.

3. Unless radical changes are proposed and accepted for training personnel at XD-1 these figures should remain fairly

Approved by
2441-3
22 MAR 55

FOR THE COMMANDER:

1708-1X

This correspondence is classified "Secret" in accordance with AFM 2441-3, APR 20-61, 13 Dec 51, or for the reason (S) stated.

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON 25, D. C.

463

AUG 2 - 1955

AFPTT-T

SUBJECT: (Unclassified) Training Support for Semi Automatic Ground Environment (SAGE) System

TO: Commander
Air Defense Command
Ent Air Force Base
Colorado Springs, Colorado

SEP 10 7

1. References:

- a. PG-57-2 United States Air Force Program Guidance.
- b. Report of United States Air Force Training Conference, SAGE System, 7 - 9 June 1955.
- c. Training-Personnel Study for the SAGE System, dated 10 May 1955 issued by Air Defense Engineering Services (Western Electric Corporation.)

2. It is essential that appropriate action be taken to provide adequate and timely training in support of the implementation program of the SAGE System. A full understanding of the training relationship that exists between the major air commands and the SAGE System contractor is tantamount to the development of a sound training program. The following policies will form the basis upon which major air commands will discharge their training responsibilities to support this program.

3. Training will be provided where possible in accordance with existing Air Force policies, regulations, and directives. This will include, but not be limited to, the following responsibilities:

- a. The Air Research and Development Command will provide necessary support for development of the Air Training Command Operator Training Instructor Cadre.
- b. The Air Training Command will provide special training under the provisions of AFR 50-9 upon request of major air commands and formal training in accordance with the Air Training Command mission.
- c. The Air University (United States Air Force Institute of Technology) will provide training under the provisions of AFR 53-11, upon request of major air commands, and staff training in accordance with the normal Air University mission.

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Ltr to ADC, subj: (U) Training Support for Semi Automatic Ground Environment (SAGE) System (Contd)

- d. The Air Defense Command will provide on-the-job training in accordance with on-the-job training directives.
4. Where training responsibilities in existing regulations and the amplifying instructions contained herein are not clearly defined and major air commands are unable to mutually resolve the problem area, this headquarters will be informed without delay in order that further guidance may be established.
5. The Air Training Command will periodically prepare and furnish information on the status of SAGE System training plans to the Air Defense Engineering Services (ADES) Joint Project Office with information copies to this headquarters, Attention: Director of Personnel Procurement and Training. This information will be sufficiently detailed to insure that all elements of training, planning, and implementation having a bearing on meeting operational dates are shown. The Air Materiel Command will arrange to furnish the Air Training Command with technical requirements for the data to be furnished.
6. The prototype model of the AN/FSQ-7 Direction Central (XD-1) will be used by the Air Research and Development Command to train instructor personnel for the Air Training Command. The Air Training Command will utilize the XD-1 site to provide formal training for Direction Center and Combat Center Operations personnel only until such training can more feasibly be provided elsewhere. Requirements for use of operational sites or for AN/FSQ-7 equipment to conduct continuing formal training will be furnished this headquarters for consideration.
7. Maximum consideration will be given to available training studies prepared by the Western Electric Corporation under the provisions of Air Force contract AF 33 (600)-29307, as supplemented. Requirements of major air commands for additional training studies will be processed in accordance with instructions contained in paragraph 9.
8. Early consideration must be given to requirements for training aids and devices to insure timely programming of funds and procurement of materials. Qualitative operational requirements for training devices will be submitted in accordance with AFR 57-3 at the earliest possible date.
9. Direct communication is authorized between major air commands and the Air Defense Engineering Services Joint Project Office on requests for additional training studies and other training matters.

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Ltr to ADC, subj: (U) Training Support for Semi Automatic Ground Environment (SAGE) System (Contd)

Information copies will be furnished this headquarters, attention: Director of Personnel Procurement and Training, Deputy Chief of Staff Personnel and Commander Air Materiel Command, attention: Director of Personnel and Support Operations.

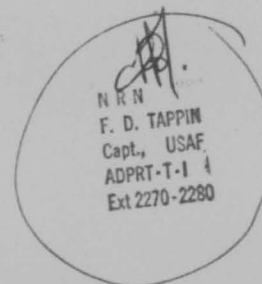
10. The following commands have been furnished this correspondence: Air Materiel Command, Air Training Command, Air University, Air Proving Ground Command, Air Research and Development Command.

BY ORDER OF THE CHIEF OF STAFF:

E. R. Baldwin

for:

C. L. MOIR
Colonel, USAF
Deputy Chief, Technical Training Div
D/Personnel Procurement & Training, DCS/P



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- Mil Pers
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- CR Div
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SUBJECT: (Usual) Personnel Training Requirements for SAGE, AFSC 56630/50/70
Comander
Technical Training Air Force
Gulfborg, Mississippi

1. Timed qualitative and quantitative requirements for SAGE in accordance with AFR 90-9, 15 October 1954, are as follows: (a) Air conditioning equipment (Carrier Corp); (b) Five (5) level or higher, organizational and field; (c) Maintenance and operations; (d) AFSC 56630/70; (e) See paragraph 3 for consolidated list of dates trained personnel will be required.
2. In addition to the training requirement for the 5 and 7 skill level, this command will require a total number of sixty-six (66) AFSC 56630 to be trained on this equipment and have completed the training in accordance with the schedule indicated for the AFSC 56650/70 personnel. If the required training can be accomplished in the basic course those people can be assigned directly to the Direction and Combat Centers in the SAGE system. However, if this plan is not feasible, the 3 skill level airman will have to receive a special training course geared to their skill level.
3. Timed requirements for all skill levels are as follows:

	AFSC	AFSC		DATE
	56630	56650/70		
Mag O	2	9	to complete training by	1 Dec 56
DCS/M	2	9	to complete training by	15 Dec 56
Asst	4	18	to complete training by	1 Feb 57
Elect	2	9	to complete training by	15 Mar 57
On Sup & Svs	4	11	to complete training by	1 Apr 57
Instr	2	9	to complete training by	1 May 57
Log Plans	2	9	to complete training by	1 Jul 57
HQ COMDT	4	11	to complete training by	1 Aug 57
ord Evaluation	2	9	to complete training by	1 Sep 57
ermanent	2	9	to complete training by	1 Oct 57
emporary	2	9	to complete training by	1 Nov 57
ntil	2	9	to complete training by	1 Dec 57
Use Confirmed	4	11	to complete training by	1 Jan 58
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 ured by FRANCIS D. TAPPIN/Capt, USAF/srj
 phone 2270/2280
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Mem to TTAF, Subj: (Uncl) New Trng Rqs for SACB, AFIC 96630/90/70

Comd				
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Adm				
Pub				
Comd Sers	2	9	to complete training by	1 Feb 58
Comd Sif JA	2	9	to complete training by	1 Mar 58
IG	2	9	to complete training by	1 Apr 58
Insp Svs	2	9	to complete training by	1 May 58
PM	2	9	to complete training by	1 Jun 58
Flt Sfty	2	9	to complete training by	1 Jul 58
PIO	2	9	to complete training by	1 Aug 58
DCS/C	4	11	to complete training by	1 Sep 58
Bud	2	9	to complete training by	1 Nov 58
Fin	2	9	to complete training by	1 Dec 58
Mgt Anlys	2	9	to complete training by	1 Jan 59
Stat	2	9	to complete training by	1 Feb 59
DCS/P	4	11	to complete training by	1 Mar 59
Chap	2	9	to complete training by	1 Apr 59
Civ Pers	2	9	to complete training by	1 May 59
Mil Pers	2	9	to complete training by	1 Jun 59
Ann Div	4	11	to complete training by	1 Jul 59
OR Div	2	9	to complete training by	1 Aug 59
US	2	9	to complete training by	1 Sep 59
Pers Sv	2	9	to complete training by	1 Oct 59
PP	4	11	to complete training by	1 Nov 59
Eng	2	9	to complete training by	1 Jan 60
DCS/I	80	311	TOTALS	

4. In answer to your earlier query concerning the source of the refrigeration and power production specialists. At the present time, this command does not have the capability of supplying these type personnel for training, however, it is anticipated that Headquarters USAF will assist in alleviating this shortage.

FOR THE COMMANDER:

- DCS/O
- Asst Prog
- CCA
- Comm & Elec
- MA&C
- O&T
- Ops Anlys
- C&I
- P&R
- Reg D
- DCS/M
- Act
- Elect
- On Sup & Svs
- Inst
- Log Plans
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2270/2280
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Issued 15 Aug 53

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SUBJECT: (Urel) Personnel Training Requirements for SAC, USAF, 1957-1960

**Commander
Technical Training Air Force
Gulfport, Mississippi**

1. To advise qualitative and quantitative special training requirements in support of SAC in accordance with AFM 5-40, 15 October 1954, and as follows: (a) photographic and most (b) (c) (d) (e) (f) (g) (h) (i) (j) (k) (l) (m) (n) (o) (p) (q) (r) (s) (t) (u) (v) (w) (x) (y) (z) (aa) (ab) (ac) (ad) (ae) (af) (ag) (ah) (ai) (aj) (ak) (al) (am) (an) (ao) (ap) (aq) (ar) (as) (at) (au) (av) (aw) (ax) (ay) (az) (ba) (bb) (bc) (bd) (be) (bf) (bg) (bh) (bi) (bj) (bk) (bl) (bm) (bn) (bo) (bp) (bq) (br) (bs) (bt) (bu) (bv) (bw) (bx) (by) (bz) (ca) (cb) (cc) (cd) (ce) (cf) (cg) (ch) (ci) (cj) (ck) (cl) (cm) (cn) (co) (cp) (cq) (cr) (cs) (ct) (cu) (cv) (cw) (cx) (cy) (cz) (da) (db) (dc) (dd) (de) (df) (dg) (dh) (di) (dj) (dk) (dl) (dm) (dn) (do) (dp) (dq) (dr) (ds) (dt) (du) (dv) (dw) (dx) (dy) (dz) (ea) (eb) (ec) (ed) (ee) (ef) (eg) (eh) (ei) (ej) (ek) (el) (em) (en) (eo) (ep) (eq) (er) (es) (et) (eu) (ev) (ew) (ex) (ey) (ez) (fa) (fb) (fc) (fd) (fe) (ff) (fg) (fh) (fi) (fj) (fk) (fl) (fm) (fn) (fo) (fp) (fq) (fr) (fs) (ft) (fu) (fv) (fw) (fx) (fy) (fz) (ga) (gb) (gc) (gd) (ge) (gf) (gg) (gh) (gi) (gj) (gk) (gl) (gm) (gn) (go) (gp) (gq) (gr) (gs) (gt) (gu) (gv) (gw) (gx) (gy) (gz) (ha) (hb) (hc) (hd) (he) (hf) (hg) (hh) (hi) (hj) (hk) (hl) (hm) (hn) (ho) (hp) (hq) (hr) (hs) (ht) (hu) (hv) (hw) (hx) (hy) (hz) (ia) (ib) (ic) (id) (ie) (if) (ig) (ih) (ii) (ij) (ik) (il) (im) (in) (io) (ip) (iq) (ir) (is) (it) (iu) (iv) (iw) (ix) (iy) (iz) (ja) (jb) (jc) (jd) (je) (jf) (jg) (jh) (ji) (jj) (jk) (jl) (jm) (jn) (jo) (jp) (jq) (jr) (js) (jt) (ju) (jv) (jw) (jx) (jy) (jz) (ka) (kb) (kc) (kd) (ke) (kf) (kg) (kh) (ki) (kj) (kk) (kl) (km) (kn) (ko) (kp) (kq) (kr) (ks) (kt) (ku) (kv) (kw) (kx) (ky) (kz) (la) (lb) (lc) (ld) (le) (lf) (lg) (lh) (li) (lj) (lk) (ll) (lm) (ln) (lo) (lp) (lq) (lr) (ls) (lt) (lu) (lv) (lw) (lx) (ly) (lz) (ma) (mb) (mc) (md) (me) (mf) (mg) (mh) (mi) (mj) (mk) (ml) (mm) (mn) (mo) (mp) (mq) (mr) (ms) (mt) (mu) (mv) (mw) (mx) (my) (mz) (na) (nb) (nc) (nd) (ne) (nf) (ng) (nh) (ni) (nj) (nk) (nl) (nm) (nn) (no) (np) (nq) (nr) (ns) (nt) (nu) (nv) (nw) (nx) (ny) (nz) (oa) (ob) (oc) (od) (oe) (of) (og) (oh) (oi) (oj) (ok) (ol) (om) (on) (oo) (op) (oq) (or) (os) (ot) (ou) (ov) (ow) (ox) (oy) (oz) (pa) (pb) (pc) (pd) (pe) (pf) (pg) (ph) (pi) (pj) (pk) (pl) (pm) (pn) (po) (pp) (pq) (pr) (ps) (pt) (pu) (pv) (pw) (px) (py) (pz) (qa) (qb) (qc) (qd) (qe) (qf) (qg) (qh) (qi) (qj) (qk) (ql) (qm) (qn) (qo) (qp) (qq) (qr) (qs) (qt) (qu) (qv) (qw) (qx) (qy) (qz) (ra) (rb) (rc) (rd) (re) (rf) (rg) (rh) (ri) (rj) (rk) (rl) (rm) (rn) (ro) (rp) (rq) (rr) (rs) (rt) (ru) (rv) (rw) (rx) (ry) (rz) (sa) (sb) (sc) (sd) (se) (sf) (sg) (sh) (si) (sj) (sk) (sl) (sm) (sn) (so) (sp) (sq) (sr) (ss) (st) (su) (sv) (sw) (sx) (sy) (sz) (ta) (tb) (tc) (td) (te) (tf) (tg) (th) (ti) (tj) (tk) (tl) (tm) (tn) (to) (tp) (tq) (tr) (ts) (tt) (tu) (tv) (tw) (tx) (ty) (tz) (ua) (ub) (uc) (ud) (ue) (uf) (ug) (uh) (ui) (uj) (uk) (ul) (um) (un) (uo) (up) (uq) (ur) (us) (ut) (uu) (uv) (uw) (ux) (uy) (uz) (va) (vb) (vc) (vd) (ve) (vf) (vg) (vh) (vi) (vj) (vk) (vl) (vm) (vn) (vo) (vp) (vq) (vr) (vs) (vt) (vu) (vv) (vw) (vx) (vy) (vz) (wa) (wb) (wc) (wd) (we) (wf) (wg) (wh) (wi) (wj) (wk) (wl) (wm) (wn) (wo) (wp) (wq) (wr) (ws) (wt) (wu) (wv) (ww) (wx) (wy) (wz) (xa) (xb) (xc) (xd) (xe) (xf) (xg) (xh) (xi) (xj) (xk) (xl) (xm) (xn) (xo) (xp) (xq) (xr) (xs) (xt) (xu) (xv) (xw) (xx) (xy) (xz) (ya) (yb) (yc) (yd) (ye) (yf) (yg) (yh) (yi) (yj) (yk) (yl) (ym) (yn) (yo) (yp) (yq) (yr) (ys) (yt) (yu) (yv) (yw) (yx) (yy) (yz) (za) (zb) (zc) (zd) (ze) (zf) (zg) (zh) (zi) (zj) (zk) (zl) (zm) (zn) (zo) (zp) (zq) (zr) (zs) (zt) (zu) (zv) (zw) (zx) (zy) (zz)

- 2 to complete training by 15 November 1957
- 8 to complete training by 15 January 1958
- 11 to complete training by 15 March 1958
- 7 to complete training by 15 May 1958
- 2 to complete training by 1 July 1957
- 6 to complete training by 15 July 1957
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Command: Ltr to T1/F, Subj: (Uncl) Hrs Trng Rpts for SAGE, AFSC 3330/50

- 6 to complete training by 15 July 1960
- 11 to complete training by 15 August 1960
- 1 to complete training by 15 September 1960
- 7 to complete training by 15 October 1960
- 8 to complete training by 15 November 1960
- 8 to complete training by 15 December 1960
- 11 to complete training by 15 January 1961
- 1 to complete training by 15 February 1961
- 7 to complete training by 15 March 1961
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- 11 to complete training by 15 May 1961
- 8 to complete training by 15 June 1961
- 7 to complete training by 15 July 1961
- 8 to complete training by 15 August 1961
- 6 to complete training by 15 September 1961

2. It is noted that nomenclature and description of equipment used, however, may not be used unless more information is available at this time. This command feels that it is more correct to delay publication, to the degree requirements and need the more detailed information to be then available.

FOR THE COMMANDER:

INFO CYS:
 Hq USAF
 Comdr, ATC
 Comdr, 1620 ADW
 ADES

- Asst Prog
- CCA
- Comm & Elec
- MSG
- OCID
- Ops Anlys
- OST
- P&R
- Team D
- DCSM
- Asst
- Ident
- Com Sup & Sys
- Instr
- Log Plans
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prepared by: AI FRANCIS D TAPHIN/Capt, USAF/srj

reference: 2270/3280

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FILE NUMBER 107

AIR DEFENSE COMMAND COUNCIL MEETING REPORT

I. Subject considered:

- Proposed Joint ADC-Rand plan for computer programming for SAGE.

1. A meeting of the Air Defense Command Council was held at 0900 hours, 6 May 1955, in the Commander's Conference Room (410), Building 1.

2. The following members were present:

Major General Frederic H. Smith, Jr. (Chairman)
Major General George F. Smith, Chief of Staff
Major General Marshall S. Roth, DCS/Materiel
Brigadier General Robert C. Macrum, DCS/Comptroller
Brigadier General E. F. Yost, Inspector General
Colonel Charles Bond, representing DCS/Operations
Colonel John C. Horton, DCS/Personnel
Colonel John H. McCann, representing DCS/Intelligence

The following interested persons were present:

Colonel F. L. Kohrieser, Director, Budget & Accounting
Colonel H. E. Neal, Director, Communications & Electronics
Colonel R. E. Pierce, Commander, 3rd Weather Group
Mr. R. E. Jones, Management Analysis
Mr. W. A. Riley, Jr., Office of Assistant for Programming

Colonel O. T. Halley, Jr., Project Group for SAGE
Lieutenant Colonel Frank Merteiy, Project Group for SAGE

3. The presentation as given by Colonel O. T. Halley, Jr., was directed primarily toward giving the joint ADC proposed plan for carrying out computer programming responsibilities for SAGE. In order to insure a proper basis of understanding, Colonel Halley explained what computer programming is, how big the job is overall, and the responsibilities that have been agreed to for the various agencies involved. Following is a brief summary of the presentation.

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H. 1. The computer program is a sequence of instructions, punched on IBM cards, which is read into the machine by means of an automatic IBM card reader. The computer program is the machine's Standing Operating Procedure by which part of the air defense process is carried out. Computer programs for air defense fall into two general categories, the operational program and the supporting programs.

a. Operational Computer Program:

The process of air defense may be broken down into a series of related functions, such as detection, tracking, height finding, identification, weapons control, etc. The air defense functions, the operating people, and the automatic devices are linked together by the operational computer program. The operational computer program controls the automatic operation on all incoming data, defines the communication system between operators and machines and defines a part of the communications system between Direction Center and operating personnel. Included in the operational program are features for automatic recording of data and for checking the operation of the duplex equipment so that transfer of the load to a standby computer can be done rapidly.

b. Supporting Programs:

The continuous operation of a complete combat-ready system demands many supporting activities. To aid in these tasks, supporting computer programs are used for maintenance, analysis of operational data, and preparation of synthetic air defense data for large scale training exercises, and for non-training purposes, such as furnishing controlled data to aid in checking program revisions. Each of these three functions was elaborated upon by Colonel Halley.

2. The entire SAGE System requires computer programs for 33 Direction Centers and 8 Combat Centers. Each Direction Center program will be an adaptation of a master Direction Center program and each Combat Center program will be an adaptation of a master Combat Center program. By means of this technique, the two master programs, which constitute a large part of the program preparation effort, need be written only once.

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3. There are several distinct and separate functions which must be performed in order to define the over-all task of computer programming as relating to the SAGE Program. These functions are:

- (1) Prepare master computer program.
- (2) Adapt and check the master for specific locations.
- (3) Use computer programs for system installation and test.
- (4) Revise computer programs with operational experience.
- (5) Research on computer programming.

a. The master computer program will be prepared by Lincoln Laboratory, with the ADC Experimental Wing guiding it, and with liaison assistance from Air Defense Command. The preparation of the master computer program follows five basic steps, as follows:

- (1) Prepare operational specifications.
- (2) Prepare program specifications.
- (3) Prepare coding specifications.
- (4) Coding the program.
- (5) Check out the product.

b. Adaptation and checkout of master programs for specific sites is the next major task. For each specific direction center or combat center, the computer program must be adapted to conform with the sub-sector or sector geography. Although the adaptation procedure follows the specific steps for preparation of a master computer program, the adaptation task and checkout of this program is much smaller.

c. Using computer programs for system installation and checkout in each subsector or sector will require the coordinated effort of trained computer programming personnel at each site.

d. Revision of computer programs (or parts of programs) will be on a continuing basis to correct residual errors of the type that occur only under peculiar circumstances and to incorporate improvements in air defense procedures which will be discovered as a result of operating experience.

e. Research on computer programs is the last major task. Development of the Air Defense System requires continuing research on equipment, such as radars, aircraft, missiles, computers, etc. To this list must be added continuing research on computer programs for air defense. The exploitation of new and improved equipment or the

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discovery of a new enemy threat will require corresponding innovations in computer programs.

4. Responsibilities:

At this point, Colonel Halley described the various responsibilities of Lincoln Laboratory, ADES, IEM and ADC. Responsibility for the operational program, responsibility for preparing computer programs for operational trouble shooting and for data reduction and analysis, responsibility for preparing computer programs and maintenance, and, finally, responsibility for preparing synthetic air defense data for training and system tests requiring computer programs were outlined for the joint plan.

5. From the responsibilities outlined, it was clear that ADC has a very large and long continuing responsibility. Here, Colonel Halley read the five basic factors which were controlling in the development of the joint ADC-Rand plan. They are:

a. Requirements for additional military personnel should be kept to a minimum and contractual effort (civilian personnel) should be used to the maximum advantage.

b. The future of the System Training Program as we move into this time era of SAGE is larger and more sophisticated and continues to require extensive additional computer facilities.

c. The maximum centralization of effort is also required due to the technical facilities, the high skill of the personnel and the requirement for standard operation.

d. The time available to develop the capability for carrying out these jobs for ADC is extremely short, and

e. Maximum continuity in coordinating, planning and implementation of the SAGE program is required.

6. Concept of the proposed ADC-RAND plan:

- a. Numbered Air Defense Wing, which would be
- b. Supported contractually by Rand.
- c. Rand headquarters would be at Santa Monica, California.
- d. Part of the military and civilian effort would be at Syracuse, N. Y.
- e. Requirement for extensive computer activities.

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7. The mission of the Air Defense Wing (Ground Environment) is as follows:

a. Provide all ADC Wings and Air Divisions with synthetic air defense problems and data for installation, maintenance, system test and operational proficiency training purposes as required.

b. Keep all operational computer programs up-to-date with operational experience and new tactics or techniques.

c. Keep all Wings and Divisions standard on data reduction and analysis for day-to-day operations and training.

d. Keep all operational system diagnostic practices and computer programs standardized and up-to-date.

e. Provide adapted master computer programs for each SAGE site to be used by ADES in system test and also for subsequent ADC operation.

f. Provide technical computer programming assistance with each Wing and Air Division cadre during system test and evaluation.

g. Close liaison will be required with the ADC Air Defense Experimental Wing at the Lincoln Laboratory. During the period of master computer program preparation and adaption for first three sites, ADC guidance will be provided through the Experimental Wing.

8. Time Phasing of Effort: Colonel Halley explained the time phasing of the major elements of this mission.

9. Personnel:

Based on estimates of the Lincoln Laboratory with IBM experience, and utilizing the experience of the RAND corporation in their past effort on creating the STP, Colonel Halley indicated the personnel requirement for Rand's contractual effort, following the time phasing just previously explained. The military personnel required of the Air Defense Wing were not included in the chart. The Wing should be activated in January 1956 and should have a strength of 27 officers and 3 airmen by July 1956, and, by July 1957, should reach its maximum strength of 35 officers and 4 airmen. This would mean 40 military, with 550 civilians on contract.

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10. Organization.

Chart indicating the organization of the RAND and military people was explained. The organization is an expansion on the part of RAND in their present effort on Systems Training Project. The military operation represents joint agreement at the working level between RAND and ADC as to the number and kinds of functions that must be performed by the military people. The headquarters of the organization will be at Santa Monica, California. The RAND organization would be matched on a military basis having the wing commander report direct to ADC Headquarters.

11. Facility Requirements.

a. To carry out the mission of the Wing, two kinds of digital computing systems are required.

- (1) Commercially available electronic computers such as IBM series; two computers are required. Rand now has an IBM 701 and is preparing to lease a 704 in addition. These functions will be carried out in Santa Monica, California.
- (2) SAGE FSQ-7 and FSQ-8 equipments. The only places that such equipments will be available are at ADC operation locations.

b. Three classes of locations were considered from which selection of the FSQ-7 and FSQ-8 facility must be made.

- (1) Near Rand for homogenous organizational relationship or near the center part of the United States, to be in a low vulnerability area.
- (2) A planned ADC facility in a low priority area such as St. Louis or Oklahoma City subsectors which could be devoted primarily to computer programming, and secondarily be on call for active air defense.

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(3) The third class of location is a high priority planned Combat Center or Direction Center, preferably a combination facility, as a permanent location. The choice, because of the perimeter identification problem, should not consider a location bordering on the eastern coast. Earliest such location on the schedule is the combined Combat Center and Direction Center at Syracuse, New York. This solution is recommended as a part of our joint plan and only requires that the following operational compromises be made:

(a) Split location for the organization of the Wing and Rand.

(b) Some interference (peace time) with the air defense mission of the sector and subsector, however, having a capability to be fully supporting the air defense mission within 10 to 15 minutes' notice.

12. The following sequence of actions were proposed in the plan:

a. RAND people will start working at Lincoln during the next three months.

b. The Air Defense Wing (Ground Environment) should be activated by January 1956.

c. Approximately 60 RAND people, with 15 military, will be at Lincoln by July 1956 and remain until the Syracuse facility has been custom modified (late 1957).

d. Simultaneously, the effort at Santa Monica will also expand as the installation of the system progresses.

e. After the Syracuse site is operating, the computer programming effort will be stabilized at Santa Monica and at Syracuse.

13. Contractual Relationship with RAND.

The present STP effort is supported by a separate contract with AMC and, in addition, RAND has a facilities contract to support

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the STP effort. Funds for both contracts are provided by Air Defense Command out of the 458 Maintenance and Operating series. RAND has already prepared an amendment in the form of a proposal to AMC for FY-56 contract re-negotiation. It is anticipated that final negotiations on next year's contract will take place on 23 May, at Wright Field. It is proposed to handle the expanded effort incorporated in this plan by amending the work statement on the present STP contract and budgetarily increasing its support.

14. Budgetary Requirements.

Colonel Halley concluded his presentation by stating the budgetary requirements for the joint ADC-RAND plan. This portion of the presentation caused considerable discussion among members of the Council.

15. Council Action:

After lengthy and careful consideration of the plan, the Council decided:

- a. The requirement for the joint plan is established.
- b. The plan for accomplishment of the requirement is sound.
- c. The Council directed the plan be forwarded to the ADES Project Office in New York as the suggested method of accomplishment. The only change requested is that the Experimental SAGE subsector and the programming tasks be combined into one Air Defense Wing, and that the mission of the Wing be revised accordingly.

16. There being no further business to come before the council, the meeting adjourned at 1130 hours.

FREDERIC H. SMITH, Jr.
Major General, USAF
Vice Commander
(Chairman, AD Command Council)

CONFIDENTIAL

466

466 ADCR 24-13

ADC REGULATION)
24-13)

HEADQUARTERS AIR DEFENSE COMMAND
Ent AFB, Colorado Springs, Colo.
9 July 1955

ORGANIZATION - AIR DIVISIONS (DEF), AIR BASES AND UNITS

Organization and Mission of the 4620th Air Defense Wing
(Experimental, SAGE)

1. Purpose. This Regulation outlines the organization, mission, functions, and responsibilities of the 4620th Air Defense Wing (Experimental, SAGE).
2. Organization. To carry out its mission, the 4620th Air Defense Wing (Experimental, SAGE) is provided a headquarters and such units as may be allocated by the Commander, Air Defense Command.
3. Mission. The mission of the 4620th Air Defense Wing (Experimental, SAGE) is:
 - a. Provide operational guidance to Air Research and Development Command in the operation of the Experimental Semi-Automatic Ground Environment (SAGE) subsector (XD-1 Simplex).
 - b. Carry out Air Defense Command's responsibility for SAGE Computer programming.
 - c. Provide all Air Defense Command operational units with synthetic air defense problems and data as required beginning 1 July 1955 and continuing indefinitely thereafter.
 - d. Supervise the assisting contractual effort for paragraphs 3b and c above, initially to be provided by the RAND Corporation, Santa Monica, California.
4. Functions and Responsibilities. The Commander, 4620th Air Defense Wing (Experimental, SAGE), will exercise command over all assigned and attached units. He will be responsible to the Commander, Air Defense Command, for the following:
 - a. Command, organize, administer, train, and equip all personnel assigned to the activity in accordance with Air Defense Command directives.
 - b. Confirm, modify, and develop operational procedures for use in the operational subsectors.

466

ADCR 24-13

c. Confirm, modify, and develop personnel requirements and operating positions devised during the development stage for inclusion in the operational subsectors.

d. Assist ARDC in the operation of the experimental SAGE subsector. The operation of this subsector will include testing the System to insure operation at full design capacity.

e. Develop and test procedures for operation of manual and SAGE Systems simultaneously. This will provide the methods required for the operational overlap period which will exist in each subsector.

f. Devise on-the-job training (OJT) programs and methods for use in operational subsectors.

g. Provide all ADC Air Defense Wings (SAGE) and Air Defense Divisions (SAGE) with synthetic air defense problems and data for installation, maintenance, system test, and operational proficiency training purposes as required.

h. Revise all operational computer programs based upon Air Defense Command's operating experience, and incorporate new tactics and techniques as they become available. This will include revision of computer programs for:

(1) Data reduction.

(2) Data analysis and system diagnostic practices.

i. Provide adapted master computer programs (operational, data reduction, data analysis, and system diagnostic practices) for each SAGE site to be used by ADES during installation testing and for subsequent Air Defense Command operation, beginning with the SAGE Direction Center at Syracuse AFS, N. Y.

j. Train advance cadres for each Air Defense Wing (SAGE) and Air Defense Division (SAGE). These cadres will then aid the 4620th Air Defense Wing (Experimental, SAGE) in the detailed operational design of each sector and subsector, beginning with the Syracuse Direction Center. The advance cadres will then move to appropriate sites and provide ADC participation in the ADES system test and evaluation effort.

k. Provide technical computer programming assistance to each Air Defense Wing (SAGE) and Air Defense Division (SAGE) cadre during system test and evaluation. This assistance may be required for some period during initial military air defense operation.

ADCR 24-13

l. Maintain close liaison and coordination with USAF Air Defense Engineering Service (ADES) (Western Electric) Project office.

m. Provide Air Defense Command representation on the ARDC Joint Testing Committee for the Experimental SAGE Subsector.

n. Provide ADC operational guidance pertaining to system operation to RAND corporation, and maintain close liaison and coordination with that organization.

o. Provide military supervision, as required, for the assistance rendered contractually by the RAND Corporation.

p. Provide liaison, as required, between the Lincoln Laboratory and the Air Defense Command.

q. Keep Air Defense Command Headquarters fully informed of developments in assigned field of interest and maintain close contact so as to receive policy and operational guidance.
(ADOMO)

BY ORDER OF THE COMMANDER:

OFFICIAL:

GEORGE F. SMITH
Major General, USAF
Chief of Staff

W. J. Birmele

W. J. BIRMELE
Lt Col, USAF
Asst Comd Adj

DISTRIBUTION:

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(AF-ADC, Colorado Springs, Colo.)

3

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467

FILE NUMBER 107-1

15 JUN 1955

AFOSD-C-3

SUBJECT: Establishment of Air Defense Wing (Experimental - SAGE)

TO: Commander
Air Defense Command
Bvt Air Force Base
Colorado Springs, Colorado

1. Reference letter, Hqs ADC, ADWCR, "ADC Headquarters Manning Requirements," dated May 1955. The study of Headquarters manpower requirements contained in Inclosures 2 through 4, is being reviewed. It is anticipated that a review of these three inclosures will be completed and manpower action resulting therefrom will be made on the MAV 56-1, to be issued early in July 1955.

2. Inclosure 5, "Establishment of ADC Experimental Wing (SAGE)," has been reviewed, and is approved with the following exceptions:

a. The size, mission and function of the Experimental Wing does not justify a Deputy Commander, therefore a troop space for this position is disapproved.

b. The grades of many of the spaces requested are considered to be excessive. Information in this Headquarters reveals that the desired knowledge, skill and experience required for this Experimental Wing may be found in officers of lower grade than those listed in Inclosure 5. This is particularly true of the functions under the purview of the Director of Operations. Accordingly, grades will be authorized as requested except (listed sequentially from beginning to the end of the last two pages of Inal 5):

<u>Job Title</u>	<u>AFSC</u>	<u>Requested</u>	<u>Approved</u>
Tech Func Off	3016	L/Col	Maj
Ops Func Off	1616	L/Col	Maj
Ops Staff Off (P)	1416	L/Col	Maj
Arm Staff Off (M)	3216	L/Col	Maj
Combat Int Off	2016	L/Col	Maj
Admin Off	7024	Capt	W/O
Dir, Ops	0036	Col	L/Col
Dir of Trng	7516	L/Col	Maj
Air Sit. Chief	1616	L/Col	Maj
Air Sit. Off	1616	Maj	Capt
SAGE Prog Chief	0036	L/Col	Maj
Adaptation Ch	1616	L/Col	Maj

- 500 - 4

1 2 5 3

Subj: Establishment of Air Defense Wing (Experimental - SAGE)

<u>Job Title</u>	<u>AFSC</u>	<u>Requested</u>	<u>Approved</u>
Asst Chief	1A16	L/Col	Maj
Ops Func Off	1A16	Maj	Capt
Ops Functions	1A16	Maj	Capt
Arm Stf Off (M)	3216	Maj	Capt
Comp Prog Engr	8626	Maj	Capt
Comp Prog Engr	8626	Capt	Lt
Comp Prog Engr	8626	Capt	Lt

6. The first subdivision on last page of Incl 5 begins with a Revision Chief, AFSC 1A16. It is assumed that this will be a functional Section. Additional information is required in this Headquarters as to the function to be performed by this Section.

3. MAV 55-12, currently being prepared will contain an authorization, effective for June 1955, for the SAGE Experimental Wing, as follows:

	<u>June 55</u>	<u>Jul 55</u>	<u>Sep 55</u>	<u>Dec 55</u>
Col	2			
L/Col	2	1		
Maj	3	5		3
Capt				
Lt				
W/O	1			
Total Officer	8	6		3
T/Sgt	1			
S/Sgt	2			
A/LC	1			
Total Airmen	4			
GS-4	2			
GS-3	1			
Total Civ.	3			

BY ORDER OF THE CHIEF OF STAFF:

KENNETH S. ROBERTS
Major General, USAF
Director of Manpower & Organization, DCS/O

S-500-5

2

1254

Subj: Establishment of Air Defense Wing (Experimental - SAGE)

<u>Job Title</u>	<u>AFSC</u>	<u>Requested</u>	<u>Approved</u>
Asst Chief	1416	L/Col	Maj
Opns Func Off	1616	Maj	Capt
Ops Functions	1416	Maj	Capt
Arm Stf Off (R)	3216	Maj	Capt
Comp Prog Engr	8626	Maj	Capt
Comp Prog Engr	8626	Capt	LA
Comp Prog Engr	8626	Capt	LA

6. The first subdivision on last page of Incl 5 begins with a Revision Chief, AFSC 1616. It is assumed that this will be a functional Section. Additional information is required in this Headquarters as to the function to be performed by this Section.

3. MAV 55-12, currently being prepared will contain an authorization, effective for June 1955, for the SAGE Experimental Wing, as follows:

	<u>June 55</u>	<u>Jul 55</u>	<u>Sep 55</u>	<u>Dec 55</u>
Col	2			
L/Col	2	1		
Maj	3	5		3
Capt				
LA				
W/O	1			
Total Officer	8	6		3
T/Sgt	1			
S/Sgt	2			
A/LC	1			
Total Airmen	4			
GS-4	2			
GS-3	1			
Total Civ.	3			

BY ORDER OF THE CHIEF OF STAFF:

KENNETH B. ROBSON
Major General, USAF
Director of Manpower & Organization, DCS/O

S-500-5

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1255

CONFIDENTIAL

FILE NUMBER 107.1

By USAF AFORD-O-3 Subj: Establishment of Air Defense Wing (Experimental - SAGE)

COMEBAC COPY

ADWD (15 Jun 55)

1st Ind

2 AUG 1955 Not requested, not furnished (Date) (Initials)

HEADQUARTERS AIR DEFENSE COMMAND, Fort Air Force Base, Colorado Springs Colorado

TO: Director of Manpower and Organization, Headquarters United States Air Force, Washington 25, D. C.

- Mr. Tolson
- Mr. Boardman
- Mr. Nichols
- Mr. Belmont
- Mr. Ladd
- Mr. Clegg
- Mr. Glavin
- Mr. Harbo
- Mr. Rosen
- Mr. Tracy
- Mr. Egan
- Mr. Gurnea
- Mr. Hendon
- Mr. Pennington
- Mr. Quinn
- Mr. Nease
- Mr. Gandy
- Mr. Mohr
- Mr. Winterrowd
- Tele. Room
- Mr. Holloman
- Miss Gandy
- Mr. Casper
- Mr. Callahan
- Mr. Connelley
- Mr. Felt
- Mr. Gale
- Mr. Rosen
- Mr. Sullivan
- Mr. Tavel
- Mr. Trotter
- Tele. Room
- Miss Holmes
- Miss Gandy
- Mr. Nease
- Mr. Gandy

1. Reconsideration is requested of your deletion of the position of Deputy Commander of the 4620th Wing. It is felt that the "size, mission and function" of the Wing require an assistant for the Commander who can act for him on his greatly varied responsibilities, particularly in view of his two distinct missions. The military size of the Wing is deceptively small. While command is not exercised, guidance must be provided to a large effort involving large numbers of people at both ID-1 and Santa Monica. The contractual effort at RAND will involve over 500 people. The staff provided the Commander is small and specialized. It is precisely for this reason - the small staff capability - that the Commander's responsibility for over-all direction will be excessive. It is, in fact, economical of manpower to solve this problem by assignment of an assistant, as an alternative to increasing the staff. It is the size of the responsibilities rather than the strength of the Wing which dictates this requirement.

2. It is impossible to over-emphasize the importance of the mission and function of this Wing to the future Air Defense System. The vital part that ID-1 will play in determining electronic reliability and developing operational procedures and requirements is too well known to require repetition here. Reference is made to the Operational Plan for SAGE (Secret), dated 7 March 1955. For your further information, the "ADC Plan for Accomplishing Computer-Programming for SAGE" (Confidential) is attached as Inclosure #1. The over-riding importance of effective performance by this Wing, in the view of this headquarters, has already led to extensive screening and the selection of a Deputy Commander.

3. It is mandatory that the Commander maintain close liaison with and attend meetings at widely dispersed agencies. Following is an estimate of some of the specific demands upon his time:

a. One meeting per month at the ADWS Project Office in New York. Total Time -- 3 days. As an example of the discussion involved and the problems for which the Commander must prepare, the agenda for a recent meeting is attached as Inclosure #2. He is particularly concerned with items A 1, 16; B 3; D 1, 3, 4, 6, 7; E 2, 3, 4; and F 11, 12, 13.

1. In Confirmed by
2. Release Plan
3. For In. AFOS
No
4. RF Coo
5. 10/2/55
6. 11/55

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S-500-1

CONFIDENTIAL

A-74543
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Hq USAF AFOSD-0-3 Subj: Establishment of Air Defense Wing (Experimental - SAGE)

AFOSD (15 Jun 55)

1st Ind (Cont'd)

- b. Meetings at the RAND Corporation in Santa Monica. Total time -- 5 days per month.
- c. Liaison at Headquarters, ADC. Total time -- 4 days per month.
- d. Chief of battle staff during W-1 exercises.
- e. Daily contact with AFOSD and Lincoln Laboratory at Lexington -- a continuous requirement.

4. The SAGE System program is on an extremely tight time schedule. ADC must maintain its portion of this schedule if the contractors are to perform effectively. This has caused some difficulty in the past. In view of the Commander's heavy schedule, it is not possible for him, without a Deputy, to satisfactorily fulfill ADC's obligations in this regard. We consider a Deputy Commander an absolute necessity for the success of the program.

5. Reconsideration is also requested of the grades allotted for three of the positions in the Wing. We realize that the initial grades requested appear high, but still believe that, could the requirement be filled, these grades represent the needs of the program. In addition to the qualifications required to develop a system which contains many radical departures, it is essential that the officers inspire confidence, by their knowledge, in the many scientists and engineers with whom they will daily work. This is part of the problem of obtaining an increasing measure of control by participation in highly technical contractual services. These officers will validate the operational assumptions and develop procedures for use in the initial SAGE subsectors. They will assist in the training, supervision and integration of the personnel assigned to these first wings, many of whom will be in higher grades.

6. It is likely that some officers may be found for assignment to the Experimental Wing in grades lower than those initially requested. Accordingly, reconsideration is requested for only three positions, the Operations Functions Officer (1616) in the Experimental Subsector and the Director of Training (7516) and SAGE Computer Programming Chief (0036) in the Programming Function.

- a. The latter two positions can be identified on the chart (Incl #9) of the attached ADC Plan for Computer-Programming. One is the

CONFIDENTIAL

Hq USAF AFOSD-0-3 Subj: Establishment of Air Defense Wing (Experimental - SAGE)

ADWD (15 Jun 55)

1st Ind (Cont'd)

Director of Training. The other is Chief of the principal function under the Director of Operations, that of Programming for SAGE. Considering the magnitude of the RAND organization engaged in this task, Lt Colonels are essential at these levels if ADC responsibilities in these functions are to be carried out.

b. The position of Operations Functions Officer at XD-1 is considered critical. He will have the responsibility for adapting manual aircraft control procedures to the new semi-automatic system. This will be a transition of great extent and difficulty and will involve for some period of time the concurrent use of a manual system. The maximum effective use in aircraft control of the data produced by the computer is a goal which ranks next to that of maximizing the data produced. The Operations Functions Officer and the Technical Functions Officer (3016) are concerned with these two aspects. Each will serve directly under the Deputy for Operations and are considered his principal staff functions. It is planned to use the Lt Colonel space allotted for the C&E Officer in the Technical Functions position. A Lt Colonel grade is required for the Aircraft Control Staff Officer.

9. With regard to the revision function questioned in paragraph 2c of your letter, reference is made to the information contained in Inclosure #1, a copy of which has also been furnished to your Air Defense Branch, Director of Operations. After the Master Program has been adapted to the peculiarities of each site, it will be necessary to constantly revise it (and its adaptations) in the light of new tactics and techniques, equipment and capabilities. This is seen as eventually the major function of programming.

FOR THE COMMANDER:

MEMO FOR RECORD: USAF deleted the Deputy Commander and allotted lower grades than requested for the 4620th Wing. This indorsement requests reconsideration.

2 Incl

1. ADC Plan for Computer Programming (2 cys)
2. Agenda for ADES Meeting (2 cys)

Incl 1 not rec AG file

No
Maj R.F. Cash, Dir
AFOSD-0-3
22 Jul 55
FF

W. H. SMITH
Major, USAF
Aircraft Staff

5

- 500-3 -

1258

DISPOSITION FORM		SECURITY CLASSIFICATION (If any)
FILE NO.	SUBJECT Establishment of Air Defense Wing (Experimental-SAGE)	
TO DCS/G	FROM ADHPG	DATE 25 June 55 COMMENT NO. 1 L/Col F. Mertely/2441/mn
<p>1. The attached paper has been discussed with Colonel Vergin's people. The following conclusions were reached:</p> <p>a. Headquarters USAF should be requested to reconsider the space for the Deputy Commander.</p> <p>b. Headquarters USAF should be requested to reconsider some of the grades authorized within the purview of the Director of Operations.</p> <p>2. The mission assigned to the 4620th Air Defense Wing will require timely coordination with AFCRC, Lincoln, ADES Project Office, RAND and ADC. Consequently, much of the commanders time will be spent away from his organization attending conferences. To meet the tight schedules presently established for the experimental subsector and computer programming work will require a very high degree of continuity. Authorization of a deputy will do much to provide this required continuity. It should be noted that the deputy position had been approved by the ADC Manning Review Board and concurred in by the Vice Commander.</p> <p>3. The across the board reduction of grades within the Director of Operations section does not appear to be justified. The work to be accomplished by this Wing will have a great impact upon how well the initial subsectors will operate; as such, it is essential that highly qualified personnel be assigned to this Wing. Reduction in the grades requested will make it even more difficult to obtain people with the proper qualifications. Key positions, therefore, merit reconsideration.</p> <p>4. Information concerning the revision function (reference paragraph 2-c. basic letter) is contained in the "ADC Plan for Accomplishing Computer Programming for SAGE." A copy of this plan has been furnished to Headquarters USAF, Air Defense Branch, Director of Operations.</p> <p>5. The task of computer programming represents a long and continuing function for ADC and the importance of getting a good start cannot be over emphasized.</p>		
<p>5-500-6 124-2</p>		

DISPOSITION FORM		SECURITY CLASSIFICATION (If any)	
		FILE NO.	SUBJECT
	Establishment of Air Defense Wing (Experimental-SAGE)	DATE	COMMENT NO. 1
0	FROM	25 June 55	(Cont'd)
<p>6. This office is prepared to assist M&O in the formulation of a reply to Headquarters USAF.</p> <p style="text-align: right;"><i>→ name verified 4/51</i> for OSCAR T. HALLEY, JR. Colonel, USAF Director Ext 2441-2443</p> <p style="text-align: left;">S-500-7X</p>			

CONFIDENTIAL

FILE NUMBER 107.1
xw

468

COMADC

ROUTINE

CHARLES PROJ OFFICE USAF
220 CHURCH ST NYKADC LIAISON OFFICE LINCOLN LAB
LEXINGTON, MASS

KXK

MR H O KAPPLER (AIR MAIL)
RAND CORP 1908 ARMACOST ST
WEST LOS ANGELES CALIF

28 APR 1955

(CONF) ADEPG 2057 FOR COL R H OSGOOD JPO; FOR
LTCOL R J STEVENSON LINCOLN LAB. A joint meeting BTWN Rand and
ADC at Colorado Springs was held 20-22 APR with Lincoln and
IBM representatives as advisors. Purpose of the meeting was
to develop a specific joint plan (ADC and Rand) to carry out
the AF responsibility for computer programming for SAGE. This
plan was agreed to on a PRELIM basis and is expected to be
finalized at ADC APRX 15 May 55. During this CONF it was DETERM
that the exact computer FAC to SUPP the AF adaption and
revision functions was not known. It was assumed that some
console and EQUIP ADDS could be made to the combined FSQ-7 and
FSQ-8 FAC at Syracuse that would permit Q-7 and Q-8 computer
program check out. It was also assumed that such an arrange-
ment would SUPP a full shift use of one half of the duplex

1 2

Col O. T. Halley, Jr/mm

ADEPG

2441-2443

Command Adj

1045-1

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CONFIDENTIAL

(CONF) AREFG 245

FSQ-8 to ACCOM APRI 90 percent of computer time BQR for program check outs. This would BQR APRI 30 minutes to one HR per day of the entire duplex Q-8 or the Q-7 at different times for the remaining 10 percent of computer time for program check outs. Mr. Robert Weiser, representing the Lincoln LAB, agreed to initiate a study to ESTM computer FAC BQRS for Syracuse with the objective of VER the assumptions made in the ADC-Rand plan. TWT date for COMPL was set for 24 May. Lincoln intends to advise ARDC and ADES of their work in this matter. Since the study is planned to be COMPL 10 days after confirmation of the ADC Rand plan, such confirmation will be conditional and SUBJ to further REV after the study is COMPL.

~~MESSAGE TRANSMITTED
WITH FOLLOWING DATE TIME GROUP~~

PAYLOAD NOT REQUIRED

Page 2 of 2 Pages

1045-X

1262

CONFIDENTIAL

469

107.1

AT

ADCOOT-F

SUBJECT: (UNCL) Supplemental Agreement to Contract
AF 33(600)-26134

TO: Commander
Air Materiel Command
Wright-Patterson Air Force Base
Ohio

1. It is requested that negotiations for Supplemental Agreement No. 2 to Contract AF 33(600)-26134 be undertaken as required in order that the services provided by Supplement No. 1 to subject contract continue without interruption as of 1 July 1955.

2. Cost of services to be performed subsequent to 1 July 1955 is estimated at \$6,922,485. The following fund citation is furnished to cover this requirement: 5763400 079-4000 P458-07 905-604.

3. A previous request was submitted for this extension in a letter, subject as above, this headquarters, 16 March 1955. The budget requirement in this letter was \$3,390,485. The increase of \$3,532,000 contained in present letter is a result of extending similar services to the SAGE System presently being installed in the Air Defense Command, plus additional technical assistance in the adaptation and provision for computer programs required in the SAGE System (\$3,082,000). There is also a \$450,000 carry-over from prior contract and supplements which could not be accomplished prior to 30 June 1955. Details of these additional services are contained in paragraph b, Part I, of the inclosed suggested statement of work (Inclosure 1).

4. It is recommended that this extension be effected with the Rand Corporation for the following reasons:

a. The Rand Corporation has been engaged in this type of activity since October 1953 and has rendered services contracted for completely and efficiently.

b. Based on our experience and knowledge, the Rand

CONFIDENTIAL

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Hq ADC, ADOOT-F, Subj: (UNCL) Supplemental Agreement to Contract AF 33(600)-26134 (Cont'd)

Corporation is the only organization which has engaged in this type of service. Their experience in this field is unique and therefore not only difficult to replace but time consuming.

c. The implementation of the SAGE System is based on a rapid build-up of personnel and

3
THE RAND CORPORATION
Contract AF-26134

PROPOSED STATEMENT OF WORK FOR FY-56

PART I. STATEMENT OF WORK

The scope of the effort included in this statement of work covers two general areas. The first encompasses the development and installation of the Systems Training Program into the Air Defense Command manual system. The second encompasses the extension of similar effort to the SAGE System presently being installed in the Air Defense Command and provides for certain technical assistance in the adaptation and provisions of computer programs for the SAGE System.

- (a) For the manual Air Defense system, the Contractor shall, during the period specified in Part VIII hereof, furnish and supply to the Government the necessary personnel, equipment, facilities, services, liaison, and travel as follows:
- (1) Continue preparation of track libraries for synthetic air defense problems for all Air Defense Divisions.
 - (2) Train the necessary military crews at the Contractor's Plant, The RAND Corporation, for the indoctrination of air defense supervisory personnel.
 - (3) Continue development of the training techniques to be used in the Air Defense System Training Program.

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- (4) Continue installation of the Air Defense Systems Training Program in the remaining radar stations planned for the continental United States and in such other areas as are mutually agreed upon by the 4620th Air Defense Wing (Experimental SAGE) and the Contractor.
 - (5) Continue preparation of exercise materials for all Air Defense Units in which Air Defense Systems Training Program has been installed.
 - (6) Continue to conduct an air traffic analysis as a basis for path and flight generation to be used in the preparation of nation-wide exercise materials.
 - (7) Furnish liaison to implement the Air Defense System Training Program as specified above and to carry out such other activities in conjunction with the System Training Program as agreed upon with the 4620th AD Wing (Experimental SAGE).
 - (8) RAND shall exercise to the extent it feels necessary such engineering surveillance including design recommendations and inspection and/or observation of test procedures of the performance of Contract AF 33(600)-28905 between the Government and the Radio Corporation of America. This surveillance by RAND shall in no way take the place of normal Government inspection, testing and acceptance procedures which shall
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apply to the articles to be delivered under AF 33 (600)-28905. The performance by RAND of the foregoing engineering surveillance shall in no way constitute a warranty or representation by RAND that the articles to be delivered under the aforementioned Contract AF 33(600)-28905 do meet, or shall meet, (a) the applicable specification (WCL 795 dated 17 September 1954) or the delivery schedule required by Contract AF 33(600)-28905, or (b) any warranty or representation with respect to any other matter whatsoever arising in connection with Contract AF 33(600)-28905.

(b) For the SAGE System, the Contractor shall, during the period specified in Part VIII hereof, furnish and supply to the Government the necessary personnel, equipment, facilities, services, Liaison and travel as follows:

- (1) Provide all Air Defense Command, Air Defense Wings and Air Defense Divisions with synthetic air defense problems and data for installation, maintenance, systems tests and operational proficiency training purposes as required.
- (2) Revise all operational computer programs based on the Air Defense Command's operating experience as required by the 4620th Air Defense Wing (Experimental SAGE) incorporating new tactics

and techniques as they become available. . This task will also include the revisions of computer programs for: (1) data reduction (2) data analysis and (3) system diagnostic practices.

- (3) Provide adapted master computer programs (operational data reduction, data analysis, and system diagnostic practices) for each SAGE site to be used by the Air Defense Engineering Services Group (Western Electric Co.) during installation testing beginning with the Air Defense Direction Center to be located at Syracuse Air Force Base, New York.
- (4) Maintain close liaison with the Lincoln Laboratory, Lexington, Mass., during the period that the Lincoln Laboratory is preparing the master computer programs and adapting them for Air Defense Direction Centers at McGuire and Stewart Air Force Bases and for the Air Defense Combat Center at Syracuse Air Force Base.
- (5) Assist the 4620th Air Defense Wing (Experimental SAGE) in training cadres of each Air Defense Wing and Air Defense Division.
- (6) Provide computer programming technical assistance to each cadre during the conduct of the ADES system tests and evaluation effort.

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- (7) Provide technical computer programming assistance at each operational direction center and combat center during system installation and initial military Air Defense operations, the duration of which will be agreed to be the Contractor and the 4620th Air Defense Wing (Experimental SAGE).
- (8) Furnish liaison to implement the program specified in this subparagraph (b) of Part I and to carry out such other activities as agreed upon with the 4620th Air Defense Wing (Experimental SAGE).
- (c) The 4620th Air Defense Wing (Experimental SAGE) referred to in this contract is assigned to Headquarters, Air Defense Command, USAF, Colorado Springs, Colorado, and is designated as the monitoring agency for the work to be performed hereunder. The 4620th Air Defense Wing located at Lincoln Laboratory, Lexington 73, Mass. will provide resident representative at the principal location of the performance of the contract.

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ADC PLAN FOR ACCOMPLISHING COMPUTER-PROGRAMMING FOR SAGE

6 June 1955

1. INTRODUCTION.

a. The tasks of SAGE Computer-Programming are defined in Chapter VII, Operational Plan, Semi-Automatic Ground Environment System for Air Defense, 7 March 1955. (See Incl. #1) These tasks and responsibilities were clarified in a subsequent meeting called by the ADES Project Office at New York City on 17 March 1955 and attended by ADES (Western Electric Co.), Lincoln Laboratory, IBM and RAND. Agreed responsibilities for accomplishing the various tasks are depicted on Inclosures 2, 3, 4 and 5.

b. Development of the ADC plan to carry out its responsibilities for computer programming took cognizance of the following basic factors:

- (1) Requirements for military personnel should be kept to a minimum and that contractual effort (civilian personnel) should be used to maximum advantage.
- (2) The future of the Systems Training Program during the SAGE era is larger and more sophisticated and continues to require extensive computer facilities.
- (3) Maximum centralization of effort is required due to the technical facilities, the high skill of personnel and control for standard operation.

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- (4) Time available to develop the capability for carrying out ADC's task is extremely short.
- (5) Maximum continuity in coordination and planning for implementation of the SAGE System is required.

2. THE ADC PLAN.

a. Consideration of the factors indicated in paragraph 1b led Air Defense Command to implement the following plan for carrying out its responsibilities for computer programming:

- (1) The 4620th Air Defense Wing (Experimental SAGE) was activated at the Lincoln Laboratory, Lexington 73, Mass. effective 1 June 1955 and is assigned directly to ADC Headquarters.
- (2) The military responsibility for computer programming will be vested in the 4620th Air Defense Wing (Experimental-SAGE).
- (3) The 4620th Air Defense Wing (Experimental-SAGE) will be supported contractually by the RAND Corporation.
- (4) Ultimate headquarters of the military and the contractor will be at Santa Monica, California.
- (5) Part of the military and civilian effort will be at Syracuse.

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(6) Access to extensive computer facilities is required for the Wing to carry out its mission. This establishes a requirement for a custom modification of the AN/FSQ-8 at Syracuse to permit computer program checkout.

3. MISSION AND RESPONSIBILITIES OF THE 4620TH AIR DEFENSE WING (EXPERIMENTAL-SAGE).

a. The mission of the 4620th Air Defense Wing (Experimental-SAGE) is twofold. First, it will provide operational guidance to ARDC in the operation of the Experimental SAGE Subsector (XD-1) and second carry out Air Defense Command's responsibility for SAGE computer programming. The functions of this organization in carrying out its computer programming responsibilities are indicated below.

- (1) Provide all Air Defense Wings (SAGE) and Air Divisions (SAGE) with synthetic air defense problems for installation, system tests, operational system diagnostic practices and operational proficiency training purposes as required.
- (2) Revise all operational computer programs based upon Air Defense Command's operating experience, incorporating new tactics and techniques as they become available. This

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will include revision of computer programs for: (a) data reduction, (b) data analysis and system diagnostic practices.

- (3) Provide adapted master computer programs (operational, data reduction, data analysis and system diagnostic practices) for each SAGE site to be used by ADES (Western Electric Co.) during installation testing beginning with the Air Defense Direction Center to be located at Syracuse Air Force Station, New York.
- (4) Train advance cadres [approximately 5 officers of each operational Air Defense Wing (SAGE) and Air Division (SAGE)]. These cadres will aid the 4620th Air Defense Wing in the adaptation functions of each sector or subsector beginning with the fourth site (Syracuse Direction Center). For the first three sites, these cadres will be the ADC component of the ADES System Test and Evaluation effort.
- (5) Provide technical computer programming assistance to each cadre at operational direction centers and combat centers during system installation and initial military operation.

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- (6) Maintain close liaison with the Lincoln Laboratory, Lexington, Mass. during the period that the Lincoln Laboratory is preparing master computer programs and adapting them for Air Defense Direction Centers at McGuire and Stewart Air Force Bases and the Air Defense Combat Center at Syracuse Air Force Station.

4. TIME PHASING OF EFFORT.

a. Computer programming efforts for the SAGE System must be phased to meet the requirements of the overall SAGE System schedule.

- (1) Time phasing of the major elements of the 4620th Air Defense Wing mission is depicted on Inclosure 6.
 - (a) The System Training Program for the Air Defense System (Manual) will reach its peak in 1956 and then slowly phase out as the SAGE System becomes installed.
 - (b) Immediate effort is required for the preparation of synthetic data for SAGE. This represents a long and continuing requirement.
 - (c) Immediate participation in preparation of the master computer program being

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developed by the Lincoln Laboratory is required.

- (d) The adaptation functions must begin by July 1956 to insure that adapted master computer programs will be available in sufficient time to meet system test requirements for the Syracuse Direction Center and subsequent SAGE sites.
- (e) The revision function must begin to develop early in 1957 and be continued on a long term basis.

5. PERSONNEL REQUIREMENTS.

a. Development of personnel requirements to accomplish the tasks previously indicated were based upon the estimates of the Lincoln Laboratory, IBM and by utilizing the RAND Corporation's experience in creating the Systems Training Project.

- (1) Incl. 7 reflects the personnel required for RAND's contractual effort. These estimates follow the time phasing of the 4620th Air Defense Wing's mission indicated above.
- (2) Military personnel requirements are indicated on Incl. 8. Initial military personnel for computer programming must be in place at Santa Monica by July 1955. Additional personnel will be phased according

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to the time requirement of the adaptation and revision functions. This work will initially be accomplished at the Lincoln Laboratory with eventual movement to Syracuse.

6. ORGANIZATION. The organization developed to carry out the assigned mission of the 4620th Air Defense Wing (Experimental-SAGE) is shown on Incl. 9. This organization is an expansion of RAND's present effort on the System Training Project. The military operation indicated, represents joint agreement between ADC and RAND as to the number and kind of functions that must be performed by the military personnel.

7. FACILITY REQUIREMENTS.

a. To enable the 4620th Air Defense Wing (Experimental-SAGE) to perform its mission two kinds of electronic computing systems are required. These are:

- (1) Commercially available electronic computers. These are necessary for preparation of synthetic Air Defense situation data and for certain data reduction and analysis work. These functions, requiring two IBM 700 series computers, will be carried out at Santa Monica, California.
- (2) SAGE AN/FSQ-7 and AN/FSQ-8 equipments are

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also required. These will be available only at ADC operational locations unless a complete new facility could be manufactured and installed to provide a sole use facility at an early date. The required facilities are based on the following latest available information:

- (a) Approximately 90% of computer program checkout for revision and adaptation function can be carried out by utilizing one-half of a duplex AN/FSQ-7 or AN/FSQ-8 for eight hours per day. This can be done at a single facility such as a Combat Center (AN/FSQ-8) provided a custom modification is made incorporating most of the display equipment of the AN/FSQ-7. The reliability of the half of the AN/FSQ-8 doing air defense, would be reduced and some unscheduled outages could be expected. Under this arrangement the AN/FSQ-8 (modified) could be fully operating as a standard duplex installation in approximately 10-15 minutes.
- (b) Approximately 10% of the computer

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program checkout task will require complete use of an AN/FSQ-7 and an AN/FSQ-8 for periods of 30 minutes to one hour each per day and may be at different times. This requires a schedule of one hour per day for computer program checkout for an AN/FSQ-7 and an AN/FSQ-8. During this hour if an emergency were to develop, this facility could be returned to the active air defense mission within 10-15 minutes. The tasks to be performed during this type of operation are:

1. Checkout of duplex functions.
2. Checkout parts of the program which require operators on a large scale.
3. Checkout data input and output parts of the program.

(c) Many possibilities were explored by Air Defense Command in an effort to find an acceptable method of meeting this requirement. Based upon considerations of economy and the early requirement for this facility, Air Defense

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Command has selected Syracuse Air Force Station, New York, as the permanent site where these functions will be performed. This decision requires that the AN/FSQ-8 at Syracuse be custom modified to perform the functions indicated above. Such modification must be accomplished as soon as possible, but must not interfere with the schedule presently established for the Syracuse facility. This solution required the Air Defense Command to accept the following compromises:

1. A split location of the 4620th Air Defense Wing (Experimental-SAGE) effort.
2. Some interference (peacetime) with the air defense mission; however, having a capability (alert or emergency) of fully supporting the air defense mission within 10-15 minutes notice.

(d) This plan takes cognizance that the exact specification for modification of the AN/FSQ-8 at Syracuse to do the

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computer program checkout task has not been defined. It is known that certain engineering changes, such as cable routings, number of consoles and wiring changes, will be required for the custom modification. The extent to which the operations building may have to be modified will depend upon the equipment specification. ADC has requested the Lincoln Laboratory and IBM to study this problem. Cognizance of this work is being maintained by the ADES Project Office, USAF.

8. ADC-RAND CONTRACTUAL RELATIONSHIP.

a. The RAND Corporation presently has a contract with AMC for the System Training Program (Manual). It also has a facilities contract to support the STP effort. Funds for both contracts are provided from ADC 458 series funds. Action is being taken with AMC to amend the present statement of work to include the computer programming effort for FY-56.

9 Incls
See attached
List

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INCLOSURES

1. Computer Programming Tasks
2. Responsibility for Operational Computer Programs
3. Responsibility for Operational Trouble Shooting, Data Reduction and Analysis
4. Responsibility for Preparation of Synthetic Air Defense Data for Training and System Tests Requiring Computer Programs
5. Responsibility for Maintenance (FSQ-7, FSQ-8) Computer Programs
6. Time Phasing of Effort
7. Contractor Personnel Requirements
8. Military Personnel Requirements 4620th Air Defense Wing (Experimental-SAGE)
9. RAND-4620th Air Defense Wing Organization

1

COMPUTER PROGRAMMING TASKS

Prepare Master Computer Programs.

Adapt and Check the Master for Specific Locations.

Use Computer Programs for System Installation and Test.

Revise Computer Programs with Operational Experience.

Research on Computer Programming.

Incl #1

1 2 8 2

2

RESPONSIBILITY FOR

OPERATIONAL COMPUTER PROGRAMS

Preparation of Master	Lincoln with ADC
Adaptation & Check Out	Same as above for first two Direction Centers & first Combat Center; thereafter ADC
Use for System Test	ADES with ADC (assisted by Lincoln for first 3 sites)
Revision	ADC
Research	ARDC (Lincoln initially)

Incl #2

1 2 8 3

3

RESPONSIBILITY FOR

OPERATIONAL TROUBLE SHOOTING, DATA REDUCTION AND ANALYSIS

COMPUTER PROGRAMS

Preparation of Master	Lincoln & ADES with ADC
Adaptation & Check Out	Lincoln with ADC for 1st 2 Direction Centers & 1st Combat Center; then ADC
Use for System Test	ADES with ADC assisted by Lincoln for first three sites
Revision	ADC
Research	ARDC (Lincoln initially)

Incl #3

1 2 8 4

4

RESPONSIBILITY FOR
PREPARATION OF SYNTHETIC AIR DEFENSE DATA
FOR TRAINING & SYSTEM TESTS
REQUIRING COMPUTER PROGRAMS

Preparation of Master	ADC
Adaptation & Check Out	ADC
Use for System Test	ADES with ADC
Revision	ADC
Research	ARDC (Lincoln initially)

Incl #4

1 2 8 5

5

RESPONSIBILITY FOR

MAINTENANCE (FSQ-7, FSQ-8) COMPUTER PROGRAMS

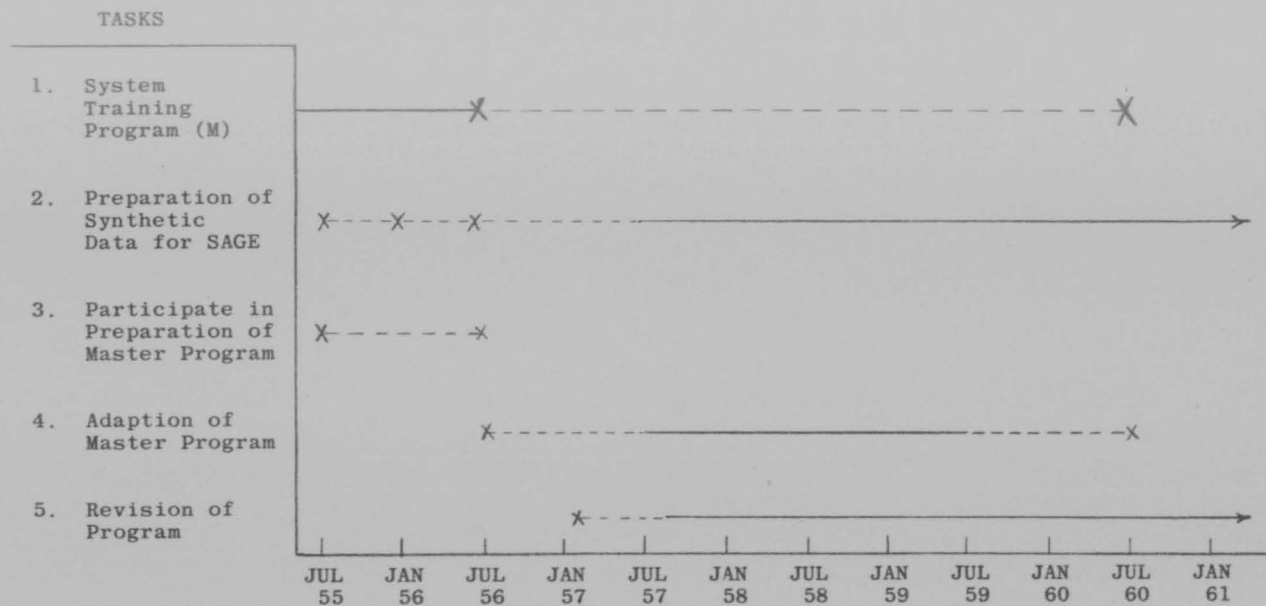
Preparation of Master	IBM
Adaptation & Check Out	IBM
Use for System Test	IBM
Revision	IBM
Research	ARDC (Lincoln & IBM Initially)

Incl #5

1 2 8 6

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TIME PHASING OF EFFORT

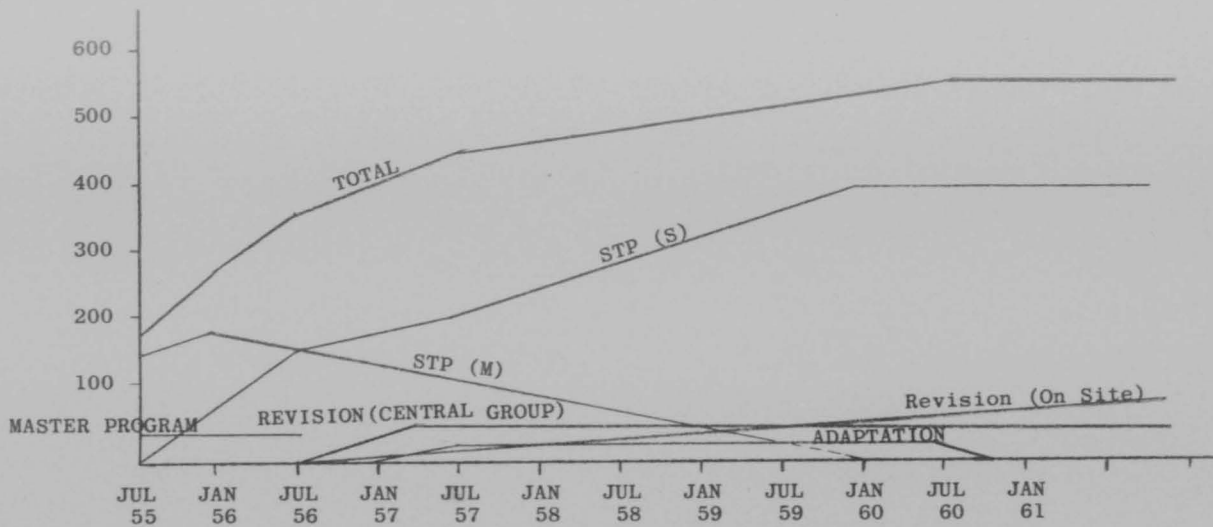


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CONTRACTOR PERSONNEL REQUIREMENTS



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Incl #7

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MILITARY PERSONNEL REQUIREMENTS
4620TH AIR DEFENSE WING (EXPERIMENTAL-SAGE)

FISCAL YEAR QUARTERS

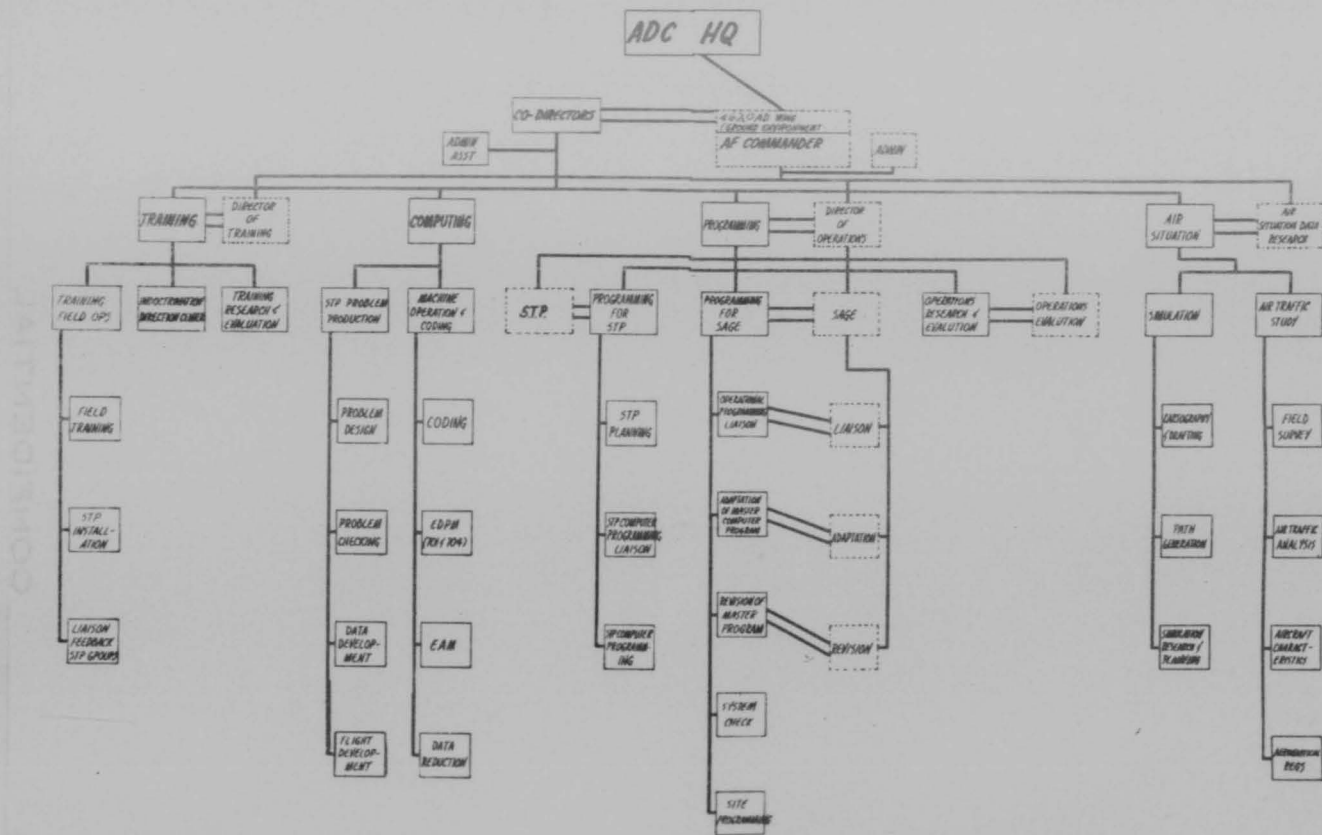
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Airmen				4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5
Civilians				3	3	3	3	3	3	3	3	3	3	6	6	6	6	6	6	6	6
TOTALS				15	22	25	25	31	45	45	48	50	53	49	49	49	49	49	49	49	49

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Incl #8

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RAND-4620th Air Defense Wing Organization



Incl #9



IN REPLY REFER TO: GTS

HEADQUARTERS
AIR TRAINING COMMAND
SCOTT AIR FORCE BASE, ILLINOIS

471

SUBJECT: Request for Planned Utilization of USAF Versus Contractor
Personnel in Support of the SAGE and Interim System
Equipment

TO: Commander
Air Defense Command
Ent Air Force Base
Colorado Springs, Colorado

1. Personnel of this command recently visited the Air Defense Engineering Service (ADES) Project Office, the Lincoln Laboratory and various manufacturers of the SAGE and interim system equipment to obtain information necessary for preparing training plans. During the visit to ADES and Lincoln Laboratory there was some question as to the Air Force maintenance concept for this equipment. Headquarters, Air Materiel Command has been requested to furnish this Headquarters the maintenance concept on both the interim and the SAGE system equipments at an early date. In order that training plans can be completed it is requested that the planned utilization of USAF versus contractor personnel be forwarded this Headquarters at the earliest practicable date. (Unclassified)

2. It is further requested that this Headquarters be furnished at least three (3) copies of each of the several classified documents comprising the "Operational Plan for Semi-Automatic Ground Environment System for Air Defense". (Confidential)

FOR THE COMMANDER:

Cy Funn
Comdr, TTAF, Gulfport, Miss
Dir of Maint Engr, Hq USAF,
Wash 25, D. C.

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HEADQUARTERS
AIR DEFENSE COMMAND
CENTRAL AIR FORCE BASE
COLORADO SPRINGS, COLORADO

GENERAL ORDERS)
NUMBER 7)

18 March 1955

This order supersedes General Orders 10, this Headquarters, 1953, Part II of General Orders 30, this Headquarters, 1954 and General Orders 37, this Headquarters, 1954.

RECISSION OF GENERAL ORDERS.....I
ASSIGNMENT OF GEOGRAPHICAL AREAS OF COMMANDS.....II

I. RECISSION OF GENERAL ORDERS. Paragraph 2, Section I, and paragraphs 1 and 2 of Section II, General Orders 21, this Headquarters, 30 June 1954, are rescinded.

II. ASSIGNMENT OF GEOGRAPHICAL AREAS OF COMMANDS.--1. Areas of responsibility of Air Defense Forces.

a. Western Air Defense Force. That geographical area inclosed by a line beginning at 48 degrees 30 minutes North - 132 degrees 02 minutes West; thence east to 48 degrees 30 minutes North - 124 degrees 43 minutes West; thence eastward along the United States-Canadian International Boundary to 49 degrees 00 minutes North - 115 degrees 00 minutes West; thence south along the 115th meridian to 46 degrees 58 minutes North - 115 degrees 00 minutes West; thence southward along the eastern border of Idaho to 42 degrees 00 minutes North - 111 degrees 03 minutes West; thence west along the 42nd parallel to 42 degrees 00 minutes North - 113 degrees 00 minutes West; thence south along the 113th meridian to 33 degrees 00 minutes North - 113 degrees 00 minutes West; thence southwest to 32 degrees 11 minutes North - 113 degrees 45 minutes West; thence westward along the United States-Mexican International Boundary to 32 degrees 30 minutes North - 117 degrees 23 minutes West; thence southeast to 28 degrees 48 minutes North - 115 degrees 45 minutes West; and including that area westward to the limit of radar surveillance and controlled fighter-interceptor capability adjacent to the western seaboard within the boundaries specified.

b. Eastern Air Defense Force. That geographical area inclosed by a line beginning at 43 degrees 00 minutes North - 65 degrees 45 minutes West; thence northwest to 44 degrees 49 minutes North - 66 degrees 56 minutes West; thence north and westward along the United States-Canadian International Boundary to 48 degrees 03 minutes North - 90 degrees 00 minutes West; thence south-southwest to the Minnesota-Wisconsin-Iowa intersection;

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GO 7, Hq ADC, Ent AFB, Colorado Springs, Colo., 18 Mar 55,
para II lb, cont.

thence along the western border of Wisconsin to the intersection with the northern border of Illinois; thence to 41 degrees 45 minutes North - 89 degrees 00 minutes West; thence along the 89th meridian to the border of Kentucky; thence along the western border of Kentucky to the northern border of Tennessee; thence east along the northern borders of Tennessee and North Carolina to the Atlantic Ocean; thence continuing on an azimuth of 122 degrees to the limit of radar surveillance and controlled fighter-interceptor capability; and including the area eastward to the limit of radar surveillance and controlled fighter-interceptor capability adjacent to the Eastern Seaboard of the Continental United States north of the above described line.

c. Central Air Defense Force. That geographical area inclosed by a line beginning at 25 degrees 57 minutes North - 97 degrees 09 minutes West; thence westward along the United States-Mexican International Boundary to 32 degrees 11 minutes North - 113 degrees 45 minutes West; thence northeast to 33 degrees 00 minutes North - 113 degrees 00 minutes West; thence north along the 113th meridian to 42 degrees 00 minutes North - 113 degrees 00 minutes West; thence east along the 42nd parallel to 42 degrees 00 minutes North - 111 degrees 03 minutes West; thence northward along the eastern border of Idaho to 46 degrees 58 minutes North - 115 degrees 00 minutes West; thence to 49 degrees 00 minutes North - 115 degrees 00 minutes West; thence along the United States-Canadian International Boundary to a line beginning at a point on the United States-Canada International Boundary at 90 degrees 00 minutes West; thence south-southwest to the Minnesota-Wisconsin-Iowa intersection; thence along the western border of Wisconsin to the intersection with the northern border of Illinois; thence to 41 degrees 45 minutes North - 89 degrees 00 minutes West; thence along the 89th meridian to the border of Kentucky; thence along the western border of Kentucky to the northern border of Tennessee; thence east along the northern borders of Tennessee and North Carolina to the Atlantic Ocean; thence continuing on an azimuth of 122 degrees to the limit of radar surveillance and controlled fighter-interceptor capability; and including the area eastward and southward to the limit of radar surveillance and controlled fighter-interceptor capability adjacent to the Eastern Seaboard and the coast of the Gulf of Mexico of the Continental United States east and south of the above described lines.

2. Areas of responsibility of Air Divisions (Defense).

a. Western Air Defense Force.

GO 7, Hq ADC, Ent AFB, Colorado Springs, Colo., 18 Mar 55,
para II 2a(1), cont.

(1) 9th Air Division (Defense) (Spokane Sector). That portion of the Western Air Defense Force area of responsibility inclosed by a line beginning at 49 degrees 00 minutes North - 115 degrees 00 minutes West; thence south to 46 degrees 58 minutes North - 115 degrees 00 minutes West; thence south along the eastern border of Idaho; thence west along the southern border of Idaho to 42 degrees 00 minutes North - 117 degrees 00 minutes West; thence north to 43 degrees 00 minutes North - 117 degrees 00 minutes West; thence west to 43 degrees 00 minutes North - 122 degrees 15 minutes West; thence north to 44 degrees 00 minutes North - 122 degrees 00 minutes West; thence north to 46 degrees 40 minutes North - 121 degrees 00 minutes West; thence north to 49 degrees 00 minutes North - 121 degrees 00 minutes West; thence east along the Canadian border to starting point.

(2) 25th Air Division (Defense) (Seattle Sector). That portion of the Western Air Defense Force area of responsibility inclosed by a line beginning at 48 degrees 30 minutes North - 132 degrees 02 minutes West; thence east to 48 degrees 30 minutes North - 124 degrees 43 minutes West; thence east along the United States - Canadian International Boundary to 49 degrees 00 minutes North - 121 degrees 00 minutes West; thence south to 46 degrees 40 minutes North - 121 degrees 00 minutes West; thence southwest to 44 degrees 00 minutes North - 122 degrees 00 minutes West; thence south to 43 degrees 00 minutes North - 122 degrees 15 minutes West; thence west along the 43rd parallel to the extent of the western boundary of the Pacific Air Defense Identification Zone and including the area westward to the limit of radar surveillance and controlled fighter-interceptor capability adjacent to the western seaboard within the boundaries specified.

(3) 28th Air Division (Defense) (San Francisco Sector). That portion of the Western Air Defense Force area of responsibility inclosed by a line beginning at 43 degrees 00 minutes North - 130 degrees 10 minutes West; thence east along the 43rd parallel to 43 degrees 00 minutes North - 117 degrees 00 minutes West; thence south to 42 degrees 00 minutes North - 117 degrees 00 minutes West; thence east to 42 degrees 00 minutes North - 113 degrees 00 minutes West; thence south to 39 degrees 00 minutes North - 113 degrees 00 minutes West; thence southwest to 37 degrees 00 minutes North - 118 degrees 30 minutes West; thence southwest to 36 degrees 00 minutes North - 120 degrees 00 minutes West; thence west to 36 degrees 00 minutes North - 121 degrees 30 minutes West; thence to 34 degrees 39 minutes North - 126 degrees 10 minutes West; and including that area westward to the limit of radar surveillance and controlled fighter-interceptor capability adjacent to the western seaboard within the boundaries specified.

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para II 2a, cont.

(4) 27th Air Division (Defense) (Los Angeles Sector).
That portion of the Western Air Defense Force area of responsibility inclosed by a line beginning at 34 degrees 39 minutes North - 126 degrees 10 minutes West; thence northeast to 36 degrees 00 minutes North - 121 degrees 30 minutes West; thence east to 36 degrees 00 minutes North - 120 degrees 00 minutes West; thence northeast to 37 degrees 00 minutes North - 118 degrees 30 minutes West; thence northeast to 39 degrees 00 minutes North - 113 degrees 00 minutes West; thence south to 33 degrees 00 minutes North - 113 degrees 00 minutes West; thence southwest to 32 degrees 11 minutes North - 113 degrees 45 minutes West; thence west along United States-Mexican International Boundary to 32 degrees 30 minutes North - 117 degrees 23 minutes West; thence southeast to 28 degrees 48 minutes North - 115 degrees 45 minutes West and that area westward to the limit of radar surveillance and controlled fighter-interceptor capability adjacent to the western seaboard within the boundaries specified.

b. Eastern Air Defense Force.

(1) 30th Air Division (Defense) (Detroit Sector).
That portion of the Eastern Air Defense Force area of responsibility south and west of a line beginning on the United States-Canadian International Boundary at 42 degrees 18 minutes North - 80 degrees 30 minutes West; thence east to 42 degrees 15 minutes North - 79 degrees 45 minutes West; thence south and east along the New York border to 42 degrees 00 minutes North - 78 degrees 28 minutes West; thence southwest to 39 degrees 35 minutes North - 80 degrees 20 minutes West; thence south to the intersection with the northern border of North Carolina at 80 degrees 20 minutes West; thence west, north and east along the Eastern Air Defense Force boundary to starting point.

(2) 32nd Air Division (Defense) (Syracuse Sector).
That portion of the Eastern Air Defense Force area of responsibility north of a line beginning on the United States-Canadian International Boundary at 42 degrees 18 minutes North - 80 degrees 30 minutes West; thence east to 42 degrees 15 minutes North - 79 degrees 45 minutes West; thence south and east along the New York border to 42 degrees 00 minutes North - 78 degrees 28 minutes West; thence northeast to 42 degrees 36 minutes North - 76 degrees 55 minutes West; thence east to 42 degrees 25 minutes North - 75 degrees 25 minutes West; thence southeast to 42 degrees 00 minutes North - 73 degrees 35 minutes West; thence northeast to 42 degrees 03 minutes North - 73 degrees 30 minutes West; thence east along the southern border of Massachusetts to the Atlantic Ocean; thence continuing on an azimuth of 122 degrees

GO 7, Hq ADC, Ent AFB, Colorado Springs, Colo., 18 Mar 55,
para II 2b(2), cont.

to the limit of radar surveillance and controlled fighter -
interceptor capability; and including that area eastward to
the limit of radar surveillance and controlled fighter-inter-
ceptor capability adjacent to the eastern seaboard north of
the above described line.

(3) 26th Air Division (Defense) (New York Sector).
That portion of the Eastern Air Defense Force area of responsi-
bility not contained in the 30th and 32nd Air Division (Def-
ense) Sectors, and including that area eastward to the limit
of radar surveillance and controlled fighter-interceptor
capability adjacent to the eastern seaboard between the
boundaries specified for the Syracuse Sector and Eastern Air
Defense Force.

c. Central Air Defense Force.

(1) 29th Air Division (Defense) (Great Falls Sector).
That portion of the Central Air Defense Force area of responsi-
bility inclosed by a line beginning at a point on the United
States-Canadian International Boundary at 115 degrees 00 minutes
west; thence south along the 115th meridian to the Idaho- Mont-
ana border; thence along the eastern border of Idaho and the
western border of Wyoming to the northern border of Utah at
41 degrees 00 minutes North - 111 degrees 03 minutes West;
thence along the southern borders of Wyoming and Nebraska to
the 96th meridian; thence north along the 96th meridian to the
western borders of Iowa; thence north along the western borders
of Iowa and Minnesota to the United States-Canadian International
Boundary.

(2) 31st Air Division (Defense) (Minneapolis Sector).
That portion of the Central Air Defense Force area of responsi-
bility inclosed by a line beginning at a point on the United
States-Canadian International Boundary at 90 degrees 00 minutes
West; thence southwest to the Minnesota-Wisconsin-Iowa intersec-
tion; thence along the western border of Wisconsin to the inter-
section with the northern border of Illinois; thence to 41 deg-
rees 45 minutes North - 89 degrees 00 minutes West; thence south
along the 89th meridian to 39 degrees 00 minutes North - 89 deg-
rees 00 minutes West; thence west along the 39th parallel to the
intersection with the eastern border of Missouri; thence along
the eastern and northern borders of Missouri with the line ex-
tended westward to the 96th meridian; thence north along the
96th meridian to the western border of Iowa; thence north along
the western borders of Iowa and Minnesota to the United States-
Canadian International Boundary.

GO 7, Hq ADC, Ent AFB, Colorado Springs, Colo., 18 Mar 55,
para II 2c, cont.

(3) 34th Air Division (Defense) (Albuquerque Sector). That portion of the Central Air Defense Force area of responsibility inclosed by a line beginning at a point on the United States-Mexican International Boundary at 32 degrees 11 minutes North - 113 degrees 45 minutes West; thence northeast to 33 degrees 00 minutes North - 113 degrees 00 minutes West; thence north to 42 degrees 00 minutes North - 113 degrees 00 minutes West; thence east, south and east along the Utah border; thence east, south and west along the Colorado border to 37 degrees 00 minutes North - 103 degrees 00 minutes West; thence south along the 103rd meridian to the United States-Mexican International Boundary.


(4) 33rd Air Division (Defense) (Oklahoma City Sector). That portion of the Central Air Defense Force area of responsibility inclosed by a line beginning at a point on the United States-Mexican International Boundary at 103 degrees 00 minutes West; thence north along the eastern boundary of the 34th Air Division (Defense) Sector to the southern boundary of the 29th Air Division (Defense) Sector; thence east along the southern boundaries of the 29th and 31st Air Divisions (Defense) Sectors to the 89th meridian; thence south along the 89th meridian to the Kentucky border; thence south along the western borders of Kentucky, Tennessee and Mississippi to the Gulf of Mexico; thence continuing on an azimuth of 180 degrees to the limit of radar surveillance and controlled fighter-interceptor capability; and including that area south and east to the limit of radar surveillance and controlled fighter-interceptor capability adjacent to the gulf coast west of the above described line.

(5) 35th Air Division (Defense) (Atlantic Sector). That portion of the Central Air Defense Force area of responsibility not contained in the 29th, 31st, 33rd and 34th Air Divisions (Defense) Sectors; and including that area southward and eastward to the limit of radar surveillance and controlled fighter-interceptor capability adjacent to the eastern seaboard and the gulf coast between the boundaries specified for the Oklahoma City Sector and Central Air Defense Force.

BY ORDER OF THE COMMANDER:

OFFICIAL:

GEORGE F SMITH
Major General, USAF
Chief of Staff


WALTER W. ROBINSON
Colonel, USAF
Command Adjutant

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HEADQUARTERS
AIR DEFENSE COMMAND
Ent Air Force Base
Colorado Springs, Colorado

FILE NUMBER 52.1

474

ADCOOT-B1

17 Sep 54

SUBJECT: (Uncl) Proposed 1956 Air Defense Force and Air Division (Defense)
Boundaries

TO: Commander
Western Air Defense Force
Hamilton Air Force Base
Hamilton, California

1. Inclosed are proposed changes to Air Defense Force and Air Division (Defense) boundaries.
2. The boundaries, when practical, conform to your anticipated sub-sector boundaries as submitted to this headquarters.
3. Note that the boundary between Central and Eastern Air Defense Forces has been relocated. A better distribution of weapons and units has been achieved by this realignment.
4. Request comments to specific changes to geographical coordinates be sent to this headquarters not later than 11 October 1954.

BY ORDER OF THE COMMANDER:

2 Incls

1. Air Def Forces & ADiv (Def)
Boundary Coordinates (5 cys)
2. Map of Boundaries (5 cys)

SECRET

1301

SECRET

Hq ADC ADCCT-B1, Subj: (Uncl) Proposed 1956 Air Defense Force and Air Division (Defense) Boundaries

PO&R-R (17 Sep 54)

1st Ind

23 Oct 54

HEADQUARTERS CENTRAL AIR DEFENSE FORCE, Grandview Air Force Base, Grandview, Missouri

TO: Commander, Air Defense Command, Ent Air Force Base, Colorado Springs, Colorado

1. This headquarters concurs with the proposed changes to air division and air defense force boundaries with the following minor exceptions:

a. It is recommended that the Air Division (Defense) boundary between the 34th and 33d Air Divisions be readjusted as follows:

- (1) Beginning at a point of 37° North 102° West; west to 37° North and 103° West; southwest to $35^{\circ}15'$ North 104° West; southeast to 32° North $101^{\circ}40'$ West; thence southwest to the United States-Mexican border at $29^{\circ}10'$ North and $103^{\circ}30'$ West.
- (2) This adjustment to proposed boundaries is recommended for the following reasons:
 - (a) The line proposed by this headquarters follows the sub-sector boundaries between M-88, P-51 and P-8.
 - (b) The recent decision to drop TM-185 from the third phase program necessitates a change in the sub-sector boundary between TM-184 and TM-188.

b. In instances where division or defense force boundaries follow sub-sector lines which cross surveillance station locations, the description of the boundary should designate a curve in the line to encompass the unit for assignment to the proper air division. It is therefore recommended that the boundaries, when described, indicate a curvature of the line so that:

- (1) The 808th AC&W Squadron will be assigned to the 31st Air Division.
- (2) The 722d AC&W Squadron and other units located at Sioux City will be assigned to the 20th Air Division.

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Hq CADF PQ&R-R 1st Ind to 1tr ADC ADOCT-B1, Subj: (Uncl) Proposed 1956
Air Defense Force and Air Division (Defense) Boundaries

(3) The 730th AC&W Squadron will be assigned to the 58th
Air Division.

2. The realignment of the boundary between Central and Eastern Air
Defense Forces, which involves the transfer of the 35th Air Division to
Eastern Air Defense Force, appears to support the organizational concept
for CONAD under which the command of naval forces will be exercised at
regional level for the east and west coasts.

3. It is assumed that the proposed changes in Air Defense Force
and Air Division (Defense) boundaries will not be implemented until the
double perimeter concept of operations is implemented. Referring speci-
fically to the 35th Air Division, it is assumed that four new AC&W Squad-
rons will be operational within the 35th Air Division's area of responsi-
bility, as revised, before the 663d AC&W Squadron and the 516th Air Defense
Group are transferred to another air division within Eastern Air Defense
Force. There is now only one other AC&W Squadron operational in the 35th
Air Division. The 663d AC&W Squadron and the 516th Air Defense Group now
accomplish the training of personnel earmarked for new squadrons in the
35th Air Division. The ADC Program, dated 1 July 1954, indicates that
the 663d AC&W Squadron and 516th Air Defense Group, with subordinate units,
are to be transferred to the Eastern Air Defense Force during the third
quarter of fiscal year 1955. It is recommended that the present boundary
for the 35th Air Division remain unchanged until this division has at least
five operational assigned AC&W Squadrons in order to provide for the train-
ing of personnel for the new squadrons and the formation of these new squad-
rons on an orderly basis.

2 Incls
w/d

E. W. SUAREZ
Brigadier General, USAF
Vice Commander

SECRET
3

FILE NUMBER 52.1

475

17 Jan 55

COMADC

COMCADF GRANDVIEW AFB, GRANDVIEW, MO.

(UNCLASSIFIED) ADOOT-B1 _____ . This message in 2 parts: Part I. Your classified message PG&R-E 14. The 1956 Central Air Defense Force and Air Division (Defense) boundary will be approximately as submitted in your first indorsement PG&R-R, 23 October 54, to my letter ADOOT-B1, Subject: "Proposed 1956 Air Defense Force and Air Division (Defense) Boundaries," 17 September 54, and your classified message PG&R-R 33, 13 January 55. Part II. Your Classified Message PG&R-R 33. Request your comments and recommendations to the advisability of placing this Eastern Air Defense Force-Central Air Defense Force boundary into effect at earliest possible date.

MEMO FOR RECORD: CADF and EADF have agreed on the 1956 ADF boundary; therefore, it is deemed advisable to put this force boundary into effect at the earliest possible date, thereby affording EADF and CADF to immediately assume responsibility for the geographical region and existing units therein, which would eventually be assigned to them. This would further assist them in their programming, development of plans, and engineering and installing wire and radio communications.

Identical message sent to EADF.

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1304

FILE NUMBER 52.1

ADC
 ENA3 12 YMB142IYB170
 PPJED
 ZFD JWF

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17 Jan 55

WWD149KFA125
 PP JADEN JEPNB JESKB
 DE JEDKF 67
 P 291745Z
 FM COMDR CADF, GRANDVIEW AFB, MO.
 TO JEDEN/COMDR EADF, STEWART AFB, NEWBURGH, NY.
 JESKB/COMDR 35TH AD V TINKER AFB, OKLA.
 BT

/UNCLASSIFIED/ P&R 8474. This message in five parts. Part I. Reference your message ADOOT-B1 03380. This headquarters recommends transfer of the 35th Air Division to Eastern Air Defense Force and implementation of the Eastern Air Defense Force Central Air Defense Force boundary as of 0001Z, 1 April 1955./ 0-45 82. Earliest possible implementation of boundary change consist with orderly transfer is believed desirable from the viewpoint of all units and commands involved. Part III. The transfer date effective 1 April 1955, will enable commands concerned to completely coordinate the transfer. A plan is being developed by this headquarters which outlines specified actions to be completed.

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In a time-phased basis. This plan includes a detailed briefing of the Eastern Air Defense Staff by this headquarters at Grandview. Part IV. Recommend assumption of command and/or operational control by Eastern Air Defense Force for the 35th Air Division and assigned and augmentation units effective 0001Z 1 April 1955. Part V; IC order to accomplish transfer of the 35th Air Division to EADF by 1 April 1955. Approval by ADC is requested not later than 5 February 55.

BT
 29/1846Z Jan JEDKF

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HEADQUARTERS
 AIR DEFENSE COMMAND
 8th AIR FORCE BASE
 COLORADO SPRINGS, COLORADO

DOC 477 ORDER 55a

GENERAL ORDERS }
 NUMBER 8)

29 March 1955

REASSIGNMENT OF THE 35TH AIR DIVISION (DEFENSE).--1. The 35th Air Division (Defense) and assigned units at locations indicated are relieved from assignment to Central Air Defense Force and are assigned to Eastern Air Defense Force effective 10 April 1955 without change in strength or station.

35th Air Division (Defense), Headquarters
 Dobbins Air Force Base, Georgia
 444th Fighter Interceptor Squadron
 Charleston Air Force Base, South Carolina
 460th Fighter Interceptor Squadron
 McGhee Tyson Municipal Airport, Tennessee
 469th Fighter Interceptor Squadron
 McGhee Tyson Municipal Airport, Tennessee
 516th Air Defense Group, Headquarters
 McGhee Tyson Municipal Airport, Tennessee
 516th Air Base Squadron
 McGhee Tyson Municipal Airport, Tennessee
 516th Materiel Squadron
 McGhee Tyson Municipal Airport, Tennessee
 516th United States Air Force Infirmary
 McGhee Tyson Municipal Airport, Tennessee
 614th Aircraft Control and Warning Squadron
 Dobbins Air Force Base, Georgia
 632nd Aircraft Control and Warning Squadron
 Dobbins Air Force Base, Georgia
 652nd Aircraft Control and Warning Squadron
 Dobbins Air Force Base, Georgia
 660th Aircraft Control and Warning Squadron
 MacDill Air Force Base, Florida
 663rd Aircraft Control and Warning Squadron
 Lake City Air Force Station, Tennessee
 679th Aircraft Control and Warning Squadron
 Dobbins Air Force Base, Georgia
 701st Aircraft Control and Warning Squadron
 Dobbins Air Force Base, Georgia
 702nd Aircraft Control and Warning Squadron
 Dobbins Air Force Base, Georgia
 792nd Aircraft Control and Warning Squadron
 North Charleston, South Carolina
 810th Aircraft Control and Warning Squadron
 Dobbins Air Force Base, Georgia

GO 8, Hq ADC, Ent AFB, Colorado Springs, Colo., 29 Mar 55,
para 1, cont.

861st Aircraft Control and Warning Squadron
Dobbins Air Force Base, Georgia
908th Aircraft Control and Warning Squadron
Dobbins Air Force Base, Georgia
4674th Ground Observer Squadron
Dobbins Air Force Base, Georgia
Detachment 1, 4674th Ground Observer Squadron
Nashville, Tennessee
Detachment 2, 4674th Ground Observer Squadron
Knoxville, Tennessee
Detachment 3, 4674th Ground Observer Squadron
Durham, North Carolina
Detachment 4, 4674th Ground Observer Squadron
Charlotte, North Carolina
Detachment 5, 4674th Ground Observer Squadron
Savannah, Georgia
Detachment 6, 4674th Ground Observer Squadron
Atlanta, Georgia
Detachment 7, 4674th Ground Observer Squadron
Jacksonville, Florida
Detachment 8, 4674th Ground Observer Squadron
Miami, Florida
Detachment 9, 4674th Ground Observer Squadron
Mobile, Alabama
Detachment 10, 4674th Ground Observer Squadron
Columbia, South Carolina
Detachment 11, 4674th Ground Observer Squadron
Jackson, Mississippi
Detachment 12, 4674th Ground Observer Squadron
Montgomery, Alabama


Subassignment of component units of the 35th Air Division
(Defense) remain unchanged.

2. Authority: Air Force Regulation 20-27.

BY ORDER OF THE COMMANDER:

OFFICIAL:

GEORGE F SMITH
Major General, USAF
Chief of Staff


WALTER W ROBINSON
Colonel, USAF
Command Adjutant

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5 - Units concerned

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1307

HEADQUARTERS
CONTINENTAL AIR DEFENSE COMMAND
CENTRAL AIR FORCE BASE
COLORADO SPRINGS, COLORADO

DOC 478 ADGHR 55a

CONAD
GENERAL ORDERS }
NUMBER 2)

8 April 1955

REASSIGNMENT OF THE 35TH JOINT AIR DIVISION (DEFENSE).

1. The 35th Joint Air Division (Defense) is relieved from assignment to Joint Central Air Defense Force and is assigned to Joint Eastern Air Defense Force effective 10 April 1955 without change in strength or station.

2. Authority: Paragraph 30212 of Joint Action Armed Forces (Field Manual 110-5, Joint Action Armed Forces, Air Force Manual 1-1).

BY ORDER OF THE COMMANDER IN CHIEF:

OFFICIAL:

GEORGE F SMITH
Major General, USAF
Chief of Staff

W J Birmele

W J BIRMELE
LT COL, USAF
Asst Comd Adj

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5 - Unit concerned

HEADQUARTERS
 AIR DEFENSE COMMAND
 CENTRAL AIR FORCE BASE
 COLORADO SPRINGS, COLORADO

478

GENERAL ORDERS)
 NUMBER 12)

13 April 1955

RECISSION OF GENERAL ORDERS..... I
 ASSIGNMENT OF GEOGRAPHICAL AREAS OF COMMANDS..... II

I. RECISSION OF GENERAL ORDERS. Paragraph 1b, 1c, 2b(3), 2b(4), 2c(2), 2c(4) and 2c(5) of Section II, General Orders 7, this Headquarters, current series are rescinded.

II. ASSIGNMENT OF GEOGRAPHICAL AREAS OF COMMANDS --1. Section II, General Orders 7, this Headquarters, current series, is amended as follows. Areas of responsibility of Air Defense Forces.

d. Eastern Air Defense Force That geographical area inclosed by a line beginning at 43 degrees 00 minutes North - 65 degrees 15 minutes West; thence northwest to 44 degrees 49 minutes North - 66 degrees 56 minutes West; thence North and westward along the United States-Canada International Boundary to 48 degrees 03 minutes North - 89 degrees 32 minutes West; thence southwest to 47 degrees 50 minutes North - 90 degrees 00 minutes West; thence south to 46 degrees 30 minutes North - 90 degrees 00 minutes West; thence southwest to 46 degrees 00 minutes North - 91 degrees 00 minutes West; thence south to 42 degrees 00 minutes North - 90 degrees 40 minutes West; thence southeast to 41 degrees 20 minutes North - 88 degrees 45 minutes West; thence south to 37 degrees 13 minutes North - 89 degrees 10 minutes West; thence south along the western borders of Kentucky, Tennessee and Mississippi to 31 degrees 00 minutes North - 91 degrees 38 minutes West; thence west to 31 degrees 00 minutes North - 91 degrees 45 minutes West; thence south to 25 degrees 00 minutes North - 91 degrees 45 minutes West; and including that area eastward and southward to the limit of radar surveillance and controlled fighter-interceptor capability adjacent to the Eastern Seaboard and Gulf of Mexico east and south of the above described line.

c. Central Air Defense Force. That geographical area inclosed by a line beginning at 25 degrees 57 minutes North - 97 degrees 09 minutes West; thence westward along the United States-Mexico International Boundary to 32 degrees 11 minutes North - 113 degrees 45 minutes West; thence northeast to 33 degrees 00 minutes North - 113 degrees 00 minutes West; thence North along the 113th meridian to 42 degrees 00 minutes North - 113 degrees 00 minutes West; thence east along the 42nd parallel to 42 degrees 00 minutes North - 111 degrees 03 minutes West; thence northward along the eastern border of Idaho to 46 degrees

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1309

GO 12, Hq ADC, Ent AFB, Colorado Springs, Colo , 13 Apr 55, 3
 para IIIc, cont.

58 minutes North - 115 degrees 00 minutes West; thence north to 49 degrees 00 minutes North - 115 degrees 00 minutes West; thence eastward along the United States-Canada International Boundary to 48 degrees 03 minutes North - 89 degrees 32 minutes West; thence southwest to 47 degrees 50 minutes North - 90 degrees 00 minutes West; thence south to 46 degrees 30 minutes North - 90 degrees 00 minutes West; thence southwest to 46 degrees 00 minutes North - 91 degrees 00 minutes West; thence south to 42 degrees 00 minutes North - 90 degrees 40 minutes West; thence southeast to 41 degrees 20 minutes North - 88 degrees 45 minutes West; thence south to 37 degrees 13 minutes North - 89 degrees 10 minutes West; thence south along the western borders of Kentucky, Tennessee, and Mississippi to 31 degrees 00 minutes North - 91 degrees 38 minutes West; thence west to 31 degrees 00 minutes North - 91 degrees 45 minutes West; thence south to 25 degrees 00 minutes North - 91 degrees 45 minutes West; and including that area south and east to the limit of radar surveillance and controlled fighter-interceptor capability adjacent to the gulf coast west of the above described line.

2. Areas of responsibility of Air Division (Defense).

d. Eastern Air Defense Force

(3) 35th Air Division (Defense)(Atlanta Sector).

That portion of the Eastern Air Defense Force area of responsibility inclosed by a line beginning at a point 25 degrees 00 minutes North - 91 degrees 45 minutes West; thence north to 31 degrees 00 minutes North - 91 degrees 45 minutes West; thence east to 31 degrees 00 minutes North - 91 degrees 38 minutes West; thence north along the western borders of Mississippi and Tennessee to the intersection of Tennessee-Kentucky-Missouri borders; thence east along the northern borders of Tennessee and North Carolina to the Atlantic Ocean; thence continuing on an azimuth of 122 degrees to the limit of radar surveillance and controlled fighter-interceptor capability and including that area eastward and southward to the limit of radar surveillance and controlled fighter-interceptor capability adjacent to the eastern seaboard and Gulf of Mexico east and south of the above described line.

(4) 26th Air Division (Defense)(New York Sector).

That portion of the Eastern Air Defense Force area of responsibility not contained within the 30th, 32nd, and 35th Air Divisions (Defense) sectors, and including that area eastward to the limit of radar surveillance and controlled fighter-interceptor capability adjacent to the eastern seaboard between the boundaries specified for the Syracuse and Atlanta sectors.

GO 12, Hq ADC, Ent AFB, Colorado Springs, Colo., 13 Apr 55,
para II2, cont.

c. Central Air Defense Force.


(2) 31st Air Division (Defense)(Minneapolis Sector).
That portion of the Central Air Defense Force area of responsibility inclosed by a line beginning at a point on the United States-Canada International Boundary at 48 degrees 03 minutes North - 89 degrees 32 minutes West; thence southwest to 47 degrees 50 minutes North - 90 degrees 00 minutes West; thence south to 46 degrees 30 minutes North - 90 degrees 00 minutes West; thence southwest to 46 degrees 00 minutes North - 91 degrees 00 minutes West; thence south to 42 degrees 00 minutes North - 90 degrees 40 minutes West; thence southeast to 41 degrees 20 minutes North - 88 degrees 45 minutes West; thence south to 39 degrees 00 minutes North - 88 degrees 55 minutes West; thence west along the 39th parallel to the intersection with the eastern border of Missouri; thence along the eastern and northern borders of Missouri with the line extended westward to the 96th meridian; thence north along the 96th meridian to the western border of Iowa; thence north along the western borders of Iowa and Minnesota to the United States-Canada International Boundary.

(4) 33rd Air Division (Defense)(Oklahoma City Sector).
That portion of the Central Air Defense Force area of responsibility inclosed by a line beginning at a point on the United States-Mexico International Boundary at 103 degrees 00 minutes West; thence north along the eastern boundary of the 34th Air Division (Defense) to the southern boundary of the 29th Air Division (Defense); thence east along the southern boundaries of the 29th and 31st Air Divisions (Defense) to the Central Air Defense Force boundary; thence south along the Air Defense Force boundary to the limit of radar surveillance and controlled fighter-interceptor capability and including that area south and east to the limit of radar surveillance and controlled fighter-interceptor capability adjacent to the gulf coast west of the above described line.

BY ORDER OF THE COMMANDER:

OFFICIAL:

GEORGE F SMITH
Major General, USAF
Chief of Staff


WALTER W ROBINSON
Colonel, USAF
Command Adjutant

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CONTINENTAL AIR DEFENSE COMMAND
CENTRAL AIR FORCE BASE
COLORADO SPRINGS, COLORADO

480

GENERAL ORDERS)
NUMBER 3)

13 April 1955

RECISSION OF GENERAL ORDERS.....I
ASSIGNMENT OF AREAS OF RESPONSIBILITY FOR JOINT REGIONAL
AIR DEFENSE FORCES AND JOINT AIR DEFENSE DIVISIONS.....II

I. RECISSION OF GENERAL ORDERS. Paragraph 1b, 1c, 2b(3), 2b(4), 2c(2), 2c(4) and 2c(5) of General Orders 1, this Headquarters, current series are rescinded.

II. ASSIGNMENT OF AREAS OF RESPONSIBILITY FOR JOINT REGIONAL AIR DEFENSE FORCES AND JOINT AIR DEFENSE DIVISIONS.--1. General Orders 1, this Headquarters, current series is amended as follows. Areas of responsibility of Joint Regional Air Defense Forces.

b. Joint Eastern Air Defense Force. That geographical area inclosed by a line beginning at 43 degrees 00 minutes North - 65 degrees 15 minutes West; thence northwest to 44 degrees 49 minutes North - 66 degrees 56 minutes West; thence north and westward along the United States-Canada International Boundary to 48 degrees 03 minutes North - 89 degrees 32 minutes West; thence southwest to 47 degrees 50 minutes North - 90 degrees 00 minutes West; thence south to 46 degrees 30 minutes North - 90 degrees 00 minutes West; thence southwest to 46 degrees 00 minutes North - 91 degrees 00 minutes West; thence south to 42 degrees 00 minutes North - 90 degrees 40 minutes West; thence southeast to 41 degrees 20 minutes North - 88 degrees 45 minutes West; thence south to 37 degrees 13 minutes North - 89 degrees 10 minutes West; thence south along the western borders of Kentucky, Tennessee, and Mississippi to 31 degrees 00 minutes North - 91 degrees 38 minutes West; thence west to 31 degrees 00 minutes North - 91 degrees 45 minutes West; thence south to 25 degrees 00 minutes North - 91 degrees 45 minutes West; and including that area eastward and southward to the limit of radar surveillance and controlled fighter-interceptor capability adjacent to the Eastern Seaboard and Gulf of Mexico east and south of the above described line.

c. Joint Central Air Defense Force. That geographical area inclosed by line beginning at 25 degrees 57 minutes North - 97 degrees 09 minutes West; thence westward along the United States-Mexico International Boundary to 32 degrees 11 minutes North - 113 degrees 45 minutes West; thence northeast to 33 degrees 00 minutes North - 113 degrees 00 minutes West; thence north along the 113th meridian to 42 degrees 00 minutes North - 113 degrees 00 minutes West; thence east along the 42nd parallel to 42 degrees 00 minutes North - 111 degrees 03 minutes West; thence northward along the eastern border of Idaho to 46 degrees 58 minutes North - 115 degrees 00 minutes West; thence north to 49 degrees 00 minutes North - 115 degrees 00 minutes West; thence eastward along the United States-Canada International Boundary to 48 degrees 03

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GO 3, Hq CONAD, Ent AFB, Colorado Springs, Colo., 13 Apr 55,
IILc, cont.

minutes North - 89 degrees 32 minutes West; thence southwest to 47 degrees 50 minutes North - 90 degrees 00 minutes West; thence south to 46 degrees 30 minutes North - 90 degrees 00 minutes West; thence southwest to 46 degrees 00 minutes North - 91 degrees 00 minutes West; thence south to 42 degrees 00 minutes North - 90 degrees 40 minutes West; thence southeast to 41 degrees 20 minutes North - 88 degrees 45 minutes West; thence south to 37 degrees 13 minutes North - 89 degrees 10 minutes West; thence south along the western borders of Kentucky, Tennessee, and Mississippi to 31 degrees 00 minutes North - 91 degrees 38 minutes West; thence west to 31 degrees 00 minutes North - 91 degrees 45 minutes West; thence south to 25 degrees 00 minutes North - 91 degrees 45 minutes West; and including that area south and east to the limit of radar surveillance and controlled fighter-interceptor capability adjacent to the gulf coast west of the above described line.

2. Areas of responsibility of Joint Air Defense Divisions.

b. Joint Eastern Air Defense Force.

(3) 35th Joint Air Defense Division (Atlantic Sector).
That portion of the Joint Eastern Air Defense Force area of responsibility inclosed by a line beginning at a point 25 degrees 00 minutes North - 91 degrees 45 minutes West; thence north to 31 degrees 00 minutes North - 91 degrees 45 minutes West; thence east to 31 degrees 00 minutes North - 91 degrees 38 minutes West; thence north along the western borders of Mississippi and Tennessee to the intersection of Tennessee-Kentucky-Missouri borders; thence east along the northern borders of Tennessee and North Carolina to the Atlantic Ocean; thence continuing on an azimuth of 122 degrees to the limit of radar surveillance and controlled fighter-interceptor capability and including that area eastward and southward to the limit of radar surveillance and controlled fighter-interceptor capability adjacent to the eastern seaboard and Gulf of Mexico east and south of the above described line

(4) 26th Joint Air Defense Division (New York Sector).
That portion of the Joint Eastern Air Defense Force area of responsibility not contained within 30th, 32nd, and 35th Joint Air Defense Division sectors, and including that area eastward to the limit of radar surveillance and controlled fighter-interceptor capability adjacent to the eastern seaboard between the boundaries specified for the Syracuse and Atlanta sectors.

c. Joint Central Air Defense Force.

(2) 31st Joint Air Defense Division (Minneapolis Sector).
That portion of the Joint Central Air Defense Force area of responsibility inclosed by a line beginning at a point on the United States-Canada International Boundary at 48 degrees 03 minutes North - 89 degrees 32 minutes West; thence southwest to 47 degrees 50 minutes North - 90 degrees 00 minutes West; thence south to 46 degrees 30

GO 3, Hq CONAD, Ent AFB, Colorado Springs, Colo., 13 Apr 55,
II2c(2), cont.

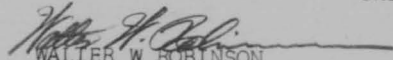
minutes North - 90 degrees 00 minutes West; thence southwest to 46 degrees 00 minutes North - 91 degrees 00 minutes West; thence south to 42 degrees 00 minutes North - 90 degrees 49 minutes West; thence southeast to 41 degrees 20 minutes North - 88 degrees 45 minutes West; thence south to 39 degrees 00 minutes North - 88 degrees 55 minutes West; thence west along the 39th parallel to the intersection with the eastern border of Missouri; thence along the eastern and northern borders of Missouri with the line extended westward to the 96th meridian; thence north along the 96th meridian to the western border of Iowa; thence north along the western borders of Iowa and Minnesota to the United States-Canada International Boundary.

(4) 33rd Joint Air Defense Division (Oklahoma City Sector). That portion of the Joint Central Air Defense Force area of responsibility inclosed by a line beginning at a point on the United States-Mexico International Boundary at 103 degrees 00 minutes West; thence north along the eastern boundary of the 34th Joint Air Defense Division to the southern boundary of the 29th Joint Air Defense Division; thence east along the southern boundaries of the 29th and 31st Joint Air Defense Divisions to the Joint Central Air Defense Force boundary; thence south along the Joint Air Defense Force boundary to the limit of radar surveillance and controlled fighter-interceptor capability and including that area south and east to the limit of radar surveillance and controlled fighter-interceptor capability adjacent to the gulf coast west of the above described line.

BY ORDER OF THE COMMANDER IN CHIEF:

OFFICIAL:

GEORGE F SMITH
Major General, USAF
Chief of Staff


WALTER W ROBINSON
Colonel, USAF
Command Adjutant

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GENERAL ORDERS)
 NUMBER 3)

8 February 1955

DESIGNATION AND ORGANIZATION OF A NON-TABLE OF
 ORGANIZATION UNIT..... I
 REASSIGNMENT OF A UNIT..... II

I. DESIGNATION AND ORGANIZATION OF A NON-TABLE OF ORGANIZATION UNIT. 1. The following unit is designated, assigned as indicated and will be organized under appropriate Unit Manning Documents, effective 18 February 1955, at Moody Air Force Base, Georgia:

UNIT	ASSIGNMENT
Headquarters, 4756th Air Defense Group (Weapons)	4750th Air Defense Wing (Weapons)

2. Organizational equipment will be authorized by Air Defense Command Unit Authorization List 500-OA-07.
3. Action directed herein will be reported in accordance with Air Force Regulation 20-49.
4. Authority: Air Force Regulation 20-27.

II. REASSIGNMENT OF A UNIT. 1. Effective 18 February 1955, the 4756th Air Defense Squadron (Weapons) is relieved from assignment to 4750th Air Defense Wing (Weapons) and is assigned to the 4756th Air Defense Group (Weapons).

2. Authority: Air Force Regulation 20-27.

BY ORDER OF THE COMMANDER:

OFFICIAL:

GEORGE F SMITH
 Major General, USAF
 Chief of Staff

W J Birmele
 W J BIRMELE
 LT COL, USAF
 Asst Comd Adj

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HEADQUARTERS
AIR DEFENSE COMMAND
ENT AIR FORCE BASE
COLORADO SPRINGS, COLORADO

ADHCR

SUBJECT: ADC Headquarters Manning Requirements

TO: Chief of Staff
Headquarters United States Air Force
Washington 25, D.C.

1. On 26 February 1954, I sent you a letter, subject: "ADC Evaluation of Headquarters Functions," which outlined many of the problems facing the headquarters of the Air Defense Command. In this letter were the recommendations of my "Functions and Manning Review Board" which your Headquarters had directed that I convene. You may recall that this Board recommended a reduction of 121 manpower spaces from our previous authorizations for Division Headquarters and above and that your Headquarters generally approved the findings.

2. We have now had many months of operating experience under the manning recommended by this Board. It has become increasingly evident that we underestimated our headquarters requirements. In particular, the criterion of matching phased requirements with our expanding workloads was not sufficiently considered. Because of my concern for overloaded staffs, I again convened a Headquarters Functions and Manning Review Board to consider the impact of all our increased workloads upon headquarters of Division level and above. Requirements were projected to 30 June 1955 with the intention of presenting the results to you several months ago. However, our heavy schedule has made this impossible and again we are caught in the position of presenting our "current" requirements rather than being able to project our requirements to where we can once more catch up with the game. We are attempting to solve this problem by continuing our present Board's deliberations.

3. I am well aware of the critical manpower situation facing the Air Force at the present time and of the impact an expanding Air Defense Command has upon this problem. It would be a blessing if we could shut our eyes to the many expanding requirements and have them disappear. Unfortunately, as you know only too well, this cannot be done,

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ADHCR Subject: ADC Headquarters Manning Requirements

and I feel that I would be remiss in my duties if I did not present to you a true and realistic picture of the minimum adequate manpower requirements necessary to carry out my ever expanding mission. I am also aware of the concern which your staff and the Office of the Secretary of Defense feel for the relatively high percentage of personnel presently authorized within the various staffs in the Air Force. This concern was clearly expressed to the members of our Board and they had this thought before them during all of their deliberations.

4. Notwithstanding these facts, this Board has recommended increases of 390 personnel for the headquarters staffs of the twelve Air Divisions (Defense), three Air Defense Forces, and Air Defense Command. Your Manpower and Organization people may view this increase with trepidation; however, I am not convinced that even this increase is adequate for our increasingly complex mission. This is roughly an increase of 9.7% per Division, 8.6% per Air Defense Force and 6.9% for Headquarters, Air Defense Command. I am certain that our current program will establish an expansion in workload which is relatively much greater than this increase in personnel. We will continue to apply every possible measure for better management, but further economies in this area will be needed to supplement, rather than replace, our increased requirements.

5. To present our case in as much detail as possible, I have had prepared a number of inclosures stressing in utmost detail some of the points I have passed over quickly above or outlined in my letter of last year. First is an enumeration of the many increased workloads imposed upon the Command during the past year, either as an operating or a staff planning load (Inclosure #1). Secondly, I have again had listed the factors I pointed out last year as the basis for an increase in headquarters strength, which are, in fact, more applicable this year and a relisting of the principles upon which our Review Board conducted their deliberations and hearings. Thirdly, the detailed findings of the Board are presented in a series of Inclosures and Tabs which your staff will desire to go over in detail.

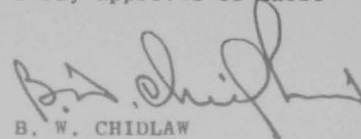
6. Of the many new developments in Air Defense which make demands upon our time, the establishment of CONAD is uppermost in my mind. The workload incident to coordinating and publishing the many necessary new plans, directives and

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policies is being superimposed on the existing ADC staffs. There is no alternative but to do both jobs properly. I feel it is absolutely essential that the organization be manned to the degree necessary to permit the Air Force to successfully discharge its responsibility as the executive agency in this first domestic joint command.

7. The next few years in this Command are indeed critical ones. The staff work being done now, particularly for SAGE, increased early warning and other weapons improvements, involves billions of dollars as well as Air Force hopes in air defense. We must take a realistic look at the requirements and meet them. I strongly urge early approval of these requested personnel increases.



B. W. CHIDLAW
General, USAF
Commander

5 Incls:

1. Additional or Expanded Programs, Functions and Projects
2. Functions & Manning Factors
3. Increased Requirements for Hq ADFs and Air Divisions
4. Increased Requirements for Hq ADC
5. Establishment of ADC Experimental Wing (SAGE)

Incl #1

If the attached document/is withdrawn (or not attached) the classification of this correspondence is downgraded to Unclassified in accordance with para. 26G-APR 205-1

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SECRETADDITIONAL OR EXPANDED PROGRAMS, FUNCTIONS AND PROJECTSUSAF APPROVED PROGRAM OF UNIT EXPANSION

	<u>END</u>	<u>FY 54</u>	<u>55</u>	<u>56</u>	<u>57</u>	<u>58</u>	<u>59</u>
<u>FIGHTER SQUADRONS</u>							
F-86F		3					
F-86D		36	41	46	37	23	14
F-94C		10	9	9	7		
F-89C		2					
F-89D		3	8	5	2	2	1
F-89D/H				8	10	10	10
F-102					14	35	44
TOTAL FIGHTER		54	58	68	70	70	69
(1) F-101						1	9
(2) Conversion and Equipping Schedule (During Years Shown)				21	27	25	10
<u>MISSILES</u>							
TALOS						2	5
BOCMAHC							1
<u>AEW&CON</u>							
Wings			1	2	2	3	3
Squadrons			4	7	7	10	12
<u>AC&W</u>							
Permanent		75	75	75	75	75	75
1st Phase			17	40	40	40	40
2nd Phase				16	21	21	21
3rd Phase				2	24	24	24
4th Phase					5	21	21
R.E.P.		8	8	8	8	8	8
Gap Fillers				125	225	323	423
Texas Towers				1	5	5	5
TOTAL AC&W		83	100	267	403	517	617
<u>SAGE</u>							
Air Divisions		11	12	16	16	16	16(3)
Direction Centers					2	9	19
Control Centers						2	4
(1) As approved by AF Council. Not yet in program. Will replace older types.							
(2) An expression of workload not fully shown above. Does not include conversions to F-101.							
(3) Still in program. Will begin to phase out.							

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SECRETFUNCTIONAL EXPANSION

The constantly increasing workload of the headquarters staffs of ADC is not due solely to the expansion in units portrayed in the foregoing table. Related to these units are new or changed equipments, environments, and concepts. Were this a mature, relatively stable command, an increase of units of a like nature or the introduction of new developments accompanied by phasing out of the old could be looked upon as a normal staff workload. As it is, we are straining to expand the present Air Defense System while we daily become more and more involved in future systems. Our requirements are always characterized as additive. They cannot help but be so, as long as we are in an expansion phase. As further explained in Inclosure #2, we must continue to recognize this.

Illustrative of the additive problems of the headquarters staff is the following listing. These are developments which have generated new workloads during FY 1955, either as a result of their initiation, new emphasis or growth. There is no comparable list of discontinued programs.

1. ESTABLISHMENT OF CONAD

Under the authority of the Secretary of Defense, the Continental Air Defense Command (CONAD) was established, effective 1 September 1954, as a Joint Command for the air defense of the continental United States, with headquarters at Ent AFB, Colorado. The Secretary of Defense has designated the Department of the Air Force as the executive agency for the command. The existing organization of the USAF Air Defense Command, with its air defense system for surveillance, warning and control, and combat is the basic structure which will be utilized for the Joint Command. Each USAF headquarters, from command down to air division level, will be additionally designated as a joint headquarters commanded by an Air Force Officer and will be staffed with appropriate representation from each Service. Each of these headquarters must, in addition to their ADC functions, assume responsibility for joint command, and administration. This is being done, to the utmost of our capability, within current strength authorizations of ADC.

2. DECENTRALIZATION OF LOCAL PURCHASE PROGRAM

a. Decentralization of central procurement continues. By paragraph 8, AFR 70-16, 5 March 1953, HQ USAF reversed the policy of central procurement and since that date there has been a steady conversion of supply items from "central procurement" to "local purchase".

b. The continuing conversion program has recoded the items to local purchase at the rate of 1000 per month. The present plan is to continue to convert at this rate thru FY-1957 or until 250,000 items have been converted. This means a constantly increasing workload in the base procurement office. In most instances the base commanders have recognized the increase in workload and secured personnel spaces accordingly.

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c. The problem area, which has not been recognized until recently, is the need for closer surveillance of this huge program. Certain Congressmen have expressed serious doubts, as to the capacity of placing many millions of dollars in the hands of semi-experienced procurement personnel at base level. The USAF Inspector General, AMC procurement personnel, and the Chief of Procurement, ADC, all recognize the vital need for an accelerated procurement surveillance program, if the Government is to avoid serious financial embarrassment from this new policy.

d. To meet this requirement, it is essential that the Procurement Divisions at Defense Force level review procurement operations at each ADC base under their respective jurisdiction three times a year, and the Procurement Division at HQ ADC visit each ADC base once a year. Under this plan, procurement operations at each base will be reviewed once each quarter.

3. INTEGRATION OF NEW WEAPONS SYSTEMS

a. The rapid expansion of ADC and the introduction of radically new weapons systems presents many new and different problems. Precise information must be available at all levels on future aircraft performance, lethality, and limitations before the weapons are introduced into the defense system. Planning becomes more complicated as intercept problems are simplified by automatic devices. Similarly, new and vastly expanded ground environment systems are expected to come into being within the next few years. The translation of long standing plans into operable reality inevitably increases staff workload and reduces the margin for error of staff considerations.

b. Late in 1949, Headquarters USAF initiated Project MX-1554, which was a design competition among various aircraft manufacturers for a high altitude supersonic fighter. This competition resulted in the procurement of the F-102. In 1953, intelligence sources confirmed that the Soviets had a bomber, the Type 37, capable of an over-the-target ceiling on a one-way mission of 57,000 feet. This required ADC to re-evaluate the interceptor performance requirements in order to obtain a kill capability at the threat altitude. Extensive planning has been and will continue to be, required in order to obtain this capability. Due to the importance to the national security of this performance increase, personnel of this Headquarters must continuously monitor this program.

c. Generally speaking, the same problems will hold true for the IF-101A. The procurement of this weapons system as a companion to the F-102 was approved this year by Headquarters USAF. Although the IF-101A has greater speed and radius of action than the F-102, it still has a serious altitude deficiency. Investigating and monitoring possible actions to correct this deficiency requires a great deal of time on the part of staff sections in this Headquarters.

d. The Long Range Interceptor-X and the Medium Range Interceptor-X are presently in the planning stage. These are the successors to our present and programmed interceptor aircraft. Although they are not scheduled for

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introduction into the ADC inventory until the post 1960 time period, a considerable amount of time and effort must be expended by personnel of this Headquarters in order to assure that we get the weapons system that is required to combat the threat.

e. The staff sections of this Headquarters involved in the interceptor aircraft program (operations, logistics and personnel plans) are DCS/O, DCS/M, and DCS/P.

4. INTEGRATION OF TEXAS TOWERS

a. An ADC requirement for five Texas Towers has been approved for installation off the Northeast Coast of the United States. These installations are marine-anchored towers utilized for radar installation to extend the early warning system coverage approximately 100 miles beyond the coastal areas.

b. Beneficial occupancy date for Texas Tower #2 is September 1955 with an operational date of June 1956. Operational date of remaining four towers is June 1957.

c. A total of nearly 500 military personnel will be required for their operation based on a requirement of 6 officers and 40 airmen for one of two crews per each tower.

d. Construction responsibility is that of U.S. Navy with ADC providing operational guidance, personnel, training, and logistics support. Impact levels - ADC, Air Defense Forces and Air Divisions.

5. DEVELOPMENT OF PICKET SHIP PROGRAM

a. This development includes providing operational guidance, personnel training and logistic support on the land-based (ADC) function.

b. A total of 10 Picket Ship Stations have been approved for the purpose of extending radar coverage from land based radars off the East and West Coasts of the U.S. Five such Stations are presently required on each coast with a sixth being tentatively planned for the West Coast under the SAGE system. Two vessels are required to cover one Picket Ship Station or area. Communications requirements for naval picket ships are similar to those of an ADDC for the control of fighter aircraft. In addition, communications must be established between the picket ship and the adjacent coastal ADDC's as well as AEW&Con aircraft.

c. CINC CONAD through COMNAVFORCONAD will exercise operational control of all naval forces while on station. Control of the picket vessel active air defense functions while on station will be designated by the Air Division commander within whose sector the picket vessel is operating.

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SECRET**5. THE SAGE SYSTEM**

The SAGE System introduced into the Air Defense Command the most complex electronic system in the world and is in addition to the functions now being performed by the Air Defense Command. The magnitude and the impact of the SAGE System upon the command is tremendous. It requires complete re-alignment of organizational structures, operating procedures and support procedures. It includes the construction of 32 direction centers and 8 combat centers, plus the construction of facilities to process and transmit data from existing and planned data gathering sources to the direction centers and combat centers, and from the direction centers and combat centers to the appropriate weapons. There will be approximately 1.1 billion dollars in capital costs and 1.2 billion dollars in operating costs, which started in FY 1953 and will continue through FY 1964. These costs involve the equipment, facilities, and buildings. This does not include the communications costs which will run somewhere in the vicinity of 100 million dollars a year (based communications cost).

6. THE DEW LINE

a. The DEW Line, over 1000 miles long, consisting of a chain of long range radar stations extending from Kodiak Island, Alaska around the perimeter of Alaska and across Northern Canada, along the 70th Parallel, and terminating on the Island of Greenland, is being constructed with an expected operational date of July 1957. The purpose of the line is to provide early warning of enemy air attack on North America. Air Defense Command is responsible for the preparation of the operational plan, the logistics plans, and the O&M planning. The complexity of this problem, because of the Arctic locale, has imposed an additional workload in the personnel, operational, and material areas.

b. The DEW system has a grave problem due to the presentation of entirely new logistic problems, many of which are still unresolved. It is known that ADC will be responsible for logistics support of a portion of this line. The development and testing of all equipments and designs have not been completed, thus delaying completion of operational plans. O&M planning includes the spare or back-up facilities to be provided for all communications systems.

7. INCREASED STAFFS OF PERSONNEL REQUIREMENT

a. During FY 55 the expansion of ADC caused organizational and manpower problems at all levels. Integration of new units with new equipments, conversion of units from one type aircraft to another, shifting boundaries, planning for the SAGE System, reorganization of 100th units from F-4 to F-4E, reorganization of Fighter 3 squadrons, Project "Hawkeye", constant rejustification of "functional ceiling" areas

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and the program changes incident to all these were major problems. The UMD System's initial impact was felt at all levels. A long period of time and much effort from base level up must be expended before the system achieves its ultimate value.

b. In the management engineering area the rescinding of AFM 150-1 required the development in ADC of interim production standards and participation in the development of new USAF standards. The expansion and new equipment of ADC in the face of manpower shortages demand ever greater effort in management improvement at all levels.

c. The impact of organizational and manpower programs, projects or problems is felt across the entire staff and throughout the chain of command. The problems of 1955 will multiply as the SAGE System approaches.

9. EXPANDED ADC MILITARY CONSTRUCTION PROGRAM

a. This expansion is indicated by the work remaining to be done. This includes both the construction backlog at the end of each year and the new work authorized by Congress. As of 1 July 1954, it totaled \$413 million and on 1 July 1955 we estimate it to be \$573 million.

b. The cumulative total of the program since FY 1951 to 1 July 1955 amounts to \$713 million. Of this amount, we expect \$360 million to be completed by 1 July 1955, leaving a backlog of \$353 million. We estimate new work for FY 1956 to be authorized by Congress at about \$220 million. Thus, we will go into FY 1956 with a workload of \$573 million of construction to be accomplished.

c. Under the Air Force installations program, once work is completed, all staff workload does not cease. There are continuing staff responsibilities for reports and related actions deemed essential by Hq USAF for continued management control of Air Force facilities. As the total inventory of finished ADC facilities increases, this staff workload will continue to increase even though the field work has been completed.

d. We look forward to a continually expanding military construction program in ADC. We currently estimate our FY 1957 program at \$300 million, an increase of \$80 million over our anticipated new authorization for FY 1956.

10. NEW INTERCEPTOR MISSILE PROGRAM

a. The ADC Interceptor Missile program was originated in November 1954 as a result of the unstable programming of the various types of interceptor missiles. This program embraces all surface-to-air guided missiles with a range of over fifty nautical miles programmed and/or planned for by the Air Defense Command. This headquarters establishes the

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qualitative and quantitative operational requirements for these weapons systems, monitors the entire program from the R&D phase through acceptance of the weapons system and related equipment into the ADC inventory. The action taken by various staff agencies in this headquarters relative to this program includes operational, logistic and personnel planning; preparation of budgetary estimates, and programming for and justification of, all equipment and personnel required. The first ADC interceptor missile squadron is programmed for activation in mid-FY 58. Prior to this time, and as additional IM squadrons are activated, the Defense Forces and Air Divisions will require additional personnel in the operations and maintenance staff areas to handle this increased workload.

b. The interceptor missiles presently programmed and/or planned for in ADC are as follows:

The IM Talos, established as a requirement in November 1954, to give ADC an early IM capability. The first squadron is programmed for activation in Mid-FY 58 with a total of 23 squadrons by end FY 61.

IM-99 (Bomarc) program initiated by Headquarters USAF under contract number AF33(038)-19589 in 1950. The first unit is programmed for activation in late FY 59 with a total of 27 squadrons by early FY 63.

Lockheed IM (L-253), a tactical version of the L-275 Guidance Test Vehicle. ADC is planning for this IM as a companion weapon to the IM-99. Activation of the first unit is planned for late FY 59 with a total of 26 squadrons by early FY 63.

The IM-X, an advanced type interceptor missile, was established as a requirement in November 1954. The first unit is planned for activation in early FY 64 with a total of 60 squadrons by end FY 65.

11. INCREASED PLANNING FOR USE OF AUGMENTATION FORCES

As a result of the increased emphasis by Headquarters, USAF, on the strengthening of the Air Reserve Forces (ANG and AFRES) and their specific utilization in the air defense of the United States, an accelerated program of planning for the D-Day use of these forces has been implemented. Pre-D-Day responsibilities include training assistance and logistics action to support the D-Day mission. Thus, the program involves materiel areas, as well as operations, and the Air Defense Forces and Air Divisions are charged with the implementation of the program as directed and monitored by ADC Headquarters.

12. GROWING CONELRAD PROGRAM

a. Recent directives have been received from Headquarters USAF to expedite detailed CONELRAD planning. Lack of adequate military personnel has caused most of the load in the past to be carried by the

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1. Also office. Originally he was to be concerned with commercial marketing studies. As a result of this headquarters' request, the FCC last year directed liaison officers to concern themselves with all phases of COMINT planning and implementation. The present growth of the program now exceeds this capability resulting in a workload impact on the remainder of the communications staff.

2. ADC is also in the process of implementing the BROFICOM Plan as a back-up to the ground-to-air communications system through the use of standard radio broadcast stations. This program will require constant coordination with broadcast stations and the development of operational plans and standard operating procedures.

13. ESTABLISHMENT OF AIRBORNE EARLY WARNING AND CONTROL

With seven currently authorized AEW&C Squadrons, AEG is in the process of incorporating a new weapon into the defense system. Development of operational plans, procedures, and techniques to most efficiently utilize this weapons system is essential. Integration of AEW&C with the land based radar, picket vessels, and base towers systems requires constant supervision to obtain the most effective utilization of all weapon capabilities available. The program also involves personnel, training, and materiel areas, as well as development problems associated with a tremendously complex aircraft.

14. TACAN FACILITIES AT 20 AEG BASES

Headquarters USAF has directed this headquarters to proceed with the construction of facilities in which to install TACAN (AN/URN-3) equipment at 20 separate AEG bases. It is also mandatory that all these construction contracts be completed prior to 30 June 1955.

15. STOCK REDUCTION PROGRAM (PROJECT "NEW BROWN")

a. An analysis of supply managerial reports indicates that there exists within Air Defense Command organizations and bases, material, both supplies and equipment, which is either in excess of realistic requirements or in the case of equipment cannot be effectively justified on the basis of utilization. In order to correct these deficiencies, this command has initiated a project "New Brown" which is a time phased program aimed at the elimination of non-essential items from units and base supply. In accomplishing this project a follow-up phase conducted by utilization survey teams will be employed to insure that all organizations and bases do equally professional jobs in the elimination of non-required equipments and supplies. This program will result in a saving due to reduced procurement, reduced warehousing space requirements and possibly an over-all personnel reduction.

1. Progress of this project has been highly encouraged by Hq AEG and Hq USAF. Further, the reports which Hq USAF continually places on equipment utilization survey functions in accordance with AFR 15-8 demands continuous and close supervision over the entire AEG equipment authorization and utilization process.

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SECRET16. ADDITIONAL RESPONSIBILITY FOR UAL-UPREAL

a. At the end of FY 1954, Hq USAF, through AFR 67-03, assigned to ADC the additional responsibility for developing and maintaining a consolidated UAL-UPREAL authorization document for each ADC unit. Prior to this time, the UAL was prepared by ADC and the UPREAL by Hq AMC. This new responsibility has generated additional workload in the review of changes to UALs and in the coordination with Hq USAF and Hq AMC of required changes to basic USAF equipping documents.

b. By letter from Hq USAF (AFMSS-EA-3), 23 November 1954, Subject: "Continuation of AMC Statistical Services Capability in Equipping Document Area", ADC was directed to increase its capabilities to assume certain additional functions performed by Hq AMC, namely, (1) preparation of UME EAM card decks for new type unit activations, reorganizations, and conversions; (2) preparation and publication of equipping documents for the AF-GEN program; (3) preparation of Air Force Shipping Documents (AFSD) when required; (4) development and maintenance of Master EOL files for ADC equipment and personnel; and (5) development and maintenance of MUAL files for ADC equipment. To date, ADC has partially assumed function (1) enumerated above, and is currently planning for the complete assumption of the above functions.

c. On 18 February 1955, Hq AMC (MCCSHM) advised Hq ADC that Hq AMC would discontinue the preparation of UME, EAM card decks for new type activations, effective 1 March 1955, and for reorganizations and conversions as soon as ADC can assume this responsibility. Planning continues with Hq AMC to define workload, machine-time requirements and other factors involved in ADC performing this and associated tasks under the program.

17. INCREASED EMPHASIS ON SUPPLY MANAGEMENT

Recent changes in the Air Force supply system and increased surveillance from other agencies make it mandatory for ADC to develop an aggressive supply management system which will bring about efficiency and economy in its supply operations. The introduction of the new monetary inventory accounting system provides one of the tools for exercising control over the management of ADC assets. Standard supply procedures and management control techniques have been developed and are in process of publication. A requirement exists for continuous analysis by Hq ADC and the Air Defense Forces of Supply operations. A requirement exists also for adequate performance of field surveillance of unit and base supply operations by the Air Defense Forces. At each of the Air Defense Forces a supply management unit has been established to perform these functions.

18. EXPANSION OF WEAPONS EMPLOYMENT CENTERS

In view of the limited facilities at Yuma Weapons Center, it has been necessary to expand the Weapons Center concept to allow annual tactical unit evaluation. Moody AFB is being utilized as a temporary stepping stone for expansion pending completion of the Buckingham,

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Florida, Weapons Center. A related feature is the installation of a ground-to-air weapons range at Bonita Springs, Florida, to conduct initial and refresher training for TALOS--BOMARC units. As a result of the expanding weapons program, the staff planning workload has increased considerably at command level.

19. INCREASED EMPHASIS ON RE-ENLISTMENT

This program is recognized as the most important personnel problem in the Air Force. It requires increased attention from commanders and staffs at all levels of command. Primary duty re-enlistment spaces have been recently authorized at some levels of this command. This will help solve the problem. In addition to the required monitoring and control of the program, many "sub-projects" exist in the area of increasing career attractiveness. Among these are re-enlistment for base or school of choice, re-enlistment and grade retention for certain specialists separated more than 90 days, rotation of personnel at AC&W sites, specialist rating system, family housing at AC&W sites, station allowances for isolated sites, etc. These all add to an increased workload across the staff.

20. INAUGURATION OF USAF INDICATIONS PLAN

a. In a letter dated 15 November 1954, Subject: "Air Force Activities to Provide Warning of Imminence of Hostilities", the Chief of Staff, USAF, directed Commander, Air Defense Command, to participate actively in implementation of the USAF Indications Plan (USAFIP), dated 16 November 1954, and stated "this headquarters will give priority consideration to the additional personnel spaces required..." The increased emphasis throughout the Air Force on strategic (or pre-take off) warning of attack has had manpower implications in the intelligence field at the command, air defense force, and air division levels. The requirements are of a continuing nature.

b. One of the six indications centers in the Air Force has been established at Headquarters, Air Defense Command. This center serves the Continental Air Defense Command and its three service components on indications intelligence matters. The manning of the center involves only a nominal increase at this time because a 24 hour indications intelligence activity has been maintained at Headquarters, Air Defense Command ever since 1952.

c. A second impact of USAFIP is the requirement for an increased capability in the command to receive and exploit the results of the growing indications intelligence effort. This entails establishment of a 24 hour intelligence capability in all three joint air defense forces. Only Eastern Air Defense Force Headquarters has this capability at the present time.

d. At Air Division level the added requirement is being met by USAFSS which is establishing a Security Service Office in each air division of this command. This will provide a 24-hour on-call capability for receiving indications intelligence. The adequacy of this arrangement will be determined by experience.

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e. The program for establishing Special Security Officer facilities at the joint air defense division level has involved considerable staff planning, coordination and monitoring within DCS/I since June 1954. This workload will continue on a reduced scale through FY 1956. The first of these planned facilities at the division (or sector) level are just going into operation. The workload involved in Staff monitoring of the activity of these facilities will grow through FY 1956, and will level out thereafter unless a similar requirement develops for SSO facilities at the subsector.

21. FY 55 "CLOSE OUT" OF CONSTRUCTION FUNDS

Project "Close Out" has placed additional demands on the staff of this headquarters. Incompleted items of the USAF wide Military Construction Program through FY 55 total some \$800,000,000 with only some \$600,000,000 of funds available to finance the work. On 31 December 1954, Headquarters USAF therefore established Operation "Close Out" designed to evaluate each line item and the sensitive actions leading up to contract award, such as siting, criteria, review of plans, acquisition of real estate interest, etc. Each funded line item, which could not be awarded until after 1 July 1955 because of incompletion of the sensitive actions, would be de-funded, and the funds transferred to those line items which could be awarded. This evaluation, in itself highly desirable, constitutes an increased demand on the already limited manpower of this organization, both in order to speed up the actions on that construction for which ADC is the construction agency, and in order to coordinate with the Air Force Installations Representatives and Corps of Engineer agencies on that construction being performed by construction agencies other than Air Force.

22. EXPANDED ON-THE-JOB TRAINING PROGRAM

a. The increased workload in this area during FY 1955 can be attributed to vastly increased emphasis, directing and supervising the application of Project Guidance and the use of Training Needs Tests, correlating and supervising the use of Mobile Training Detachments, monitoring the AF Training Program, directing the Base Level Management Training Program and supervising the allocation and withdrawal of quotas to ATC formal technical schools.

b. Headquarters USAF established an OJT quota for ADC of 29,123 airmen to be trained and upgraded between 1 April 1954 and 30 June 1955. This figure approximates 50% of the assigned strength of ADC. In addition, ADC has a requirement to train approximately 8500 airmen from the helper (1) level to the apprentice (3) level during the same period. With this much training and the functions of a. above, an efficient training organization is necessary at each echelon of command. In establishing the requirements for a training organization at every level of command, the geographical dispersion of our units was of paramount importance. The operational units alone in ADC number over 120 and are dispersed throughout the entire Zone of Interior, parts of Canada and coastal islands. Many are located in remote areas hundreds of miles from their next immediate headquarters, necessitating "supervision by remote control".

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SECRET**23. INCREASED EMPHASIS ON ECM**

The command ECM program is geared directly to the operational units of the command. As the number of AC&W units, all Weather Interceptor units, AEW&Con units, and AA units increase, of necessity the ECM program and effort will increase. Approval and receipt of B-57 aircraft will increase the command ECM effort and requirement for ECM personnel. Initiation of ECM programs at the air to air rocketry training bases will further increase the requirement for ECM personnel. In short, as the command operational and training efforts grow the requirement for ECM personnel will increase at all levels of command, therefore its impact will be felt at all levels.

24. ADDITIONAL CRYPTOGRAPHIC ACCOUNTS

a. There are at the present time 123 communications centers and cryptographic accounts. With the addition of the SAGE System and the additional AC&W units, we will have a total of approximately 300 communications and cryptographic accounts.

b. Present authorizations for cryptographic personnel total 675 for operation and maintenance purposes within ADC. It is necessary to have this figure supplemented by an increase of 350 more through 1958 to total over 1000 personnel at the end of that period. It is estimated that the cost of cryptographic equipment will be approximately \$800,000 for new ADC units. This necessitates increased planning and supervision in the headquarters staffs.

25. SUPPORT FOR AF ACADEMY CONSTRUCTION AGENCY

By letter from Assistant Vice Chief of Staff, Hq USAF, dated 27 July 1954, ADC was required to provide, in accordance with AFR 11-4, necessary administrative and logistic support to the Air Academy Construction Agency. Although the 1600th Air Base Group, Ent AFB, has been assigned the task of providing such support, the importance of the Air Academy to the Air Force and publicity connected therewith has required prompt support and generated additional workload on the ADC staff in providing supply support assistance and in meeting its initial and expanding requirements for office equipment and furniture.

26. INCREASED AIR TRAFFIC CONTROL PROBLEMS

Increased emphasis on this function has resulted in establishment of an Air Traffic Control Branch in Headquarters USAF. A similar increased workload has been generated at staff levels throughout the command. This recent increase stems primarily from the long required emphasis on air traffic control as it affects jet aircraft. In addition, the mission of air defense requires continued coordination in air traffic matters in the conduct of scramble and recovery procedures. Establishment of new navigational environments, such as recently approved TVOR and the proposed TACAN, requires close planning to insure airborne systems modifications consonant with ground environments.

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SECRET**27. CONTROL OF CRITICAL ITEMS OF CONSTRUCTION**

Critical Item Control recently instituted by Hq USAF has placed additional staff workload also on ADC headquarters. Critical items are defined in Headquarters USAF message AFDIE/3, 27 April 1954, as those the lack of which will delay activating and equipping schedules or materially affecting operational capability of installations. In May 1954, Headquarters USAF initiated a series of important letters which established procedures for the closer control of "critical" items of construction, to assure their completion by the Beneficial Occupancy Dates established by using commands. This correspondence reached a climax with the letter of 9 August 1954 from Gen. White, which established a mandatory schedule of dates to be met for some 15 "sensitive" actions for each critical line item, from the initial programming through the final acceptance. To comply with the streamlined procedures required temporary duty travel in excess of the normal amount since the time limits established require special trips to be made for purposes of citing and review of preliminary plans, rather than waiting to try to combine these actions with related actions on non-critical items. It also requires more detailed monitoring procedures and follow-up action, which, of course is highly desirable and beneficial, but which at the same time constitutes an increased demand on the resources of this organization which was not present when the current personnel ceilings were established.

28. 456 NEW ACGW FAMILY HOUSING UNITS

By letter 17 March 1955, the Air Defense Command was instructed by Headquarters USAF to proceed with the design and construction of 456 family housing units at 50 separate ACGW locations. Total cost of this project was not to exceed \$7,311,000. It is mandatory that design be completed, construction contracts awarded and funds obligated for all these projects prior to 30 June 1955.

29. 1515 NEW ADC BASE FAMILY HOUSING UNITS

Public Law 765, 83rd Congress authorized 1515 units of family housing for construction at 20 ADC fighter bases. Construction responsibility for units at 6 bases has been assigned to the Corps of Engineers, the remaining 14 bases are the responsibility of ADC. This program totals approximately 20½ million dollars.

30. INCREASED PARTICIPATION IN OPERATIONAL SUITABILITY TESTS

Many complex OSTs are programmed and currently active which require staff action at command and defence force level. Many of these OSTs have generated specialized personnel requirements within this command to insure prompt and effective results. Numerous command and inter-staff actions are necessary to develop suitable OST test criteria which will result in exacting unit tactical, logistical and administrative requirements of the test item. Some of the scheduled OSTs actively monitored by this command are: KC-121 C43 AEWCSon aircraft; F-99B project "Lock-On"; Selective Identification Feature (SIF) "Project Pinball"; OST of AW/GPA-8 and AW/GPA-9; F-102 and F-102B; M-27M, Data Link; C-2A Drone and Project "Turkey Shoot". The staff planning workload has increased considerably in view of these OSTs.

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SECRET31. INTERCONTINENTAL BALLISTIC MISSILE THREAT

At the close of World War II, the Soviets initiated a thorough and systematic exploitation of German guided missile personnel, facilities and equipment. We acknowledge at that time that Germany had out-distanced the rest of the world in guided missile development--particularly in the ballistic missile rocket. There is evidence that, as a result of German exploitation and their own efforts, the Soviets have the capability of developing and producing tactical inter-continental ballistic missiles for use against the United States. An intensive investigative program has recently been undertaken by the NSC and DOD to provide a solution against this threat to our national security. The impact of this endeavor has already been felt within ADC. It is anticipated that this program could assume "CRASH" proportions. This program involves initially the long-range planning sections within ADC, and will require, as the program progresses, participation of all agencies within ADC Headquarters and the Air Defense Forces.

32. INCREASED JOINT AIR DIVISION EXERCISE ACTIVITY

The last command-wide exercise, "Check Point", conducted in the Summer of 1954, generated a requirement for many more small-scale, force and division level exercises to be conducted throughout the year. The need stemmed primarily from the readily apparent desirability of keeping the system well-trained and exercised throughout the year, rather than peaking effort toward one or two annual command maneuvers. As a result, the staff planning workload has increased considerably at division level. This load consists of increased liaison and coordination with SAC units, design of strike routes and timing, exercise conduct, detailed analysis, and institution of corrective action.

33. DEVELOPMENT OF IMPROVED SCATER PLANS

The development of SCATER (Security Control of Air Traffic and and Electromagnetic Radiation) Plans and improvements of SCATER implementing actions are of prime importance to ADC in the event of a military emergency. Coordination of SCATER Plan development with the many civil and military agencies concerned must be effected, and such plans and involved personnel must be tested and evaluated to insure maximum effectiveness. Since the details of such plans are constantly changing, continuous indoctrination of personnel concerned is essential.

34. INTRODUCTION OF DING DONG

a. The DING DONG Weapon is being developed under authority of the JCS for use by ADC, beginning 1 January 1957. This armament will be incorporated into many present and programmed fighter interceptors.

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b. This Headquarters must monitor all phases of this program, prepare necessary operations, logistic and personnel plans, and coordinate all phases of the program with aircraft and fire control system development. This armament being a nuclear device, imposes an additional workload on the various staff agencies of this headquarters, due to the coordination required with various DOD and AEC agencies involved in this area.

35. INCREASED REQUIREMENT FOR MODERNIZATION OF EQUIPMENT

a. Complex tactical equipment in being coupled with programmed equipments, such as Data Link and TVOR, has dictated a continuing and expanding requirement for modernization programs. The "Project Hotwheel" program will continue through the next twelve months and the C&E modernization program will commence during fiscal year 1956. The B-45 engine modernization and tow assembly is also indicative of the type of modernization programs which are being monitored. TOS, ECLs and ground handling equipment requirements must be initiated by this command concurrent with each equipment modernization or conversion program and monitored throughout the active use of major equipments.

b. The MA-1 fire control system requirement was established as a part of the MX1554 interceptor weapons system in 1950. The development of this system is being monitored by staff personnel in Headquarters ADC in DCS/O, DCS/M and DCS/P.

c. The MG-10 Fire control system requirement was established in early 1953 as an interim system to the MA-1 fire control system. The development of this system is being monitored by staff personnel in Headquarters ADC in DCS/O, DCS/M and DCS/P.

d. The monitoring of new developments, such as automatic acquisition of target, "snap-up" and climbing attack modifications and modifications for firing the "DING DONG" weapon, to increase the capabilities of the above systems is the responsibility of Headquarters ADC staff personnel.

e. The fire control system for the LRI was submitted as a part of the over-all LRI requirement. The development of the LRI fire control system and the necessary test equipment for the system will be monitored by staff personnel of this Headquarters in DCS/O, DCS/M and DCS/P until the system is procured. Additional personnel will be required for the support and maintenance of this system at Air Defense Force and Air Division levels. These personnel will be required in the operations and maintenance staff areas when the aircraft enter the ADC inventory in the post-1960 period.

SECRET**36. PARTICIPATION IN GUIDED AIRCRAFT ROCKET PROGRAM**

a. The growing capability of the threat, together with the increased capability of ADC interceptor aircraft, require that interceptor armament be of such a nature as to provide the kill required by ADC. The guided aircraft rockets, together with the small and large unguided air rockets, were and are being developed to provide this capability. This headquarters monitors all phases of the guided aircraft rocket program, including ground handling and check-out equipment, to assure that qualitative requirements are met; prepares necessary operations, logistic and personnel plans; and coordinates all phases of the program with aircraft and fire control system development. The GARs presently programmed and/or planned for in ADC under USAF Missile Project MX 904 are the following types of Falcon GARs.

The GAR-1 is a semi-active radar equipped missile for use by subsonic interceptor aircraft. This rocket will appear initially in ADC interceptor squadrons in mid-FY 56.

The GAR-1B is an infrared seeker missile for use by subsonic interceptor aircraft. This rocket will appear initially in ADC interceptor squadrons in mid-FY 56.

The GAR-1A employs a radar seeker and will be used by supersonic interceptor aircraft which are expected to appear in the ADC inventory in mid-FY 58.

The GAR-1C employs an infrared seeker and will be used by supersonic interceptor aircraft which are expected in the ADC inventory in mid-FY 58.

b. In addition to the above guided aircraft rockets, this headquarters monitors the air-to-air guided rocket programs of other services to evaluate them for possible use by ADC aircraft or use by augmentation aircraft of other AF commands and services. Rocket programs presently being monitored by this headquarters include the Sidewinder and Sparrow.

37. EXPANSION OF AIR FORCE SECURITY SERVICE CLOSE SUPPORT PLAN

The plan for close support of Air Defense Command by AFSS was developed during FY 1954 for the purpose of supporting and supplementing the Air Defense Detection System with specialized intelligence facilities. A considerable staff workload has developed during FY 1955 in connection with implementation of the initial plan, the installation of facilities and in subsequent National Security Agency expansion and refinement of the plan for support of CONAD. The actual operation of the plan will require continuing intensive staff involvement in the development of operating doctrine and procedures needed to insure optimum exploitation of this potential in support of the growing and changing air defense system. It represents a general workload increase.

SECRET**38. MAINTENANCE WORKLOAD AT INCREASED ADC FACILITIES**

a. On 1 July 1954, ADC had 28 bases and 94 AC&W stations at which physical facilities had to be maintained. To date, nine new AC&W stations and \$50,000,000 worth of new facilities have been added to the ADC inventory during FY 1955. Approximately 168 new stations and 2 new main bases will be added by the end of FY 56. Additional workloads are imposed due to the requirements of the following:

- (1) Semi-annual supervisory and technical preventive maintenance staff visits for each technical field of engineering for each of these stations as required by AFR 85-21.
- (2) Technical Review of Planning Report, preliminary and final plans and specifications prepared by OCE in technical fields beyond capability of Construction Division, Dir of Instls.
- (3) Technical "in-construction" and final acceptance inspections beyond capability of Construction Division, Dir of Instls.
- (4) Assistance in preparation, technical review and supervision of M&O financed construction type projects.

b. In the next two years the workload for the maintenance function will be increased tangibly in proportion to increments of \$50,000,000 and \$100,000,000 in completed military construction. Further increases which are not so tangible but are nonetheless very real are due to the complexity of technological developments being adopted within the sphere of Air Force Facilities.

c. Final acceptance inspections are required on all Major Repair and Minor Construction Projects exceeding \$25,000.00 in cost. Approximately 50 projects are involved in FY 55. In an attempt to absorb these new workloads imposed since June 1954 to the present date, our operations division has resorted to overtime work. For example, a total of 383 overtime manhours were required during the period 19 Feb to 19 Mar 55. This does not include many hours of voluntary civilian and military overtime not recorded under authorized civilian overtime requests.

d. The semi-annual inspection of the requirements and utilization of leased and government owned real estate at all Air Defense Command installations as set forth in AFR 87-1 will be accomplished at the time regular semi-annual management inspections are

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performed; therefore, the increase in workload will be integrated with present inspection requirements. At the present there are 30 bases and 103 ACOM stations to be visited each six months. Also to be visited once each year are 19 Ground Observer Stations. There are a total of 315 separate installation inspection requirements, and these will continue through Fiscal Year 1955. Additional installations to be inspected during fiscal year 1956 consist of 23 Ground Observer Stations and 96 ACOM stations. 24 additional ACOM stations will be inspected during Fiscal Year 1957. A total of 263 additional installations will be visited by the end of Fiscal Year 1957 or a grand total of 578 separate inspections each fiscal year.

39. EXPANDED MOBILIZATION ASSIGNEE/DESIGNEE PROGRAM

a. As a result of letters, messages, and new regulations from Headquarters USAF and ComAC requesting greater emphasis and implementation of the Mobilization Assignee/Designee Program and the ComAC Training Designation Program, this headquarters has approved standardized manning tables for M-Day augmentation and a policy of accepting training designations for reservists assigned to ComAC Air Reserve units. Mobilization Assignee strength has increased every month since July 1954. The number of training designees accepted has increased rapidly since July 1954. Chief of Staff message of 10 March 54 requested that all TI commands accept a maximum number of Air Reserve Center members for short tours, which is being done, and which will create a continuing expanded personnel training program.

b. Although there is a freeze on recalling reserve officers, the policy of permitting them to submit applications through channels has resulted in increased correspondence. Implementation of the Armed Forces Reserve Act of 1952 and ROPA of 1954 has resulted in additional work. The direction of these programs requires additional staff visits by this and Air Defense Force Headquarters.

40. DEVELOPMENT OF USAF LOGISTICAL PLANNING MANUAL (AFM 100-5)

a. On 11 March 1955, HQ USAF (AFMLP-SP) submitted a proposed revision to AFR 5-48 to ADC for comment. Under this regulation, ADC will be responsible for developing, compiling, and furnishing to AMC logistical information and data on air defense operations. This includes consumption and stockage of oxygen, gases, fuels, rations and ammunition; supply and maintenance factors; and characteristics and technical data on ADC equipment.

b. Air Force Manual 100-5 is to provide in one document either in content or by reference, logistical doctrines, concepts, information and planning data required in logistical planning for all tactical commands. Preliminary planning with HQ USAF has been initiated to determine the scope of required ADC participation and the workload it will impose on this headquarters.

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SECRET11. EXPANDING MULTIPLE CORRIDOR IDENTIFICATION SYSTEM

With the implementation of MCIS, ADC is in the process of incorporating a new identification procedure into the air defense system. The MCIS requires constant supervision while undergoing tests to obtain maximum efficiency. Procedures, charts, and briefings are required at departure points generating MCIS traffic. The expansion of this identification procedure is programmed to cover additional overwater approach routes. Additional planning and implementation are required at all levels of headquarters.

12. REQUIREMENT FOR STANDARD MISSILE BASE

A requirement for a Standard Interceptor Missile Base for ADC was established by letter to the Director of Requirements, Headquarters USAF, on 28 December 1954. Headquarters USAF has initiated design studies to determine the optimum design of such a base. The standard IM base is an integral part of ADC's IM program and is required to preclude the necessity for construction of new bases for each advanced type IM entering the inventory. The standard IM base program must be closely monitored by this headquarters from the present design study phase through site selection and construction. After the design of the base has been established, all items required--real estate, buildings, launching revetments, hardware, etc.--must be programmed and justified. The standard IM base impact will be felt in all IM programs. Each type of IM must be evaluated to determine its compatibility with the standard base environment. Also, each type of IM must be evaluated to determine the items of equipment peculiar to it which will be required on the standard base. As advanced types of IM's are phased into the standard base, a thorough and continuous study must be made to assure an orderly phase-in of the new type and phase-out of the old type. This program involves personnel from DCS/M, DCS/O and DCS/P in Headquarters ADC.

13. SUPPORT OF AF ACADEMY ACTIVITIES

On 17 March 1955, the Air Force Academy advised ADC that Hq USAF is planning on the accomplishment at Peterson Field (ADC), beginning the 4th quarter, FY-1957, of combat-readiness flying training for approximately 100 rated USAF Academy officers. Planning has been initiated to determine facility and base personnel requirements, as well as other items to support Air Force Academy operations at this field.

14. EXPANSION OF THE RADAR NET

During FY 56 ADC expects to put into operation 11 heavy radar sites, one Texas Tower, 4 air defense control centers, and 125 gap-filler radars. During FY 57 an additional 32 heavy radar sites will be placed into operation, and the 4 remaining Texas Towers will become operational. Also, during

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FY 57 an additional 100 gap-filler radars will be installed. By the end of FY 58, 9 SAGE Direction centers and 2 SAGE Control Centers will be in place, as well as an additional 98 gap-filler radars being installed. By the end of FY 59 two additional SAGE Control Centers will have been established and 100 more gap-filler radars will be in place. The additional workload required by the above will be felt at ADC, at the defense forces, at the air divisions, and at the MCEM squadrons.

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FUNCTIONS AND MANNING FACTORS

1. There are three factors which are generating and will continue to generate a requirement for additional strength in Air Defense Command headquarters activities. These are reiterated from our letter of 26 February 1954, Subject: "ADC Evaluation of Headquarters Functions". They are:

a. The Air Defense Command program is in an expansion phase. The accelerated effort associated with this phase in both the staff and command elements will not abate until end FY 1959 according to present USAF plans and programs. The supervisory load associated with this expansion is a dual one, it results both from quantitative increases in numbers of units and from qualitative problems in converting to new equipment.

b. The growing national interest and emphasis on air defense has presented a major problem. A considerable volume of special studies, briefings, program changes, conferences, and test participation over and above normal requirements for such staff actions are the direct result. A constant stream of high ranking military personnel and civilian dignitaries arrives at this and subordinate headquarters. This is necessary in solving the air defense problem, and represents a workload reflected throughout the Air Defense Command and Defense Force staffs. Our current authorizations are proving inadequate even now to meet these accelerating demands.

c. Our mission requires continuous coordination with numerous civilian agencies--national, state and local, as well as other commands and services. This has been compounded by the creation of CONAD. The comparatively large staff workload resulting from this requirement is unique to this command.

2. The nature of ADC expansion has been outlined in Inclosure #1. The impact on the staff of b and c, above, is less tangible. Some indication of the workload follows:

a. Estimates by the Deputy Staff alone of this headquarters as to the number of staff officer manhours per average month expended on briefings and conferences with personnel outside of ADC and community relations produced a total of 9000 manhours. Converted to manmonths, this means that 64 members of the Deputy Staff are continuously engaged in these activities. This has a very considerable impact on the accomplishment of the normal workload of this headquarters. A similar situation exists and is growing at subordinate headquarters.

b. An important aspect of this problem is our increasing involvement in the planning, development, testing, procurement and scheduling of the resources required for our mission. Our mission is no longer one of implementation. We can no longer sit back and wait for

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Hq USAF, Air Training Command, AMC, or ARDC to "deliver the goods" in the sense that this was true in the past. The complexity of the resources problem is leading to more and more decentralization, from the early phases of programming to the actual placement of resources in our inventory.

3. As guidelines upon which to conduct the current review, the Board used the principles, concepts and policies enunciated last year. These (explained in detail in our letter of 26 February 1954) are as follows:

- a. No basic changes are to be made in the current ADC organization.
- b. Manning is to be based on responsibilities as of June 1955.
- c. Duplication of effort between levels of headquarters is to be eliminated.
- d. Equal levels of headquarters have the same basic functions.
- e. Manning should vary only with workload.
- f. Air Division Commanders have full responsibility.
- g. Organizations should be standardized.
- h. Each headquarters function should meet the essentiality test;
 - (1) Is it necessary?
 - (2) Is it being done elsewhere?
 - (3) Could it be done better?
 - (4) Could it be done cheaper?
 - (5) What happens if it isn't done at all?

INCREASED REQUIREMENTS FOR HQ, AIR DEFENSE FORCES AND AIR DIVISIONS

REF TAB	FUNCTION	COL	L/C	MAJ	CAPT	LT	WO	TOTAL OFF	M/SGT	T/SGT	S/SGT	A/1C	A/2C	TOTAL AMN	GRD P-458 CIVS	GRAND TOTAL
A	Adjutant														2	2
A	Information Svcs														-2	-2
B	Chaplain					2		2		2	1	2		5		7
B	Flight Safety			4	-4			0								0
C	Inspector General			1		1		2								2
D	DCS/Intelligence		3		9			12								12
E	DCS/Comptroller		4	-1		-2		1	3	8	13			24	2	27
F	DCS/Personnel		3	9	1	6		19	30	30	4			64	6	89
G	DCS/Operations		9	17	23	3		52	1	8	10	5	7	31	24	107
H	DCS/Materiel	9	8	5	27		8	57	-14	41	6	-14	-18	1	25	83
I	Hq Sq Section								6	-6					0	0
I	Flight Section				1			1	1	2	4	2		9		10
	TOTAL	9	27	35	57	10	8	146	27	85	38	-5	-11	134	57	337

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ADJUTANT

1. There are currently no civilian stenographers authorized in the Adjutant function of the 29th and 35th Air Divisions. All other divisions are authorized one. The total number of personnel authorized in the Adjutant function is less than in any other division in CAADF.

2. At present, the Adjutant and Assistant Adjutant are required to prepare most written material in longhand. Considering the administrative nature of the adjutant function, this is a voluminous task. It is wasteful of their time and precludes expeditious handling of the huge flow of paper work through the section. This workload has increased over the past year; both divisions have expanded in units and activity. In the past, the Adjutant received some stenographic support from other sections, for example, the Commander's stenographer. Increased activity throughout the headquarters has now reduced this support to a minimum.

3. In addition to the stenographic requirement, the Adjutant's office serves as a focal point for the reception of visitors, arrangement of conferences and appointments and handling of telephone contacts with outside agencies. The volume of such activities has increased. The continuity and experience of airmen available for this task is unsatisfactory. Without question, this sort of work can be best handled by an office secretary as a part of her general duties.

4. An increase of two civilian spaces is required, one in each Division.

INFORMATION SERVICES

Letter from Hq, USAF, subject: "Revision of AFM 150-1, Functional Manning Requirements", 4 November 1954, inclosed new manning criteria for Information Services. Based upon this, the following adjustments are required:

	<u>S SGT</u>	<u>CIV</u>
*Hq, EADF	+ 1	
Hq, CAADF		- 1
Hq, WADF	- 1	- 1
	0	- 2

* 2 additional spaces permitted under criteria, only 1 required now.

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Tab A

CHAPLAIN

General: New manning criteria for inclusion in revision of AFM 150-1 allows 1 chaplain for each 850 personnel. On this basis this command should be allotted 89 chaplains on 30 June 1955 on the basis of 75,399 military personnel authorized. On the same criteria, one service space is authorized for each authorized commissioned chaplain. This command now has 72 service spaces authorized for 81 commissioned chaplains. The following requests are based on this criteria.

1. An increase of 1 T Sgt is required in the 29th Air Division. Three chaplains now have only two airman assistants, 1 A/IC and 1 S Sgt.
2. An increase of 1 T Sgt is required in the 34th Air Division. An additional chaplain (Capt) was authorized effective for December (USAF PAV #44, 22 July 1954) without a service space. The previous authorization was 1 Major, 1 S Sgt.
3. An increase of 1 S Sgt is required in the 28th Air Division. One chaplain is presently authorized with no assistant.
4. An increase of 1 Lt and 1 A/IC is required in the 9th and 28th Air Divisions, each. Each division is now authorized only 1 chaplain, which is inadequate in view of the number and geographical dispersion of units whose religious activities must be supervised and where services must be conducted by the Division Chaplain.

FLIGHT SAFETY

An increase in grade of the Flight Safety Officer from Captain to Major is required in the 29th, 33rd, 34th, and 35th Air Divisions, each. Reference is made to our letter, subject: "Air Defense Command Accident Prevention Program", dated 24 September 1954 to Director of Operations, Hq USAF, which outlined our program of placing the responsibility for flight safety on commanders at all levels and providing an "Assistant for Flight Safety" at Defense Force and Division levels only. This program was implemented on the basis of Lt Colonels at Air Defense Force level and Majors at Divisions. The four divisions in question were authorized Captain spaces out of our own resources; all others have Majors. It is felt that Majors are essential at this level if the program is to be successfully carried out. This command cannot fulfill this requirement.

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Tab B

INSPECTOR GENERAL

General: The inspection system of this command is organized so that Air Defense Forces have the capability of inspecting each of their units annually. This capability is placed at the lowest level at which the full time of inspection personnel can be utilized. Accordingly, EADF, with large divisions, has inspection teams at air division level, and a reduced staff at Hq EADF. WADF maintains team capability at its headquarters. CADF is in the process of readjusting its inspection system by placing capability in some air divisions, while retaining some in its headquarters, at no cost in additional personnel spaces.

Increases in activities to be inspected have occurred during FY 1955, however, no increase in "inspector" personnel is being requested on this basis at this time since team type operations are capable of absorbing some additional workload.

1. An increase of 1 Lt, Administrative Officer, is required in Hq, EADF. Increased numbers of units and inspection activities in EADF can be absorbed by present inspection personnel. However, they generate an increased paper workload which, under EADF's concept of inspection from the Division level, centers in the Office of the IG, EADF. There is a shortage of administrative capability in that office. Two Administrative Staff Officers (Majors) authorized are required as inspectors. There is need for an officer to relieve the IG of mounting administrative details.

2. An increase of 1 Major is required in the 27th Air Division to be Director of Inspection Services. Only one officer, the IG, is presently authorized. Other divisions in WADF and similar divisions in CADF are authorized the two officers. This shortage stems from the divorcement of Flight Safety from the IG in ADC (see previous discussion of Flight Safety). The 27th Division was not previously authorized a Flight Safety Officer, as were other WADF divisions, because of its relatively smaller size. The Major in IG performed the function as an additional duty. When separation of the function from IG was directed, the Major space was also transferred to meet the greater immediate requirement. This caused a serious deficiency in the IG manning which cannot be remedied by this command.

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Tab C

DCS/INTELLIGENCE

General:

Intelligence activities in Air Defense Command are centralized to the maximum extent possible in order to exploit the homogeneity of the command and to realize maximum manpower economy. Accordingly, in the functional area of Intelligence, the impact of a general growth of air defense can be expected to be felt at the higher echelons.

No increases are requested for the air division level. The increases required at the air defense force level grow out of:

- a. Assessment of workload based on experience of the past year, and
- b. Increased tempo of activities related to growing recognition of the importance of air defense.

1. Hq EADF, CADF and WADF each require an increase of 1 Lt Col to be Assistant Deputy for Intelligence. This is one of two deputates at Air Defense Force level without an assistant deputy. The request is predicated on the following:

- a. The standard intelligence staff provided at Air Defense Force headquarters in the last review was established on an extremely austere basis. Experience in the past year has demonstrated that manning has been below the bare minimum necessary for the deputy to meet the requirements of his job. He is primarily charged with servicing the commander and headquarters staff; supervising the staff under him; and for providing staff supervision to intelligence activities in the subordinate tactical units. Adequate discharge of the last responsibility requires that the deputy make frequent personal visits to all subordinate units. To do so however, and still adequately discharge his headquarters functions, requires that he be provided with a senior assistant qualified to assume full responsibility in the deputy's absence and alternatively to relieve the deputy of some of the burden of essential field visits. At the present time the deputy is desk-bound.

2. Hq CADF and WADF each require an increase of 4 Captains to establish a 24-hour intelligence duty officer in the CCC as a standard function at all Air Defense Force Headquarters. In the last review, in the interest of maximum austerity, the 24-hour intelligence watch was established at Hq EADF only. Experience has shown that the lack of a 24-hour intelligence evaluating capability at all Air Defense Force Headquarters constitutes an unwarranted hazard. Unacceptable delays

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Tab D

and inaccuracies have occurred in the reporting of warning type incidents during non-duty hours. The basic inadequacy of an "on-call" watch system during off-duty hours at Hq CADF and WADF is aggravated by the distance from the headquarters at which most of the intelligence staff lives. Although five spaces are normally required to maintain a 24-hour, 7 day a week watch, it is considered that the fifth position can be provided out of the present authorization for the Operational Intelligence Division during normal duty hours.

3. An increase of 1 Captain is necessary in Hq EADF. This represents an augmentation of the standard manning of the intelligence organization at ADF level. It is justified by the larger workload arising from the following:

a. EADF is by far the largest air defense force in terms of numbers of subordinate air defense units requiring staff supervision.

b. There is a higher tempo of activity in EADF than in the other two ADF's occasioned by the fact that the eastern air defense region contains the largest number of critical population and industrial targets in the U.S. In turn the defense of this region involves a greater number of external agencies requiring close and continuing contact than is the case in the other two air defense regions.

DCS/COMPTROLLER

General: Increases and adjustments to current authorizations in headquarters staff elements of the Comptroller activity derive from a number of factors. During the review of February 1954, the Comptroller took a most austere approach to manning. Functions were standardized and manning recommended to accomplish varying workloads within those functions. As a result, a reduction of 53 spaces was made from the then existing authorizations. In general, the authorizations recommended proved sound. However, additional workloads and responsibilities, plus one year's operating experience, have revealed certain deficiencies. The need for such changes as are recommended herein derive principally from the following:

- a. Stabilization of workload at Air Divisions at a known level following the functional realignment of last year.
- b. Increase in the requirement for field supervision at Air Defense Force level as a result of new accounting procedures, civilian payroll operations, IAM, etc., combined with the reduction of Division Staffs.
- c. Recognition of a firm requirement for an adequate Central Graphics capability at each level of command.

The organization and manning recommended herein provide for consistency in manning and functional alignment at the various echelons. Under this plan, certain personnel wear more than one hat; certain echelons carry a large portion of the burden of a function for other echelons; control information is consolidated, and duplication and overlapping is minimized.

The Air Division Staffs are identical except where ADC is required to operate Fiscal Stations. At present this requirement exists at Norton AFB and Tinker AFB. At such time as the Air Materiel Command is directed to perform these functions (AFR 11-4), this command will transfer the spaces involved. These staffs are manned to provide an advisory service to the Division Commander and to provide organic operations only in the area of Statistical Services and Graphics presentation. Funds flow is from base (Air Defense Group) to Air Defense Force level direct. Except in rare instances, statistical reporting (except for organic requirements) follows the same channels.

Details concerning adjustments to support these operations are contained in subsequent paragraphs. It should be noted that the manning thus recommended will not provide for the operation of the Central Accounting Office.

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1. An increase of 1 Lt. Colonel is required at each Air Defense Force to be Assistant DCS/Comptroller. This is one of two deputates at Defense Force level without an assistant deputy. The requirement was evaluated last year but waived on the basis of trial without one. It is since apparent that the small advisory staff at Division level is not equipped to technically supervise lower echelons, most of whose work flows directly to the Defense Force. This results in an increased workload at the Deputy level in the Defense Force and generates an absolute requirement that the Deputy make numerous staff visits to base as well as division level. The need for continuity of supervision at the Defense Force of an integrated financial management system cannot be met by the use of a Director as acting DCS/C during the frequent absences of the Deputy. The requirement for adequate field supervision to insure the integration of all Comptroller functions can most economically be met by augmentation at the Defense Force level.

2. In Hq EADF, a decrease of 4 A/IC and 3 S/Sgts and replacement with 1 T/Sgt and 4 civilians (airman grade) in Budget and Accounting is required for better balance. The ratio of military to civilians, considering new accounting procedures, is now too high. The work at this level can best be done by qualified civilians (who also provide continuity). Lower grade military spaces are better used at base level where the training of airmen is more easily accomplished; higher grades only are useful at Defense Forces.

3. A similar adjustment is required in Hq CADF by a decrease of 2 civilians and replacement with 2 T/Sgts in Budget and Accounting. This action, combined with 2 above, will standardize the airman authorization at all Defense Forces at three (3), all in top grades.

4. In Hq CADF, an increase of 1 civilian Management Analyst and 1 civilian stenographer is required in Management Analysis. Excluding draftsmen this section in CADF is authorized 2 officers, 1 civilian analyst, 1 civilian management technician and 2 airmen management technicians. This compares with 2 officers, 5 airmen and 4 civilians in Hq EADF and 2 officers, 2 airmen and 3 civilians in Hq WADF. The small authorization approved by the Board last year for Hq CADF was due to the then Commander's lack of support for this function. The new Commander of CADF is emphasizing the use of Management Analysis but is unable to obtain maximum effectiveness for lack of personnel in the function.

5. In the review of last year, a standard manning of 1 officer, 3 airmen and 2 civilians was approved for Air Divisions. Three divisions were augmented slightly because they operated fiscal stations. The divisions in WADF were manned below standard on a trial basis. In the

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light of a year's experience, a new standard division manning has been developed as follows:

1	Lt Col	DCS/Comptroller
1	Civ	Stenographer
1	T/Sgt	Accounting Technician
1	M/Sgt	Stat Services Supervisor
1	S/Sgt	Sr Statistical Specialist
1	S/Sgt	Illustrator
1	A/IC	Draftsman

This standard provides a minimum advisory staff for the division commander and a minimum capability in the operating functions of Statistical Services and Central Graphics. The major departure from the previous standard (which was not uniform AFSC and grade-wise) is the establishment of a central graphics capability. At present, only the 3 divisions in EADF number a draftsman among their airman authorizations. The function is now being performed on a sub-standard basis. Requirement for public appreciation of the Air Defense mission and the Division's requirement for official presentation demands recognition of a minimum graphics capability. The Air Defense Command standardization concept places this function within DCS/Comptroller purview. Implementation of this manning standard will result in the following adjustments:

	<u>Lt Col</u>	<u>Maj</u>	<u>Lt</u>	<u>M/Sgt</u>	<u>T/Sgt</u>	<u>S/Sgt</u>	<u>A/IC</u>	<u>Civ</u>	<u>TOTAL</u>
*Present Auth:	11	1	2	9	7	8	8	14	60
*Proposed Auth:	<u>12</u>	—	—	<u>12</u>	<u>12</u>	<u>24</u>	<u>12</u>	<u>12</u>	<u>84</u>
Net Change:	+1	-1	-2	+3	+5	+16	+4	-2	+24

* Excludes fiscal station augmentation.

The grade spread in the changes above involved many internal adjustments, best described in general terms as follows:

- a. Upgrading of 1 Comptroller from Major to the standard Lt. Colonel.
- b. Elimination of 2 non-standard Lt authorizations and replacement of 1 with a civilian.
- c. Upgrading of 3 spaces to M/Sgt in Statistical Services.
- d. Replacement of civilian accounting technicians with T/Sgts.
- e. Addition of 21 draftsmen in the grade of S/Sgt and A/IC.
- f. Addition of Statistical Specialists (S/Sgt) and civilian stenographers in the divisions of WADF.

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DCS/PERSONNEL

General: The personnel activity within the Air Defense Command was authorized minimum manpower spaces required to perform directed functions during the last manpower review. Since this review, the increase in the number of personnel being separated from the Air Force and ADC's expansion have generated an increase in workload in the personnel activity and have made it necessary that additional functions be performed. Manpower authorizations are not available to ADC to fulfill the additional requirements in the personnel area. Hence, authorizations must be provided by Hq USAF. There follows below a discussion of each function in the personnel area for which manpower is not authorized or is inadequate, along with an indication of the additional manpower required.

1. Personnel Classification and Utilization Team Function

The requirement for personnel authorizations to establish and operate Personnel Classification and Utilization Teams within ADC was presented by letter from Headquarters ADC to Director of Military Personnel, Headquarters USAF, Subject: "Classification and Utilization Teams", dated 31 August 1954. An answer to this letter has not been received. This requirement remains an urgent one. The performance of the personnel function at squadron level continues to be below acceptable standards. It is essential that squadrons be given assistance through frequent visits by Classification and Utilization Teams. To provide adequate assistance requires four teams in EADF, three teams in CADF, and three teams in WADF with each team consisting of one officer and three airmen. Instead of the officer on each team being a warrant officer as requested in Headquarters ADC's 31 August 1954 letter, it is requested that one team in each defense force be authorized a captain and that the remaining teams be authorized lieutenants. One captain space in Headquarters CADF can be provided for this function. Remaining required spaces must be authorized by Headquarters USAF and amount to:

<u>Capt</u>	<u>Lt</u>	<u>M Sgt</u>	<u>T Sgt</u>	<u>Total</u>
2	7	10	20	39

2. Reserve Activities Function

ADC has been directed to actively support the Air Force Reserve Program. In keeping with the intent of USAF and in accordance with the requirement of ADC, plans have been developed to utilize approximately 1500 mobilization assignee and designee reserve officers and airmen in ADC. Positions for these personnel have been established on T/Ds for units which will require them in the event of

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hostilities. To recruit personnel for and administer a mobilization assignee/designee program of this magnitude requires one officer, two airmen, and one civilian at each defense force headquarters. In EADF the officer should be a major due to the size of the program, while in WADF and CADF he can be a captain. One lieutenant space in Headquarters CADF can be made available for this function if upgraded to captain. Other personnel required for this function must be authorized by Headquarters USAF if the function is to be performed. Due to non-availability of personnel for the function, only 216 out of the required 4500 mobilization assignees/designees vacancies have been filled. Net additional personnel authorizations required for this function are:

<u>Maj</u>	<u>Capt</u>	<u>Lt</u>	<u>M Sgt</u>	<u>A/1C</u>	<u>Civ</u>	<u>Total</u>
1	2	- 1	3	3	3	11

3. Personnel Services Function

ADC expansion and the emphasis placed on personnel welfare in order to retain career personnel in the Air Force require the following additional personnel authorizations at defense force and air division headquarters level in ADC.

a. Upgrade the Director of Personnel Services at defense force headquarters level from major to lieutenant colonel. This is the normal grade for directors at numbered Air Force level and the responsibilities warrant this grade.

b. Authorize one officer and one airman for the function in Headquarters 35th, 26th, 30th, and 32d Air Divisions. These divisions are not authorized personnel for this function, but other divisions are. At the last review, personnel were not authorized Headquarters 35th Air Division because the total strength did not warrant it. Since that time, the division has expanded so that personnel are required. In Headquarters 26th, 30th, and 32d Air Divisions, personnel for this function were not authorized during the last review because it was intended that the function be performed at defense wing headquarters level in these divisions. Personnel have not been authorized for the function at wing level and experience has proved that the function can be more economically performed at air division headquarters level.

c. Net personnel authorizations required by the above from Headquarters USAF are:

<u>Lt Col</u>	<u>Maj</u>	<u>Capt</u>	<u>T Sgt</u>	<u>Total</u>
3	- 3	4	4	8

4. Personnel Training

a. "One of the most complex personnel problems facing the Air Force during the next several years is the improvement of the skill level quality of our airman inventory. During this same period we are faced with the prospect of heavy losses of our experienced airmen which causes the (training) problem to reach unprecedented proportions! These are the words of the DCS/P, Headquarters USAF, in a personal letter, dated 9 November 1954, to the Commander, Air Defense Command.

b. The Air Defense Command has been assigned the OJT task of training and upgrading 29,164 airmen to the 5 and 7 skill level during the period 1 April 1954 through 30 June 1955. This quota was given us by Hq USAF and was designed to meet the integrated needs of both the Air Defense Command and the Air Force for skilled personnel during this period. In addition, approximately 8,500 helper level airmen with "directed duty assignment" for training to the apprentice level is to be accomplished during this same period. The skills of many of these people are required to operate and maintain equipment that is among the most technically complicated of any of the major commands. The previous USAF OJT requirement for ADC was 29,355 for the 21 month period from 1 October 1952 through 30 June 1954. We trained only 22,156 people. Obviously, the new requirement (numerically the same) cannot be trained in a 15 month period under our present authorization and manning. The lack of full time, authorized training personnel at all levels of command has served to nullify the spirit and intent of the USAF "Integrated Training Program" and "Project Guidance".

c. In establishing the requirements for a training organization at every level of command, the geographical dispersion of our units was of paramount importance. The bases of the operational units alone in ADC number over 120 and are dispersed throughout the entire Zone of Interior. Many of these units are located in remote areas hundreds of miles from their next immediate headquarters necessitating "supervision by remote control". Another factor considered was the necessity of having authorized training organizations at each of these units, thus providing continuity and on-the-spot supervision of the USAF and ADC training programs. In determining the exact number of personnel required to support our training program, consideration was given to the size of the defense force or air division concerned together with the number of subordinate units assigned and their geographical proximity to the supervisory headquarters. The number of additional personnel we have requested represents the absolute minimum required to carry out our personnel training function.

d. This function has been critically short of authorized spaces since before the last review board. The recommendations of that board were reduced by your headquarters by one officer and one airman in each headquarters. Since then our letters of 6 March 1954, subject:

"Manpower Requirements for Training Function" and 27 July 1954, subject: "ADC Manpower for Training" have reiterated our urgent need for training spaces in Defense Force and Division headquarters, as well as elsewhere. In each case your reply has indicated that your headquarters is studying the problem USAF-wide in order to establish a firm policy. The delay has been partially overcome in this command by overmanning the function since the urgency of the programs developed could not wait upon manning authorizations for implementation.

e. The required manning at Defense Force and Division level follows. Air Divisions in EADF require no personnel because their Wings provide training capability.

Headquarters EADF

<u>Number</u>	<u>Grade</u>	<u>AFS</u>	<u>AFSC</u>	<u>Title</u>
1	Lt Col	Education & Training Staff Off	7516	Director
1	Major	Education & Training Staff Off	7516	Asst Director
1	Capt	Education Specialist	7524	Ch, Schools Div
1	Civ(GS-12)	Education Specialist	7516	Ch, OJT Div
2	M Sgt	Administrative Supervisor	70270	
2	M Sgt	Education Technician	75270	
2	T Sgt	Personnel Technician	73270	
2	S Sgt	Clerk	70250	
1	A/1C	Clerk	70250	
1	A/2C	Clerk	70250	
3	Civ	Steno	70252	

Headquarters CAIF and WALF

<u>Number</u>	<u>Grade</u>	<u>AFS</u>	<u>AFSC</u>	<u>Title</u>
1	Lt Col	Education & Training Staff Off	7516	Director
1	Major	Education & Training Staff Off	7516	Asst Director
1	Capt	Education Specialist	7524	Ch, Schools Div
1	Civ(GS-12)	Education Specialist	7516	Ch, OJT Div
1	M Sgt	Administrative Supervisor	70270	
2	M Sgt	Education Technician	75270	
1	T Sgt	Personnel Technician	73270	
2	A/1C	Clerk	70250	
2	Civ	Steno	70252	

Headquarters, 9th, 27th, 34th, 35th Air Divisions

<u>Number</u>	<u>Grade</u>	<u>AFS</u>	<u>AFSC</u>	<u>Title</u>
1	Major	Education & Training Staff Off	7516	Director
1	M Sgt	Education Technician	75270	
1	S Sgt	Clerk	70250	

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Headquarters 28th and 29th Air Divisions

<u>Number</u>	<u>Grade</u>	<u>AFS</u>	<u>AFSC</u>	<u>Title</u>
1	Major	Education & Training Staff Off	7516	Director
1	M Sgt	Education Technician	75270	
1	T Sgt	Personnel Technician	73270	
1	A/IC	Clerk	70250	

Headquarters, 25th, 31st, and 33d Air Divisions

<u>Number</u>	<u>Grade</u>	<u>AFS</u>	<u>AFSC</u>	<u>Title</u>
1	Major	Education & Training Staff Off	7516	Director
1	M Sgt	Education Technician	75270	
1	T Sgt	Personnel Technician	73270	
1	S Sgt	Personnel Specialist	73251	
1	A/IC	Clerk	70250	

f. Additional spaces required are:

<u>Air Defense Forces</u>	<u>Lt Col</u>	<u>Maj</u>	<u>Capt</u>	<u>M</u>	<u>S</u>	<u>T</u>	<u>S</u>	<u>S</u>	<u>A/IC</u>	<u>A/2C</u>	<u>Civ</u>	<u>Total</u>
Authorized	3	1		2	3	4	5		1	7		26
Required	3	3	3	10	4	2	5		1	10		41
Increase	0	2	3	8	1	-2	0		0	3		15

<u>Air Divisions</u>	<u>Maj</u>	<u>Capt</u>	<u>M</u>	<u>S</u>	<u>T</u>	<u>S</u>	<u>S</u>	<u>A/IC</u>	<u>Total</u>	
Authorized		10						1	8	19
Required		9		9	5	7	5			35
Increase		9	-10	9	5	6	-3			16

DCS/OPERATIONS

General: In considering personnel increases, the Board was primarily concerned with the expansion in supervisory workload caused by the increase in ACEW, GOC and Fighter Squadrons. This requires not only supervision after these units are on station, but the very important and very extensive planning preceding their activation as well as assistance during their growth period. The planning workload is not, of course, limited by the units in operation by June 1955 but is being done now for FY 56 and even beyond. This is a factor of utmost importance and cannot be disregarded even though the cut-off date for personnel requirements in this study is 30 June 1955.

Reference to Inclosure #1 will provide a better insight into the increased workload of this command, particularly the impact in the DCS/O functional areas. In some cases, the items of referenced Inclosure reflect an increased staff workload at ADC Headquarters only. However, there are many (e.g. SAGE) which already have increased the staff workload at ADF and AD Headquarters as well.

The last review standardized functions, but recommended manning on the basis of workload. Some headquarters were authorized less personnel than others on the basis of smaller workloads. The Board, in the current review, approved increases for such headquarters when increases in workload proved present authorizations to be inequitable. This was particularly true in the case of CADF and its divisions, where a greater expansion occurred than in other Defense Forces and a greater planning load was assumed.

OFFICE OF THE DCS/O

1. In Headquarters CADF, an increase of 1 Major to be Executive Officer is required. The standard authorization for Headquarters EADF and Headquarters WADF in this office is 1 B/Gen, 1 Lt Col, and 1 Major (WADF also has 2 liaison officers authorized.) CADF has not previously been authorized the Major. The workload has reached the point where this executive is warranted.

2. An increase of 12 civilian stenographers is required to provide a secretary in each of the Air Divisions to satisfy the requirements of the FCC, FCDA, and CAA liaison offices.

a. The terms of agreement with these agencies require that ADC provide suitable and satisfactory secretarial services to their liaison officers. In June 1953 the Chairman of the FCC brought deficiencies in this support to the attention of the Commander, ADC. As a result, a stenographer space was provided to each Air Defense Force to be shared

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by the liaison agencies. It was reiterated that satisfactory support would be provided at Air Divisions by an equitable sharing of existing capabilities with the regular staff at no increase in personnel.

b. At present, DCS/O is authorized a total of 4 stenographers in the EADF Divisions, 3 in the WADF Divisions and from 1 to 4 in the CADF Divisions. The authorization for officers varies from 12 to 23. The workload has steadily increased throughout DCS/O during FY 55. Consequently the support available for the liaison offices has steadily deteriorated.

c. Meanwhile, the workload of the liaison offices has increased. For example, until early 1954 the FCC liaison officer was solely concerned with commercial stations in implementing CONELRAD. In March 1954 agreement was reached whereby he would assist the Project Officer in all his duties because of the expansion of the program. This further involves:

- (1) The implementation of CONELRAD for U.S. Government Stations.
- (2) The preparation and publication of Air Division CONELRAD Plans.
- (3) Special weekly tests of the CONELRAD Radio Alerting System were initiated during April 1954 involving the weekly receipt in each air division of detailed reports from approximately 150 radio stations. Each of these reports require detailed study and analysis, and discrepancies thereby revealed require a substantial amount of correspondence. The inauguration of regular tests of the CONELRAD clusters on two different wave lengths, the addition of new stations to the CONELRAD system, changes and modifications required in the CONELRAD alerting system, etc., have necessitated a steadily increasing amount of correspondence. In addition, these same activities have increased the amount of travel involved and the amount of time which each FCC Liaison Officer is required to be away from his headquarters. Organized training programs for control center personnel and briefings of various interested military and civilian groups make additional demands on the time of FCC CONELRAD personnel.
- (4) While the Liaison Officer is absent from his headquarters, the work accumulates and upon his return it is necessary for him to type letters, tabulate reports, and perform other routine clerical and stenographic duties, much of which could have been done by a clerk-stenographer during his absence. Because of these conditions, progress in the planning and implementation of CONELRAD is being seriously retarded.

- (5) During the coming year, additional duties and responsibilities will be placed upon each FCC Liaison Officer. Headquarters USAF has indicated a desire that the BRIFCON Project be implemented upon an expanded basis at the earliest possible date. This will require FCC CONELRAD personnel to perform increased travel and to conduct additional correspondence. During March 1959, the Commission is expected to issue formal CONELRAD Rules for all radio stations in the Fire and Police services. The issuance of these Rules will open up an entirely new and additional phase of the Project and will necessitate liaison with several thousand additional radio stations.
- (6) Concurrent with all the other CONELRAD functions, a requirement exists for constant revision of existing CONELRAD plans in order that they can reflect current status. Such duties require not only a considerable amount of time by the CONELRAD Project Officers and FCC personnel, but also involve a considerable amount of correspondence.

CIVIL AIR DEFENSE

1. The current authorization for this staff at ADF headquarters is:

	<u>WADF</u>	<u>CADF</u>	<u>WADF*</u>
Col	1	1	1
Lt Col			1
Maj	<u>3</u>	<u>3</u>	<u>2</u>
TOTAL	4	4	4

*Not including the state coordinator (Lt Col) for California previously carried in this authorization.

2. The CAC expansion plan puts the operation in all 48 states during FY 55, an increase of 12 states, all in CADF at this time. Two GO squadrons with 20 detachments (filter centers) have already been activated. They are now manned with 1 officer and 1 airman pending the acquisition of real estate and development of the center organization. This program requires an increase of 1 Lt Col and 1 Capt in HQ CADF to handle the additional workload.

3. Further plans call for the transfer of 7 states (35th Air Division) with 1 squadron and 13 filter centers to WADF. Also involved is a realign-

ment of existing centers in SACF to conform with sub-sector boundaries. When this occurs, it is proposed to transfer the title of SACF from SACF to WADF, placing the authorizations of both Defense Forces in line with their responsibilities.

OPERATIONS AND TRAINING

General: Reference is made to letter from HQ USAF to Deputy Inspector General, Norton AFB, subject: "(Unclassified) Report of Survey Inspection of Air Defense Command Augmentation Plans, 4-22 Oct 54", dated 4 Nov 54. The deficiencies noted are partially traceable to lack of staff supervisory personnel. Attention is invited to the heavy concentration of augmentation forces, and thereby a greater supervisory responsibility, in the areas of the 33d and 35th Air Divisions within SACF.

1. Based upon workload in June 1954, HQ USAF was authorized 9 officers, 3 airmen and 2 civilians in Operations and Training. HQ WADF was authorized 12 officers and 10 others; HQ SADF was authorized 22 officers and 13 others. During FY 55, SACF experienced a relatively greater expansion in units and in the tempo of operations than the other Defense Forces. There is an immediate requirement for 1 Lt. Col to be Assistant Director, 2 Majors in ACOM operations and 2 Civilians to provide stenographers for the Director of O/T and his three divisions.
2. The 33d Air Division received a minimum authorization of 4 officers and 3 airmen based on June 1954 workload. This Division will now have 14 ACOM and 2 Fighter Squadrons in operation by June 1955. This will make it the largest Division in terms of operational units, exceeding those of SADF. More units are in the planning stage. In addition, this Division is heavily populated with augmentation forces. It has the largest geographical area in ADC. An increase of 2 Captains and 1 M Sgt is warranted.
3. The 35th Air Division, like the 33d, has a minimum authorization. It will gain 4 operational ACOM squadrons during FY 55. Six more will go on site in FY 56. Augmentation forces are an important part of its combat capability, comprising approximately 385 fighters and 20 radar sites located at 28 bases throughout its area. Eleven of these sites now report to the 35th ADCO on a 24-hour basis. An increase of 1 Major and 1 Captain is required.
4. WADF will increase by three Fighter squadrons and two ACOM Squadrons in FY 55. Utilization of augmentation forces is being more closely monitored. WADF has an expanded workload in that the newly activated 9th Air Division now adds to WADF's supervisory workload. An increase of 1 Major in HQ WADF is required to provide capability to meet the expanded workload.

Incl #3
Tab G

5. The 25th Air Division is the largest division in WADF, with 6 Fighter and 8 AC&W Squadrons. It is authorized one less officer in O&T than the other divisions in WADF because at the time of the last review it possessed two wings to assist in supervision of operational units. The wings have since been inactivated. An increase of 1 Captain is required to achieve the standard authorization on an equitable basis.

STANDARDIZATION SECTION

1. Implementation of the standardization program by DCS/O will require the following increases in each Air Defense Force Headquarters:

1 Lt Col	1416	Operations Staff Officer
1 Major	1124C or B	Fighter Pilot (F-86D, 89, 94)
1 Captain	1124C or B	Fighter Pilot (F-86D, 89, 94)
1 Captain	1644	Intercept Controller
1 Captain	1564	Aft Observer, Radar Intercept
1 S Sgt	70250	Clerk
1 A/IC	70250	Clerk

2. Reference is made to paragraph 5, Tab H, Inclosure #4 of this letter, which explains the requirement throughout the command for a Standardization Program.

PLANS, ORGANIZATION AND REQUIREMENTS

1. In this area, the authorizations derived from the last review are especially varied. This was because of differing workloads due to the relative sizes of the organizations or the emphasis placed on the function by higher headquarters. This is an area where improved management is certain to pay dividends. Poor planning, poor organization, poor establishment of requirements and most important, poor management of resources to meet requirements are not always obvious. Some of the resulting problems are passed on to higher headquarters in the form of incomplete, inadequate work; some are never solved, some functions are not performed at all. The very specific problem of economic use of manpower is centered in the M&O Section of these directorates.

2. A need exists for a manpower management officer and an airman management technician at each air division. There are no primary duty personnel to perform this function below division level except in EALF which has subordinate Wing Hqs. It is felt that such personnel at base level would pay real dividends; however, lacking this, we propose to place this capability as close to the base as possible. The evaluation

of changes or increases in authorization can best be accomplished by trained personnel close to the problem. In the past, such changes generally arose on an individual basis as the need suddenly became obvious or pressing. There has always been a requirement for a continuous study of organization and manpower management, especially in a growing command such as ADC. A vehicle for initiating this is now present in the quarterly Unit Manning Document Worksheet. This document, to be effective, must be properly prepared and must receive more than a cursory inspection at division level. Its value derives from its presentation of the findings of people at the working level, who must be encouraged and guided in its preparation. Their recommendations must be screened so that the product arriving at higher headquarters is worthy of and capable of consideration. For example, the first cycle of UMDWs for all of ADC in September 1954 resulted in a total requested increase of some 9,000 spaces. Obviously the magnitude of this request precluded adequate consideration at either this or Defense Force level. Eventually, the recommendations will be digested and reduced to workable proportions. How well this is done will be dependent upon appropriate screening at lower echelons.

3. In addition, the general "management improvement" activities of the command require guidance and actual implementation from the division level. This includes both the formal programs conducted command-wide and the day-to-day study and institution of better management techniques.

4. This justification has dwelt upon the M&O requirement, since that is where the principal shortage exists within PQ&K. The Eastern Divisions are adequately manned with 3 officers and 3 airmen including a management officer and airman. The Western Divisions have 2 officers and 2 airmen with no management personnel. The Central Divisions vary from 1 to 2 officers and from 2 to 3 clerks. Where 2 officers are authorized, one is in manpower management. No management airmen are authorized.

5. The following standard Air Division manning is proposed:

1 Lt Col	1416	Operations Staff Officer
1 Major	7336	Manpower Management Officer
1 Capt	1435	Operations Officer
1 T Sgt	80170	Management Technician
1 S Sgt	70250	Clerk
1 Civ	70252	Stenographer

6. This results in the following adjustments of authorization:

	<u>Lt Col</u>	<u>Maj</u>	<u>Capt</u>	<u>T Sgt</u>	<u>S Sgt</u>	<u>A/1C</u>	<u>A/2C</u>	<u>Civ</u>	<u>TOTAL</u>
Current	9	8	9	7	11	5	3	3	55
Required	12	12	12	12	12	0	0	12	72
Adjustment	+3	+4	+3	+5	+1	-5	-3	+9	+17

7. The present PO&R authorization of Hq CADF is 11 officers and 8 airman/civilians. This compares with 13 officers and 9 airman/civilians at WADF and 16 officers and 12 airmen/civilians at EADF. The expansion of CADF during FY 55 requires an authorization at least equal to that of WADF. An increase of 1 Lt Col, 1 Major and 1 civilian stenographer is required.

COMMUNICATIONS AND ELECTRONICS

1. Reference is made to the latest report of this headquarters, subject: "(Unclassified) Bi-Weekly AQ&W Status Report". During FY 1955, this command is experiencing a sizeable increase in workload in the communications and electronics area, principally due to the following:

- a. Establishment of 23 AC&W squadrons on site.
- b. Programming of equipment and preparation of Public Works program requirements now for the remainder of the program through FY 57.
- c. Accomplishing site surveys for 3d Phase Radar Sites and gap filler radar sites.
- d. Accomplishing site surveys for additions to radar sites to provide for increased manual capability and operation of the SAGE System.
- e. Planning and processing telephone and teletype wire requirements for the expanded manual system.
- f. Planning and processing telephone and teletype wire requirements for the SAGE System.

2. Based upon the foregoing, an increase is required in each Air Defense Force of 1 Major, 1 Captain, 1 T Sgt, 2 S Sgts and 1 A/LC. This is necessary to provide an acceptable capability to accomplish the additional planning, monitoring and reviewing generated by the FY 55 increase in workload.

3. The standard authorization in Air Divisions approved by the last review was 5 officers, 3 airmen and 1 civilian. This has been found to be satisfactory manning to absorb the increased workload generated during FY 55 with the following exceptions:

- a. The EADF divisions are unable to discharge their complete responsibilities in the area of wire communications. These divisions

are by far the largest in terms of communications. The smallest, for example, has communications responsibility for its headquarters, 8 AC&W Squadrons, 2 ADC bases and 5 Fighter Squadrons, which are tenants on bases of other commands. Wire systems constitute approximately 75% of these communications facilities and involve records on some 200 long line telephone circuits. A Wire officer must initiate, process and coordinate all requests for commercial facilities and then certify their installation. He must prepare and submit or review and process C&E operational plans and C&E schemes to insure completion of fixed wire facilities. He processes telephone and telegraph bills including those for ground observer posts and the CONELRAD Plan. An additional officer, Lieutenant, is required for full time duty to accomplish this function in the 26th, 30th and 32d Air Divisions.

b. The 35th Air Division is authorized only 4 officers (1 below standard, based upon FY 54 workload). Only one Communications Officer is authorized to act as both staff Radio and Wire Officer and Security Officer and to supervise all communications operating sections. Increased numbers of radar sites multiply communications and call for additional staff visit capability along with the responsibility. An additional Captain is required.

COMBAT OPERATIONS CENTER

1. It is reiterated, here again, that because of the peculiarity of Air Defense Operations and Organization, this function is included as part of a division headquarters. In the strictest sense, however, it is purely an operations function, similar to an AC&W squadron function.

2. This operating function at Hq CADF is presently authorized only 32 spaces compared with 52 at WADF and 56 at EADF. The number of radar status reports and actual radar tracks is increasing about 30 per cent in FY 1955 with the phase-in of new radar sites. The number of interceptor bases from which status and tactical action reports are received has increased with the integration of five ANG units to active air defense missions in the CADF area. There has been an increase in unknown aircraft activity, training exercises and system tests. Current authorizations are handicapping the proper display of current information necessary to operations. An increase of 1 Major and 6 A/2C is required.

3. The 31st Air Division is authorized 10 officers and 62 airmen, somewhat less than other divisions of similar responsibility. The minimum requirement for this operation is as follows:

- Director - 1 Officer, 1 Airman Clerk
- Combat Ops Center - 2 Officers, to provide, with the Director, a 24-hour capability during conditions of advanced warning.
- Air Def Control Center - 1 Officer and 1 Airman to be Chief Controller and AC&W Supervisor, respectively. 8 Officers and 68 Airmen to comprise 4 crews of 2 Officers and 17 Airmen each. These 19 positions must be manned for proper operation of the center as presently designed.

An increase of 2 Captains, 4 A/1C and 4 A/2C is required.

DCS/MATERIEL

General: Changes in workload and some changes in the concept of operations in Materiel required that a complete look be taken at the function at Wing, Air Division and Air Defense Force level. As a result, a modified organization and new manning were developed for the DCS/Materiel at Air Divisions and Wings. The Directorate of General Supply and Services at Defense Force was divided to provide a distinct Assistant for Materiel Control. The other materiel functions at Defense Force level were found to be satisfactorily manned with the few exceptions noted later.

1. Considerable disparity is present in current Air Division authorizations. Eastern Divisions are authorized only 4 spaces because of their supporting wings. No change is contemplated here. Central Divisions vary in authorization from 14 to 20. The smaller divisions in CADF have grown to where this great a variance is unwarranted. The Western Divisions are authorized 4 spaces with the exception of the 27th Division with 20 spaces. The authorization of 4 spaces in the 25th and 28th Divisions was approved by the last review board on an experimental basis. It was believed that the divisions, being on ADC bases, could utilize the capabilities of Air Defense Group personnel in performing the materiel function. In addition, the 25th Division had two wings at that time and the 28th Division was located on the same base as Hq WADF. It was further proposed to augment the Air Defense groups in the materiel area, which did not materialize. This concept is not believed to be sound; neither division has been able to meet its responsibilities within its authorization and must be heavily overmanned. The 9th Air Division, being on an ADC base, was patterned after the 25th and 28th when activated in October 1954.

a. A new concept for manning the DCS/M at Air Divisions is based upon the following:

- (1) A Defense Wing in EADF is directly comparable to an Air Division in CADF or WADF in its materiel responsibility and should be manned accordingly. It follows that division headquarters in EADF need only a small advisory staff as at present.
- (2) The workload among divisions and wings varies only slightly, since supervision of a function or sub-function must be performed whether of one subordinate unit or several. A variation does exist when the difference in numbers of units supervised becomes large. This can be resolved by determining the critical point at which additional manning is required.

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b. The standard authorization is 19 spaces as follows:

Director of Aircraft Supply & Maintenance

1	Major	4316	Aircraft Maintenance Staff Officer
1	Capt	3234	Armament Systems Officer
1	Capt	6424	Supply Officer
1	M/Sgt	43171	Aircraft Maint Technician
1	M/Sgt	64173	Organization Supply Supervisor
1	T/Sgt	30170	Acft Radio Maint Technician

Director of Communications and Electronics Supply & Maintenance

1	Maj	3016	Comm-Electronics Staff Officer
1	M/Sgt	30372	AC&W Radar Maint Technician
1	T/Sgt	64173	Organiz. Supply Supervisor

Director of General Supply and Services

1	Maj	6416	Supply Staff Officer
1	M/Sgt	64173	Organiz. Supply Supervisor
1	M/Sgt	47170	Vehicle Maint Supervisor
1	S/Sgt	64151	Organiz. Supply Specialist

DCS/Materiel

1	Col	9946D	DCS/Materiel
1	Lt Col	6416	Assistant DCS/M

Administrative Support

1	T/Sgt	70270	Administrative Supervisor
1	Civ	70252	Stenographer
2	Civ	70232	Appr. Stenographer

c. The foregoing is standard for Divisions or Wings containing 2 or less fighter squadrons and 7 or less AC&W Squadrons. The following augmentations are required:

3 and 4 Fighter Squadrons (Acft S&M)

Add 1 T/Sgt 32270 Fire Control Systems Technician

5 and 6 Fighter Squadrons (Acft S&M)

Further Add 1 WO 43100 Acft Maint. Superintendent
1 S/Sgt 64151 Organiz. Supply Specialist

8 to 16 AC&W Squadrons (Elect S&M)

Add 1 Capt 6424 Supply Officer

The foregoing standards cover the existing situation. As squadrons are added, it will be necessary to determine the next point of augmentation.

d. The functional areas covered by DCS/M at this level are:

(1) Aircraft Supply and Maintenance.

- (a) Aircraft Maintenance - Airframe, hydraulics, engines, etc.
- (b) Armament Systems Maintenance - Fire Control, Weapons and Missiles.
- (c) Communications Maintenance - Radio, Navigation, APX, etc.
- (d) Aircraft Supply
- (e) Munitions Supply

(2) Communications & Electronics

- (a) Ground Radar Maintenance
- (b) Ground Communications Maintenance
- (c) Ground Radar - Communications Supply

(3) General Supply and Services

- (a) Unit Supply and Equipment
- (b) Motor Vehicle and Ground Powered Equipment Supply and Maintenance
- (c) Note: The Food Service function and authorization is removed from Division level to be accomplished at Air Defense Force.

e. Required changes to the present authorization are as follows:

	Col	L/C	Ma.j	Capt	WO	M/Sgt	I/Sgt	S/Sgt	ALC	A2C	Civ	Tot
Required	15	15	45	35	5	75	57	20	0	0	45	312
Authorized	9	15	36	16	0	93	25	16	12	18	30	270
Increase	6	0	9	19	5	-18	32	4	-12	-18	15	42

f. On the next page is a tabulation of the new authorizations for each division or wing based upon the number of squadrons assigned.

PROPOSED STANDARD MANNING OF AIR DIVISIONS AND WINGS

<u>CRITERIA</u>			<u>MANNING</u>					<u>TOTAL</u>	<u>CURR</u>	<u>CHANGE</u>
<u>DIV-WG</u>	<u>FTR SQ</u>	<u>AC&W SQ</u>	<u>A/C CELL</u>	<u>AC&W CELL</u>	<u>GS CELL</u>	<u>ADMIN CELL</u>	<u>DM CELL</u>		<u>AUTH</u>	
<u>EADF</u>										
4706 Wg	6	10	9	4	4	4	2	23	29	- 6
4707 Wg	4	5	7	3	4	4	2	20	29	- 9
4708 Wg	5	8	9	4	4	4	2	23	29	- 6
4709 Wg	6	3	9	3	4	4	2	22	26	- 4
4710 Wg	5	5	9	3	4	4	2	22	27	- 5
4711 Wg	5	6	9	3	4	4	2	22	27	- 5
<u>CADF</u>										
29 Air Div	2	7	6	3	4	4	2	19	13	+ 6
31 Air Div	4	11	7	4	4	4	2	21	18	+ 3
33 Air Div	2	14	6	4	4	4	2	20	15	+ 5
34 Air Div	2	7	6	3	4	4	2	19	13	+ 6
35 Air Div	3	5	7	3	4	4	2	20	14	+ 6
<u>WADF</u>										
9 Air Div	4	6	7	3	4	4	2	20	4	+16
25 Air Div	4	8	7	4	4	4	2	21	4	+17
27 Air Div	3	5	7	3	4	4	2	20	18	+ 2
28 Air Div	4	4	7	3	4	4	2	20	4	+16
<u>TOTAL</u>			<u>112</u>	<u>50</u>	<u>60</u>	<u>60</u>	<u>30</u>	<u>312</u>	<u>270</u>	<u>+42</u>

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2. Assistant for Materiel Control. In the interest of better management and in order to centralize all supply management under one single head, for the purpose of homogeneous assignment, the office of Assistant for Materiel Control has been established at both Hq ADC and Defense Force level. This office is responsible for the development of policies and procedures and staff surveillance in the following area: Procurement, Supply Control, Equipment Authorization and Utilization. The cadre for establishment of this office was procured from General Supply and Services, and includes the spaces allotted by Hq USAF upon decentralization of the equipment authorization documents by AMC. The spaces allotted to DCS/M were distributed as follows: Hq, ADC-8; Hq, EADF-6; Hq, CADF-5; and Hq, WADF-6.

a. The proposed organization and manning follows:

			HQ EADF	HQ CADF & HQ WADF EACH
<u>Assistant for Materiel Control</u>				
Lt Col	6h16	Supply Staff Officer	1	1
<u>Procurement Division</u>				
Civ	6516	Prod. Proc. Staff Off	1	1
Civ	6525	Prod. Proc. Officer	2	1
M Sgt	65170	Proc. Supervisor	1	1
<u>Supply Control Division</u>				
Maj	6h16	Supply Staff Officer	1	1
Capt	6h2h	Supply Officer	1	
Civ	6h2h	Supply Officer	1	1
T Sgt	6h17h	Supply Records Supv	2	1
T Sgt	6h17l	Warehousing Supervisor	1	
<u>Equipment Authorization and Utilization Division</u>				
Maj	6h16	Supply Staff Officer	1	1
Capt	6h2h	Supply Officer	1	1
Lt	6h2h	Supply Officer	1	1
M Sgt	6h173	Org. Supply Supervisor	1	
T Sgt	6h172	Supply Inspection Tech	1	1
S Sgt	6h152	Supply Records Spec	1	1

The above authorizations are required for the Equipment Authorization function. Although Equipment Utilization surveys are a distinct and separate function, no spaces are being requested at this time. It is hoped that the spaces to be allotted by Hq USAF for the ADC Stock Reduction Program (reference our letter, subject: "Manpower Authorization for ADC Stock Reduction Program", dated 30 September 1954 and indorsements thereto) will provide the added capability to accomplish the surveys.

<u>Administrative Support</u>		<u>HQ CADF &</u>	
		<u>HQ EADF</u>	<u>HQ WADF EACH</u>
Civ 70252	Stenographer	<u>3</u>	<u>2</u>
TOTAL		20	14, each

b. Since this is a new organizational segment, the following functional workload data is submitted:

- (1) Procurement Division. The three major areas within procurement are contract approval, field assistance and surveillance and headquarters staff assistance. The present authorization at each ADF headquarters is being increased by 1 civilian space. The problems arising at each headquarters are directly traceable to neglect of one or more of these functions through lack of personnel. For example, in EADF field surveillance is emphasized with a consequent lack of staff assistance and unsatisfactory contract approval procedures. In the other forces, field visits are not being made. Regulations require staff visits "preferably quarterly" but no less frequently than semi-annually. Local purchases have increased from \$18,000,000 in 1951 to \$60,000,000 in 1955 with an increase in the associated staff workload but without any increase in the procurement personnel authorizations at ADF level. EADF, with 14 bases, requires an additional space over CADF with 5 bases and WADF with 4.
- (2) The specific functions of Supply Control are:
 - (a) Supervises the Base Supply Operation at each base.
 - (b) Resolves supply procedural questions which arise within the Defense Force or which are submitted by organizations within the Defense Force.
 - (c) Performs semi-annual staff visits to each base to insure compliance with supply directives, renders technical assistance, observes the overall supply operation, recommends changes for improvement of the operation and makes special studies of critical areas. Personnel performing field visits spend approximately one week at each base. Special staff visits are performed as directed.
 - (d) Receives numerous supply reports such as monthly Base Supply Reports, monthly and quarterly Monetary Inventory reports, Air Force Service Store reports, etc. Reviews and analyzes these reports and directs corrective action as required.

- (e) Receives reports of visits from AMA activities teams, I.G. reports and audit reports. Reviews and analyzes these reports and directs corrective action as required.
 - (f) Interprets and develops implementing instructions based on procedural changes received from Hq ADC, Hq USAF, and Hq AMC.
 - (g) Attends or participates in conferences as directed.
- (3) The specific functions of Equipment Authorization are:
- (a) Reviews all requests for changes to UALs approved by the Base Equipment Review Board.
 - (b) Reviews, processes and publishes new UALs for each unit.
 - (c) Develops and publishes UALs for newly activated organizations and organizations undergoing conversion.
 - (d) Prepares and processes annual UAL report (Requirements and In-Use Asset Report).
 - (e) Assists Hq ADC in the preparation of Equipment Authorization documents for the support of new type weapons.
 - (f) Receives, reviews, or prepares appropriate recommendations for changes to the MEAL, TAs, ECLs.
 - (g) Accomplishes stock number alignment on all UAL items.
- (4) The specific functions of the Equipment Utilization Survey required by AFR 150-8 are:
- (a) To perform an annual review of all equipment listed on the UAL to determine:
 - 1 If the item is required, based on usage.
 - 2 If a like item is used by another organization, can the item be pooled and thus reduce the requirement?

- 3 Can commercial facilities and equipment be used or work performed contractually in lieu of requiring expensive equipment?
- 4 Can a less costly item be substituted for the item in use?
- 5 Has a better item been developed to more effectively accomplish the mission?

(b) To advise the Equipment Authorization Branch of its findings and recommend changes in authorization based on its studies. Annual reports are required by Hq USAF indicating the items and dollar value saved as a result of these surveys.

c. Considering the present General Supply and Services authorizations being utilized for Materiel Control and the augmentation received for the Equipment Authorization function, the following increases are required in Materiel Control at Air Defense Forces:

	<u>L/C</u>	<u>Maj</u>	<u>Capt</u>	<u>Lt</u>	<u>M Sgt</u>	<u>T Sgt</u>	<u>S Sgt</u>	<u>A/1C</u>	<u>Civ</u>	<u>Total</u>
Required	3	6	4	3	4	8	3	0	17	48
Authorized	<u>3</u>	<u>4</u>	<u>3</u>	<u>5</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>10</u>	<u>30</u>	
Increase	3	3	0	0	-1	6	2	-2	7	18

3. General Supply and Services. The establishment of a separate Materiel Control function at Air Defense Force and the reorganization of DCS/Materiel at Air Division requires a reorganization of General Supply and Services at Defense Force. The following standard organization and manning have been developed.

Director

1 Lt Col 6416 Supply Staff Officer
 1 Civ 70252 Stenographer

Supply Division

1 Major 6416 Supply Staff Officer
 1 Capt 6424 Supply O.
 1 M Sgt 64173 Organizational Supply Supervisor
 1 T Sgt 64173 Organizational Supply Supervisor
 1 Civ 70252 Stenographer
 1 Civ 70250 Clerk Typist
 1 Capt 6454 Petroleum Officer

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Services Division

1 Major	6416	Supply Staff Officer
1 Capt	6434	Supply Services Officer
1 M Sgt	62270	Food Service Supervisor
1 T Sgt	62270	Food Service Supervisor
1 M Sgt	64270	Sales Store Supervisor

Transportation Division

1 Major	6016	Transportation Staff Officer
1 Capt	4384	Ground Equip Maint O.
1 M Sgt	47170	Vehicle Maint Supervisor
1 M Sgt	60370	Motor Transp. Supervisor
1 Civ	70252	Stenographer

a. This standard will result in the following increases
(Materiel Control spaces are excluded from the authorized):

	<u>Lt Col</u>	<u>Maj</u>	<u>Capt</u>	<u>M Sgt</u>	<u>T Sgt</u>	<u>Civ</u>	<u>Total</u>
Required	3	9	12	15	6	12	57
Authorized	3	9	6	11	3	9	41
Increase	0	0	6	4	3	3	16

b. In general support of these increases, it is pointed out that the increase in units in each Defense Force during FY 55 has added to the workload of each of the above supervisory staffs. The Director (Lt Col) and three Division Chiefs (Majors) are currently authorized. Following is an explanation of the essentiality of each of the remaining positions.

- (1) The Captain, Supply Officer, in the Supply Division is required because one officer is incapable of discharging the full responsibility of the division. This can be seen by the scope of functions performed, as follows:
 - (a) Develops policies and procedures for and maintains surveillance of approximately 70 classes and sub-classes of Air Force property, Personal Equipment and Salvage and Disposal operations.
 - (b) Implements policies and directives of the Department of Defense, Hq USAF, AMC and ADC in his area of responsibility.
 - (c) Reviews excess reports and makes redistribution within his capability or refers the matter to higher headquarters and follows up until proper action is taken.
 - (d) Attends numerous conferences within his chain of command and at AMC.

- (e) Reviews audit reports, IG reports, AMC Technical Visit reports and Hq ADC staff visit reports. Takes corrective action and makes necessary replies.
 - (f) Makes special studies on problem areas on his own initiative, at the direction of higher headquarters or under AFR 400-8.
 - (g) Makes staff visits to subordinate units on a recurring and special basis.
 - (h) Renders technical advice to the Equipment Review Board, assists subordinate commands in their supply problems, assists in the processing of personal clothing claims, monitors alert hangar furnishing requirements and makes recommendations on the establishment of salvage accounts.
- (2) The Captain, Petroleum Officer, is a recognized requirement for a full-time position. Reference is made to HEDUSAF message to ALZICOM cite 217/54, dated 28 December 1954. Despite the shortage of Supply Officer spaces at Air Defense Forces, conversion was made at the expense of other functions since the Petroleum Officer requirement is a full time job. The fuels budget is the largest single item within ADC and the second largest item within USAF. Losses due to improper accounting and handling are ever present. Management of this resource requires, as a minimum, one officer at Defense Force level.
- (3) The M Sgt and T Sgt, 64173, are required to assist the officers in the General Supply Division in a more detailed and minute discharge of the responsibilities enumerated above. They accompany the officers on staff visits, make the detailed scrutiny of reports to discover items requiring action, do research as required, implement the decisions of their officers on the disposition of excess materiel, review UAL charges, compute requirements, review directives, review requisitions and assist in their fulfillment and perform or supervise the performance of the routine work of the office. These two positions are currently authorized. By relieving the officers of the more routine work, they permit them to devote their efforts to a higher level of staff supervision.

- (h) The Captain, Supply Services Officer, is required because one officer cannot adequately perform the volume and variety of the workload in the Services function. The Services staff must:
- (a) Supervise exchange store operations, review and act on board proceedings, review exchange council minutes submitted by parent and satellite exchanges, perform duty as recorder of defense force exchange council, review monthly exchange financial operating statement--determine weak points in operation--recommend and assist in corrective measures, review exchange store layout plans and merchandising methods and make recommendations for improved systems, review and act on annual reports of exchange audits, provide staff action concerning activation and deactivation of exchanges, and make periodic visits to exchanges and the Army and Air Force Exchange Regional Offices.
 - (b) Review monthly commissary operating statements and determine accuracy and compliance with directives, review quarterly reports of audit for commissary accounts and semiannual reports of audit for food processing activities, act on requests for establishment and disestablishment of issue and sales commissaries, review commissary store and food service layouts, and act on requisitions for controlled items of equipment.
 - (c) Coordinate on personnel assignments and requirements make periodic staff visits to commissaires and food service facilities, review requirements for special rations, and conduct food service surveys of various types.
 - (d) Establish mortuary procedures for USAF units located in Canada, maintain a complete file over matters pertaining to memorial affairs and assure maximum utilization of technical mortuary assistance provided by Hq AMC.
 - (e) Supervise laundry activities.
 - (f) Normally one officer handles commissary, food service, and subsistence activities. The other officer handles exchanges, laundry activities and memorial services. The workload in all these categories is too much for one individual to handle.

- (5) To assist the foregoing officers, 2 Food Service Supervisors (1 M/Sgt, 1 T/Sgt, currently authorized) and 1 M/Sgt Sales Store Supervisor are required. These airmen assist in making staff visits to and supervising the following activities in ADC:

- 106 Field Ration Dining Halls
- 8 Canadian Ration Dining Halls
- 39 Garrison Ration Dining Halls
- 4 Pastry Kitchens
- 2 In-Flight Kitchens
- 4 Meat Plants
- 13 Parent Exchanges
- 32 Satellite Exchanges
- 8 Commissary Stores
- 14 Issue Commissaries
- 1 Laundry

- (6) The transportation section at Defense Force level functions under a commodity system which includes responsibility for supply and maintenance of all general and special purpose vehicles, materiel handling, engineer construction vehicles, and marine equipment. This responsibility also includes supply and maintenance of components, parts and accessories relative to such equipment. These functions are in addition to normal surface and air transportation functions of the section. The authorized transportation staff officer (Major - 6016) by nature of his career field is not normally qualified as a supply and maintenance officer. He cannot adequately perform the volume and variety of the workload in the over-all transportation function. The Captain, Ground Equipment Maintenance Officer (4384) is required to perform staff functions relative to plans, policies, and procedures for maintenance of automotive, marine, and ground equipment. The workload entails: Determination of organizational structure, equipment, facility and personnel requirements for ground equipment maintenance activities; insuring that required maintenance standards are adhered to in maintenance and repair of ground and marine equipment;

determination of maintenance support and coordination with appropriate agency in obtaining required depot maintenance; preparation of directives and implementation of policies and procedures affecting military and commercial contract maintenance of above equipment; assistance to subordinate units in resolving problems relative to above equipment; review of unsatisfactory reports on ground and marine equipment and preparation of reports required by higher headquarters.

- (7) The M/Sgt, Vehicle Maintenance Supervisor, is required in the performance of the maintenance staff functions for which the transportation section is responsible. His duties include: Recommendations for disposition of vehicles and ground powered equipment when condition is a determining factor, review of requests for equipment disposition to insure compliance with maintenance directives, assistance to the ground equipment maintenance officer in staff supervision of maintenance activities within the Defense Force and review and evaluation of vehicle and ground equipment maintenance procedures and standards within Defense Forces. The scope of the maintenance staff function at this level requires this position to accomplish the volume and variety of the workload.
- (8) The M/Sgt, Motor Transportation Supervisor, is required to assist the Surface Transportation Officer in the efficient and economical management of military motor vehicle and facility resources. He establishes standards for the uniform operation of motor pools and effective vehicle utilization; provides technical advice and assistance through the media of policy papers and staff visits; monitors the effectiveness of driver training programs; reviews and evaluates vehicle authorizations against programs, plans and workload data,

recommending necessary supply actions and monitors and assists subordinate units in vehicle utilization, fuel conservation, traffic control and the reduction of vehicle abuse and misuse. He assists in the procurement of plans pertinent to motor vehicles; coordinates actions of common interest with other agencies, i.e., procurement, ground safety, budget; implements and enforces directives of higher headquarters; reviews directives of subordinate units to insure adequacy and agreement with AF policies. This position is required because the one (1) officer authorized (Major - 6016) cannot adequately perform the volume and variety of the workload.

- (9) Four civilian clerk/stenographers are a minimum requirement. No clerical airmen are provided. The fifteen staff personnel will all generate clerical/typing requirements. Their ratio to typists is almost four to one. This is considered no more than adequate in an area such as supply where a great deal of paper work is generated and processed. Two of the civilians will be placed in the Supply Division. The Services Division will receive typing assistance from other offices.

4. Aircraft Supply and Maintenance is the primary function of Materiel. Other functions are generally in support of this effort. The increased numbers, types and complexities of the aircraft assigned to this command demand that staff planning and supervision be of the highest order. Experience and technical competence are essential if Aircraft Supply and Maintenance is to achieve the quality desired. The present authorizations for this function in the Air Defense Forces are inadequate to meet the requirement.

a. The Director of Aircraft S & M is authorized a Lt Colonel space. The demands of this position can only be met by a highly qualified, experienced officer. It is possible that a Lt Colonel of high caliber could discharge the duty; however, the necessary selectivity in this regard is not available to this command. The qualifications required are those possessed by a colonel and it is only through a colonel authorization that the required type of officer can be procured.

b. Similarly, the authorization of Majors as Chiefs of the Aircraft Maintenance, Aircraft Supply and the Armament and Airborne Electronics Divisions is unsatisfactory. These division chiefs are expected to be fully informed on a variety of complicated equipment and capable of managing the operation of a complex function. The grade of Lt Colonel is the minimum which will procure the required qualifications. For example, the Armament Division Chief supervises armament and munitions, fire control systems and airborne electronics in four or more Air Divisions and subordinate tactical units with different equipment and weapons. He also works with factory/depot facilities and represents the command at mock-up boards and pre-provisioning and other conferences.

c. By way of comparison, the Directorates of the DCS/Operations at Air Defense Force level are all authorized Colonels, with commensurate Lt Colonel grades below the Director. This inequity in grades is detrimental to the relationship which should exist between functions which are co-equal in importance in the task of providing effectiveness in the weapons of Air Defense.

d. The adjustments required to authorize Colonels as Directors of Aircraft Supply and Maintenance and Lt Colonels as their Division Chiefs at Air Defense Force level are:

	<u>Col</u>	<u>Lt Col</u>	<u>Maj</u>	<u>Capt</u>	<u>Total</u>
Authorized	0	4	7	1	12
Required	<u>3</u>	<u>9</u>	<u>0</u>	<u>0</u>	<u>12</u>
Difference	+ 3	+ 5	- 7	- 1	0

5. The increasing complexity of fire control systems requires that a staff responsible for the maintenance of such systems contain at least one officer with the technical training of an electronics engineer. Maximum effectiveness of present weapons is dependent upon proper maintenance and repair procedures to insure that fire control equipments are operating at design capability. Development and follow-up of these procedures in technical detail is beyond the capability of the armament officer. Assistance in this area is now being rendered by civilian technical representatives. This is not adequate or satisfactory. There is an increasing need for the Air Force to provide its own capability of supervising this function. An increase of 3 Captains, AFSC 8626, Electronics Engineers is required, one for each Air Defense Force.

6. The increased number of units and aircraft throughout the command has generally increased the workload of the Aircraft Supply activity at Air Defense Force level. An example is the aircraft distribution function. This was formerly an additional type duty; it now requires the full time of an officer.

a. The responsibilities of this officer are the assignment of all aircraft within the command, handling of transfers in and out of the command, scheduling of aircraft for work projects including major damage repair, modification, IRAN, etc., follow-up on accountability as pertains to reclamation, salvage and survey, maintaining balance of different series of specific aircraft within units to avoid logistic or maintenance problems, preparing regulations and directives implementing distribution, and close liaison with requirements and statistical sections to insure proper distribution.

b. The magnitude of certain aspects of this function is demonstrated by the following workload in Eastern Air Defense Force from January 1954 through June 1955.

- (1) Movement of approximately 600 aircraft applicable to Project "Pull Out" to and from work facility.
- (2) Movement of approximately 800 production and modified aircraft from factory.
- (3) Movement of 175 aircraft applicable to Project "Hop-Up" to and from work facility.
- (4) Movement of approximately 125 aircraft per year to and from the IRAN program.

c. An addition of one Warrant Officer, Supply Superintendent, is required in each Air Defense Force to be primarily aircraft Distribution Officer and to otherwise permit accomplishment of the increased workload and responsibilities of the section.

7. Despite its relatively greater size, Eastern Air Defense Force is authorized only 13 spaces in Electronics Supply and Maintenance compared with 13 in CADF and 12 in WADF. This Directorate has responsibility for the supervision of maintenance of telephone, teletype, recorder and associated wire systems at all AC&W Squadrons and bases within EADF. The responsibility has been only partially discharged within the capability of presently authorized personnel, none of whom are technically specialized in the field. The increased tempo of operations in other fields has now reduced this capability. Meanwhile, the increase in facilities, conversions to government owned equipment, installation of recorder-reproducers at AC&W sites, replacements of present switchboards with newer, larger units and associated problems has made staff supervision of inside wire maintenance more important than ever. An urgent need exists for an increase of 1 M/Sgt, Wire Supervisor, in this Directorate at Eastern Air Defense Force.

FLIGHT SECTION

1. The Joint Tenancy Agreement between Dobbins Air Force Base (14th AF, CONAC) and the 35th Air Division provides that personnel for organizational maintenance will be furnished to the Division, but only when there is no need for maintenance on the aircraft assigned to the base. Since the time of the agreement, the base has been assigned additional aircraft and can now render very little support. Such support is on a voluntary basis only, since organizational maintenance is the responsibility of the tenant and not a base support function.

2. Deterioration of this support was recognized by the last review board. A Flight Section was not authorized the division; however, 9 airman maintenance personnel were authorized in the Hq Squadron Section to alleviate the maintenance problem. Since then, support has further decreased. The 35th Air Division has also increased its number of aircraft and now performs organizational maintenance on 1 C-47, 2 C-82s, 2 C-45s, 1 T-11 and 1 T-33. A separate Flight Section is now required.

3. Additional personnel required are:

	<u>Capt</u>	<u>M Sgt</u>	<u>T Sgt</u>	<u>S Sgt</u>	<u>A/1C</u>	<u>A/2C</u>	<u>Total</u>
Required	1	1	2	6	6	3	19
Authorized	0	0	0	2	4	3	9
Increase	1	1	2	4	2	0	10

HEADQUARTERS SQUADRON SECTIONS

At present only four Air Divisions are authorized commissioned Supply Officers in the Hq Squadron Section. The other divisions, generally, show a requirement for this position. They will be advised to appoint a M Sgt to this position under the provisions of AFR 67-10. The 25th, 27th, 28th, 29th, 33rd, and 35th Air Divisions are currently authorized only a T Sgt grade in Unit Supply. In keeping with USAF policy regarding better utilization of non-commissioned personnel, an upgrading of 6 T Sgt spaces to M Sgt is required, so that designation as Supply Officers can be accomplished.

Incl #3
Tab I

INCREASED REQUIREMENTS FOR HQ, ADC

REF TAB	SECTION	COL	L/C	MAJ	CAPT	TOTAL OFFS	M/SGT	I/SGT	S/SGT	A/1C	A/2C	A/3C	TOTAL AMN	GRADED CYVS	GRAND TOTAL
A	Project Group for ADES	-2	-3	-5	-2	-12	-1		-1				-2	-1	-15
B	Adjutant										1	2	3	0	3
C	Inspector General	2	3	-2	3	6	-7		-1				-8	0	-2
D	Asst. for Prog.		2	1	-1	2							0	0	2
E	DCS/Comptroller					0				1			1	4	5
F	DCS/Intelligence			1	1	2		1					1	2	5
G	DCS/Personnel	1	1	1	1	4							0	4	8
H	DCS/Operations	4	7	15	3	29	2	4	1		4		11	7	47
I	DCS/Materiel	4	0	8	-4	8	3	2					5	8	21
J	Hq Squadron Sec				1	1			3	2			5	0	6
		—	—	—	—	—	—	—	—	—	—	—	—	—	—
*	TOTAL	9	10	19	2	40	-3	7	2	3	5	2	16	24(P481)	80
*	Includes Staff Requirements for SAGE of	2	7	13	1	23	2	1	1				4	6	33

Incl #4

PROJECT GROUP FOR ADES

1. On or about 1 June 1955 the Project Group for ADES at this headquarters will be discontinued. The function of this group has been to coordinate and support the activities of Project ADES (Air Defense Engineering Service) in the implementation and integration of the SAGE (Semi Automatic Ground Environment) System into the Air Defense Command.
2. The work of this Group has been mainly in the area of broad planning, initial budgetary preparation, and the development of requirements. This culminated early this year in the publication of an operational plan. The point has been reached where the further development of and detailed planning for the SAGE System must be assumed by the staffs of the various headquarters of this command. Much of this workload can and will be absorbed by the present staff as transition to the new system progresses. However, the magnitude of the new system and of the transition problems involved, together with the requirements of the expanding present system, cause personnel increases to be mandatory in certain staff areas. These are discussed individually in succeeding Tabs and comprise 33 spaces of our increased headquarters requirement.
3. The present authorization of the Project Group is 2 Colonels, 3 Lt Colonels, 5 Majors, 2 Captains, 1 M/Sgt, 1 S/Sgt, and 1 civilian stenographer. Applied against the increases elsewhere in the staff, this reduces the requirement to an additional 18 spaces.

Incl #4
TAB A

COMMAND ADJUTANT

1. Various staff sections in this headquarters show a requirement for additional administrative airmen. When analyzed, this requirement is for messengers to expedite coordination and the movement of other material within the headquarters. A great amount of valuable time of officers and highly qualified civilians and airmen is wasted in hand-carrying and waiting for important papers. The practice cannot be eliminated, since the immediate importance of the work in hand always appears greater than remaining tasks. The result is intangible; a lower productivity on the part of the staff than might otherwise be realized.

2. The Command Adjutant now maintains a regular pick-up and delivery service. This service is adequate for routine matters but not for those requiring expeditious handling. The delay is not in the Adjutant's movement of the material, but in the staff sections, which receive and initially treat all such material as routine.

3. It is not economical to provide full-time messengers to the staff sections showing the requirement, even though some are geographically removed from the principal headquarters area. It is believed that a real savings in staff man-hours can be achieved by providing a centralized on-call messenger service in the Command Adjutant's section. It will require an increase of 1 A/2C and 2 A/3C to provide this capability.

Incl #4
Tab B

COMMAND INSPECTOR GENERAL

1. The present inspection capability of the Command Inspector General, Headquarters Air Defense Command, is limited to special type inspections of Fighter-Interceptor and ACW Squadrons and, to a limited extent, of air defense groups. The existing manning authorization is geared to this inspection coverage.

2. A survey inspection was conducted by the Inspector General, USAF, in October 1954, of the Air Defense Command inspection system. The report of that inspection, dated 15 October 1954, criticized the limited inspection capability of the Command Inspector General, principally because of lack of inspection of intermediate command headquarters above group and squadron level.

3. The inadequate results obtained from this limited inspection capability had long been evident to the Command Inspector General. For some time prior to the survey inspection of the Air Defense Command inspection system by the Inspector General, USAF, the Command Inspector General had under consideration various methods of extending his inspection capability, consistent with austerity manning and effectiveness. Criticism by the Inspector General, USAF, of the inadequate inspection coverage, accelerated the decision to modify the inspection system to alleviate the existing limitation. This decision was to adopt an inspection system which would provide for survey and follow-up inspections of air defense force, air division, and wing headquarters, in addition to maintaining special type inspections of tactical units. This inspection system was determined to be the most economical and effective for meeting the requirement of providing the Commander, Air Defense Command with necessary information as to the status of the command.

4. As the conclusions in the inspection report of the Inspector General, USAF, as to deficiencies in the inspection system are identical with those of the Command Inspector General, the following comments from that report are used to describe those deficiencies:

a. The inspection system of the Air Defense Command was found to be limited in its effectiveness and economy. Intermediate commands above group level were not being inspected and, therefore, limited the Command Inspector General in his evaluation of management, efficiency, economy, security, safety, readiness, and effectiveness within the command. No inspection coverage was given to air defense force headquarters and to air division headquarters. The entire effort of the command inspection system was directed to squadron and group level. Individual inspection reports were basically compliance type. Management emphasis was limited by the grade and experience of personnel authorized and assigned to the inspection function.

Incl #4
Tab C

b. Command support did not provide the desired degree of effectiveness because of the limitation of inspection coverage to squadron and group level, and the lack of aggressive action taken by intermediate command staff sections on reported deficiencies. Inspection coverage responsibilities to include intermediate command headquarters would provide the command with a better management tool to promote effectiveness and economy of organization at all echelons. The inspection of intermediate echelons would enhance the advancement of prestige and assist the Inspector General's relationship with other staff agencies.

c. Inspection coverage of materiel services activities, including commercial transportation, Post Exchange, commissaries, Food Services, and Purchasing and Contracting, was very limited. One airman (M Sgt) was assigned to cover these functional areas. This airman was not qualified to cover such a broad field; therefore, only a few obvious deficiencies or problems were reported. The following functional areas were not being inspected by the Air Defense Command Inspector General:

- (1) Comptroller
- (2) Personnel Services
- (3) Medical Activities

5. The proposed change in the inspection program requires a revision of the present manning authorization in order to provide inspector personnel possessing the requisite experience and grade level to enable them to capably conduct inspections at air defense force and air division headquarters levels. This revision will also provide the capability to inspect some functional areas not included in the present inspection system. Over the past two years, the authorized manning strength of the Directorate of Inspection Services has remained constant, except for a five (5) per cent reduction incurred in 1953 to meet the USAF austerity program. During this two year period, the number of tactical units in Air Defense Command has increased from 118 to 170, and the number of air defense groups from 9 to 25. The proposed manning would increase officer strength from 15 officers to 21 officers, and decrease airmen strength from 18 airmen to 10 airmen, resulting in a net total of 31 positions in the proposed manning as compared to 33 positions in the present manning. These changes involve upgrading of some officer inspector positions, and substitution of officer for airmen inspector positions in some instances, to provide the quality of inspection experience and grade level considered essential to conduct inspections at air defense force and air division headquarters level. The following summary reflects the present manning authorization of the Directorate of Inspection Services which is geared to inspection of tactical units and air defense groups, and the proposed manning:

<u>Present Manning Authorization</u>	<u>Proposed Manning Authorization</u>
1 Colonel	3 Colonels
6 Lt Colonels	9 Lt Colonels
7 Majors	5 Majors
1 Captain	4 Captains
18 Airmen	10 Airmen
33	31

6. Inspection functions of the Command Inspector General are conducted by the Directorate of Inspection Services, which is organized into a: (1) Personnel and Administration Division; (2) Technical and Logistical Division; (3) Tactical Division; (4) Management Evaluation Division; and (5) Coordination and Compliance Division. A discussion of the proposed manning for the directorate and each of its divisions follows:

a. Director of Inspection Services

<u>Present</u>	<u>Proposed</u>
1 Colonel 1416	No Change
1 S Sgt 70250	

b. Personnel and Administration Division

This division will be charged with the responsibility of conducting inspections of personnel and administration functions at all echelons of command from air defense force headquarters down to and including squadron level. In addition to this inspection responsibility, which includes review and approval of corrective action on inspection reports, the division is also charged with the responsibility for conducting investigations, handling complaints and grievances, reviewing and approving all Air Defense Command publications proposed for issuance and liaison with all headquarters staff sections on personnel and administrative matters. The workload and necessary continuity of operation of this division necessitates one officer being permanently on duty in the Inspection Services Directorate, leaving 4 officers and 2 airmen available for field inspection duties. The proposed manning would add 1 Lt Colonel and 1 Major position to this division, and eliminate 2 airmen inspector positions. These substitutions will provide the experience required to conduct inspections at intermediate command levels, and the grade commensurate to deal with officers of equal or higher rank.

<u>Present</u>	<u>Proposed</u>
1 Lt Colonel 7316	1 Lt Colonel 7316
1 Major 7016	1 Lt Colonel 7016
1 Major 7324	1 Major 7016
2 M Sgt 73270	1 Major 7316
1 M Sgt 70270	1 Major 7316
1 S Sgt 70250	2 M Sgt 73270
7 TOTAL	7 TOTAL

Incl 4
Tab C

c. Technical and Logistical Division.

This division will be responsible for inspection of functions pertaining to:

Aircraft Maintenance
 Armanent Systems
 Ground Electronics
 Air Installations
 Supply
 Supply Services
 Motor Vehicle and Ground Powered Equipment Maintenance
 Commercial Transportation

The proposed manning for this division would add 4 officer positions, and eliminate 6 airmen positions, for a net reduction from 15 to 13 positions. The position of division chief would be upgraded from Lt Colonel to Colonel; 2 Major positions would be upgraded to Lt Colonel; and 1 Major and 3 Captain positions would be added. In addition to his responsibility for the inspection functions of this division, the division chief will serve as Team Captain of the Air Defense Command inspection team. He will be responsible for preparing inspection schedules, the composition of inspection teams, arranging transportation and billeting for the team, briefing organization commanders on the purpose and scope of inspections, monitoring all phases of the inspection during its progress, and critiquing the organization commander upon completion of the inspection. As Team Captain of the inspection team, he will discuss inspection findings and critique general officers commanding air defense forces and air divisions, on the inspection of their organizations. The upgrading of the 2 Major positions (5516 and 6416) will bring the experience level and grade of these positions up to the standard considered necessary to conduct inspections at intermediate command level. The additional Major (3234) is required to provide inspection capability for armament systems at the proper level. The addition of the 3 Captain positions will provide inspection coverage in Supply Services and officer inspectors for Ground Powered Equipment Maintenance, and Surface Transportation, in lieu of airmen inspectors.

<u>Present</u>		<u>Proposed</u>		
1 Lt Colonel	4316	1 Colonel	0046	
1 Lt Colonel	4316	1 Lt Colonel	4316	
1 Major	5516	1 Lt Colonel	5516	
1 Major	6416	1 Lt Colonel	6416	
1 Major	3016	1 Major	3016	
1 Captain	6424	1 Major	3234	
1 M Sgt	43170	1 Captain	6424	
1 M Sgt	64175	1 Captain	6434	
1 M Sgt	64174	1 Captain	4384	
1 M Sgt	30372	1 Captain	6034	
1 M Sgt	47170	1 M Sgt	43170	
1 M Sgt	30170	1 S Sgt	70250	
1 M Sgt	60270	1 S Sgt	70252	
1 S Sgt	70250			
1 S Sgt	70252			
15 TOTAL		13 TOTAL		Incl #4 Tab C

d. Tactical Division.

This division will be responsible for the inspection of operations functions of ADC Fighter and AC&W Squadrons, and Air Divisions; inspection of command support of tactical units by intermediate headquarters; and preparation of an overall evaluation of the operational readiness, capability and effectiveness of ADC units. The proposed manning for this division would upgrade the position of the division chief from Lt Colonel to Colonel, and the position of the Aircraft Control Officer (1616) from Major to Lt Colonel. In addition to directing the activities of this division, which will include critique of air division commanders on inspection of their organization, the division chief will serve as Team Captain of one of the ADC Inspection Teams.

<u>Present</u>		<u>Proposed</u>	
1 Lt Colonel	1416	1 Colonel	0036
1 Lt Colonel	1416	1 Lt Colonel	1416
1 Major	1644	1 Lt Colonel	1616
1 M Sgt	70270	1 M Sgt	70270
4	TOTAL	4	TOTAL

e. Management Evaluation Division.

This division is charged with responsibility for evaluating management effectiveness and the quality of the management improvement program at all echelons. Its functions include development and improvement of criteria for evaluating management practices and procedures, and their effect on organizational effectiveness. The grade of Lt Colonel is proposed because of the experience level necessary to satisfactorily perform the duties involved, and because the incumbent will be dealing with officers of equivalent, or higher grade in carrying out his responsibilities.

<u>Present</u>		<u>Proposed</u>	
1 Major	7336	1 Lt Colonel	7336

f. Coordination and Compliance Division.

This division has no inspection functions. It is responsible for coordination with headquarters staff sections on matters in inspection reports requiring action or attention of a staff activity; review of indorsements to inspection reports for compliance action; maintenance of reports of staff visits by headquarters staff sections; and various administrative functions of the directorate.

<u>Present</u>		<u>Proposed</u>	
1 Lt Colonel	7016)	
1 M Sgt	70270)	
1 T Sgt	70270)	No Change
1 S Sgt	70250)	
4	TOTAL		

Incl #4
Tab C

ASSISTANT FOR PROGRAMMING

1. An increase of two Lt Colonels and the upgrading of one Captain to Major is required in Programming to accomplish the workload engendered by new programs, principally that of SAGE.

a. The assumption of SAGE programming from the Project Group is a new function for this office. The workload will involve the phasing out of the present manual system and the phasing of the entire SAGE system into the air defense network. Associated with this project, is the proper phasing of all support elements required in the implementation of this system. The importance of the programming function cannot be over emphasized in view of defense capability and effectiveness in the SAGE implementation.

b. Incident to the pure programming function of SAGE, the Assistant for Programming will monitor current status of all elements of the SAGE system; to show status and relationship of ancillary equipment and facilities; to identify problem areas and propose remedial action; to facilitate the coordination of effort of all contributing organizations; to provide other pertinent data; and to keep the Command Section and staff informed of the progress that is being made to accomplish the programmed objective.

c. SAGE programming involves the workload associated with the phasing in of eight sectors and thirty-six subsectors, two of which are manual, and the tie-in with twelve squadrons of AEW&C.

d. In addition to SAGE, the Office of the Assistant for Programming is confronted with the programming and associated workloads involved in the following Air Defense Command expansions from the present position:

- (1) Fighter Interceptor Squadrons. (See Inclosure No. 1)
- (2) AEW&C Squadrons. (See Inclosure No. 1)
- (3) Missile Squadrons. (See Inclosure No. 1)
- (4) ACEW Squadrons. (See Inclosure No. 1)
- (5) Air Bases. (See Inclosure No. 1)

e. At the direction of the Vice Commander, a program directive system has been installed for the purpose of establishing responsibilities for monitoring and reporting progress toward achieving programmed objectives. The requirement for such a control became apparent with the tremendous expansion of ADC activities. Program directives encompass all elements of the staff who are concerned with the implementation of an approved programmed objective.

f. In order to keep the Command sufficiently current on the ADC program, an attempt was made to publish the ADC program book on a quarterly basis. However, the shortage of manpower within this office has precluded the quarterly publication. In addition, this office has been unable to publish the required changes and amendments necessary to keep the subordinate commands properly informed. The ADC program book, published on a quarterly basis with changes thereto, is required if constant reprogramming actions in the field are to be eliminated.

g. The present authorization of the Assistant for Programming is: 1 Col, 3 Lt Col, 1 Capt, 2 airmen, 1 officer type civilian, and 1 civilian stenographer.

DCS/COMPTROLLER

The requirement for an increase in personnel authorizations for Hq ADC Comptroller manning arises from a combination of several factors. First, from the addition of new workloads, and secondly from the fact that manning provided upon initial review was sufficient only to cope with workloads as then forecast. This latter factor has precluded absorbing additional work without compensating manpower increases. Examples of such workload-personnel increases are: UAL machine processing; AFML77-1 accounting procedures and electronic equipment failure reporting.

1. An increase of four (4) civilian spaces is now required in the Directorate of Statistical Services to provide machine processing of unit manning documents. As stated in our letter of 20 August 1954, subject: "Manpower authorizations for the Headquarters of ADC", request for such authorizations was then being withheld pending a determination of workload involved. Experience gained since the initiation of the UMD system demonstrates a requirement for: three (3) 68250 and one (1) 68150 civilian spaces to perform this function. These authorizations are required to perform basic reporting requirements and, more importantly, to perform UMD derivative reporting to assist the Director, Manpower and Organization in the management of the ADC manning programs.

2. An increase of one A/IC AFSC 70252 is required for the Economic Evaluation Division of the Management Analysis Directorate. This Division consists of eight personnel, comprising three officers, two civilian analysts, two senior accountants and one clerk statistician. Current authorizations do not provide typist-stenographic services for this Division. Workloads require typing of cost studies - 20%; typing of factors and standards books - 25%; dictation, transcribing and typing of correspondence - 50%; briefing materials and miscellaneous filing and logging in and out of all materials - 5%. Authorizations previously provided the Management Analysis Directorate considered the capability of one analyst (previously assigned) to perform part of the typing workload with additional typing to be provided by use of steno-typist capabilities throughout the Directorate. The yardstick used in the last review in determining steno-typist requirements overlooked the fact that technical specialists (non-officer grade) generated a considerable typing workload. Additionally, the yardstick did not take into consideration the fact that typing of detailed charts and statistics requires considerably more time than does normal letter writing. With the inception of CONAD, the Management Analysis Directorate has the added responsibility to provide information covering ARAACOM and NAVFORCONAL operations as an additional workload. These several factors, combined with experience derived from one year's operation under the initial authorization, point to the essentiality for an increase in steno-typist capability.

Incl #4
Tab E

DCS/INTELLIGENCE

General:

Increased personnel requirements for Headquarters Air Defense Command result from:

- a. Assessment of workload based on experiences of the past year, and
- b. Added functions related to the growth of air defense and increased recognition of the importance of air defense.

Included in these general considerations are such developments, since June 1954, as increased intelligence collection in support of air defense, establishment of COMAD, and inauguration of the USAF Indications Plan.

It is to be noted that the command intelligence organization reflects maximum centralization and concentration of resources at the higher echelons. All pre-hostilities intelligence is collected from sources external to the command. It is processed through the command headquarters and then produced in form suitable for use at all echelons in support of the air defense commanders, their staffs and subordinate operating units. Moreover, virtually all intelligence planning for ADC is accomplished at the command level. Manpower requirements necessarily reflect this centralization which is aimed at maximum efficiency and manpower economy.

1. Specific requirements for increases in the intelligence organization of Headquarters, Air Defense Command are summarized as follows:

a. Directorate of Operational Intelligence

(1) Combat Intelligence Division

1 GS-3 Clerk-Stenographer

(2) Intelligence Watch Division

1 Major, AFSC 2016, Asst Division Chief

1 T/Sgt, AFSC 70270, Administrative Clerk

Incl #4
Tab F

b. Directorate of Intelligence Requirements

(1) Readiness Division

1 Captain, AFSC 2054

(2) Collection Services Division

1 GS-5, AFSC 70250, Intelligence Library Coder

2. The additional stenographer is required in the Combat Intelligence Division because of the increased workload imposed by the CONAD organization.

a. Examples of the expanded scope of activities follow:

- (1) CID must now develop and monitor combat intelligence reporting procedures, regulations, guides and directives for the much larger and more complex CONAD structure. This, in effect, requires duplication of the same functions previously performed only for ADC. For instance, an entirely new set of directives must be issued to govern CONAD combat intelligence reporting. This obviously requires much typing in draft and final form of these directives.
- (2) Inasmuch as DCS/I CONAD is charged with developing and monitoring supplementary early warning plans in conjunction with other U.S. and Allied commands, CID is charged directly with the carrying out of this specific function. This necessitates a considerable increase in correspondence with these commands, thus increasing the typing load.
- (3) Within DCS/I CONAD, CID is charged with preparing and submitting intelligence annexes of operations plans and orders. Now that such plans and orders are being issued for CONAD, there has been almost a doubling of the typing workload with respect to the preparation of intelligence annexes for these documents.
- (4) The monitoring of intelligence participation in CONAD air defense exercises will be considerably expanded in scope over the monitoring of previous Air Defense Command exercises. This, in turn, will increase the secretarial and typing workload within CID.

b. The steno/typing workload of the Division is as follows:

- (1) Typing such documents as:
 - (a) Disposition forms (average of 4 per day).
 - (b) Memoranda for record (average of 3 per day).
 - (c) Staff studies (average of 1 per week).
 - (d) Intelligence Annexes (12 to 24 per year).
 - (e) Hypothetical attack plans (several yearly).
 - (f) Briefing notes (2 pages daily).
 - (g) Drafts of proposed regulations, ADC letters, intelligence guides, directives and standing operating procedures required to support the COMAD intelligence mission in the Combat Operations Center.
 - (h) Indorsements of official letters (average of 1 per day).
- (2) Maintaining a filing system for the division (10 to 20 pieces of correspondence daily).
- (3) Transcribing material that has been recorded on a wire or tape recorder or a dictaphone (occasionally).
- (4) Extracting pertinent intelligence items from documents required by personnel of the CID (continuous project).

c. The Division is authorized one airman clerk to assist in some of the foregoing. The remainder of the personnel (6 officers, 1 T/Sgt) generate the typing workload. Some assistance is rendered by the stenographer authorized in the Director's office. The only other steno-clerk in the Directorate is authorized in the Intelligence Watch Division, which contains 6 officers and 3 airman intelligence specialists. The over-all typing capability of the Directorate is thus very limited.

3. The augmentation of the Intelligence Watch Division reflects the requirements of the USAF Indications Plan. The USAF directive establishes at Hq ADC one of six centers in the Air Force for processing intelligence on the indications of the imminence of air attack. The directive further states that Hq USAF will give priority consideration

to an increase in personnel strength required for establishing and operating the six Indications Centers. Hq ADC of course has had an indications activity in operation within the Intelligence Watch Division for a period of three years. Personnel directly involved include 6 officers, 1 airman and 1 civilian. The requirement here reflects the augmentation needed to convert to the USAF directed concept. In this sense the entire force after augmentation (7 officers, 2 airmen, 1 civilian) are chargeable to this USAF directed activity.

4. The Readiness Division is assigned responsibility (a) for monitoring air defense intelligence training requirements and activities, including the command program for aircraft recognition; (b) for producing essential intelligence training materials not otherwise available; and (c) for providing standardization directives on intelligence functioning throughout the command. The last named function is of particular importance to basic and long-term improvement in the effective functioning of intelligence throughout the command. The principle of standardization of functions was adopted as a command policy after the initial ADC Functions Review completed in early 1954. The program for carrying out this policy in the intelligence field has been hampered by the involvement of the Readiness Division in the day-to-day workload arising under the first two functions listed above. The one officer and one airman presently authorized in the Readiness Division have been fully occupied in its day-to-day workload and for a period of over a year have been unable to accomplish the first step in the intelligence standardization plan, namely, the publication of an Air Defense Intelligence Operating Manual. The present workload of the division is expected to continue. In order to carry out essential functions a minimum of one additional officer, Captain, AFSC 2054 is required.

5. The requirement for an Intelligence Library Coder in the Collection Services Division results from an increased volume of library accessions. During 1954 these averaged approximately 35 documents per day. This represents a 100% increase over the 1953 average. This job of coding incoming documents to the ADC library index is essential to ready reference and use of the library. The job has been attempted on a part time basis using the Library Research Analyst. However, the volume of accessions has proved excessive for this arrangement. This is borne out by the fact that a normal workload for a Library Coder is considered to be on the order of 24 to 30 documents per day. The need for a full-time Library Coder is thus indicated.

4

Incl #1
Tab F

DCS/PERSONNEL1. Directorate of Military Personnel.a. Personnel Classification and Utilization Team

Function - The requirement for personnel authorizations to establish and operate Personnel Classification and Utilization Teams within ADC was presented by letter from Headquarters ADC to Director of Military Personnel, Headquarters USAF, Subject: "Classification and Utilization Teams", dated 31 August 1954. An answer to this request has not been received. This requirement remains an urgent one. As presented to Headquarters USAF, it called for one team at this headquarters and for teams in each defense force. In reviewing this requirement the ADC Headquarters Review Board agreed with the desirability of having a team at Headquarters ADC, but, decided in the interest of manpower, to eliminate this team. In the place of this team, the board approved 1 Captain space to monitor, coordinate, and exercise staff supervision over teams in each defense force.

b. Administration of Contract Technicians - At the present time, the contractor technician program under AFR 66-18 is being administered by two contractor representatives. One is an RCA representative being paid a contract price of \$870.00 per man-month, and the other is a Philco representative being paid a contract price of \$878.75 per man-month. This is an annual expense to the Government of \$20,985.00. Since 1 September 1953, this program has expanded from these two companies to its present size, which involves 19 companies furnishing a total of 479 contractor technicians.

We desire to replace the two contractor representatives now administering this program with two Civil Service spaces, each to be graded as GS-4. The starting salary for these people is listed as \$3,175.00 each per annum. This would be an annual expense to the Government of \$6,350.00. These Civil Service salaries, as compared to the salaries of the contractor representatives, would result in a minimum annual saving to the Government of \$14,635.00.

Of equal importance with the dollar savings factor, is the necessity for having this program administered by persons who do not have official affiliation with any of the 19 companies involved. Actions affecting these companies involve establishing requirements for and requesting procurement of contractor technicians, monitoring services rendered, and processing invoices for payment which are submitted by contractors for payment of such services. The integrity of this program demands that it be administered by people who are not affiliated with any company now involved or which may become involved.

Incl #4
TAB G

c. Upgrade Assistant Director to Colonel. At the present time the Assistant Director of Military Personnel is authorized in the grade of lieutenant colonel. It is requested that the space of the Assistant Director of Military Personnel be upgraded from a lieutenant colonel position to a colonel position.

This change is necessary because the Director of Military Personnel must deal on a daily basis with senior staff officers in this headquarters and defense force level, and at Headquarters USAF. He should make frequent staff visits to those echelons of command. During his absence, an officer in the grade of colonel is necessary in order to carry on the heavy workload and continue the daily contacts required.

The supervisory responsibility to the four division-level subsections requires experience and qualifications that are not found in the grade of lieutenant colonel.

The Directorate of Military Personnel is authorized 13 officers, 20 airmen, and 8 civilian personnel. The supervision and detailed planning of policy concerning military personnel matters requires an assistant in the grade of colonel.

2. Directorate of Personnel Requirements and Training.

a. SAGE Function - The Headquarters ADC Staff is scheduled to assume the responsibility for planning and implementation of the SAGE System (Lincoln Transition System) between March and June 1955. In the personnel area this function will generate an increased workload which will require one lieutenant colonel, one major, and one civilian stenographer. The SAGE System will require personnel with skills which the Air Force does not have. It will be necessary to develop job descriptions for these skills, establish training programs to provide personnel with the skills, and program personnel into training in order to have them available when required. Failure to properly perform these tasks will result in the SAGE System being noneffective. Personnel are not authorized to perform these tasks at present. Hence, two additional officer and one civilian authorizations are required.

b. ATRC Liaison Function - Request one lieutenant colonel space be authorized the Directorate of Personnel Requirements and Training, DCS/Personnel, Headquarters ADC, for liaison with ATRC. This officer will be utilized primarily to effect a continuous evaluation of the various Training Command courses utilized by this command. In the past, and at present, many of these courses have not produced the type of trained individual that is required. In order to insure that the personnel and procedures are current with the latest model of ADC equipment and operational procedures, frequent on-site evaluations must be accomplished. This officer will, in effect, become the ADC-Training Command liaison officer. At present many courses do

not meet the desired standard required by ADC units. It is believed that only through continuous evaluation of these courses on the part of this headquarters will the desired training level be achieved. It is further believed that this officer will remain more useful by being assigned to Headquarters ADC rather than to Headquarters ATRC. In this manner he will remain current in ADC procedures and requirements.

3. Directorate of Personnel Services - The Nonappropriated Funds Division of Directorate of Personnel Services requires the authorization of a civilian clerk typist. This division is currently authorized one major, two officer-level civilians, one civilian accounting technician, one airman auditing technician, and one airman Air Force Aid Society clerk. When these authorizations were approved, the typing workload of the division could be handled by the accounting technician and the Air Force Aid Society clerk. Since the establishment of these authorizations, additional workload in this division exceeds the time available for typing for these two clerks. The additional workload has been generated by the establishment of an ADC Mess Loan Fund, by increases in the number of Nonappropriated Fund accounts in ADC, and by increased activity in already existing funds such as the ADC Welfare Fund whose grants have increased from approximately \$15,000.00 to \$40,000.00 per month. The increased typing workload is requiring overtime by civilian employees and is requiring officer-level civilian to do typing. Between 1 January and 10 February 1955 it was necessary to use civilians 84½ hours overtime in order to accomplish essential typing. The Review Board considers it essential that this division be authorized one additional civilian in order that necessary work may be accomplished and expenditure of funds for overtime may be eliminated.

DCS/OPERATIONS

General: Reference to Inclosure #1 reveals a more specific listing of various projects, increased functional responsibilities, etc. in the DCS/O area of interest which will provide a better appreciation of the expanded ADC Headquarters staff supervisory workload.

OFFICE OF THE DCS/O

Assignment of the executive duties of the DCS/O office to the USMC and USA officers assigned to CONAD Operations permits the deletion of the Lt. Col., Executive Officer space now authorized. Current requirement is for a Captain, Administrative Officer, to replace the Executive.

DIRECTOR OF OPERATIONS AND TRAINING

1. The Directorate of Operations and Training is unable to keep abreast of its growing responsibilities with its present organization and manning. In addition to the day-to-day increase in workload caused by the expansion of units and activity, new programs and concepts are arising which require planning and implementation and deficiencies are appearing which must be corrected. Among these are the transition to the SAGE System, the implementation of a more rigorous concept of standardization in operations and training, and the need for more and better requirements planning for projects which are approved and funded but are not yet an operational reality.

2. The present organization of the Directorate into two divisions (excluding the Combat Operations Center) is inadequate. The increase in staff functions and in personnel required (over-manning has already been found to be necessary) is beyond a practical span of control for two divisions. A complete study was made and a new organization developed comprising four divisions. This organization is charted at the end of the O&T discussion. The personnel increases required by this organization are 19 officers, 7 airmen, and 5 civilian stenographers. In the following paragraphs the officer increase is discussed in connection with each of the four divisions. The requirement for additional administrative support is discussed later.

Incl #4
Tab H

3. The present Operational Plans Division remains virtually the same. It comprises 15 officers and is basically responsible for current operational plans and policies not associated with specific items of equipment, i. e., CONELRAD, SCATTER, ADIZ's, IDA's, BROFICON, Rules of Engagement, GOC etc. It is also responsible for the development of plans for the use of CONAD augmentation forces and programming for all types of ADC aircraft, flying hours, and training aids.

4. The present Systems Training and Operations Division is redesignated Current Operations Division. It loses a few responsibilities (and personnel spaces) to the newly created Standardization and Training Division. It is now concerned purely with current operations. It consists of a Fighter Branch, AC&W Branch, and Operational Support Branch, comprising 14 officers. Over and above the current day-to-day fighter and AC&W responsibilities, this division will have such functions as the development of operational concepts, procedures, and training programs for improvement in effectiveness; action for operational projects (OST joint tests, symposiums) for increasing combat capability; the establishment of requirements for and coordination with CAA and major commands on Scramble and Recovery procedures, equipments and navigational aids; the preparation and coordination of operational orders; action on all airlift and unit training schedules, support requirements, and operational problems of the weapons employment centers.

a. An increase of 1 Major, Air Traffic Controller, is required in the Fighter Branch.

- (1) The increased workload associated with air traffic control such as scramble, intercept and recovery of Air Force, Navy, and Air National Guard aircraft has far exceeded the capability of the present O&T staff. Most of these duties are presently divided throughout the Systems Division staff on a "catch-as-catch can" basis due to lack of an officer specifically to perform these duties. Headquarters USAF has recognized this problem and has established an Air Traffic Control Branch in an attempt to solve our air traffic control problems.
- (2) The bulk of work in this field concerns scramble and recovery procedures CONAD-wide, use of ADC radar for air traffic control, emergency assistance to aircraft and evaluation and use of recovery aids.
- (3) Frequent meetings with high level CAA officials, other commands and services and representatives of various agencies within the aviation industries are in progress today to resolve the air traffic problems. Resolution of the problems and adherence to the command-wide position has been threatened because of the spread-out of these functions.

b. An increase of 2 Majors, Aircraft Control Staff Officers, is required in the AC&W Branch.

- (1) The programmed expansion of the AC&W system from the present 75 sites and 12 air divisions ultimately to over 420 installations plus Picket Vessels, Texas Towers and AEW&C units has increased the staff workload associated with AC&W totally out of proportion to the personnel assigned to carry out these staff duties. Although this expansion is programmed for the next few years, the detailed planning is going on now.
- (2) In an effort to meet this increasing workload the officers in Current AC&W Training and Operations are working 50-55 hours a week. Projects under planning and development for the past 2 years are now assuming day-to-day operational status in ever increasing numbers and are being turned over to the Training and Current Operations staff personnel. Included among projects are supervision and administration of the Multiple Corridor Identification System (NCIS), Picket Vessels, and AEW&C Units. It is estimated that these projects alone will require 147 additional man-hours a week.

5. The new Standardization and Training Division was developed to fulfill the requirement in this Command for standardization of operational procedures and training directives throughout the Air Defense System. It comprises a Weapons Systems Standardization and Training Branch and a Control and Warning Standardization Branch. Five currently authorized officer spaces are available for the division. For adequate manning, seven additional officer spaces are required, 1 Colonel, 3 Lt Colonels and 3 Majors.

a. Realizing the urgent need for standardization of tactics and techniques throughout the Air Defense Command, General Chidlaw appointed a committee of his most experienced senior officers, headed by Brig. General Clinton Vincent, to prepare a detailed plan for the implementation of standardization and directive control of air defense systems and procedures. This directive by the Commander grew partly out of a directive from the Chief of Staff, USAF to take action to reduce the number of aircraft accidents in ADC.

b. This committee called in representatives from the various major commands, air lines, plus unit commanders with outstanding operational records. The people were unanimous in declaring that a successful and efficient operation can be achieved only through standardization. This committee recommended to the Commander that the standardization program be accelerated, and at the same time they spelled out in some detail their

proposals for standardization. General Chidlaw approved the following committee recommendations:

- (1) Develop and standardize tactics and techniques throughout the command so that aircrews and controllers may be shifted from one geographical area to another with little or no change in combat tactics for the units concerned.
- (2) Attain desired goals in combat potential without a sacrifice in flying safety.
- (3) Develop a qualitative measurement of controller/aircrew proficiency rather than a quantitative measurement.
- (4) Standardize publications at Air Defense Command level, with the responsibility for implementation delegated to the defense force commanders. (All publications will be coordinated with the defense forces prior to publications with incorporation of their comments and recommendations whenever feasible. This will eliminate to a large degree the necessity for implementation directives by lower headquarters. Inspection for compliance will be accomplished by the defense force standardization boards.)
- (5) Establish training standards toward which we expect our squadrons to train. (Another development that will evolve is a yardstick by which a commander can qualitatively evaluate his unit.)

c. This program of standardization goes far beyond the activities normally expected of the staff. Further, it requires at the beginning a mass of study and of implementing directives. It is for this reason that, although some spaces were available as a result of reorganizing and centralizing the standardization concept, an additional personnel requirement exists.

6. The new Systems Integration Division consists of three functions not homogeneous to the normal operations of O&T. These are:

a. SAGE Branch. The requirement here is for 1 Lieutenant Colonel and 3 Majors. As discussed elsewhere, the planned dissolution of the ADES Project Group at this headquarters now requires that the normal Headquarters ADC staff assume ADES's present duties as well as additional responsibilities as SAGE moves into later stages. The entire staff of O&T will participate. However, a specialized branch is also required to insure over-all coordination and follow-up action in the development of plans and operational concepts for implementation of the SAGE System.

b. Equipment Integration Branch. An increase of 1 Lieutenant Colonel and 2 Majors is required. One officer space is now available. The function of this branch will satisfy a requirement which has existed within DCS/Operations for some time. Under the present organization there are insufficient personnel to carry approved projects from the initial planning and approval stage through the implementation phase and at the same time continue to study long-range air defense requirements. The ADC Plans and Requirements Directorate is presently assigned this dual function. As a result, all planning responsibilities tend to suffer. In order for P&R to carry out their planning requirements, which the Commander ADC has requested be extended further in the future, it will be necessary to transfer to O&T all ADC projects that have received budget approval. This will include such projects as the F-102A, TF-102A, Target Drones, F-89H, Electronic Configuration for F-89D, F-86D, F-89H, and F-94, E-9 Fire Control System, MG-3 Fire Control System, Ground Air Data Link, NADAR, Flight Planning Aids, Falcon, Training GAR, Interceptor Missile Training Program, Picket Ships, AEW&C (approved portion), future air defense boundaries, GFA-37, and Texas Towers.

c. RAND Branch. This function is now adequately manned. This branch is responsible for the implementation and administration of the System Training Program as developed by the RAND Corporation. This, of course, entails the coordination of System Training Program matters with all units, and the evaluation of training received through the use of the synthetic exercises. The group is also responsible for integrating the System Training Program into new air defense systems as appropriate.

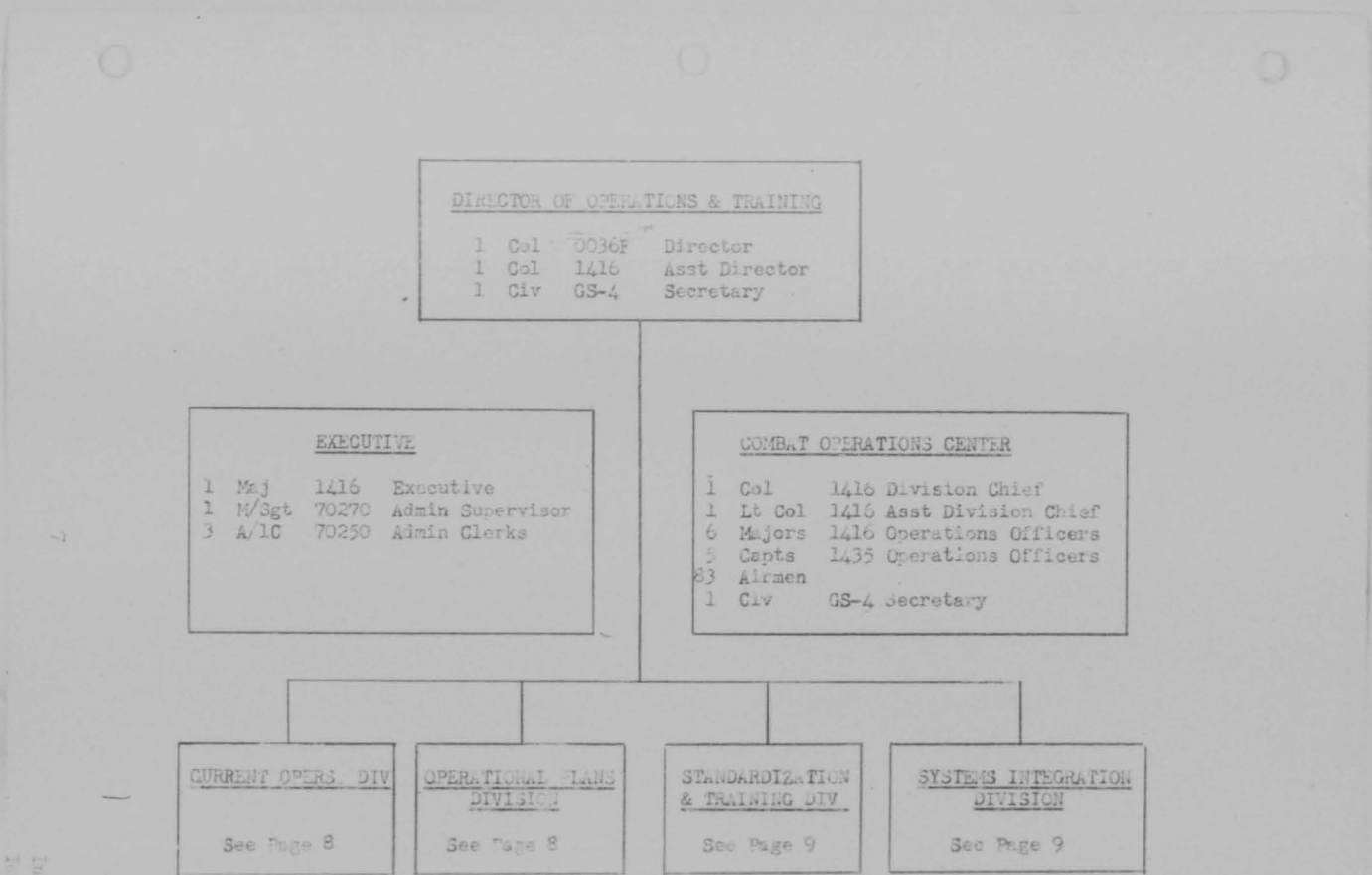
7. The reorganization of O&T requires an increase of 5 civilian stenographers concurrent with the increase in officer strength. Reference is made to letter Hq, USAF, Subject: "Manpower Authorizations for Hqs, ADC", dated 27 September 1954, 1st Indorsement by Hq, ADC and 2nd Ind by Hq, USAF. An increase of 1 civilian stenographer was granted on the acceptability of a ratio of 1 stenographer to each 4 officers. At that time, O&T was authorized 34 officers and the number of stenographers was increased to nine. Since that time an additional 4 officers have been authorized by your headquarters, together with 1 stenographer space. The requirement for five more stenographers was not derived from any ratio but was based upon a logical manning for the new divisions and branches. The resulting ratio of 1 to 4 was coincidental and confirms the validity of the previous staffing ratio.

8. The reorganization requires an increase of 7 airmen. Under the previous organization, 9 airmen were authorized: 3 in the O&T Executive Office and 3 in each division. The two new divisions, each with three branches will require an authorization of 3 airmen each. The additional workload engendered in the Executive Office will require an additional airman. Utilizing currently authorized grades as indicated in the charts which follow, the required increase is 3 T/Sgts and 4 A/2C. The following facts are submitted in support of this requirement.

a. The average officer strength of the Divisions in O&T will be larger than that of all but three of the Directorates in this headquarters. This is indicative of the volume of paper work which must necessarily be handled by officers. Most of it is classified. The process of handling such matters involves logging, receipting, safeguarding, hand-carrying, coordination and disposition. It is extremely wasteful of an officer's time for him to be his own clerk and messenger. The civilian stenographers are kept continuously busy with the typing workload. Their time is too valuable to be diverted to the more routine administrative tasks. It does not seem unreasonable to authorize airmen for these tasks on the basis of about 1 to each four officers.

b. Most staff sections have requirements for specialist airmen other than administrative types. Many of them generate administrative workloads themselves, but they also provide assistance to their officers and relieve the situation described in a above. O&T has no such airmen assigned.

c. An enlarged organization with more sub-divisions requires more administrative overhead per se. O&T is spread over three floors now (excluding the COC in another building). There is much coordination required, and the transfer of a large volume of material between Divisions and Branches will increase. It is planned to centralize administration at the Division level, since the request 3 airmen per Division will not permit further decentralization. Actually, branch administration is more desirable could the manpower requirement be met.



CURRENT OPERATIONS DIVISION

1 Col 1416 Division Chief
 1 Lt Col 1416 Current Operations
 Evaluation O
 (Asst Div Chief)
 1 Civ GS-4 Secretary
 *1 T/Sgt 70270 Admin Supervisor

FIGHTER BRANCH

1 Lt Col 1416 Flight Operations O
 (Branch Chief)
 1 Maj 1416 Tactical Operations O
 *1 Maj 1694 Air Traffic Control O
 1 Capt 1411 Non-Tactical Oper O
 1 Civ GS-3 Secretary
 1 S/Sgt 70270 Admin Specialist

CURRENT AC&W OPERATIONS BRANCH

1 Lt Col 1616 Control & Warning O
 (Branch Chief)
 1 Maj 1616 Weapons Dir Officer
 *1 Maj 1616 Surveillance O
 *1 Maj 1616 Identification O
 1 Civ GS-3 Secretary

OPERATIONAL SUPPORT BRANCH

1 Lt Col 1416 Oper Support Cont O
 (Branch Chief)
 1 Maj 1416 Air Opr Supp & Cont O
 1 Maj 8626 Spec Proj Evaluation
 & Tech Assistance O
 1 Maj 1416 ADC Resident Liaison
 O to AFGC
 *1 Civ GS-3 Secretary
 *1 A/2C 70250 Admin Specialist

OPERATIONAL PLANS DIVISION

1 Col 1416 Division Chief
 1 Lt Col 1416 Plans Evaluation O
 (Asst Div Chief)
 1 Civ GS-4 Secretary
 1 W/Sgt 70270 Admin Supervisor

PROGRAMS AND ALLOCATIONS BRANCH

1 Maj 1416 Programs & Allocations O
 (Branch Chief)
 1 Maj 1416 Allocations O
 1 Maj 1416 Support Programs O
 1 Maj 1416 Training Aids Plans O
 1 Civ GS-3 Secretary

AUGMENTATION BRANCH

1 Maj 1416 Augmentation Plans O
 (Branch Chief)
 1 Maj 1416 ANG Fighter Support O
 1 Capt 1411 USAF Augmentation O
 1 Capt 1411 ANG Training Plans O
 1 Civ GS-3 Secretary
 1 T/Sgt 70270 Admin Specialist

SYSTEMS PLANS BRANCH

1 Lt Col 1416 Systems Policy &
 Procedures O
 (Branch Chief)
 1 Maj 1416 GOC Plans O
 1 Maj 1416 AGOV Plans O
 1 Maj 1616 SCAT & Identifi-
 cation Sys O
 1 Maj 1416 Military Emerg
 Plans O
 1 Civ GS-3 Secretary
 *1 A/2C 70250 Admin Specialist

STANDARDIZATION AND TRAINING DIV.

*1 Col 1416 Division Chief
 *1 Lt Col 1416 ADC Sys Stand & Tng O
 (Asst Div Chief)
 *1 Civ GS-4 Secretary
 *1 T/Sgt 70270 Admin Supervisor

WEAPONS SYSTEMS STANDARDIZATION AND
TRAINING BRANCH

*1 Lt Col 1416 F89D/H Stdn & Tng O
 (Branch Chief)
 *1 Maj 1416 F88D Stdn & Tng O
 *1 Maj 1416 F94C Stdn & Tng O
 1 Maj 1416 Ftr Tnc & Tech Stdn
 & Tng O
 1 Maj 1416 Weapons Sys Stdn &
 Tng O
 *1 Maj 1564 Tng Aids Stdn O &
 Staff R/O
 1 Civ GS-3 Secretary
 1 S/Sgt 70270 Admin Specialist

CONTROL & WARNING STANDARDIZATION &
TRAINING BRANCH

*1 Lt Col 1616 Control & Warning Stdn
 & Tng O (Branch Chief)
 1 Maj 1616 AC&W Training O
 1 Maj 1616 AC&W Standardization
 1 Capt 1644 AEW&C Stdn & Tng O
 1 Civ GS-3 Secretary
 *1 A/2C 70250 Admin Specialist

SYSTEMS INTEGRATION DIV.

*1 Col 1416 Division Chief
 *1 Lt Col 1416 SAGE Evaluation O
 (Asst Div Chief)
 *1 Civ GS-4 Secretary
 *1 T/Sgt 70270 Admin Supervisor

SAGE BRANCH

*1 Lt Col 1416 SAGE Integration O
 (Branch Chief)
 *1 Maj 1416 C&F Functions O
 *1 Maj 1416 Airborne Equip O
 *1 Maj 1416 SAGE Weapons Coord
 *1 Civ GS-3 Secretary
 1 S/Sgt 70270 Admin Specialist

EQUIPMENT INTEGRATION BRANCH

*1 Lt Col 1416 Fighter Develop O
 (Branch Chief)
 *1 Maj 3216 Armament Staff O
 *1 Maj 8626 Fire Control Sys O
 1 Maj 1416 Fighter Elec O
 *1 Civ GS-3 Secretary
 *1 A/2C 70250 Admin Specialist

RAND PROJECT BRANCH

1 Lt Col 1416 Rand Project O
 1 Maj 1644 Rand Project O
 (PCS to Rand Corp)
 1 Capt 1644 Rand Project O
 (PCS to Rand Corp)

Incl 4
 Tab B

DIRECTOR OF COMMUNICATIONS AND ELECTRONICS

1. An increase of 7 officers, 4 airmen and 1 civilian is required as a direct result of the assumption of staff responsibilities for the SAGE system. These responsibilities will all be in addition to those now being performed. The magnitude of the task can be measured by the fact that the introduction of the system will cost in the vicinity of two billion dollars. This directorate will be the key agency in this headquarters in the implementation of the system. The following increases are required:

a. Radio Branch (Communications Systems Division)

1 L/Col 3016, 1 M/Sgt 29370, 1 Steno GS-3

The engineering associated with the radio communications systems for approximately 250 transmitter sites compared with the present installation of 82 transmitter sites gives some indication of the magnitude and responsibility being placed upon the Radio Branch.

b. Communications Security Branch (Communications Systems Division)

1 Capt 3034, 1 M/Sgt 29170, 1 T/Sgt 29170

The addition of the SAGE System program will approximately double the workload of the Comm Security Branch. There are at the present time 123 communications centers and cryptographic accounts. With the SAGE System we will have a grand total of around 300 communications and cryptographic accounts. In addition, this branch is responsible for the analysis of the communications procedures within the Air Defense Command.

c. Wire Branch (Comm. Systems Division)

1 Maj 3016, 1 S/Sgt 70250

The requirements for external circuits of each subsector in SAGE are estimated at approximately 800 circuits. There will be a total of 32 subsectors, and each subsector will have almost as many circuits as exist in the entire Air Defense Command, today. This branch is responsible for the budgeting, programming and issuing of Commercial Service Authorizations (CSA) for the entire Air Defense Command.

d. Ground Radar Branch (Electronics Systems Division)

1 Maj 3016, 1 Capt 3044

This branch will be responsible for all electronic equipment associated with SAGE, such as the computer of which there are two in each direction center - and the electronic equipment associated with Fine Grain Data (FGD) and Slowed Down Video (SDV).

e. Plans Branch (Plans and Projects Divisions)

1 Lt/Col 3016

Projects Branch

1 Maj 3016

These branches will be responsible for the programming of communications and electronic equipment requirements associated with SAGE in the Programming Communications Document (PC). In addition, they will monitor budget, construction engineering, and many other facets concerned with the implementation of the SAGE System and will be charged with preparing and publishing a periodic status report on the implementation of the SAGE System.

2. An increase in grade of 2 Lt Cols to Colonel is required for the Chiefs of the Communications System Division and the Electronics Systems Division. The following support is submitted:

a. Communications Systems Division. This requirement is justified based on the increased responsibility placed on this division because of SAGE. Included in the approximately two billion dollars which SAGE will cost will be leased circuits in the amount of four to five million dollars per subsector which will grow to 32 subsectors when SAGE is fully operational and will amount to an annual circuit rental of some 160 million dollars. The administration of this entire leased circuit program and the responsibility for budgeting, programming and engineering will fall in the Communications Systems Division. In addition to this, he will be responsible for the engineering of radio communications systems and the communications centers and cryptographic accounts. The Chief of the Communications Systems Division is required to come in contact with the top executives in the communications industry, to include presidents and vice presidents, and to represent this headquarters at high-level conferences.

b. Electronics Systems Division. This requirement is justified based on the increased responsibility placed on this division because of SAGE. The Chief of the Electronics Systems Division is responsible for electronics systems engineering which includes radar systems engineering, computer systems engineering, electronic warfare, and navigational aids. His responsibilities have been increased with the advent of the SAGE System in that the electronics systems engineering involving radars,

Computers, data links, etc., are the most complex of any electronics systems in the world. He is required to be in continual contact with development agencies of the Air Force and industry, as well as manufacturers, and these contacts are on the highest possible level at all times. He represents the Air Defense Command at conferences and meetings and is instrumental in the major decisions of this headquarters concerning electronics systems.

c. Both of the above positions report directly to the Director of Communications and Electronics who is authorized to be a Brigadier General. In addition, the grade authorization of full Colonel enhances the opportunity for better selectivity of the officer to fill these positions.

DIRECTOR OF PLANS AND REQUIREMENTS

1. With the planned dissolution of the ADES group certain functions will be assumed by the Systems Division of this directorate. The responsibilities of this directorate are normally associated with those items that are still in the planning stage such as programs not yet approved by Headquarters, USAF for inclusion in the USAF Budget Programming Guidance Documents. The SAGE system is being implemented as a simultaneous development-testing-production project; as such, the distribution of the ADES functions to the ADC staff and particularly to this directorate cannot be on the basis of clear-cut delineation of responsibilities. Many of the functional areas that are normally associated with other staff agencies are included for the Directorate of Plans and Requirements. This is necessary if the concept of the entire SAGE system is to be kept properly oriented.

2. The long range guidance and future planning relating to the operations and technical functions of SAGE and subsequent systems were considered of primary interest to the Systems Division, D/P&R. It has been determined that initially three (3) officers in the following grades and AFSC, and one (1) clerk-stenographer will be required to augment the Systems Division to fulfill the SAGE responsibilities of this directorate:

1 - Lt Col	1416	Air Surveillance Branch
1 - Lt Col	1616	Weapons Control Branch
1 - Major	3016	Air Surveillance Branch
1 - Civilian	70272	Clerk-Stenographer

3. The above officers will be responsible for the following tasks or provide guidance to the SAGE system as follows:

a. Designation of new sub-sector boundaries and location of new direction centers.

b. Operational guidance and concept of operations with the RCAF-ADC.

c. Review impact of new air defense equipments and developments on SAGE operational plan and concept of operations.

d. Provide long range operational guidance to CONAD staff for SAGE.

e. Maintain liaison with following permanent sub-committees to obtain SAGE system coordination:

- (1) Engineering - Installation Phasing Committee
- (2) SAGE System Planning
- (3) System Operational Testing
- (4) Allied Construction Phasing

It is imperative that the System Division of this directorate maintain a detailed working knowledge of these committees in order to assess the sequence of events that will have an impact on future operational requirements.

f. Monitor SAGE testing program to determine capacity and suitability of (1) Surveillance equipments (2) Weapons directing capability and (3) Manual inputs to computer.

g. Future operational guidance for the following: (1) Developing projection display equipment (2) Changes in concept that engineering changes and varying type installations will necessitate (3) Programming the computer (4) Missile and other weapons control.

5. The indirect responsibilities associated with the absorption of certain ADBS functions, but requiring additional man-hours may be classified as: (a) Briefings (formal and informal), education and indoctrination of the ADC staff and other interested agencies, (b) Program justification to Bureau of the Budget, (c) Visit or monitor the research and development activities of scientific, technical, and industrial groups or agencies to determine the status of developments relating to air defense needs.

6. This Directorate is also faced with the requirement of providing personnel for a Dew Line Project office in New York in conjunction with ARDC and AMC. This requirement, already under discussion with your headquarters, is being submitted separately.

7. The additional function of world-wide Air Defense monitoring, as a function of the recently disbanded Joint Air Defense Board, has been delegated to this command. The additional personnel required for this function have not yet been determined but upon resolution will be submitted separately.

DCS/MATERIELGeneral:

1. This deputation is experiencing an increase in workload during the latter part of FY 1955 which was not contemplated at the August meeting of the Functions and Manning Review Board. This can be expressed in general terms as resulting from:

- a. The assumption of additional responsibilities for the SAGE system.
- b. Continuing expansion of the Air Defense Command and the assumption of new programs, new facilities and new equipments.
- c. Establishment of a central Materiel Control function, necessary under a commodity system of operation for proper staff action in broad fields of supply, procurement, and management of resources.

2. The following adjustments in personnel spaces, explained in succeeding sections, are required:

	<u>Col</u>	<u>Lt Col</u>	<u>Maj</u>	<u>Capt</u>	<u>Tot Off</u>	<u>M/Sgt</u>	<u>T/Sgt</u>	<u>Tot Amn</u>	<u>Tot Civs</u>
SAGE		+ 1	+ 4		+ 5				+ 3
Other	+ 4	- 1	+ 4	- 4	+ 3	+ 3	+ 2	+ 5	+ 5
Total	+ 4	0	+ 8	- 4	+ 8	+ 3	+ 2	+ 5	+ 8

OFFICE OF THE DEPUTY

A decrease of 1 Captain, Administrative Officer, is recommended.

DIRECTOR OF INSTALLATIONS

1. A requirement exists to upgrade the Chiefs of the Plans Division, Construction Division and Operations Division from Lt Colonel to Colonel. In 1950 the Air Force had approximately a 10 billion dollar base plant. By the completion of the 137 Wing goal this will probably be doubled. Air Defense Command, with its wide-spread fighter interceptor mission, radar programs, etc., is growing proportionately faster and larger than other major commands. The Public Works Program shows no signs of tapering off. In fact, new weapons, missiles, disposal, etc., make it likely to continue to grow. Specifically, a higher grade is required because:

- a. Installations is presently implementing its reorganization which will increase its military and civilian personnel to

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a total of 126. An increase in responsibilities and the experience level required will follow. Replacement requisitions in the grade of Colonel are more apt to produce officers with the experience desired for these three important functions.

b. The Office of the Assistant Chief of Staff, Installations, Headquarters USAF is authorized three Brigadier Generals for its three main operating functions and likewise, the other major commands of comparable size and workload are manned with higher grades.

c. The Civilian Personnel Classification for the three Deputy Civilian Chiefs for the three divisions in question has recognized the responsibilities of the position by allocation of Grade GS-14, which civilian grade is equivalent to Colonel in the military structure.

d. Because of the large installations workload, the Division Chiefs coordinate extensively with other staff divisions, other major commands and construction agents and are required to take independent action, especially at conferences away from this headquarters with the Corps of Engineers, USAFIR offices and other major commands.

e. The responsibilities inherent in the development of the SAGE system will require the experience, knowledge and grade of a Colonel.

2. The assumption of responsibility for the further development of the SAGE System requires an increase of 1 Lt Colonel, 1 Major, 1 Civilian Engineer and 1 Civilian Stenographer in the Construction Division, Directorate of Installations. This Division performs the following major functions:

a. Analyzes authorized construction programs and disseminates same to subordinate echelons for guidance in the discharge of their delegated responsibilities.

b. Formulates command policies necessary to implement directives from Headquarters USAF, and establishes procedures for the supervision, coordination and accomplishment of the Military Construction Program as it relates to design and construction of ADC facilities.

To accomplish its workload, the Construction Division has been authorized 2 officers, 27 civilians and one airman, constituting the Office of the Chief, and three Branches (Fighter-Interceptor Branch, AC&W Branch and Special Projects Branch). This justification supports a request for an increase of 2 officers, one professional civilian engineer and one stenographer, to constitute a new Sage Branch.

3. The present personnel authorization reflects an attempt to evaluate the workload predicated on recentralization at Headquarters ADC of responsibilities for the implementation of the Military Construction Program. At the time of evaluation, the Military Construction Program for this command totalled approximately \$713,000,000 and involved some 4200 line items of construction, each requiring separate action as to criteria, siting, review of preliminary plans and specifications, review of contract plans and specifications, progress inspections during the course of construction, and final inspection and acceptance. Since that time the Construction Division has been engaged on various phases of implementation of the following additional fiscal year programs, of the dollar magnitude indicated:

FY-56	approximately	\$220,000,000
FY-57	estimate	\$300,000,000

(The number of additional line items in the above program has not been estimated). In the interim, of course, the construction progress made on the previous total program has resulted in a reduction in workload, but not commensurate with the increase in workload resulting from the increased program.

4. Among the major programs, missions, exercises and activities having serious impact in the form of increased workload for the Construction Division since the date of the evaluation on which the present personnel authorizations are based are:

- a. SAGE
- b. Dewline
- c. AC&W Family Housing
- d. Family Housing, ADC bases
- e. TACAN
- f. Streamlined procedures and close control for critical items.
- g. Project "Closeout"

5. A brief analysis of the SAGE project follows:

This is a classified project, the scope, expedited time schedule, purpose and location are a matter of record at Headquarters USAF. Though the operational facilities are being designed and constructed by a construction agency composed jointly by an Air Force Installations Representative and a joint Project Officer, Headquarters

ADC, as the using agency, has a prime interest in assuring that operational dates are met, and that facilities are ready to receive operational equipment as it emerges from the "pipeline". This is equally true of support facilities, such as dormitories, mess facilities, etc., which may be ready to receive "pipeline" personnel. To monitor and to participate in all the actions involved in the accomplishment of the Military Construction Program, (cited in more detail elsewhere) in order to keep the Command and the Staff Sections at Headquarters ADC currently posted as to the detailed status of each phase of the construction, at the many locations involved, will require the services of a SAGE Branch, consisting of a Military Chief, a Civilian Deputy Chief, a Military Assistant and a Stenographer. The alternate chiefs do not represent a dual incumbency, but rather recognize the need for the presence at all times of a responsible and qualified Branch Head, while the other two technical personnel of the branch are travelling for the purpose of conferences at the Joint Project Office, material tests and job conferences and/or inspections. The complex nature, close timing and operational importance to this command of this classified project, indicate the necessity for obtaining the services of senior military personnel and of a civilian professional engineer of high technical attainment. One stenographer will be required to handle all clerical, stenographic, telephone, filing and other administrative activities of the SAGE Branch.

That this workload cannot be absorbed by the present organization is apparent if it is understood that the Construction Division is attempting, with very limited success, to accomplish the superimposed workload of the other activities listed in paragraph 4 above, which as stated previously, were not elements in the evaluation which resulted in the authorization of present inadequate number of personnel spaces. Though each of the activities is important in varying ways to the mission of ADC, none, except perhaps Dewline, approaches the operational importance of SAGE.

6. To summarize, the evaluation which dictates the present personnel ceiling for the Construction Division, Dir/Instl, ADC, is no longer valid. Since it was made, the Military Construction Program for the command, requiring the attention of the Construction Division to different degrees in various phases of its implementation, has increased by some \$500,000,000 which is far in excess of the rate of completion of construction authorized in the earlier phases of the Military Construction Program. Representative of only a portion of this greatly expanded program, many new missions, package programs, exercises and other activities, such as SAGE, Dewline, Family Housing, TACAN, etc., have begun to absorb, to varying degrees, the energies of the Construction Division. Of these, and the only one for which additional personnel are presently requested, the most important is

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SAGE, the successful discharge of the responsibilities of which requires an increase in personnel. As further justification, it should be noted than an excessive amount of overtime work is required of the military and technical personnel of this organization at present - this, of course, can only be a temporary solution to the problem, as it is well known that continuous performance of overtime soon reaches a point of diminishing returns. Also the amount of temporary duty travel has greatly increased (and will continue to do so) requiring at this time an average of 8 days per month for each of the technical and military personnel of the Construction Division.

7. The SAGE requirement further calls for an increase of 1 Major and 1 Civilian Engineer in the Master Planning Branch of the Plans Division of Installations. This branch is responsible for the following:

- a. Preparation of Master Plans for all ADC Installations.
- b. Review of Master Plans for bases of other commands where ADC units are assigned as tenants. (ADC complex only)
- c. Siting of all new facilities being constructed for ADC units, regardless of location.
- d. Field Surveys to determine location of new installations.

8. At the present time, the Air Defense Command is operating 26 air bases and is developing 8 additional new bases. In addition, ADC Fighter Squadrons are located on 23 bases of other major commands. ADC is also operating, or in the process of establishing, permanent AC&W stations, M-sites and Gap Fillers, both in the U.S. and Canada. The expansion of the Air Defense system has made it impossible for the limited personnel in the Master Planning Branch to prepare and periodically revise Master Plans for these many installations. At the present time, Master Plans are under preparation for the 8 new bases and 8 of the operating bases. Master plans for the remaining 18 ADC bases are either not available or require major revision. New facilities cannot be satisfactorily sited without an up-to-date master plan for use as a guide in the orderly development of the base. It has been necessary, however, to continue to site on a day-by-day basis to prevent delay in construction of badly needed facilities. Since siting is accomplished by siting meetings held at the installation, this function will require a major part of the capabilities of the branch.

9. Since the limited number of personnel authorized for the branch is insufficient to maintain up-to-date Master Plans for our existing installations, plus siting of new facilities, those same duties cannot be assumed for SAGE without additional personnel. Current Military Construction Programs include facilities for SAGE as follows:

a. FY-1955 MCP	21 items	\$25,000,000
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b. FY-1956 MCP	240 items	\$81,000,000
c. FY-1957 MCP	285 items	73,000,000
d. FY-1958-1960 MCP	427 items	84,000,000

10. Each of the above-listed items must be incorporated into master plans for the bases concerned. In those cases where the installations will not be located on established bases, complete Master Plans must be developed. Each of the items must be sited at construction siting meetings using the Master Plans as a guide. It is planned that one of the Engineers being requested will accomplish all SAGE planning and siting within the geographical limits of EADF and the other will be responsible for the CADF and WADF areas.

DIRECTOR OF AIRCRAFT SUPPLY AND MAINTENANCE

1. A higher grade is required for the Assistant Director of Aircraft. The Lt. Colonel space authorized should be a Colonel. The incumbent is required to possess wide knowledge and experience in the supply and maintenance of a variety of aircraft. Such capability is usually only found in the grade of Colonel. Senior representation is often required on Weapons Phasing Groups, Boards (Mock-up, Contract Compliance, Accident Investigation, etc.), and at technical meetings. The Director is unable to meet these commitments without a qualified senior assistant. Further, the Director is required to be absent on temporary duty to a considerable extent. The assistant must act for him in the absence of the Director in rendering important staff decisions, both in the headquarters and at conferences involving other major commands.

2. The directorate is organized on a commodity basis. One branch is established for each aircraft manufacturer. The imminence of the F-101 requires the establishment of a McDonnell Branch. Other branches are continuing as heretofore, making this an additive requirement. An increase of 1 Major, AFSC 8616, is required for the initial establishment of the new branch.

ASSISTANT FOR LOGISTICS PLANS

1. Reference is made to our letter of 11 January to Director of M&O, Hq, USAF, Subject: "(Uncl'd) Request Authorization for Personnel Technically Qualified in the Field of Atomic Energy" and 1st Indorsement by your headquarters dated 25 February 1955. The requirement approved by your headquarters (1 Lt Col) was to

cover the need for a staff specialist, highly qualified, to initiate and control the program. The establishment of this D/M function requires the development of additional staff capability. An increase of 1 Major, AFSC 3216, is required to train in this area and provide back-up and assistance to the Lt Colonel. The scope of this program is beyond the capability of one officer to properly handle.

2. The peculiar and exceptionally heavy record keeping and paperwork load anticipated for the above, coupled with the present high ratio of officers-to-steno already existing will necessitate the authorization of one (1) additional stenographer.

3. Reference is made to Hq USAF PG 57-1 (Section V, paragraph A5f). This added responsibility, plus added responsibility for and emphasis on the use of Air Reserve fighter squadrons requires an increase of one (1) Major for augmentation plans. This headquarters has posed an objection to the above portion of PG 57-1. If this is sustained and the workload not imposed, the requirement for the additional officer is withdrawn.

DIRECTOR OF GENERAL SUPPLY AND SERVICES

1. The Assistant Director is now only authorized as a Major. The Chiefs of the General Supply and Transportation Divisions are presently authorized as Lt Colonels commensurate with their responsibilities. Aside from the impractical grade progression, the position of Assistant Director warrants a grade of Lt Colonel on the basis of its importance. The incumbent is required to:

- a. Act as Director in the Director's absence.
- b. Due to the increased workload of the Directorate, maintain constant surveillance over the majority of planning and special projects within the General Supply, Transportation, and Services Divisions.
- c. Act as Division Chief in the absence of the Chief of the General Supply, Transportation, and/or Services Division.
- d. Since the Director is a full-time member of the headquarters Equipment Review Board, the Assistant supports the Director in the over-all coordination of the activities and functions of the Directorate.

2. The General Supply Division of this Directorate has felt the greatest impact from the expansion and increased tempo of activities within the Air Defense Command during Fiscal Year 1955. This impact has resulted from the increased number of requisitions concerning controlled or regulated items, recommendations on changes to equipping documents, a greater

volume redistribution of critical supplies and equipment throughout the command, and an increased requirement for supply and maintenance assistance from the air defense forces. The present authorizations of this Division and the adjustments required follow:

Present Authorizations

Office of the Chief,
General Supply Division

1 Lt Colonel	6416
1 Civilian	6424
1 Civilian	70252
1 Civilian	70250

General Supply Branch

1 Major	6416
1 Captain	6424
1 M/Sgt	64173
1 S/Sgt	64151

Fuels Branch

1 Major	6454
2 M/Sgt	64370

Personal Equipment Branch

1 Major	6424
1 Captain	6424
1 M/Sgt	64173

a. General Supply Branch

- (1) Convert 1 Captain, Supply Officer, 6424, space to Civilian. The rapid turnover of military personnel assigned to this Branch, which has exceeded 200% in the past 15 months, has resulted in too many manhours devoted to cross training of new personnel. Continuity and stability are required within this Branch by conversion of this space.
- (2) Increase 1 M/Sgt, Stock Control Technician. This Branch is unable to cope with the increased workload without continued overtime and constant utilization of personnel outside the Branch. Much of the overflow is being performed by a GS-11 civilian who is Assistant to the Division Chief. This is considered uneconomical from the standpoint of the civilian's grade, taking him away from his regularly assigned duties and creating a backlog. The principal duties of the additional airman will be to:
 - (a) Review prime depot supply information directives pertaining to approximately 60 classes and sub-classes of Air Force property so as to keep the Branch fully informed of up-to-date changes.

- (b) Assist in reviewing and processing requisitions received from base supply officers on regulated and controlled materials. This function requires better than 350 manhours per month, involving approximately 500 requisitions per month of approximately 4 line items per requisition.
- (c) Assist in the review of Unit Allowance List change requests pertaining to approximately 60 classes and sub-classes of property; make recommendations to the Equipment Review Board.
- (d) Assist in screening and reviewing excess listings on nonexpendable items of Classes 25-A and 40-A items reported by base supply officers of this command. Effect redistribution of command-wide assets. Excess listings per month average 55 line items per listing. This function is set forth in Air Force Manual 67-1.
- (e) Render supply assistance to other staff agencies in determining requirements in support of command projects and projects directed by higher headquarters. Render supply and maintenance assistance to subordinate units.

b. Personal Equipment Branch

- (1) Increase 1 T/Sgt, Personal Equipment Specialist. This Branch has responsibility for surveillance over 20 classes and sub-classes of Air Force property, the Clothing Stock Fund Operation, and supply and maintenance of personal flying equipment. Due to the lack of necessary personal equipment specialists through the command and formal schooling facilities, a great amount of manhours have been devoted to the establishment of personal equipment training criteria. Also, due to the critical shortage of flying equipment and the continued increase of units being activated, the personal equipment problem has number one priority within this Branch. Until recently only one officer and one airman were authorized this Branch, and they spent 90% of their available time and additional overtime on personal equipment problems. The result was continued neglect of Clothing Stock Fund Operations and control over other classes of supply for which the Branch is responsible. Recently, an additional officer (Major) was authorized to alleviate the above-cited conditions. He and the present

airman will devote the majority of their time primarily to the various property classes and the Clothing Stock Fund Operations. The Captain will have primary responsibility for surveillance over personal equipment operations, including studies on new personal flying equipment to meet assignment of new types of mission aircraft. This officer requires an airman specialized in personal equipment, who cannot be obtained in the AFSC 64 series, to assist him in maintaining adequate control over command-wide personal equipment operations so as to provide combat effectiveness by furnishing necessary personal flying equipment.

c. Fuels Branch

- (1) Increase 1 Civilian, Petroleum Supply Officer, to be Administrative Assistant to the Branch Chief for the following reasons:
 - (a) To act as Branch Chief during absences of the assigned Chief due to temporary duty trips for command-wide inspections and attendance of fuel conferences directed by Headquarters USAF or AMC.
 - (b) For stabilization and continuity of operation of this Branch and to off-set lags in operations caused by reassignment of military personnel to meet overseas commitments and constant attrition.
 - (c) To afford administrative control and surveillance over maintenance of records, reports, training, and technical policies.
 - (d) To make possible staff visits to field units for the purpose of inspection and maintenance of necessary surveillance over local policies, organizational structures, administration and technical procedures, and the proper usage of petroleum handling equipment, fixed and mobile.
 - (e) In order that the Fuels Branch may perform the above outlined functions, stabilize operations, support good sound management, and continue to improve the over-all efficiency within the Air Defense Command petroleum activities, a civilian is required who possesses a high degree of

technical training and knowledge of all phases of petroleum supply and maintenance functions. This Branch has not been able to adequately fulfill its mission in the past due to lack of sufficient personnel. With anticipated increase of operational units, it is paramount that this position receive favorable consideration to provide minimum manpower for this operation.

- (2) Increase the grade of the Chief, Fuels Branch from Major to Lt Colonel for the following reasons:
- (a) The responsibilities assigned this officer at this headquarters are sufficiently great to justify the higher rank and to bring about a rank for this position commensurate with other major air command headquarters. His responsibility, money-wise alone, covers approximately \$50,000,000 annually, which is the largest single item in the Air Defense Command budget.
 - (b) Due to the continued critical shortage of qualified petroleum officers throughout the Air Defense Command, which is due primarily to this condition existing Air-Force wide, this office is responsible for the closest of control and surveillance over the activities of fuels personnel through all echelons of command, including base operation. This close control is necessary to minimize losses of petroleum products, maintenance of efficient operating procedures, and constant training of fuels personnel.
 - (c) The above responsibilities can only be met by an officer of wide experience and through knowledge of all phases of petroleum both military and civilian. Since such experience is generally not available in the Air Force at lower grades, and in order that this headquarters can obtain and retain a qualified Staff Petroleum Officer, it is necessary that the present authorization be upgraded to the rank of Lt Colonel.

3. The Services Division of this Directorate is not authorized officer grades commensurate with the responsibilities or equal to that of the other Divisions in the Directorate. The Division Chief is a Major, the two Branch Chiefs are Captains. An increase to Lt Colonel for the Division Chief and to Major for the two Branch Chiefs is required in order to:

- a. Provide maturity and experience not usually found in officers of a lesser grade.
- b. Promote policy guidance from major command headquarters rather than on-the-job training for assigned staff officers.
- c. Permit proper and necessary recognition of job responsibilities when visiting lesser headquarters of this command and/or offices of like responsibility of other major or higher commands.

ASSISTANT FOR MATERIEL CONTROL

1. Materiel Control was established as a separate function directly under DCS/M in September 1954. It was found that under a commodity system of operation a centralized agency for over-all management and control of supply policies, procedure and documents is absolutely essential. The function was manned from within DCS/M resources. It is divided into a Materiel Management Division and a Procurement Division.

2. Six months experience with Materiel Management has demonstrated a need for a change in authorization. The more routine processing of documents and reports is not being accomplished satisfactorily. It is felt that if this were done more thoroughly, there would be a lesser requirement for officers in the analysis and control area. Accordingly, it is recommended that 1 Captain be deleted and replaced with two M/Sgts.

3. The Materiel Management Division utilizes a typist pool, consisting at present of two authorized typists. This has never been adequate to accomplish the workload. An increase of one civilian typist is required as a minimum. The following data is submitted:

- a. One additional military typist is permanently assigned as an overage. Even this does not solve the problem. Other sections are called upon to assist in typing to the maximum extent possible. Overtime is utilized on a continuing basis. In the past six months, 2191 hours of civilian overtime has been required at a cost in excess of \$5000. This overtime was specifically for typing and clerical work.

b. There are twelve technical personnel in the Division to develop typing workloads.

c. The typing pool processes approximately 3,000 pieces of correspondence per month. In addition, individual item cards are continually being prepared for use in preparing equipping documents. From these cards, duplimats are typed, processed and distributed to field organizations. ECL, MEAL, and stock list changes are also typed and distributed to field organizations.

4. The Procurement Division is presently authorized one civilian chief, one Captain, one M/Sgt, one A/IC and one civilian typist. This office has general responsibility for formulating policies, plans and procedures relative to the procurement of supplies, equipment and services for ADC and supported units; monitoring procurement practices to insure uniformity of operation; reviewing for legal sufficiency all ADC contracts over \$100,000 prior to forwarding for approval; approving all classified contracts, utility contracts, and contracts from Ent, Detachment 1 and Yuma, between \$10,000 and \$100,000; preparing and disseminating regulations, directives, procedures and other pertinent procurement information; as well as advising the Commander and his staff on matters pertaining to procurement. During the past year the workload has increased in every phase of operation. During this period the Procurement Division has negotiated, executed and administered 20 Architect-Engineer contracts and 12 contract modifications involving over \$500,000. This is almost a 100% increase over the previous A-E workload. The reviewing of ADC contracts has been a steadily increasing requirement during the past year. The AF policy of decentralizing procurement has resulted in increasing the number of line items for local purchase from 75,000 to 135,000 with a programmed increase to 250,000 items by the end of FY 57. This decentralization is producing more contracts requiring review and requiring more personnel training and supervision.

An additional workload was imposed on this Division as a result of a recent reorganization of the ADF Installations Directorate. Certain personnel and project approving authority was withdrawn from the ADFs, consequently more project reviewing is done in this headquarters. Project approval results in a construction contract of the same magnitude. The Procurement Division is expending considerable time on coordination and contract review. Since the assigned personnel have been unable to properly absorb this expanding workload, insufficient time is available to properly review contracts. This work requires specialized knowledge and experience. The workload has been assumed by the Division Chief to the detriment of other vital functions. The limited time spent on contract review and the distraction of other pressing matters tend to induce oversights of technical errors, which weaken the legal sufficiency of ADC contracts.

5. The Division workload is summarized as follows:

<u>FUNCTION</u>	<u>MONTHLY MANHOUR REQUIREMENT</u>
Assistance visits and monitor ADF activities	220
Review and correct IFBs	200
ADC staff coordination	85
Annotation of higher directives	90
Initiate and administer Master Plan contracts	120
Review ADC contracts	90
Review and compile reports	100
AMC and USAF coordination	50
Revision of ADC directives	60
Record and file contractual documents	50
Review for approval all utility contracts	30
Review A-E contracts (facility)	25
Train ADC procurement personnel	20
Monthly manhour requirement	1140

6. This leaves a deficiency of three personnel spaces. In the face of current manpower shortages only two are being requested. The two areas in which coverage is seriously inadequate are Contract Review and Field Surveillance.

a. An increase of 1 Civilian, P&C Officer, is required. His duties will be to review for legal sufficiency all ADC contracts over \$100,000 before forwarding to Hq AMC for final approval; review for final approval or disapproval all construction contracts, regardless of amount, when such review is beyond the technical capabilities of the Air Defense Forces; review for approval or disapproval all contracts over \$10,000 to be entered into by Ent AFB, Detachment 1 or Yuma County Airport; review all ADC Architect-Engineer contracts for facilities design prior to the personal manual approval by the ADC Commander; review and approve all classified contracts, numbered or unnumbered; perform after-the-fact review of all ADC numbered contracts and recommend studied reversal of air defense force approval when necessary; review all Invitations for Bids with reference to compliance with current directives, proper forms, wage rates, and clarity of technical provisions; establish, screen, and keep current the ADC contract file of approximately 526 active contracts; maintain appointment and termination file on all ADC contracting officers.

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b. An increase of 1 Captain, P&C officer, is required to provide adequate field surveillance. As a result of criticism of this command by the IG, USAF, for failure to properly inspect/supervise procurement functions at lower levels, this headquarters requested AMC to provide a team to survey our situation. This team, composed of an officer from the IG, AMC and a civilian procurement specialist, recommended that the procurement function at this and Air Defense Force headquarters be augmented to provide for additional staff visits. DCS/M supervision rather than IG inspection was recommended as the solution to our problem. Present scheduling of the personnel in the Procurement Division will permit a complete cycle of staff visits every seven years. The addition of one officer will permit a visit to each base once each year.

DIRECTOR OF ELECTRONICS SUPPLY AND MAINTENANCE

1. Three factors have led to an increased workload in this function during FY 1955.

a. Transfer of the current staff responsibility for supply and maintenance of the SAGE System development from the ADES group.

b. Expansion of the current system as regards equipment and numbers and diversity of units.

c. Increased requirements for TDY at ADC units and other commands and civilian agencies. This is compounded by the time lost in travel; a two day visit means three to four days lost from this headquarters. About 25% of the manhours available to the Directorate are spent on temporary duty.

2. An increase of 1 Major (3016) in the Maintenance Division and 1 Major (6416) in the Supply Division is required to meet the requirements of the SAGE System. The magnitude of this system is discussed in Inclosure #1. The responsibility for staff planning and supervision of all electronic supply and maintenance falls upon these divisions. The present workload is in coordinating the integration into the present system of the equipments to be ultimately used in SAGE, transition to SAGE and the development with AMC and the contractors of the supply and maintenance procedures, etc., connected with the computer.

3. In addition to SAGE, the workload of the Directorate is increasing proportionately to the expansion of the present system and the installation of new equipments. The expansion in M-Sites, Gap-Fillers, Texas Towers, AEW&Con, and back-up equipment for P Sites is

proceeding rapidly. The coordination of actions for planning, installing, maintaining and supplying new equipments (FPS-6, FPS-8, MPS-11, MPS-14, FPS-14, PSA-8, PSA-10) is increasingly heavy.

4. An increase of 1 Major (3016) is required in the Maintenance Division based upon a generally expanded workload. In addition to the items in paragraph 3 above, the following new or increased functions have developed during FY 1955:

a. Implementing, supervising and evaluating the "Chidlaw Plan" for on-site contractual maintenance of AC&W weapons systems. This involves placement of a group of civilian maintenance personnel at each site to assist and train military personnel. In FY 1956 this will comprise 600 contractual personnel at a cost of over 5 million dollars.

b. Preparing, implementing, and supervising the accomplishment of master schedules for depot over-haul, radome painting, and major modifications to radar and communications equipment.

c. Increased supervision of the installation of all radar and communications equipment at AC&W sites, of wire maintenance and of the maintenance of PRE, UPA-37 and 15-J1C Training equipment.

d. Active supervision of the maintenance of ground terminal communication facilities for AEW&Con and Picket Ship operations.

e. Increased supervision of maintenance actions on IFF equipment due to the new Selective Identification Features.

5. An increase of 1 Major (6416) and 1 T/Sgt (64173) is required in the Supply Division. In addition to the increased workload indicated in paragraph 3 above, the new functions listed below were assumed during FY 55.

a. Accounting for the radar and communications systems installed at each AC&W site. Notwithstanding the length of time our P-Sites have been in existence, the accountability for approximately 20% of this equipment still has not been terminated from the installing Air Materiel Area and picked up by the individual sites. To preclude this happening in the M-Program, a new system of accountability has been devised by this directorate and has been accepted by Air Materiel Command. A form, based on AF Form 263, has been devised for each complete system at an AC&W site. The master records and control will be maintained by the Supply Division of this directorate.

b. Controlling the AFSDs established for each new M-Site. This entails maintaining a master record of every AFSD established, the Air Materiel Command assembly point, the status of completeness

of each AFSD (including every BCM applicable to a particular AFSD), to insure completed supply action prior to date site is scheduled to become operational. This action has been taken to minimize incomplete equipment arriving at a site, shortage of test equipment and special tools, and shortage of spare parts, as was experienced in the P-Program.

c. Establishing initial level of spares at electronic support bases, for new equipment. This entails forecasting aggregate new equipment requirements to electronic support bases, providing the applicable Table 16s, and insuring that requisitioning action is accomplished or automatic distribution by AFSD is made.

d. Central procurement and regulation of critical spare parts.

e. Control of critical items furnished by contractors under the provisions of T.O. 00-16-1E-2 and -3.

f. Follow-up beyond depot actions to Air Materiel Command procurement and factory production.

HQ SQUADRON SECTION

1. At the February 1954 meeting of the Functions and Manning Review Board, the Headquarters Squadron Section voluntarily reduced its authorizations by 3 airmen. This reduced strength to the minimum number believed necessary to administer the squadron with its then current strength and workload. The authorization at that time was for 528 airmen against an assigned strength of 484. With the advent of Project Guidance and the availability of recruits from basic training etc., an increase in assigned strength came about. At the present time the authorization is 548 against an assigned strength of 556. Many of the personnel received have not been qualified for effective performance of duty and an extensive training program has been initiated. At the present time the effective assigned strength is approximately 510, with the remainder undergoing extensive training.

2. One of the spaces released last year was in Unit Supply. Since that time some 1000 weapons have been procured for the personnel of this headquarters. These weapons must be accounted for, stored and maintained. About 23,500 rounds of ammunition must be stored. Over 500 field packs, mess kits, helmets, etc., have been procured and must be kept on hand at all times. This squadron plays a part in the base defense plan and is in a state of readiness at all times. The Headquarters Squadron does not have a Supply Officer assigned and does not desire one. A N/Sgt has been placed in charge and is accountable in accordance with AF Manual 67-1. He, with one assistant, is unable to assume the added workload. An increase of 1 A/IC is required.

3. An increase of 3 S/Sgts and 1 A/IC is required in the area of Personnel and Training. The increase in workload generated during FY 1955 is illustrated by the following data on manhours required to comply with specific new directives or programs:

	<u>Manhours Per</u> <u>Month</u>
a. Airman's Performance Reports (AFR 39-62)	51
b. Cost Coding of C&A Lists (AFM 171-6)	35
c. Two pays per month (AFM 173-20)	45
d. <u>OJT Program</u> . The squadron commander is required to initiate and supervise the OJT program involving some 400 airmen. This program has been newly emphasized during FY 1955 by Headquarters USAF resulting in publication of ADC Manual 52-1, going far beyond the previous requirements. The minimum requirement to properly execute the program is one NCOIC, one airman	

Incl #4
Tab J

	<u>Manhours Per</u> <u>Month</u>
to maintain OJT records and monitor changes in personnel records in the squadron, and one airman in the headquarters proper to monitor the maintenance of records and the conduct of the program. This is aside from the increased workload in unit personnel record keeping and the officer supervision required. The time of three airmen is submitted as the requirement.	420
e. The present emphasis on reenlistment is well known and documented by directives too numerous to mention. The preparation and processing of letters, forms and charts has required the assignment of an airman to the job as a primary duty. About half his time is now available for other work.	70
f. Concurrent movement of dependents to overseas areas (AF Regulation 75-26).	20
g. Overseas Volunteer Program (AFR 35-39).	16
h. Mortgage Insurance (AFR 34-65).	10
	<hr/> 667

4. The present officer authorization of the Headquarters Squadron Section is 1 Lt Colonel, Commander, and 1 Major, Personnel Officer. The workload of the commander has increased to the point where an additional Captain is required as an Adjutant.

a. A study was made of one month's reenlistment workload. The commander was required to conduct the following interviews based upon various directives:

Interview on arrival in organization.	55
Interview one year prior to ETS.	33
Interview six months prior to ETS	9
Interview 90 days prior to ETS	13
Interview 30 days prior to ETS	45

155

A satisfactory interview should consume at least 30 minutes. Obviously these could not be of that duration, to the detriment of the reenlistment rate of the Air Force. The interviews are supplemented by letters to the wife and/or parents of each individual, and letters to the individual subsequent to separation in the case of those declining to reenlist. It is anticipated that throughout the period of one year, the commander will process some 2500 personal letters to families of squadron personnel. It has been directed that these letters all be original and personal.

b. The commander is initiating and supervising the OJT program within his limited capability. This program has been planned and developed to the point where it can and will pay real dividends if properly executed. It is impossible for the commander to give it the attention it deserves. This would be a duty of the additional officer.

c. Disciplinary problems at this level of command are of the greatest sensitivity. It is necessary for the commander to spend an extraordinary amount of time in preventing incidents or publicity on incidents which might bring discredit to the Commander, ADC. This squadron is one of the largest in the entire Air Defense Command, being considerably larger than the average squadron. Consequently, a great many personal problems are brought to the commander and these he must interest himself in both from a moral and official standpoint. Also, the complexity of operating a major air command headquarters necessitates that the squadron commander maintain constant liaison with many high ranking staff officers. He must enter into many functions at base level, as Headquarters ADC is actually a tenant on Ent Air Force Base. The items outlined prevent the commander from giving his personal attention to many things normally handled by a squadron commander.

d. The current authorization of two officers for a squadron of this size is now considered to be inadequate, and the addition of an Adjutant would permit proper supervision of the OJT program and relieve the commander of sufficient administrative details to permit his concentrating upon those which can and must be performed by him alone.

ESTABLISHMENT OF ADC EXPERIMENTAL WING (SAGE)

1. On or about 1 June 1955, an Air Defense Wing will be organized at Lincoln Laboratories, Lexington, Massachusetts. The mission of the wing will be twofold. First, it will provide operational guidance to ARDC in the operation of the Experimental SAGE Subsector (XD-1, Simplex) and secondly, provide computer programs for SAGE Combat Centers and Direction Centers, which includes adaptation and revision of the master computer program and the provision of synthetic air defense situation data for use in systems training required for each computer installation.

2. The phased personnel requirements are displayed at the end of this discussion. The initial establishment of the Wing Headquarters at Lexington (for XD-1) will be immediately followed by establishment of a detachment at Santa Monica, California (for master computer programming). Increments of personnel follow for (a) Adaptation of the master program to sites (b) Revision of the program (c) Expanded liaison requirements at Syracuse, New York. The Command and Administrative elements move to Santa Monica with phasing out of the experimental mission at Lexington in 1st Qtr FY 58. At this time it is necessary to increase administrative support to accommodate the situation at Syracuse.

3. Personnel requirements were derived from the organizational plan approved by the ADC Command Council. Further information on this concept will be forwarded to your headquarters through normal channels. The major portion of the effort is in the hands of civilian contractors. The ADC wing will satisfy the requirements for ADC participation. These requirements are included as a part of this review because of their relationship to the other explanations of the SAGE System contained herein. The initial requirements for the wing were referred to and approved by the Functions and Manning Review Board.

4. Current requirements for space authorizations, in view of the lead time involved, extend through 2nd Qtr FY 56. The monthly requirement is shown below. Initial personnel assignments are being made from within the resources of this command in accordance with this schedule. It is requested that spaces be made available at the earliest possible time in order to realign command personnel requisitioning.

	<u>JUNE 55</u>	<u>JULY 55</u>	<u>SEPT 55</u>	<u>DEC 55</u>
Colonel	2	1	1	
Lt Colonel	5	2		3
Major		3		
Captain	1			
TOTAL OFFICERS	<u>8</u>	<u>6</u>	<u>1</u>	<u>3</u>
T Sgt	1			
S Sgt	2			
A/IC	1			
TOTAL AIRMEN	<u>4</u>			
Civilians (Graded Ph58)	3			

5. The specific functions of the wing follow:

a. Confirm, modify and develop operational procedures for use in the operational subsectors.

b. Confirm, modify and develop personnel requirements and operating positions devised during the development stage for inclusion in the operational subsectors.

c. Aid in the operation of the system to design capacity to verify the assumptions used in developing the system application to air defense.

d. Develop and test procedures for operation of manual and SAGE Systems simultaneously. This will provide the methods required for the operational overlap period which will exist in each subsector.

e. Devise OJT procedures for use in operational subsectors.

f. Provide all ADC Wings and Air Divisions with synthetic air defense problems and data for installation, maintenance, system test and operational proficiency training purposes as required.

g. Keep all operational computer programs up-to-date with operational experience and new tactics or techniques.

h. Keep all Wings and Divisions standard on data reduction and analysis for day-to-day operation and training.

i. Keep all operational system diagnostic practices and computer programs standardized and up-to-date.

j. Provide adapted master computer programs for each SAGE site to be used by ADES in system test and also for subsequent ADC operation. This task is amplified as follows:

(1) Adapted master computer programs for McGuire, Stewart and Syracuse will be prepared by Lincoln in conjunction with this organization.

(2) Advance cadres of each operational wing and Air Division will be trained by this organization. For the first three sites these cadres will be the ADC contingent of the ADES System Test and Evaluation effort. These cadres will provide the operational design of each additional sector and subsector which is essential to the adaption function.

k. Provide technical computer programming assistance to each Wing and Air Division cadre during system test and evaluation. This assistance may be required for some period during initial military air defense operation.

l. Maintain close liaison with ADC Headquarters for policy and operational guidance.

6. Factors considered in the development of the organization and personnel requirements of the wing were:

a. Complete systems testing prior to installation cannot be accomplished and meet the compressed installation schedule of the SAGE System. However, XD-1 was placed into the program to provide the Air Force with a facility that would enable retrofit changes to be introduced into the production equipment as rapidly as possible. In order to insure that the changes required reflect the operational desires of the using command, representation by the using command in the operation of XD-1 is required.

b. A proper time phasing of functions listed in paragraph 5 is necessary to insure compatibility of the tasks and also provide sufficient time to meet operational dates.

c. The training and programming tasks should be accomplished by maximum use of contractual personnel keeping additional military personnel to a minimum.

d. The effort of the System Training Program for the manual system will decrease; however, a more sophisticated and larger effort with extensive computer facilities will be required for SAGE.

e. Maximum centralization of programming effort is required due to the technical facilities, the high skill of the personnel, and the necessity for control of standard operations.

f. The time available to perform all of the functions assigned the Wing is extremely short.

g. Maximum continuity in coordinating, planning and implementation of the SAGE program is required.

h. The sequence of actions for time phasing of personnel requirements for the Wing are as follows:

- (1) Initial personnel for Experimental SAGE Subsector must be in place by 1 June 1955.
- (2) Total complement for Experimental SAGE Subsector required by 1 December 1955.

- (3) Initial personnel for programming must be in place at Santa Monica by July 1955.
- (4) Additional personnel required will be phased according to the time requirement for the adaptation and revision functions and work initially at Lincoln Laboratory with eventual movement to Syracuse.
- (5) Total complement will eventually be 38 officers to be located at Santa Monica and Syracuse.
- (6) Experimental SAGE Subsector functions probably will not be required after September 1957.

1. Personnel requirements reflect the minimum grades necessary to acquire the skills and experience necessary to carry out the project and establish the proper relationship with the contractors involved.

PHASED PERSONNEL REQUIREMENTS

4--- AIR DEFENSE WING (XXXX)

EXPERIMENTAL SUBSECTOR

Job Title	Rank	AFSC	FY-55				FY-56				FY-57				FY-58				
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Commander	Col	0066		x			x	x	x	x	x	x	x	x					
Deputy Commander	Col	0066					x	x	x	x	x	x	x	x					
D/O	Col	0036		x			x	x	x	x	x	x	x	x					
D/P	L/Col	0016		x			x	x	x	x	x	x	x	x					
D/M	L/Col	0046						x	x	x	x	x	x	x					
C&E Stf Officer	L/Col	3016		x			x	x	x	x	x	x	x	x					
Tech Func Off	L/Col	3016		x			x	x	x	x	x	x	x	x					
Ops Func Off	L/Col	1616		x			x	x	x	x	x	x	x	x					
Ops Stf Off (F)	L/Col	1416		x			x	x	x	x	x	x	x	x					
Arm Stf Off (M)	L/Col	3216						x	x	x	x	x	x	x					
Combat Int Off	L/Col	2016						x	x	x	x	x	x	x					
Admin Officer	Capt	7024		x			x	x	x	x	x	x	x	x					
Admin Supv.	T/Sgt	70270		x			x	x	x	x	x	x	x	x					
Pers Specl.	S/Sgt	73251		x			x	x	x	x	x	x	x	x					
Stat Specl.	S/Sgt	60150		x			x	x	x	x	x	x	x	x					
Clerk	A/IC	70250		x			x	x	x	x	x	x	x	x					
Secretary	GS-4	70252		x			x	x	x	x	x	x	x	x					
Secretary	GS-4	70252		x			x	x	x	x	x	x	x	x					
Secretary	GS-3	70252		x			x	x	x	x	x	x	x	x					
<u>COMPUTER PROGRAMMING</u>																			
Commander	Col	0066															*	*	*
Deputy Commander	Col	0066															#	#	#
Dir, Ops	Col	0036					*	*	*	*	*	*	*	*	*	*	*	*	*
Dir of Trng	L/Col	7516					*	*	*	*	*	*	*	*	*	*	*	*	*
Trng (AC&W)	Maj	1616					*	*	*	*	*	*	*	*	*	*	*	*	*
Training (W)	Maj	1416					*	*	*	*	*	*	*	*	*	*	*	*	*
Air Sit. Chief	L/Col	1416					*	*	*	*	*	*	*	*	*	*	*	*	*
Air Sit. Officer	Maj	1616								*	*	*	*	*	*	*	*	*	*
Sys Trng Prog	Maj	1644					*	*	*	*	*	*	*	*	*	*	*	*	*
Ops Evaluation	Maj	1616								*	*	*	*	*	*	*	*	*	*
SAGE Prog Chief	L/Col	0036							x	x	x	x	x	x	x	#	#	#	#
Adaptation Co.	L/Col	1616							x	x	x	x	x	x	x	#	#	#	#
Asst Chief	L/Col	1416							x	x	x	x	x	x	x	#	#	#	#
Tech Func. Off.	Maj	3016							x	x	x	x	x	x	x	#	#	#	#
Ops Func. Off.	Maj	1616							x	x	x	x	x	x	x	#	#	#	#
Ops Functions	Maj	1416							x	x	x	x	x	x	x	#	#	#	#
Arm Stf Off (M)	Maj	3216								x	x	x	x	x	x	#	#	#	#
Comp Prog Engr	Maj	8626								x	x	x	x	x	x	#	#	#	#

Job Title	Rank	AFSC	FY-55				FY-56				FY-57				FY-58			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Comp Prog Engr	Maj	8626									x	x	x	x	x	#	#	#
Comp Prog Engr	Maj	8626									x	x	x	x	x	#	#	#
Comp Prog Engr	Capt	8626											x	x	x	#	#	#
Comp Prog Engr	Capt	8626											x	x	x	#	#	#
Comp Prog Engr	Capt	8526											x	x	x	#	#	#
Revision Chief	L/Col	1616									x	x	x	x	x	#	#	#
Asst Chief	L/Col	1416									x	x	x	x	x	#	#	#
Tech Functions	Maj	3016									x	x	x	x	x	#	#	#
Ops Functions	Maj	1416									x	x	x	x	x	#	#	#
Ops Functions	Maj	1616									x	x	x	x	x	#	#	#
Arm. Stf Off (M)	Maj	3216									x	x	x	x	x	#	#	#
Comp Prog Engr	Maj	8626									x	x	x	x	x	#	#	#
Comp Prog Engr	Maj	8626									x	x	x	x	x	#	#	#
Comp Prog Engr	Capt	8626											x	x	x	#	#	#
Comp Prog Engr	Capt	8526											x	x	x	#	#	#
Opr Comp Prog L	Maj	1416													#	#	#	#
Opr Comp Prog L	Capt	1644													#	#	#	#
Opr Comp Prog L	Capt	1644													#	#	#	#
Admin Officer	Capt	7024													*	*	*	*
Admin Officer	Lt	7024													#	#	#	#
Admin Supv.	T/Sgt	70270													*	*	*	*
Prog Specl.	S/Sgt	73251													*	*	*	*
Stat. Specl.	S/Sgt	68150													*	*	*	*
Clerk	S/Sgt	70250													#	#	#	#
Clerk	A/IC	70250													*	*	*	*
Secretary	GS-4	70252													*	*	*	*
Secretary	GS-4	70252													#	#	#	#
Secretary	GS-3	70252													#	#	#	#
Secretary	GS-3	70252													#	#	#	#
Secretary	GS-3	70252													#	#	#	#
Secretary	GS-3	70252													#	#	#	#
TOTALS:			FY-55				FY-56				FY-57				FY-58			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Officers	8	15	18	18	24	38	38	41	43	46	38	38	38					
Airmen	4	4	4	4	4	4	4	4	4	4	5	5	5					
Civilians	3	3	3	3	3	3	3	3	3	3	6	6	6					
- Lexington																		
* - Santa Monica																		
# - Syracuse																		
NOTE:		Subsequent yearly personnel requirements continue as per 4 FY-58 totals.																

FILE NUMBER 551-10

483

ADONO

10 Aug 54

SUBJECT: Review of ADC Headquarters Manning Requirements

TO: Commander (IDENTICAL LETTERS SENT TO
Western Air Defense Force COMDIS EADF AND CADF)
Hamilton Air Force Base
Hamilton, California

1. On 1 March 1954 this headquarters completed the ADC Headquarters Functions and Manning Review. The final report of this study to USAF (additional copies of which are being distributed to your headquarters) indicated that there would be possible future increases to the manpower figures contained in the study resulting from such considerations as:

- a. Programmed expansion of ADC forces and other activities.
- b. Directives initiated by Hq USAF which require the addition of manpower.
- c. Future ADC command structure reorganization.

2. In view of the long lead time required to acquire additional manpower spaces from Hq USAF, it is considered that a review of our requirements is desirable at this time for the manning of Air Defense Force and Air Division Headquarters. Accordingly, you are requested to review these manning requirements as they apply to the 4th Quarter, FY 1955. Your recommendations should arrive at this headquarters by 15 October 1954.

3. Factors which govern your review are:

- a. Adjustments must be justified on the basis of circumstances which apply subsequent to completion of the previous ADC Hq Functions and Manning Review. This headquarters will not approve items which involve reconsideration of prior requests excepting in unusual circumstances in which experience has shown that manning authorized by the 26 February report to Hq USAF has proven to be demonstrably deficient.

Hq ADC ADOMG Subj: Review of ADC Hq Manning Requirements

b. Justification for adjustments must identify the directive which is generating (or will generate) new functions/workload, or the reasons for expansion of existing functions/workload. In addition, complete justification and background which is pertinent as substantiation for recommended adjustments is required.

c. As outlined in directives governing your previous study, your recommendations for adjustments are to be limited to those considered the minimum required to effectively carry out essential functions.

d. The December 1954 Tables of Distribution will be the basis from which adjustments will be recommended. These T/Ds will be distributed during August 1954.

4. This headquarters will convene the Hq ADC Functions and Manning Review Board as the medium for reviewing your recommendations. It is requested that such a board be appointed at Hq Air Defense Force level to review your recommendations prior to forwarding to this headquarters.

5. It is not planned to request your representatives to meet at this headquarters to discuss the results of your review.

6. A specific format for registering the results of your study is not being directed. However, it is requested that your material be forwarded in thirty (30) copies, to avoid the necessity for repetitive reproduction in this headquarters.

BY ORDER OF THE COMMANDER:

MARSHALL S. ROTH
Brigadier General, USAF
Acting Chief of Staff

704 7 December 1954

PERSONNEL AUTHORIZATIONS FOR HQ ADC APPROVED BY THE CHIEF OF STAFF
EFFECTIVE FOR December 1954 REPORTING Report #55-4

TITLE	TOT OFF	GEN	COL	LT COL	MAJ	CAP	LT	W O	TOT AMN	M/S	T/S	S/S	A/1	A/2	A/3	TOT CIV	GR
Commander	3	1	1		1				1		1					2	2
Deputy Commander	(23)	(1)	(1)	(7)	(7)	(3)	(1)		(9)	(3)	(2)	(3)	(1)			(6)	(6)
O/V/Commander	2	1			1											1	1
Ass't/Programming	5		1	3		1			2		1	1				2	2
Ass't/Flt Safety	6		1	2	1	1	1		5	2	1	1	1			2	2
Proj Gp/ADES	8		1	2	4	1			2	1		1				1	1
Lincoln Proj LN	2		1		1												
Chief of Staff	2	1			1				1	1						1	1
Command Surgeon	9	1	3	1	4				5	1	1	2		1		4	4
Command Chaplain	3		1	1			1		2	1		1				1	1
Command Insp Gen	(23)	(1)	(2)	(8)	(10)	(2)			(28)	(15)	(3)	(8)	(2)			(5)	(5)
O/Insp Gen	2	1		1					1	1						1	1
Provost Marshall	6		1	1	3	1			9	2	2	3	2			2	2
D/Insp Svcs	15		1	6	7	1			18	12	1	5				2	2
Command Adjutant	(10)		(1)	(3)	(3)	(2)		(1)	(77)	(8)	(8)	(21)	(27)	(11)	(2)	(11)	(10)
D/Comd Adj	2		1	1												1	1
D/Admin	6			1	2	2		1	5	6	5	12	19	7	2	7	7
D/F	2			1	1				26	2	3	9	8	4		3	2
Chief of Info Svcs	(8)		(1)	(1)	(4)	(2)			(9)	(3)	(2)	(2)	(2)			(9)	(9)
D/Info Svcs	5		1	1	2	1			5	2	1	1	1			2	2
D/Internal Info	1			1												2	2
D/Historical Svcs									3		1	1	1			5	5
D/Public Info	2				1	1			1	1							
Command Staff JA	4		1	2	1				3	1		1	1			2	2
S/C	(22)	(1)	(5)	(4)	(7)	(3)		(2)	(94)	(12)	(13)	(18)	(25)	(26)		(64)	(64)
D of the Deputy	3	1	1		1				3	1		1	1			1	1
D/Mgt Analysis	6		1	2	2			1	15	3	3	5	3	1		10	10
D/Bud & Acctg	4		1	1	2				6	2	3		1			29	29
D/Stat Svcs	7		1	1	2	3		1	66	5	5	12	19	25		22	22
D/Finance	2		1	1					4	1	2		1			2	2
S/P	(31)	(1)	(5)	(11)	(11)	(2)		(1)	(49)	(13)	(9)	(20)	(7)			(36)	(36)
D of the Deputy	3	1	1						1	5		1	2	2		1	1
D/Civ Pers																7	7
D/Pers P&R	5		1	3	1				3	2		1				2	2
D/Mil Pers	13		1	4	6	2			23	8	4	9	2			11	11
D/Pers Svcs	4		1		3				8	1	1	4	2			8	8
D/Grd Safety									2	1		1				3	3
D/Eng	6		1	4	1				8	1	3	3	1			4	4

	TOT OFF	GEN	COL	LT COL	MAJ	CAP	LTW	O	TOT AMN	M/S	T/S	S/S	A/B	A/2	A/3	TOT CIV	BR
CS/Intel	(30)	(1)	(4)	(6)	(3)	(6)			(23)	(7)	(11)	(6)	(5)			(17)	(17)
Chief of the Deputy	4	1	1	1		1			4	1	1	1	1			2	2
D/Operl Intel	12		1	2	7	2			8	2	3	1	2			4	4
D/Intel Rqrs	6		1		3	2			9	2	3	2	2			7	7
D/Rsch & Ests	8		1	3	3	1			8	2	4	2				4	4
CS/O	(174)	(3)	(17)	(28)	(51)	(13)	(2)		(137)	(27)	(16)	(21)	(58)	(12)		(61)	(61)
Chief of the Deputy	3	2		1					1	1						1	1
D/Civil Air Def	5		1	2	1	1			2			1	1			4	4
D/Dpr & Ing	34		4	7	20	3			8	2	3	3				9	9
Combat Opr Cen	13		1	1	6	5			8	8	7	8	50	10		1	1
D/M&O	10		2	4	4				11	7	2	1	1			9	9
J/Plans & Rqr	30		7	9	12	1	1		8	1	1	5		1		5	5
D/C&E	18	1	2	4	8	3			20	7	4	5	3	1		15	15
Ops Analysis	1						1		4	1	2	1				17	17
CS/M	(92)	(1)	(7)	(6)	(38)	(30)			(69)	(35)	(7)	(14)	(11)	(2)		(144)	(144)
Chief of the Deputy	5	1	1	1	1	1			6	3		2	1			3	3
Ass't/Loc Plans	8		2	2	1	1			4	1	1	1	1			1	1
Ass't Mat Con	8				2	6			8	4	1		3			7	7
J/Aircraft	35		1	4	16	14			18	13		2	2	1		13	13
J/Elct	12		1	4	3	4			6	3		1	2			5	5
J/Gen Sup & Svcs	12		1	2	6	3			16	10	1	3	1	1		10	10
J/Instls	12		2	3	6	1			11	1	4	5	1			105	105
Sq Section	2			1	1				19	3	2	5	5	4			
TOTAL	376	12	52	89	152	63	4	4	532	130	75	125	144	56	2	363	362

REMARKS:

- This report supersedes all previous reports.
- In addition to the authorizations shown above, the following civilian coverages are approved:

	FUNCTION
a. General Supply, Services & Transportation DCS/M Steno 70252	42000
b. Air Installations DCS/M Steno 70252	39000
c. Plans & Requirements DCS/O Analy O 6746	27000.27
- Approved changes in authorizations for this report and subsequent months are itemized on attached pages.

George F. Smith
 GEORGE F. SMITH
 Major General, USAF
 Chief of Staff

CG Hq-O-M&O Form 33
 September 1954
 Enclosure

80
486
CONTINENTAL AIR DEFENSE COMMAND
CENTRAL AIR FORCE BASE
COLORADO SPRINGS, COLORADO

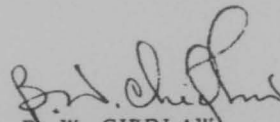
OFFICE OF THE COMMANDER-IN-CHIEF

28 May 1955

MEMORANDUM TO: All Personnel, Headquarters Continental Air
Defense Command

Upon the eve of my retirement from active military service, I wish to express to each and every member of the Continental Air Defense Command my sincere thanks for the intense drive and personal effort you have put forth toward achieving and maintaining an adequate air defense capability for our country.

Your understanding, your perseverance, your loyalty and devotion to duty have helped to overcome many of those frustrating and vexatious problems so inevitable in the build-up of an organization as large and complex as CONAD must be to carry out its mission. I am grateful for the splendid team-play spirit all elements of CONAD have shown in working closely together, and I say good-bye to you knowing that you will carry on and ever improve the defenses of this grand old country we love. I am proud to have had the privilege of serving as your Commander and shall remember you with respect and deep affection. God bless you and may He watch over you always.


B. W. CHIDLAW
General, USAF
Commander-in-Chief

PUBLIC INFORMATION OFFICE
 HEADQUARTERS CONTINENTAL AIR DEFENSE COMMAND
 Ent Air Force Base
 Colorado Springs, Colorado

487

GENERAL EARLE E. PARTRIDGE, USAF

Earle Everard Partridge was born at Winchendon, Massachusetts, on July 7, 1900. He enlisted in the Army July 10, 1918, at Fort Slocum, New York, and was assigned to the Fifth Engineer Training Regiment at Camp Humphries, Virginia. General Partridge went to France in August 1918, and served in the Argonne offensive with the 79th Division. When the division returned to Camp Dix, New Jersey, in June 1919, he was honorably discharged.

Following a year at Norwich University, General Partridge reenlisted in June 1920. A year later he was appointed to the U. S. Military Academy, was graduated June 12, 1924, and commissioned a second lieutenant of Air Service in the Regular Army. Entering Primary Flying School at Brooks Field, Texas, he was graduated from Advanced Flying School at Kelly Field, Texas. After serving ten months in the Third Attack Group there he was appointed as Instructor at the Advanced Flying School there in July 1926. He became an instructor in mathematics at the Military Academy in September 1929.

Going to the Panama Canal Zone in October 1930, he was assigned to the Seventh Observation Squadron at France Field, and was later transferred to the Sixth Composite Group there.

In December 1932, General Partridge was assigned to Selfridge Field, Michigan, and in July 1936, went to Wright Field, Ohio, as a test pilot. Entering the Air Corps Tactical School at Maxwell Field, Alabama, in September of that year, he was graduated the following June, and was assigned to the Command and General Staff School at Fort Leavenworth, Kansas. He then returned to Maxwell Field as an instructor in the Pursuit Section of the tactical school. Transferring to the Southeast Air Corps training command in June 1940, he took a major part in establishing flying schools in the Southeast. On October 1, 1940, he was sent to Barksdale Field at Shreveport, Louisiana, to start an advanced single-engine flying school. He went to Dothan, Alabama, in May 1941, to supervise construction of the single-engine advanced flying school there.

Five months later he was assigned to Air Force headquarters as a member of the Air War Plans Division, and in March 1942, was made a member of the War Department General Staff to serve on the Joint Strategic Committee, Joint Chiefs of Staff. He assumed command of the New York Air Defense Wing in January 1943.

The following Spring he joined the Northwest African Air Force as operations officer and chief of staff of the 12th Bomber Command and later became chief of staff and deputy commander of the 15th Air Force. In January 1944, General

(MORE)

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Partridge moved to England and became deputy commander of the Eighth Air Force, and the following June assumed command of the Third Bombardment Division. At the close of hostilities in the European theater, General Partridge became deputy commander, and later assumed command, of the Eighth Air Force and assisted in its reorganization and movement to Okinawa in August 1945.

Returning to Air Force headquarters in January 1946, he became Assistant Chief of Staff for Operations. In October of the following year he was appointed Director of Training and Requirements in the office of the Deputy Chief of Staff, Operations, there. Assigned to the Fifth Air Force at Nagoya, Japan, in August 1948, he assumed command the following October, and took the Fifth to Korea in July 1951.

General Partridge was named acting commanding general of the Air Research and Development Command at Wright-Patterson Air Force Base, Ohio, in June 1951, and on July 28, 1951, was designated commanding general of that Command, which had moved to Baltimore, Maryland. He became Deputy Chief of Staff, Operations, at Air Force headquarters, on June 30, 1953.

On April 1, 1954, General Partridge assumed command of the Far East Air Forces, at Tokyo, Japan.

On June 1, 1955 the General assumed command of the Continental Air Defense Command at Colorado Springs, Colorado, at that time the only truly unified all-services organization operating within the limits of the United States.

His decorations include the Distinguished Service Medal, Legion of Merit, Distinguished Flying Cross, Bronze Star Medal, and the Air Medal with three Oak Leaf Clusters. For his service in the Korean campaign he was also awarded the Distinguished Service Cross, Silver Star, two Oak Leaf Clusters to the DFC, and seven Oak Leaf Clusters to the Air Medal. His foreign decorations include the French Legion of Honor and Croix de Guerre with two Palms; the Polish Order of Polonia Restituta, Chevalier, with Commander's Cross with star; the British Companion of the Order of the Bath; and the Belgian Croix de Guerre with Palm. General Partridge won the Distinguished Aerial Gunner's Medal in 1926, 1927, and 1928. He is rated a command pilot, combat observer, and aircraft observer.

General Partridge married Miss Katherine L. Holder on January 27, 1928. They have two daughters, Patricia Earle and Kay Blythe.

PROMOTIONS

He was promoted to first lieutenant December 15, 1928, to captain (temporary) April 20, 1935; to captain (permanent) August 1, 1935; to major (temporary) March 11, 1940; to major (permanent) June 12, 1940; to lieutenant colonel (temporary) November 15, 1941; to colonel (temporary) March 1, 1942; to brigadier general (temporary) December 9, 1942; to major general (temporary) May 31, 1944; to brigadier general (permanent) February 19, 1948; to major general (permanent) June 11, 1948; to lieutenant general (temporary) April 11, 1951; to general (temporary) April 1, 1954.

END

to date as of June 1, 1955.

485 7111
21 June 1955

PERSONNEL AUTHORIZATIONS FOR HQ ADC APPROVED BY THE CHIEF OF STAFF
EFFECTIVE FOR JUNE 1955 REPORTING REPORT #55-8

TITLE	TOT OFF	GEN	COL	LT COL	MAJ	CAP	LT	WO	TOT AMN	M/S	T/S	S/S	A/1	A/2	A/3	TOT CIV	GR	ORG COD
Commander	4	1	1		1	1			5	4		1				2	2	01
Deputy Commander	(25)	(1)	(4)	(8)	(7)	(4)	(1)		(9)	(3)	(2)	(3)	(1)			(6)	(6)	02
Adjutant/Commander	2	1			1											1	1	03
Asst't/Programming	5		1	3	1				2		1	1				2	2	04
Asst't/Flt Safety	6		1	2	1	1	1		5	2	1	1	1			2	2	05
Proj Gp/ADES	10		1	3	4	2			2	1		1				1	1	06
Lincoln Proj LN	2		1		1													07
Chief of Staff	2	1			1				2	1		1				1	1	12
Command Surgeon	9	1	4	1	3				6	1	1	2		2		4	4	16
Command Chaplain	3		1	1				1	2	1		1				1	1	19
Command Insp Gen	(23)	(1)	(2)	(6)	(10)	(2)			(28)	(15)	(3)	(8)	(2)			(5)	(5)	22
Deputy Insp Gen	2	1		1					1	1						1	1	23
Provost Marshall	6		1	1	3	2			9	2	2	3	2			2	2	24
Deputy Insp Svcs	15		1	6	7	1			18	12	1	5				2	2	25
Command Adjutant	(10)		(1)	(3)	(3)	(2)			(1)(78)	(8)	(9)	(21)	(27)	(11)	(2)	(11)	(10)	28
Deputy Comd Adj	2		1	1												1	1	29
Adjutant	6			1	2	2		1	52	6	6	12	19	7	2	7	7	30
Adjutant	2			1	1				26	2	3	9	8	4		3	2	31
Chief of Info Svcs	(8)		(1)	(1)	(4)	(2)			(9)	(3)	(2)	(2)	(2)			(4)	(9)	34
Deputy Info Svcs	6		1	1	2	2			6	2	2	1	1			2	2	35
Internal Info	1				1											2	2	36
Historical Svcs									2			1	1			5	5	37
Public Info	1				1				1	1								38
Command Staff JA	4		1	2	1				3	1		1	1			2	2	41
S/C	(23)	(1)	(5)	(4)	(7)	(4)		(2)	(94)	(12)	(13)	(18)	(25)	(26)		(76)	(76)	44
Deputy of the Deputy	3	1	1		1				3	1		1	1			1	1	45
Mgt Analysis	6		1	2	2			1	15	3	3	5	3	1		10	10	46
Bud & Acctg	4		1	1	2				6	2	3		1			4	4	47
Stat Svcs	7		1		2	3		1	66	5	5	12	19	25		22	22	48
Finance	3		1	1		1			4	1	2		1			2	2	49
S/P	(37)	(1)	(5)	(2)	(13)	(5)		(1)	(56)	(16)	(10)	(22)	(8)			(36)	(36)	53
Deputy of the Deputy	3	1	1		1				5		1	2	2			1	1	54
Civ Pers																7	7	55
Pers Rqr & Ing	17		2	2	5	2			20	7	4	7	2			7	7	56
Mil Pers	12		1	4	5	1		1	21	7	4	8	2			10	10	57
Pers Svcs	5		1		3	1			8	1	1	4	2			8	8	58
Ord Safety									2	1		1				3	3	59

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REPORT #55-8 (Continued)

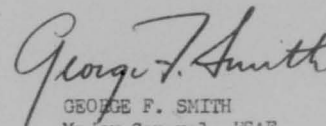
	TOT OFF	GEN	COL	LT COL	MAJ	CAP	LT	W	O	TOT AMN	M/S	T/S	S/S	A/1	A/2	A/3	TOT CIV	GR	ORGI CODE
Incl	(31)	(1)	(5)	(6)	(13)	(6)				(29)	(7)	(11)	(6)	(5)			(17)	(17)	64
of the Deputy	5	1	2	1		1				4	1	1	1	1			2	2	65
/Oprl Intel	12		1	2	7	2				8	2	3	1	2			4	4	66
/Intel Rqrs	6		1		3	2				9	2	3	2	2			7	7	67
/Rsch & Ests	8		1	3	3	1				8	2	4	2				4	4	68
S/O	(133)	(4)	(17)	(31)	(58)	(20)	(1)	(2)		(115)	(28)	(19)	(26)	(58)	(13)	(1)	(63)	(63)	72
of the Deputy	3	2		1						1	1						1	1	73
/Civil Air Def	5		1	2	1	1				2			1	1			4	4	74
/Dpr & Tng	39		5	7	22	5				9	2	1	3	3			10	10	75
Combat Opr Cen	13		1	1	6	5				83	8	7	8	50	10		1	1	76
/M&O	14		2	4	5	3				12	8	2	1	1			9	9	77
/Plans & Rqr	34	1	6	12	12	2	1			8	1	1	5		1		6	6	78
/C&E	24	1	2	4	12	4			1	25	7	6	6	3	2	1	15	15	79
prs Analysis	1								1	5	1	2	2				17	17	80
S/M	(96)	(1)	(7)	(20)	(37)	(31)				(68)	(35)	(7)	(3)	(11)	(2)		(14)	(14)	85
of the Deputy	5	1	1	1	1	1				6	3	2	1				3	3	86
ss't/Loc Plans	9		1	3	4	1				4	1	1	1	1			1	1	87
ss't Mat Con	8				2	6				8	4	1		3			7	7	88
/Aircraft	35		1	4	16	14				18	13		2	2	1		13	13	89
/Elct	12		1	4	3	4				6	3		1	2			5	5	90
/Gen Sup & Svcs	14		1	2	7	4				16	10	1	3	1	1		10	10	91
/Instls	13		2	6	4	1				10	1	4	4	1			105	105	92
g action	2			1	1					18	3	2	5	4	4				13
TOTAL	410	13	54	98	159	77	2	7	552	138	79	130	144	58	3	377	376		

REMARKS:

- This report supersedes all previous reports.
- In addition to the authorizations shown above, the following civilian averages are approved:

a.	Dir Gen Sup, Svcs & Transportation	DCS/M	Steno	AFSC	FUNCTION
				70252	L2000
b.	Dir Air Installations	DCS/M	Steno	70252	39000
c.	Dir Plans & Requirements	DCS/O	Mgt Analysis		
			Officer	6746	27000.27
- Approved changes in authorizations for this report and subsequent months are itemized on attached pages.

Incl:
Attachment to Pers
Authorization for
Hq ADC #55-8


 GEORGE F. SMITH
 Major General, USAF
 Chief of Staff

McM&O Form 33
September 1954

HEADQUARTERS
CONTINENTAL AIR DEFENSE COMMAND
CENT AIR FORCE BASE
COLORADO SPRINGS, COLORADO

DOC 488 ADCHR 55a

GENERAL ORDERS)
NUMBER 7)

20 July 1955

ASSUMPTION OF COMMAND. Under the provisions of Air Force Regulation 35-54, as amended, and Headquarters United States Air Force Special Orders 91, paragraph 1, current series, the undersigned hereby assumes command of the Continental Air Defense Command, effective this date.

DISTRIBUTION:
"A"

E. E. Partridge
E. E. PARTRIDGE
General, USAF
Commander in Chief

1448

HEADQUARTERS
AIR DEFENSE COMMAND
ENT AIR FORCE BASE
COLORADO SPRINGS, COLORADO

489

GENERAL ORDERS)
NUMBER 39)

20 July 1955

ASSUMPTION OF COMMAND Under the provisions of Air Force Regulation 35-54, as amended, the undersigned hereby assumes command of the Air Defense Command, effective this date

DISTRIBUTION:
"A"

E. E. Partridge
E. E. PARTRIDGE
General USAF
Commander

259

1449

490

HEADQUARTERS
CONTINENTAL AIR DEFENSE COMMAND
ENT AIR FORCE BASE
COLORADO SPRINGS, COLORADO

GENERAL ORDERS)
NUMBER 5)

1 June 1955

ASSUMPTION OF COMMAND. Under the provisions of paragraph 3, Inclosure 1 "Terms of Reference and Mission" to letter Headquarters United States Air Force, subject "Continental Air Defense Command (CONAD)" 27 August 1954, the undersigned hereby assumes command of the Continental Air Defense Command during the temporary absence of the Commander in Chief, effective this date.

S. R. Mickelsen

DISTRIBUTION
A

S R MICKELSEN
Lieutenant General, USA
Commander in Chief

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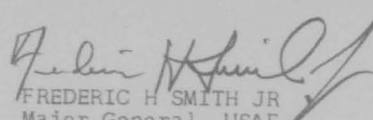
HEADQUARTERS
AIR DEFENSE COMMAND
BNT AIR FORCE BASE
COLORADO SPRINGS, COLORADO

GENERAL ORDERS)
NUMBER 23)

1 June 1955

ASSUMPTION OF COMMAND. Under the provisions of Air Force Regulation 24-1 and by direction of the President, the undersigned hereby assumes command of the Air Defense Command during the temporary absence of the Commander, effective this date.

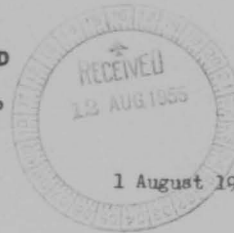
DISTRIBUTION
A


FREDERIC H SMITH JR
Major General, USAF
Commander

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HEADQUARTERS
AIR DEFENSE COMMAND
CENT AIR FORCE BASE
COLORADO SPRINGS, COLORADO



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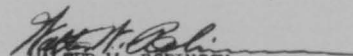
SUBJECT: Roster of Supervisory Personnel

TO: All Personnel concerned

FILE NUMBER 911

1. Purpose. To provide a current listing of personnel occupying supervisory positions within this headquarters. It will be published monthly in accordance with ADC Staff Memorandum 11-22, as amended.
2. Verification. Roster should be reviewed by all personnel listed thereon to ascertain that information pertaining to them is correct. Errors noted by individuals should be brought to the attention of the appropriate Deputy or comparable staff office for consolidation and submission as required by paragraph 5, ADC Staff Memorandum 11-22, as amended.
3. Abbreviations. All abbreviations used are contained in JANAP 169.

BY ORDER OF THE COMMANDER:


WALTER W. ROBINSON
Colonel, USAF
Command Adjutant

ROSTER OF SUPERVISORY PERSONNEL
HEADQUARTERS AIR DEFENSE COMMAND

1 August 1955

COMMAND SECTION

COMMANDER, Gen E E Partridge, Rm 401, P-1	2201-02	ME 4-7711
Secretary, Miss P J Wiggins, Rm 400B, P-1	2201-02	ME 2-5842
Executive Asst, Col J F Fletcher, Rm 400D, P-1	2202-2554	MU 4-9545
Secretary, Miss D A Clare, Rm 400, P-1	2202-2554	ME 2-5305
Aide-de-Camp, Maj W J Evans, Rm 400C, P-1	2535-2554	
Pilot, Capt A S Dudley, Rm 400C, P-1	2535-2554	ME 3-3671
VICE COMMANDER, Maj Gen F H Smith Jr, Rm 400, P-1	2283-84	ME 3-7090
Assistant, Maj A D Latimer Jr, Rm 400, P-1	2285	MU 4-9576
Secretary, J Klipping, Civ, Rm 400, P-1	2283-84	ME 3-2519
ASST FOR FLIGHT SAFETY, Col J F Sharp, Rm 125, S-2	2816-2615	ME 2-5804
Chief Clerk, T/Sgt L W Benton, Rm 125, S-2	2816-2615	Ext 2654
CHIEF, PREV RESEARCH DIV, Lt Col R M Myers, Rm 125, S-2	2816-2615	ME 3-5330
Maintenance Chief, M/Sgt G Mick, Rm 125, S-2	2816-2615	ME 3-1312
CHIEF, ACCIDENT ANALYSIS DIV, Maj R D DeMont, Rm 125, S-2	2816-2615	ME 2-1797
CHIEF, SAFETY EDUC & STAT DIV, Maj F F Parham, Rm 125, S-2	2816-2615	ME 2-1013
ASST FOR PROGRAMMING, Col C Tice Jr, Rm 409, P-1	2691-92	ME 2-6268
Assistant, W A Riley Jr, Civ, Rm 409, P-1	2691-92	ME 2-2921
Secretary, S Turner, Civ, Rm 409, P-1	2691-92	ME 3-5383
CHIEF, ABN WPN DIV, Lt Col H J Mazur, Rm 409, P-1	2691-92	ME 3-6244
Assistant, Lt Col Y A Pitts Jr, Rm 409, P-1	2691-92	ME 3-6573
CHIEF, CON & ADMIN DIV, Lt Col W A Larsen, Rm 409, P-1	2691-92	ME 3-7616
Chief Clerk, M/Sgt T P Krause, Rm 408, P-1	2730	ME 4-9958
CHIEF, GND SUPP DIV, Lt Col S T O'Dell, Rm 409, P-1	2691-92	ME 3-7352
DIR, SAGE PROJ GRU, Col O T Halley Jr, Rm 120, S-2	2441-43	ME 4-5161
CHIEF OF STAFF, Maj Gen G F Smith, Rm 100A, P-1	2234	ME 4-5137
Assistant, Maj I L Wadlington, Rm 100B, P-1	2235	ME 2-6286
Secretary, M Kanger, Civ, Rm 100C, P-1	2234	ME 2-7270
Admin Supv & Flt Scheduling, M/Sgt J L Zimmerman, Rm 100B, P-1	2236	ME 4-9826
COMMANDER, HQ SQ SEC, Maj J S Purdum, Rm 112, S-87	2771	ME 2-0539
Personnel Officer, WOJG O H Garceau, Rm 111, S-87	2647	None
First Sergeant, M/Sgt C W Smith, S-87	2654	ME 2-2390
Pers Sgt Maj, M/Sgt W A Owens, S-87	2992	ME 2-0530

COMMAND ADJUTANT

COMMAND ADJUTANT, Col W W Robinson, Rm 101, S-2	2513-14	ME 4-8011
Assistant, Lt Col J D Hornsby, Rm 101, S-2	2513-14	ME 4-6544
Secretary, Mrs M Sally, Rm 101, S-2	2513-14	ME 4-5253
DIR OF ADMIN, Lt Col W J Birmele, Rm B-5C, S-2	2546	ME 2-3419
Chief Clerk, M/Sgt E Lewkowski, Rm B-5C, S-2	2546	None
Secretary, Mrs G M Sorrentino, Rm B-5C, S-2	2546	None
CHIEF, CLASSIFIED DIV, Maj R E Palmer, Rm B-28, S-2	2836	
Assistant, Maj C F Humphreys, Rm B-28, S-2	2836	ME 2-1643
Chief Clerk, M/Sgt H Price, Rm B-28, S-2	2836	ME 4-6362
Chief, Top Secret Con Br, S/Sgt J D Kitchens, Rm B-28, S-2	2836	None
NCOIC, Files Br, S/Sgt H M Craig, Rm B-28, S-2	2871	None
NCOIC, Processing Br, T/Sgt H L Schreiner, Rm B-26, S-2	2836	ME 2-7456
CHIEF, HQ OFF PERS DIV, 1st Lt N H Wright, Rm B-5D, S-2	2635	ME 4-2398
Chief Clerk, M/Sgt W M Wood Jr, Rm B-5D, S-2	2635	ME 3-9889
Eff Rept & Spec Act Br, Miss M A Cornell, Rm B-5F, S-2	2471	None
NCOIC, Off Rec Br, S/Sgt K C Jones, Rm B-5E, S-2	2659	ME 3-3487
CHIEF, REC MGT DIV, CWO J J Hayes, Rm B-5A, S-2	2894	Ext 2858
Chief Clerk, T/Sgt H C Anderson, Rm B-5A, S-2	2894	Ext 3-4738
Librarian, A/IC J A Taylor, Rm B-5A, S-2	2464	Ext 2654
Supv, Gen Files, P A Timoney, Civ, Rm B-5A, S-2	2426	None
CHIEF, UNCLASSIFIED DIV, Maj T C Savage, Rm B-5, S-2	2838	ME 3-2925
Chief Clerk, M/Sgt R C Eriel, Rm B-5, S-2	2838	ME 3-0692
NCOIC, Incoming Msg Br, S/Sgt F W Grant, Rm B-5, S-2	2652	ME 4-3397
NCOIC, Mail & Dist Br, S/Sgt B G Bennett, Rm B-5, S-3	2677	ME 4-5795
NCOIC, Mail Proc Br, S/Sgt M L Pagram, Rm B-5, S-2	2548	
NCOIC, Spec Orders Br, S/Sgt J W Fairweather Jr, Rm B-5, S-2	2668	ME 3-4939
DIR OF PUB, Maj S B Szczerba, Rm B-1, S-2	2549	ME 4-8183
Assistant, Capt R C Dacus, Rm B-1, S-2	2549	ME 2-4923
Secretary, Mrs S Broen, Rm B-1, S-2	2549-2892	
Chief, Forms & Distr Sec, S/Sgt E G Beyers, Rm B-3, S-2	2478	ME 2-1003
Chief, Editorial Sec, G Holland, Civ, Rm B-20, S-2	2547	ME 3-7556
Chief, Printing Plant Sec, J E White, Civ, Rm B-1, S-2	2550	ME 2-1602
NCOIC, Printing Plant Sec, M/Sgt C Kirby, Rm B-1, S-2	2550	None

COMMAND CHAPLAIN

COMMAND CHAPLAIN, Col W W Sissel, Rm 6, S-48	2532-2773	ME 2-7528
Assistant, Maj G M Hickey, Rm 4, S-48	2532-2773	ME 3-7517
Admin Asst, WOJG M J Scrivner, Rm 4, S-48	2532-2773	ME 4-4400
Secretary, M Maravilla, Civ, Rm 2, S-48	2532-2773	ME 4-9669

COMMAND INFORMATION SERVICES

COMD INFO SVC OFF, Col A B Oldfield, Rm 103, P-1	2387-88	ME 2-374
Deputy Info Svc Off, Maj J W Caraway, Rm 103, P-1	2387-88	ME 3-606
Executive Off, Maj P L Salk, Rm 106, P-1	2386-87	ME 4-080
Secretary, G Ruiz, Rm 103, P-1	2387-88	ME 4-258
Chief Clerk, S/Sgt D Rupprecht, Rm 106, P-1	2386-87	ME 4-438
DIR OF HIST SVC, T A Sturm, Civ, Rm 112, S-2	2830	ME 2-045
Assistant, D Volan, Civ, Rm 112, S-2	2830	ME 3-637
DIR OF INTERNAL INFO, Maj J W Caraway, Rm 103, P-1	2387-88	ME 3-606
DIR OF PUBLIC INFO, Maj C H Franks, Rm 102, P-1	2387-89	ME 4-121
NGOIC, Public Info, M/Sgt T H Rhone, Rm 102, P-1	2389	ME 2-388

COMMAND INSPECTOR GENERAL

COMD INSP GEN, Brig Gen E F Yost, Rm 105, S-2	2515-41	ME 4-596
Assistant, Lt Col R M DeBord, Rm 105, S-2	2515-41	ME 4-598
Secretary, C Olson, Civ, Rm 105, S-2	2515-41	ME 4-704
DIR OF INSP SVC, Col D H Hahn, Rm 115, S-2	2558-18	ME 3-633
Assistant, Lt Col E M Velton, Rm 115, S-2	2558-18	ME 2-131
CHIEF, PERS & ADMIN DIV, Lt Col W McNichols, Rm 115, S-2	2819	ME 3-255
CHIEF, TACTICAL DIV, Lt Col G G Dewey, Rm 115, S-2	2516	ME 2-038
CHIEF, TEC & LOGISTICAL DIV, Lt Col L W Chick, Rm 115, S-2	2571	ME 4-035
PROVOST MARSHAL, Col E P O'Kane, Rm 107, S-2	2611-12	ME 3-367
CHIEF, INSTL DEF DIV, Capt W J Scull, Rm 107, S-2	2613	ME 2-281
CHIEF, INTERNAL SCTY DIV, Lt Col F L Brown, Rm 107, S-2	2613	ME 4-065
CHIEF, SCTY CLNC DIV, Capt E W Beck, Rm 111, S-2	2614	ME 3-734

COMMAND STAFF JUDGE ADVOCATE

COMD STAFF JA, Col S S Maxey, Rm 207, S-2	2446	ME 2-413
Assistant, Lt Col J O Green, Rm 203, S-2	2447	ME 4-431
Secretary, H Keogh, Civ, Rm 205, S-2	2446-47	ME 3-912
Chief Clerk, M/Sgt J A Black, Rm 237, S-2	2715	ME 4-484
DIR OF CIVIL LAW, Maj J K Hickey, Rm 241, S-2	2448	ME 2-450
DIR OF LEGAL ASST, Lt Col J O Green, Rm 203, S-2	2447	ME 4-431
DIR OF MIL JUSTICE, Lt Col R W Adams, Rm 239, S-2	2448	ME 3-370

COMMAND SURGEON

COMMAND SURGEON, Brig Gen A H Schwichtenberg, S-45	2711-12	ME 2-9142
Deputy, Col H A Myers, S-45	2712	ME 4-2975
Secretary, M R Lamberty, Civ, S-45	2711-12	ME 3-3453
Executive, Lt Col H F Register Jr, S-45	2637	ME 3-1334
Chief Clerk, M/Sgt H L Springer, S-45	2639	ME 3-1280
ASST FOR DENTAL SVC, Col E H McCue, S-45	2638	ME 3-8150
ASST FOR VETERINARY SVC, Col R R Miller, S-45	2638	ME 3-0846
DIR OF MEDICAL ADMIN, Lt Col H F Register Jr, S-45	2637	ME 3-1334
CHIEF, PLANS & HOSP, Maj S A Gibson, S-45	2637	ME 4-2531
NCOIC, Medical Supply Br, T/Sgt W J Cikat, S-45	2637	ME 4-4289
CHIEF, STAFFING & EDUCATION, Maj V W Cornils, S-45	2637	ME 2-1738
DIR OF PROFESSIONAL SVC, Col H A Myers, S-45	2712	ME 4-2975
CHIEF, AVN & PREV MEDICINE DIV, Col H A Myers, S-45	2712	ME 4-2975
Assistant, Maj A M Donnell, S-45	2712	ME 3-8978
CH, SANITARY & IND HYGIENE ENG DIV, Lt Col C W Bryan, S-45	2638	ME 3-9146

COMPTROLLER

DCS/COMPTROLLER, Brig Gen R S Macrum, Rm 102, S-3	2432	ME 2-3987
Assistant, Col R J Friedman, Rm 102A, S-3	2432	ME 2-6798
Executive Officer, Capt J A Zimmermann, Rm 102, S-3	2432	ME 2-1696
Admin NCO, S/Sgt G T Carta, Rm 104, S-3	2431	ME 2-9592
Secretary, E Waltman, Civ, Rm 102, S-3	2432	ME 4-2608
DIR OF BUDGET & ACCT, Col F L Kohlrieser, Rm B-30, S-3	2843	ME 3-4484
Associate Dir, Mr L Gilgoff, Rm B-30, S-3	2843	ME 3-5933
Chief Clerk, T/Sgt C C Prebay, Rm B-32, S-3	2842	None
Secretary, Mrs T E Little, Rm B-30, S-3	2843	ME 2-5882
CHIEF, ACCT DIV, Mr P J Lahay Jr, Rm B-4, S-3	2872	ME 2-5792
Chief, Appn Acct Br, Mr B R Williams, Rm B-4, S-3	2896	ME 2-7000
Chief, Gen Acct Br, Mr D R Megargee, Rm B-4, S-3	2872	ME 2-9615
CHIEF, BUDGET DIV, Mr F V Cava, Rm B-34, S-3	2442	ME 2-8126
Chief, Budget Opr Br, Mr S J Warren, Rm B-34, S-3	2483	ME 3-3208
CHIEF, FIELD & PRO DIV, Lt Col J B Murrow Jr, Rm B-6, S-3	2503	None
Chief, Field Review Br, Mr C M Barrett, Rm B-20, S-3	2503	None
CHIEF, PLANS & CONCEPTS DIV, Mr J H Ballard, Rm B-26, S-3	2975	None

COMPTROLLER (CONT'D)

DIR OF FINANCE, Col E W Gude, Rm 7, S-48	2400-2540	ME 2-9790
Executive Dir, Lt Col A R Ricketts, Rm 7, S-48	2400-2540	ME 2-1735
Assistant Director, Capt H G Harkins, Rm 9, S-48	2540	ME 3-7564
Chief Clerk, T/Sgt J M Weinberg, Rm 9, S-48	2540	ME 2-2132
Chief, Advisory Br, M/Sgt J A Witte, Rm 9, S-48	2540	None
Chief, Surveys & Boards Br, L M Eagan, Civ, Rm 9, S-48	2540	ME 4-7895
DIR OF MGT ANALYSIS, Col L W Montgomery, Rm B-10B, S-3	2831	ME 4-1117
Chief Analyst, R E Jones, Civ, Rm B-10B, S-3	2943	ME 3-5967
CHIEF, ECON EVAL DIV, Lt Col F B Leggette, Rm B-10A, S-3	2433-2542	ME 2-7011
Business Analyst, S O L'Herisson, Civ, Rm B-8, S-3	2491-92	ME 2-1878
Business Analyst, J J Maher, Civ, Rm B-10A, S-3	2433-2542	ME 4-3812
Mgt Eng Supt, CWO S C Slivinski, Rm B-10A, S-3	2433-2542	ME 3-1193
CHIEF, PROGRESS ANALYSIS DIV, Maj J M MacGregor, Rm B-10, S-3	2434-35	ME 3-3012
Chief, Graphics Presentation Br, P R Shade, Civ, Rm B-24, S-3	2230	ME 4-5144
Mgt Analyst, C H Franz, Civ, Rm B-10, S-3	2434-35	ME 3-8412
Mgt Analyst, 2nd Lt W Schleusener, Rm B-10, S-3	2434-35	ME 2-2397
ACT DIR OF STAT SVC, Capt I H McKinney, Rm B-11A, S-3	32522-2826	ME 3-4772
Chief Clerk, M/Sgt V L Rhule, Rm B-11, S-3	2826-2522	ME 4-0777
Secretary, Miss M Rising, Rm B-11A, S-3	2522-2826	Canon 106
Technical Advisor, Mr W H Besse, Rm B-13, S-3	2524	ME 2-8128
CHIEF, MACH ACCT DIV, Capt E W Graham, Rm B-13, S-3	2524	ME 3-7031
Assistant, WOJG R Donovan, Rm B-15, S-3	2025	ME 2-3669
NCOIC, M/Sgt E C King, Rm B-15, S-3	2025	ME 3-2586
Procedures Specl, Mr J R McCormick, Rm B-15B, S-3	2524	ME 4-1388
CHIEF, OPR, COST & EQP DIV, Capt J Robertson, Rm B-3, S-3	2621	ME 2-9597
NCOIC, M/Sgt A P Bogus, Rm B-7, S-3	2523-2621	None
Chief, Acft & Eqp Sec, Mrs P Plante, Rm B-7, S-3	2523-2621	ME 2-5070
Chief, Cost & Opr Sec, Mr L H Rens, Rm B-7, S-3	2523-2621	ME 2-2536
CHIEF, PERS STAT DIV, Capt C M Baker, Rm B-15A, S-3	2623	ME 4-5995
NCOIC, Pers Stat Div, M/Sgt S V Dearing, Rm B-15A, S-3	2623	ME 3-6530
NCOIC, Detailed Pers Stat Sec, T/Sgt F B Valdes, Rm B-19, S-3	2623	ME 3-7402
Chief, Morning Rept Sec, Mrs E Van Hecke, Rm B-19, S-3	2622	ME 2-5126
CHIEF, REPT CON DIV, Mr W W Campbell, Rm B-9, S-3	2525-2625	ME 2-9630
NCOIC, M/Sgt R S Moore, Rm B-9, S-3	2525-2625	ME 2-7907
CHIEF, SPEC PROJECTS DIV, Capt I H McKinney, Rm B-3, S-3	2621	ME 3-4772
NCOIC, T/Sgt W L Rush, Rm B-3, S-3	2621	None

INTELLIGENCE

DCS/INTELLIGENCE, Brig Gen W M Burgess, Rm 200, P-1	2246-47	ME 2-1151
Assistant, Col J H McCann, Rm 200, P-1	2246-47	ME 2-3404
Secretary, I M Brand, Rm 200, P-1	2246-47	ME 3-2734
Executive, Maj J B Pritchard, Rm 200, P-1	2802	ME 4-2037

INTELLIGENCE (CONT'D)	2829-2802	ME 2-9040
Admin Off, CWO H H Smith, Rm 200, P-1	2829-2763	None
Chief Clerk, M/Sgt G D Adamson, Rm 200, P-1	2805-2765	ME 4-7513
DIR OF INTEL RQR, Col H C Brown Jr, Rm B-9A, S-2	2805-2765	ME 2-5215
Secretary, G Talbott, Civ, Rm B-9A, S-2	2805-2765	ME 2-9385
Chief Clerk, S/Sgt J E Douglas, Rm B-9, S-2	2607-2557	ME 4-4789
CHIEF, COLL SVC DIV, Maj C E Wayt, Rm B-9D, S-2	2805-2765	ME 2-9938
CHIEF, PUB & DISEM DIV, Maj W J Mandros, Rm B-9, S-2	2804-2765	ME 2-5142
CHIEF, READINESS DIV, Maj C S Hill Jr, Rm B-9, S-2	2404	ME 4-3248
DIR OF OPR INTEL, Col A E Lackey, Rm 114, P-1	2045	ME 2-2045
Assistant (CONAD), Comdr R M Thudium, USN, Rm 112, P-1	2801-2404	MU 5-9455
Secretary, V P Swope, Civ, Rm 112, P-1	2801	ME 2-4090
Chief Clerk, T/Sgt H J Bendfeldt, Rm 112, P-1	2693-2887	ME 3-6519
CHIEF, COMBAT INTEL DIV, Lt Col G R Kauffman, Rm 204, S-4	2405-2191	ME 2-7865
ACT CHIEF, INTEL WATCH DIV, Maj G O Warner, Rm 204, S-4	2626-2745	ME 4-6896
DIR OF RSCH & EST, Col C A Miller, Rm B-7A, S-2	2626-2745	CripC 184J
Secretary, G C Patton, Civ, Rm B-7A, S-2	2626-2745	ME 3-2954
Chief Clerk, M/Sgt F Z MacAllister Jr, Rm B-7, S-2	2504	ME 4-5414
CHIEF, DOM VULNERABILITY DIV, Lt Col M B Sterling, Rm B-7B, S-2	2626-2745	ME 4-2559
CHIEF, STRAT ANALYSIS DIV, Lt Col J R Linehan, Rm B-7, S-2	2666	ME 3-8666
CHIEF, TEC ANALYSIS DIV, Lt Col M R Graham, Rm B-7C, S-2	2666	ME 2-4201
Air Wpn Specl, O M Rupert, Civ, Rm B-7C, S-2	2666	ME 2-9183
Elct Specl, A O Behnke, Civ, Rm B-7C, S-2		
MATERIEL		
DCS/MATERIEL, Maj Gen M S Roth, Rm 105, S-3	2242-43	ME 4-7830
Assistant, Col S A Ofsthun, Rm 105, S-3	2242-43	Ext 2002
Executive, Lt Col D B Hamilton, Rm 105, S-3	2242-43	ME 3-7098
Secretary, B L Davis, Civ, Rm 105, S-3	2135	ME 4-1318
MATERIEL ADVISOR, G P Lachar, Civ, Rm 107, S-3	2452	ME 4-7102
CHIEF, PERS & ADMIN, Maj D E Pickard, Rm 105, S-3	2726-97	ME 4-3816
Chief Clerk, M/Sgt W L Hallauer, Rm 109, S-3	2726	ME 2-9712
NCOIC, Tec Rep Admin, M/Sgt W D Jeffries, Rm 109, S-3	2559-2839	ME 3-2264
ASST FOR LOG PLANS, Col W D Campbell, Rm 103A, S-3	2559-2839	ME 3-8591
Dep Assistant, Lt Col C V Fowles, Rm 103, S-3	2559-2839	None
Chief Clerk, M/Sgt E W Buckingham, Rm 103, S-3	2559-2839	ME 3-0336
Secretary, H I Shockley, Civ, Rm 103, S-3		

MATERIEL (CONT'D)

CHIEF, CAPABILITIES DIV, Maj R W Trueblood, Rm 101, S-3	2430-2502	ME 2-0312
Chief, Augmentation Br, Maj H J Payton, Rm 101A, S-3	2430-2502	ME 2-8361
Chief, Emerg Plans Br, Capt O Brewer Jr, Rm 101A, S-3	2502-2430	ME 4-5121
CHIEF, MAT PROG DIV, Lt Col O K Morton II, Rm 101A, S-3	2430-2502	ME 4-8346
CHIEF, RQR DIV, Lt Col M Quinn, Rm 127, S-3	2676-2737	ME 2-7916
Chief, Objectives Br, Maj E N Shaskey, Rm 129, S-3	2676-2737	ME 2-4562
Chief, War Reserve Br, Maj F R Smith, Rm 129, S-3	2676-2737	ME 2-9643
Chief, Wpns & Sys Br, Maj W D Morrison, Rm 129, S-3	2676-2737	ME 3-9760
ASST FOR MAT CON, Mr M S Alexander, Rm 105D, S-3	2744-2901	ME 2-7906
Chief Clerk, A/IC A F Prestley, Rm 105D, S-3	2901	None
Secretary, F H Sprague, Civ, Rm 105D, S-3	2744-2901	ME 3-6397
CHIEF, MAT MGT DIV, Mr W M Zenthoefer, Rm 211, S-3	2413	ME 3-4558
Chief, Eqp Auth & Util Br, Maj D P Meaney, Rm 209, S-3	2409	ME 4-6255
Assistant, Capt W W MacConnell, Rm 209, S-3	2409	None
Chief Clerk, T/Sgt W R Handy, Rm 209, S-3	2409	ME 4-7071
Chief, Supply Con Br, Maj G T Swan, Rm 211, S-3	2413	
Assistant, Capt J C Haller, Rm 211, S-3	2413	ME 3-1150
CHIEF, PROCUREMENT DIV, Mr F X Grover, Rm 131, S-3	2444-2679	ME 2-2067
Assistant, Lt Col W A Becker, Rm 131, S-3	2444-2679	ME 3-0308
Chief, Policy Br, Capt R E Vaile, Rm 131, S-3	2444-2679	ME 3-1069
Chief Clerk, T/Sgt J L Richard, Rm 131, S-3	2444-2679	Ext 2654
DIR OF ACFT SUP & MAINT, Col D M Hamilton, Rm 141, S-3	2406-07	ME 4-4982
Assistant, Lt Col T M Love, Rm 139, S-3	2406-07	ME 3-9472
Chief Clerk, A/2C C Ausmus, Rm 137, S-3	2406-07	Ext 2654
Secretary, M T Keeton, Civ, Rm 137, S-3	2406-07	None
CHIEF, ACFT DISTR DIV, Capt B Gray, Rm 120, S-3	2600-2891	ME 2-8296
Assistant, CWO R W Dalton, Rm 120, S-3	2600-2891	ME 2-8621
Chief Clerk, T/Sgt R E Burns, Rm 120, S-3	2600-2891	Ext 2654
CHIEF, ACFT MAINT DIV, Lt Col J D Beckelman, Rm 130, S-3	2043-2142	ME 4-5922
Assistant, Lt Col L K Nesselbush, Rm 130, S-3	2043-2142	ME 4-2110
Chief Clerk, A/2C R E Greene, Rm 128, S-3	2043-2142	Ext 2654
CHIEF, ACFT SUP DIV, Lt Col L R Walker, Basement, S-3	2695-2678	ME 3-5430
Chief Clerk, S/Sgt C Morgan Jr, Basement, S-3	2678	None
CHIEF, ARMT & AIRBORNE ELCT DIV, Maj F F Hooker, Basement, S-3	2589	ME 3-4124
Assistant, Capt H S Stees, Basement, S-3	2589	ME 4-4288
Chief Clerk, M/Sgt E J McKnight, Basement, S-3	2589	
CHIEF, SPECIAL PROJ DIV, Maj H L Swaim, Rm 133, S-3	2115	ME 3-2731
Assistant, Maj R G Korthals, Rm 133, S-3	2115	ME 2-3050

MATERIEL (CONT'D)

DIR OF ELCT SUP & MAINT, Lt Col R A Turnbull, Rm 115E, S-3	2596	ME 2-8576
Secretary, Mrs J H Gordon, Rm 115D, S-3	2596	ME 3-9162
Chief Clerk, A/LC D L Schiffman, Rm 115D, S-3	2596	ME 4-9667
CHIEF, MAINT DIV, Lt Col R J McCleary, Rm 115C, S-3	2881	ME 2-7770
Assistant, Maj W H Johnson, Rm 115C, S-3	2881	
Comm Maint Off, Capt W M Sexton Jr, Rm 115C, S-3	2881	None
Radar Maint Off, Capt J L Turner, Rm 115C, S-3	2881	ME 2-6436
CHIEF, PROGRAMS DIV, Maj H W Dewald, Rm 115A, S-3	2983	ME 3-0571
Perm & Mobile AC&W Proj Off, Maj R F McAteer, Rm 115A, S-3	2983	None
SAGE Proj Off, Maj H I Mellion, Rm 115A, S-3	2983	ME 3-9050
Tex Tower & Gap Filler Proj Off, Capt D W Hodges, Rm 115A, S-3	2983	ME 3-5853
CHIEF, SUP DIV, Lt Col H B Gamper, Rm 115F, S-3	2993	ME 3-5935
Assistant, Maj C B Ashworth, Rm 115F, S-3	2993	ME 3-3462
Elct Sup Off, Unit #1, Maj M McKee Jr, Rm 115F, S-3	2993	ME 3-5042
Elct Sup Off, Unit #2, Capt A S Tonelli, Rm 115F, S-3	2993	ME 2-5206
DIR OF GEN SUP & SVC, Col G B Hooker Jr, Rm 217C, S-3	2835	ME 3-4943
Assistant, Lt Col B Krupinski, Rm 217C, S-3	2835	ME 4-2717
Chief Clerk, S/Sgt F Mendes, Rm 217B, S-3	2562	ME 4-5333
Secretary, Mrs B Wood, Rm 217C, S-3	2835	ME 3-5338
CHIEF, GENERAL SUPPLY DIV, Lt Col F R Koby, Rm 215, S-3	2701	ME 4-7181
Assistant, Mr H R Brown, Rm 215, S-3	2702	ME 2-0020
Chief, Fuels Br, Maj D C Kershner, Rm 213, S-3	2690	ME 2-8712
Chief, General Sup Br, Capt R A Moore, Rm 217A, S-3	2570	ME 2-6259
Chief, Pers Equipment Br, Capt R A Secor, Rm 217A, S-3	2770	ME 4-6764
CHIEF, SVC DIV, Lt Col R A Gorisse, Rm 217D, S-3	2593	ME 4-4432
Ch, Comsy, Food Svc & Subs Br, Maj J N Rothaus, Rm 217D, S-3	2585	None
Ch, Memorial Aff, LDCC & AF Exch Br, Maj R A Rhoads, Rm 217D, S-3	2595	ME 4-0208
CHIEF, TRANS DIV, Maj R A Vrillakas, Rm 217E, S-3	2506	ME 3-9331
Chief, Mtz Sup & Maint Br, Capt R T McMullen, Rm 219, S-3	2507	ME 3-7330
Ch, Plans, Programs & Proj Br, Mr F E Sayers, Rm 217E, S-3	2718	ME 2-5072
Ch, Tfc Mov, Frt, Pax & HHG Br, Mr C K Belt, Rm 217E, S-3	2718	ME 3-1844
Chief, Trans Methods & Fac Br, Maj B H Hoenig Jr, Rm 217E, S-3	2507	ME 3-1369
DIR OF INSTL, Col M T Maxwell, Rm 1, S-47	2528-2840	ME 4-2140
Deputy, Col J S Caples, Rm 1, S-47	2528-2840	ME 2-4724
Secretary, Miss B Ritencour, Rm 1, S-47	2756-2840	ME 3-6764
Chief, Real Estate Br, Mr A J Libasci, Rm 2A, S-46	2472-73	ME 3-6028
Secretary, Mrs M Conover, Rm 2A, S-46	2994-2473	ME 4-5418
Chief, Air Base Sec, R A King, Civ, Rm 2A, S-46	2472-73	ME 4-1001
Chief, AC&W Sec, J L Standlee, Civ, Rm 2A, S-46	2472-73	ME 3-9900
Chief, Spec Proj Sec, C L Britton, Civ, Rm 2A, S-46	2473-2994	ME 2-3910
CHIEF, CONTROL DIV, Lt Col R C Johnston, S-47	2155-2474	Ext 2879
Assistant, Mr D B Herman, S-47	2155-2153	ME 3-2334

MATERIEL (CONT'D)

Secretary, Mrs J E McLimans, S-47	2155-2474	ME 4-3089
Chief, Admin Sec, 1st Lt K C Thompson, S-47	2155	ME 2-7114
Chief Clerk, M/Sgt D W Sellers, S-47	2154	None
Chief, Mgt & Prop Acct Sec, Mr P W Carver, S-47	2474-2153	ME 3-0862
Chief, Prog & Funds Con Br, Mr W Dippel, S-47	2155-2474	None
CHIEF, CONSTRUCTION DIV, Lt Col J C Meadows, S-47		
Assistant, Mr C H Miller, S-47	2526-2565	Ext 2869
Secretary, Miss M Lane, S-47	2526-2565	ME 2-3408
Chief, AC&W Br, Mr T L Johnston, S-47	2526-2565	None
Chief, Ftr-Intop Br, Mr H W Bashore, S-47	2073	None
Chief, SAGE Br, Maj T E Davidson, Rm 4, S-47	2629-2634	ME 4-2574
Chief, Spec Proj Br, Mr A H Hollandsworth, Rm 4, S-47	2085	None
	2085	ME 3-5244
CHIEF, OPERATIONS DIV, Maj C E Nichols, Rm 2, S-46		
Assistant, Mr G B Lynes, Rm 2, S-46	2627-2415	ME 4-4240
Chief Clerk, S/Sgt J C Root, Rm 2, S-46	2627-2415	ME 2-3604
Secretary, Miss I J Miller, S-46	2627-2415	None
Chief, Bldg & Gnd Br, Maj R H Armstrong, Rm 5, S-46	2627-2415	ME 4-3846
Chief, Pavements Sec, J M Arnett, Civ, Rm 5, S-46	2462-2416	ME 4-2536
Ch, Structures Sec, Mr H Burnett, Rm 5, S-46	2738-2462	ME 3-3096
Agronomy & Entomology, Mr R C Harvey, S-46	2472-2738	ME 4-6257
Agronomy & Entomology, Mr E I Welch, S-46	2738-2416	ME 3-2207
Chief, Drafting & Reproduction Br, Mr W B Milliken, Rm 4, S-46	2738-2416	ME 2-9616
Chief, Fire Protection Br, Mr P E Odell, Rm 3, S-46	2796	ME 3-5344
Chief, Util Br, Maj J H Almond, Rm 5, S-46	2124-2127	ME 4-6188
Chief, Electrical Sec, Mr F K Werdel, S-46	2165	ME 2-4755
Chief, Heating Sec, Mr M A Rauch, Rm 5, S-46	2956-2946	ME 2-2091
Chief, Liquid Fuels Sec, Mr E F Mills, S-46	2945-2165	None
Ch, Refrg & Ventilation Sec, Mr R C Holsworth, S-46	2945-2165	None
Chief, Sanitary Sec, L A Callen, Civ, Rm 5, S-46	2946-2956	ME 3-0992
	2945-2165	ME 4-0239
CHIEF, PLANS DIV, Lt Col J A Dusenbury, Rm 7A, S-47		
Assistant, Mr A E Everett, Rm 7A, S-47	2620-2485	ME 2-5128
Chief Clerk, T/Sgt R S Latham, Rm 7, S-47	2620-2485	ME 2-3350
Secretary, Mrs G Ehrlich, Rm 7A, S-47	2486	
Chief, Master Planning Br, Maj J E Peterson, Rm 7, S-47	2620-2485	ME 4-6433
Chief, Programs Br, Maj J L Christopoulos, Rm 7, S-47	2485-2579	ME 3-6059
Chief, Rqr Br, Capt L C Porter Jr, Rm 7, S-47	2486-2915	ME 3-4481
	2925-2616	ME 3-3322

OPERATIONS

ACT DCS/OPERATIONS, Col C R Bond Jr, Rm 300, P-1	2321-22	ME 3-2260
Assistant (CONAD), Col R S Dingle Jr, USA, Rm 300, P-1	2321-22	ME 2-3823
Assistant (CONAD), Col J N Renner, USMC, Rm 300, P-1	2321-22	ME 3-2931
Executive, Col J N Renner, USMC, Rm 300, P-1	2321-22	ME 3-2931
Assistant, Col R S Dingle Jr, USA, Rm 300, P-1	2321-22	ME 2-3823
Admin Off, CWO J T Keeton, Rm 300, P-1	2902	ME 3-9311
Chief Clerk, M/Sgt V R Maigret, Rm 300, P-1	2902	None
CIVIL AERONAUTICAL ASSN LN, Mr J V Tighe, Rm 307, P-1	2215	ME 2-7776

OPERATIONS (CONT'D)

CHIEF, OFF OF OPR ANAL, Mr P S Ball Jr, Rm 211, S-2	2742-43	ME 2-0621
Assistant, Dr R H Jordan, Rm 211, S-2	2742-43	ME 3-5847
Secretary, Miss A Murphy, Rm 211, S-2	2742-43	ME 3-5085
Admin & Scty Off, CWO J H Hoff Jr, Rm 211, S-2	2742-43	ME 2-4498
Chief Clerk, M/Sgt L G Turner, Rm 211, S-2	2742-43	None
CHIEF, AC&W DIV, Mr W F Blaylock, Rm 211, S-2	2742-43	ME 2-0687
CHIEF, IDENT & TNG DIV, Dr R H Jordan, Rm 211, S-2	2742-43	ME 3-5847
CHIEF, FTR & ARMT DIV, Mr E C Helfrich, Rm 211, S-2	2742-43	ME 3-0265
CHIEF, MATHEMATICAL & STAT DIV, Mr R H Blythe, Rm 211, S-2	2742-43	ME 3-8864
DIR OF CIVIL AIR DEF, Col B H Mayall, S-45	2341-42	ME 3-7558
Assistant, Lt Col C R Stapp, S-45	2341-42	None
Secretary, B Greeley, Civ, S-45	2341-42	ME 2-5427
CHIEF, CIV LIAISON DIV, Mr W L Wilson, S-45	2809-2343	None
CHIEF, VOL & MIL TNG DIV, Maj J C Keller Jr, S-45	2342-43	ME 3-6469
CHIEF, VOL ORG & NATL PROGRAMS DIV, Lt Col A A Walters, S-45	2342-43	ME 3-4943
DIR OF COMM & ELCT, Col H E Neal, Rm 222A, S-2	2228	ME 4-7587
Assistant, Col J H Weiner, Rm 222B, S-2	2228	ME 3-2934
Executive, Maj K Bowen, Rm 222, S-2	2746	ME 4-4926
Secretary, F G Cava, Civ, Rm 222A, S-2	2228	ME 2-8126
Chief Clerk, M/Sgt C C Hicks, Rm 222, S-2	2746	None
Comm & Elct Digest Editor, W C Wandell, Civ, Rm 224, S-2	2854	ME 4-8230
CHIEF, COMM SYS DIV, Lt Col G W Hester, Rm 230, S-2	2412	ME 4-5420
Chief, Comm Scty Br, Capt R E Livermore, Rm 234, S-2	2803-2122	ME 2-4198
Chief, Radio Br, Maj R W Anderson, Rm 234, S-2	2645-2778	None
Chief, Wire Br, Lt Col M J Anderson, Rm 122, S-2	2206	ME 4-4274
CHIEF, ELCT SYS DIV, Lt Col H K Anderson, Rm 218, S-2	2410	ME 3-8922
Chief, Elct Warfare Br, Capt J W Clancy, Rm 222C, S-2	2648	ME 3-3022
Chief, Gnd Radar Br, Lt Col F K Nichols, Rm 214, S-2	2716	ME 3-1536
Chief, Nav Aids Br, Capt R F Huard, Rm 214, S-2	2644	None
CHIEF, PLANS & PROJ DIV, Lt Col W A Lafrenz, Rm 126, S-2	2411	ME 3-8417
Chief, Plans Br, Maj R J Streamer, Rm 126, S-2	2643-2853	ME 3-5816
Chief, Proj Br, Capt G F Palmer, Rm 126, S-2	2853-2643	ME 2-8643
DIR OF MANPOWER & ORG, Col J R Wergin, Rm 225A, S-2	2237-38	ME 4-1354
Assistant, Col D A Hornby, Rm 225A, S-2	2237-38	ME 4-8218
Secretary, P J Warner, Civ, Rm 223, S-2	2237-38	ME 3-1323
Chief Clerk, M/Sgt L D Rogers, Rm 223, S-2	2237-38	ME 2-0253
CHIEF, ALLOCATIONS DIV, Lt Col H O Parsons, Rm 225, S-2	2750-51	ME 3-7297
Assistant, Lt Col K M Berninger, Rm 225, S-2	2750-51	ME 4-4550

OPERATIONS (CONT'D)

Functions & Manning Rev Bd, Rec, Maj R F Cook, Rm 225, S-2	2750-51	ME 4-7421
Chief, CADF Br, M/Sgt A W Beardsley, Rm 225, S-2	2750-51	ME 2-2290
Chief, EADF Br, Maj P E Harden, Rm 225, S-2	2750-51	ME 2-8657
Chief, Hq ADC & Misc Br, T/Sgt E D Starkey, Rm 225, S-2	2750-51	ME 2-7219
Chief, Programming Br, Capt W H Klinker, Rm 225, S-2	2750-51	None
Assistant, M/Sgt H S Seiler, Rm 225, S-2	2750-51	None
Chief, WADF Br, M/Sgt L V DeFoe, Rm 225, S-2	2750-51	ME 3-4752
CHIEF, MANAGEMENT DIV, Lt Col J S Bowman, Rm 217, S-2	2817-18	ME 4-6729
Chief, Mgt Eng Br, Mr H E Witham, Rm 217, S-2	2817-18	MU 5-9555
Chief, Mgt Improvement Br, Maj W Stacey, Rm 219, S-2	2817-18	ME 3-5115
CHIEF, ORG DIV, Maj L Hicks, Rm 225B, S-2	2445-2775	ME 2-7346
Chief, Admin Br, M/Sgt W A Thorburn, Rm 227, S-2	2445-2775	ME 3-1974
Chief, Table of Org Br, Maj L Hicks, Rm 225B, S-2	2445-2775	ME 2-7346
Assistant, Maj M J Shopa, Rm 225B, S-2	2445-2775	ME 2-7936
Chief, Units & Con Br, Maj H F Maurer, Rm 225B, S-2	2445-2775	ME 3-8039
DIR OF OPR & TNG, Col G E Pinkston, Rm 309, P-1	2212-13	
Assistant, Col H H Green, Rm 311, P-1	2212-13	ME 3-0660
Executive Off, Capt M J Bailey, Rm 311, P-1	2212-13	ME 2-0801
Secretary, B J Darcy, Civ, Rm 311, P-1	2212-13	ME 3-0881
Chief Clerk, M/Sgt S Suval, Rm 315, P-1	2450	None
ADC PROJ OFF, F-102, Col R N Baker, Edwards AFB, Calif	Ext 1101	Ext 1882
CHIEF, COMBAT OPR CEN, Col H W Shoup, S-4	2724-25	ME 2-3477
Supervisor, Maj A C Simmons, S-4	2724-25	ME 4-7544
Chief Clerk, M/Sgt R S Moulton, S-4	2724-25	None
NCOIC, Operations, M/Sgt J C Cauchon, S-4	2724-25	ME 4-4723
Plans & Evaluations Off, Maj J A Reding, S-4	2724-25	ME 3-8124
Surveillance Con Dy Off, S-4	2544	
Tac Con Dy Off, S-4	2544	
CHIEF, CURR OPR DIV, Maj H L Fisher, Rm 208, P-1	2601-2890	ME 4-4493
Chief Clerk, M/Sgt G W Heslep, Rm 208, P-1	2601-2890	None
Chief, Abn Wpn Sys Br, Maj M C Johansen, Rm 207, P-1	2727-2739	ME 3-3955
Chief, AC&W Br, Maj J E Williams, Rm 208, P-1	2601-2890	ME 3-7237
Chief, Ftr Br, Maj V E Chandler, Rm 210, P-1	2890-2601	ME 3-8475
CHIEF, OPR PLANS DIV, Col B I Mayo Jr, Rm 306, P-1	2661-63	ME 2-2101
Assistant, Lt Col E S Popek, Rm 306, P-1	2661-63	ME 4-5681
Chief Clerk, T/Sgt T J Hash, Rm 305, P-1	2602-03-04	None
Chief, Sys Plans Br, Lt Col B H Aszman, Rm 113, P-1	2722-2814	ME 2-0320
Admin Clerk, S/Sgt E A Rusinko, Rm 113, P-1	2722-2814	None
Chief, Programs & Alloc Br, Wg Comdr G H Westlake, Rm 305, P-1	2602-04	MU 4-9584
Chief, Augm Br, Maj J B Guynes, Rm 312, P-1	2175-85-95	ME 3-9310
Admin Clerk, S/Sgt A L Vernon, Rm 312, P-1	2175-85-95	ME 4-1184
CHIEF, STAN & TNG DIV, Col V Milner Jr, Rm 202, P-1	2813-2739	ME 4-7173
Assistant, Lt Col R Woody Jr, Rm 202, P-1	2813-2739	ME 2-8240
Admin NCO, M/Sgt E F Blanchard, Rm 206, P-1	2811	ME 3-3106

OPERATIONS (CONT'D)

Chief, AC&W Stan & Tng Br, Lt Col C H Price, Rm 207, P-1	2662-2811	ME 2-8518
Assistant, Maj V G Sestokas, Rm 207, P-1	2662-2811	ME 4-6210
Chief, Flt Stan & Tng Br, Maj J T F Hart Jr, Rm 207, P-1	2727-2739	ME 4-7349
Assistant, Maj R C Garrett, Rm 207, P-1	2727-2739	ME 4-3421
Chief, Weapons Stan & Tng Br, Maj S H Turner, Rm 207, P-1	2727-2739	ME 2-2455

CH, SYS INTEGRATION DIV, Lt Col A R Schindler, Rm 113, P-1	2722-2814	ME 3-9102
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DIR OF PLANS & RQR, Act, Col R B Hughes, Rm 210B, S-2	2216-17	ME 2-1882
Assistant, Act, Col J F Kirkendall, Rm 210A, S-2	2216-17	ME 3-9520
Admin Off, Maj D Chafitz, Rm 210A, S-2	2216-17	Ext 2879
Chief Clerk, M/Sgt E Evans, Rm 210, S-2	2694	ME 4-5144

ADC LIAISON OFF, AFSWC, Col C D Slocumb, Albuquerque, NM 37831	AL 4-4597
Assistant, Lt Col T M Scott, Albuquerque, NM 37831	AL 6-3654

COMD INDOC OFF, 1st Lt I H Lindsey Jr, Rm 212, S-2	2114	ME 4-0708
Draftsman, S/Sgt C E MacNeill, Rm 210E, S-2	2114	ME 3-8159

CHIEF, PLANS DIV, Lt Col T E Telzrow, Rm 210C, S-2	2841-45	ME 4-0282
Chief, Plans Br, Lt Col T E Telzrow, Rm 210C, S-2	2841-45	ME 4-0282
Plans Officer, Maj R R Bonebrake, Rm 212, S-2	2933	ME 3-2750
Plans Officer, Maj E J Monaghan, Rm 212, S-2	2933	ME 4-1715
CONAD Staff, Comdr J C Huddleston, USN, Rm 210C, S-2	2841-45	ME 5-0043
CONAD Staff, Lt Col M L Parsons, USA, Rm 210C, S-2	2841-45	ME 2-8562
Chief, Plans Analysis Br, Lt Col J A Cartwright, Rm 202, P-1	2437	ME 4-1703
Assistant, Maj P H Wine, Rm 202, P-1	2437	ME 2-9381
Ch, Psychological Warfare Br, Lt Col G T Suderman, Rm 212, S-2	2933	MU 4-9392

CHIEF, SYS DIV, Lt Col C S Glenn, Rm 204, S-2	2521	ME 2-4224
Ch, Air Surveillance Br, Lt Col W A Tapscott, Rm 206, S-2	2981	Ext 2879
Surveillance Br Off, Maj R J Lloyd, Rm 206, S-2	2981	ME 2-8330
Surveillance Plans Off, Maj G H Adams, Rm 206, S-2	2981	ME 2-5409
Surveillance Plans Off, Maj B W Clinger, Rm 208, S-2	2981	Ext 2879
Surveillance Plans Off, Maj R D Poindexter, Rm 206, S-2	2981	ME 2-7041
Chief, Wpn Con Br, Maj H M Farmer, Rm 208, S-2	2183	ME 4-1201
Assistant, Maj M W Baylor, Rm 208, S-2	2183	ME 2-2263
Assistant, Maj J C Elledge, Rm 208, S-2	2183	ME 3-7167

CHIEF, WPN DIV, Lt Col C J Butcher, Rm 202, S-2	2851	ME 2-3304
Chief, Acft Br, Maj R T Merrill III, Rm 200C, S-2	2003	ME 3-8602
Chief, Elct Br, Maj W E Preble, Rm 236, S-2	2852	ME 3-0459
Assistant, Capt J P Acre, Rm 236, S-2	2852	ME 3-6734
Assistant, Capt J B Koelle, Rm 236, S-2	2852	ME 4-8433
Chief, Intep Missiles Br, Lt Col J R Thornton Jr, Rm 200B, S-2	2133	ME 2-5679
Assistant, Maj J F Hughes, Rm 200B, S-2	2133	ME 4-4687
Chief, Nuclear Armt Br, Lt Col S C Bruce, Rm 236, S-2	2143	Ext 2879
Assistant, Maj N B Bodinger, Rm 236, S-2	2143	ME 4-0135

PERSONNEL

DCS/PERSONNEL, Col J C Horton, Rm 210A, S-3	2248-49	ME 4-0870
Assistant, Col W H Clark, Rm 210B, S-2	2248-49	ME 3-7146
Secretary, R J Graff, Civ, Rm 210, S-3	2248-49	ME 4-0695
Admin Off, WOJG L A Trainor Jr, Rm 210, S-3	2248-49	Ext 2879
Admin Supv, M/Sgt B D Carlross, Rm 232, S-3	2427	None
DIR OF CIV PERS, F R Taylor, Civ, Rm 3, S-48	2657	ME 4-1650
CHIEF, CLAS & PAY ADMIN DIV, R T McLean, Civ, Rm 1, S-48	2657	ME 3-1345
CHIEF, MGT & DEV DIV, R J Freeburg, Civ, Rm 1, S-48	2758	ME 3-3460
CHIEF, SVC DIV, P McWilliams, Civ, Rm 1, S-48	2758	ME 3-2524
DIR OF GND SAFETY, Mr R M Riley, Rm 14, S-48	2428-2757	ME 3-9178
Assistant, Mr E G Holden, Rm 14, S-48	2428-2757	ME 2-1698
DIR OF MIL PERS, Col D F Smith, Rm 205B, S-3	2264-65	ME 4-3065
Assistant, Lt Col J D W Haessler, Rm 205B, S-3	2264-65	ME 3-7650
Secretary, M Erdley, Civ, Rm 205A, S-3	2264-65	ME 4-0412
CHIEF, ASG DIV, Lt Col W D Chalek, Rm 204, S-3	2306	ME 2-8647
Secretary, B Listug, Civ, Rm 204, S-3	2306	ME 2-3180
Ch, Ann Asg Br, CWO C G Hall, Rm 206, S-3	2709	ME 3-4541
Chief Clerk, M/Sgt M W Nelson, Rm 208, S-3	2465	Ext 2641
Chief, Off Asg Br, CWO P J Kosh, Rm 202, S-3	2631	ME 2-0318
NCOIC, Off Asg Sec, M/Sgt G Welch, Rm 202A, S-3	2672	Ext 2641
NCOIC, Off Special Asg & Act Sec, M/Sgt M Serna, Rm 202A, S-3	2672	ME 2-0498
NCOIC, Off Overseas Asg Sec, T/Sgt T J Sizemore, Rm 202, S-3	2631	None
CHIEF, COLONELS & REC GROUP, Maj C W Bell, Rm 205A, S-3	2520	ME 4-0759
Chief, Colonels Sec, T/Sgt D Atzert, Rm 205A, S-3	2520	Ext 2712
Chief, Comd Rec Sec, M I Souza, Civ, Rm 205A, S-3	2569	ME 2-7129
Chief, Off Eff Rept Sec, T/Sgt D E Gigous, Rm 205, S-3	2671	ME 3-7100
CHIEF, RES ADMIN DIV, Lt Col R L Cole, Rm 207, S-3	2703	ME 4-2108
Chief-Clerk, M/Sgt E W Jackson, Rm 207, S-3	2703	ME 3-7019
CHIEF, SPECIAL ACT DIV, Maj G R Pearson, Rm 203A, S-3	2538	ME 2-2796
Secretary, S Lockhart, Civ, Rm 203A, S-3	2538	ME 3-1084
Chief, Ann Special Act Br, Capt W J Gates, Rm 203, S-3	2708	MU 4-9139
Assistant, M/Sgt E D Rohan, Rm 203, S-3	2708	ME 3-3079
Chief, Off Special Act Br, CWO A Aja, Rm 203, S-3	2707	ME 2-2516
Assistant, S/Sgt G E Smith, Rm 203, S-3	2707	None
Contractor Tec Supv, E Kelly, Civ, Rm 203, S-3	2252	ME 2-2034
Contractor Tec Supv, R A Staffen, Civ, Rm 203, S-3	2252	Ext 2879
DIR OF PERS SVC, Col H C Eckhoff, S-45	2449-2682	ME 4-1156
Secretary, L Jonson, Civ, S-45	2449-2682	ME 2-1354
Chief Clerk, M/Sgt J L Murray, S-45	2449-2682	ME 2-7503

PERSONNEL (CONT'D)

CH, EDUCATION & COMMUNITY SVC DIV, O R Johnston, Civ, S-45	2468	ME 3-2027
Assistant, T/Sgt R T Kirk, S-45	2468	ME 3-7964
CHIEF, FUNDS & SPECIAL PROJ DIV, Maj D Ropp, S-45	2533-2682	ME 4-9079
Chief, Funds Br, R M Barlow, Civ, S-45	2533	ME 3-9462
CHIEF, PERS AFFAIRS DIV, Maj M G Rehfuess, S-45	2469	ME 4-3656
Assistant, G Duff, Civ, S-45	2469	ME 3-9214
CHIEF, SPECIAL SVC DIV, Maj A B Culp, S-45	2534-2482	ME 2-1380
Assistant, Capt Floyd V Welch, S-45	2534-2482	ME 4-0947
Svc Club Dir, E Honts, Civ, S-45	2534	ME 4-4413
Staff Librarian, H Rourke, Civ, S-45	2482	ME 2-8077
DIR OF PERS RQR & TNG, Col G B Simler, Rm 224D, S-3	2582-2700	ME 4-2201
Assistant, Lt Col M S Johnson, Rm 224D, S-3	2582-2700	ME 3-1486
Chief Clerk, M/Sgt C D McCoy, Rm 224B, S-3	2700	ME 2-1341
CH, OFF MANNING DIV, Lt Col R D Carlson, Rm 201, S-3	2074-2985-95	ME 3-7538
Chief, Manning & Con Br, CWO E H Hatcher, Rm 201, S-3	2074-2985-95	ME 2-0219
Chief, Crew Br, Maj R E Koons Jr, Rm 201, S-3	2074-2985-95	None
CHIEF, PERS PROJ DIV, Maj R E Loos, Rm 226, S-3	2660-2697	ME 4-3947
Chief, Reenl Br, Maj R E Loos, Rm 226, S-3	2660-2697	ME 4-3947
NCOIC, M/Sgt M P Lacasse, Rm 226, S-3	2660-2697	None
Chief, Liaison Br, Capt J W Griffis Jr, Rm 226, S-3	2660-2697	ME 2-7453
NCOIC, Liaison Br, S/Sgt C E Beverley, Rm 226, S-3	2660-2697	None
CH, PROGRAM ANALYSIS DIV, Lt Col R W Deppe, Rm 218, S-3	2605-2720	ME 4-7959
Chief, Analysis Br, Capt R F Grossman, Rm 214, S-3	2782-2759	ME 4-2740
NCOIC, Analysis Br, M/Sgt M D Mitchell, Rm 214, S-3	2782-2759	ME 2-6513
Chief, Early Warning Br, Maj J Way, Rm 216, S-3	2605-2790	ME 3-6577
Chief, Ftr-Intcp Br, Maj B E Davis Jr, Rm 216, S-3	2605-2790	ME 2-4462
CHIEF, TNG DIV, Lt Col C W Stewart, Rm 222, S-3	2270-2280	ME 4-5734
Chief, Tec Sch Br, Capt A A Fox, Rm 224, S-3	2681-2897	ME 4-1604
NCOIC, M/Sgt M E Claybourn, Rm 224, S-3	2681-2897	None
Chief, Tec Tng Br, Maj E D Gillespie, Rm 224C, S-3	2270-2280	ME 2-0924
Assistant, Capt J T McKinney, Rm 224C, S-3	2270-2280	ME 2-4950
Chief, Tng Eval & Con Br, Capt T W Adair Jr, Rm 220, S-3	2481-2537	ME 3-0522
CHIEF, WO & AMN MANNING DIV, Maj W C Arbogast, Rm 212, S-3	2075-2905	ME 2-6496
NCOIC, Con & Manning Br, S/Sgt W D Beaman, Rm 212, S-3	2075-2905	ME 3-3195
USAF SECURITY SVC OFF, Lt Col R E Scott, Rm 204, S-4	2848-49	ME 4-2784
Assistant, Maj T Smith, Rm 204, S-4	2848-49	ME 4-2963
Assistant, Capt W J Weltin, Rm 204, S-4	2848-49	ME 3-9281
Assistant, 1st Lt J W Lindsey, Rm 204, S-4	2848-49	ME 4-2609
Assistant, 1st Lt P G Riddle, Rm 204, S-4	2848-49	ME 3-3270
Assistant, 2nd Lt C H Haberkorn, Rm 204, S-4	2848-49	ME 4-2495
NCOIC, M/Sgt H P Geilert, Rm 204, S-4	2848-49	ME 2-5390
NCOIC, Communications, T/Sgt C J Poppe, Rm 204C, S-4	2848-49	None

COMDR, 3RD WEAGRU, Col R K Pierce Jr, Rm 108, S-2	2429	ME 2-246
Executive Officer, Lt Col P M Huber, Rm 108, S-2	2429	ME 2-204
Secretary, Mrs B J Wade, Rm 108, S-2	2429	ME 3-246
ADJUTANT, Capt P F Poduska, Rm 108, S-2	2414	ME 2-748
Sergeant Major, M/Sgt P L Brewster, Rm 108, S-2	2414	None
COMPTROLLER, 1st Lt D E Roberts, S-35	2419	ME 4-747
CONSULTANT SVC OFF, Maj B F Walker, Rm 138, S-2	2510	ME 2-856
INSPECTOR & PM, Lt Col E H Karstens, Rm 108, S-2	2636	MU 4-933
MATERIEL OFFICER, Maj F M Gibson, S-35	2419	ME 3-549
OPERATIONS OFFICER, Lt Col A W Anderson, Rm 108, S-2	2649	ME 2-652
PERSONNEL OFFICER, Maj J G Albeck, S-35	2220	ME 3-201
Pers Sgt Maj, M/Sgt Olive M Polze, S-35	2519	ME 2-549

SECRET

FILE NUMBER 1065

HEADQUARTERS
CONTINENTAL AIR DEFENSE COMMAND
Ent Air Force Base
Colorado Springs, Colorado

494

COCFR

24 March 1955

SUBJECT: (Unclassified) Continental Air Defense Command Disaster Plan

TO: See Distribution

1. Letter this Headquarters, subject as above, file COMADOPR, 1 December 1954, is hereby rescinded, and will be removed from files and destroyed. No certificate of destruction is required by this Headquarters.
2. Enemy air attack, subversive activity, or natural disaster may destroy, isolate, or render Headquarters Continental Air Defense Command inoperative. To insure continuity of air defense operations, Headquarters Joint Central Air Defense Force is designated as the alternate headquarters and command post for COMAD.
3. Effective 0001 hours, 15 May 1955, Headquarters Joint Central Air Defense Force will assume the command functions of Headquarters COMAD when:
 - a. All communications, direct and indirect, military and civil, between Headquarters COMAD and the joint air defense forces have been severed for a period of one hour; or
 - b. When so ordered by the Commander in Chief, COMAD.
4. When command authority is assumed by Joint Central Air Defense Force the functions and responsibilities of all staff and special staff agencies of Headquarters COMAD will be assumed by the Joint Central Air Defense Force counterparts of these agencies.
5. In the event of the death, disability, or absence of the Commander in Chief, COMAD, the next senior component commander shall assume command until such time as a permanent successor is designated by the Joint Chiefs of Staff.
6. When command is assumed by Joint Central Air Defense Force, notification of assumption of command will be transmitted to the Joint Chiefs of Staff, Joint Eastern Air Defense Force, and Joint Western Air Defense Force by the most expeditious means.

BY ORDER OF THE COMMANDER IN CHIEF:

WALTER W. ROBINSON
Colonel, USAF
Command Adjutant

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Mr. Tolson

There is a clear and direct effect upon our state of credit standing, the amount of money needed for an adequate backing in liquid liability assets when compared to the total requirements for program systems and electronic ground services. For the important effect which we would achieve were the plan to be carried out and to properly would be disproportionately large. I urge sincerely a concerted effort to satisfy at least the minimum joint world requirements of the Air Defense Council.

There are certain other miscellaneous problems which can be resolved through dialogue. I refer to such items as a decision on the location of the distant early warning line in the Atlantic, the provision of essential support equipment and inter-governmental agreements with Canada and Mexico. I discuss these problems later in Annex II.

There is a unique problem which I would like to treat separately, i.e., the question of an integrated U.S.-Canada air defense system. The developing nature of the threat against us, and the complex nature of the air and space defense of our air defense problem, require a joint effort -- both Canadian and U.S. -- to direct the planning toward an efficient integrated system for the defense of the North American continent as a whole. I believe this long-range task is to be done. I believe also that the integration of our two systems is inevitable -- the question being one of timing. Thus, I feel that inter-governmental level agreement in principle should be achieved as soon as possible in order to permit proper design of the system. Cooperation in this and other communications alignment and other matters concerning the activities of SACs are vital in the design of a system which must be planned in an early date and which cannot have large gaps in coverage or be in general an integrated system at least the maintenance of separate systems.

While, as I said above, I think the essential viability of our two systems is certain, there is a real danger that we might become separated into working the system toward a combined, shared development. I have this deepest that consideration

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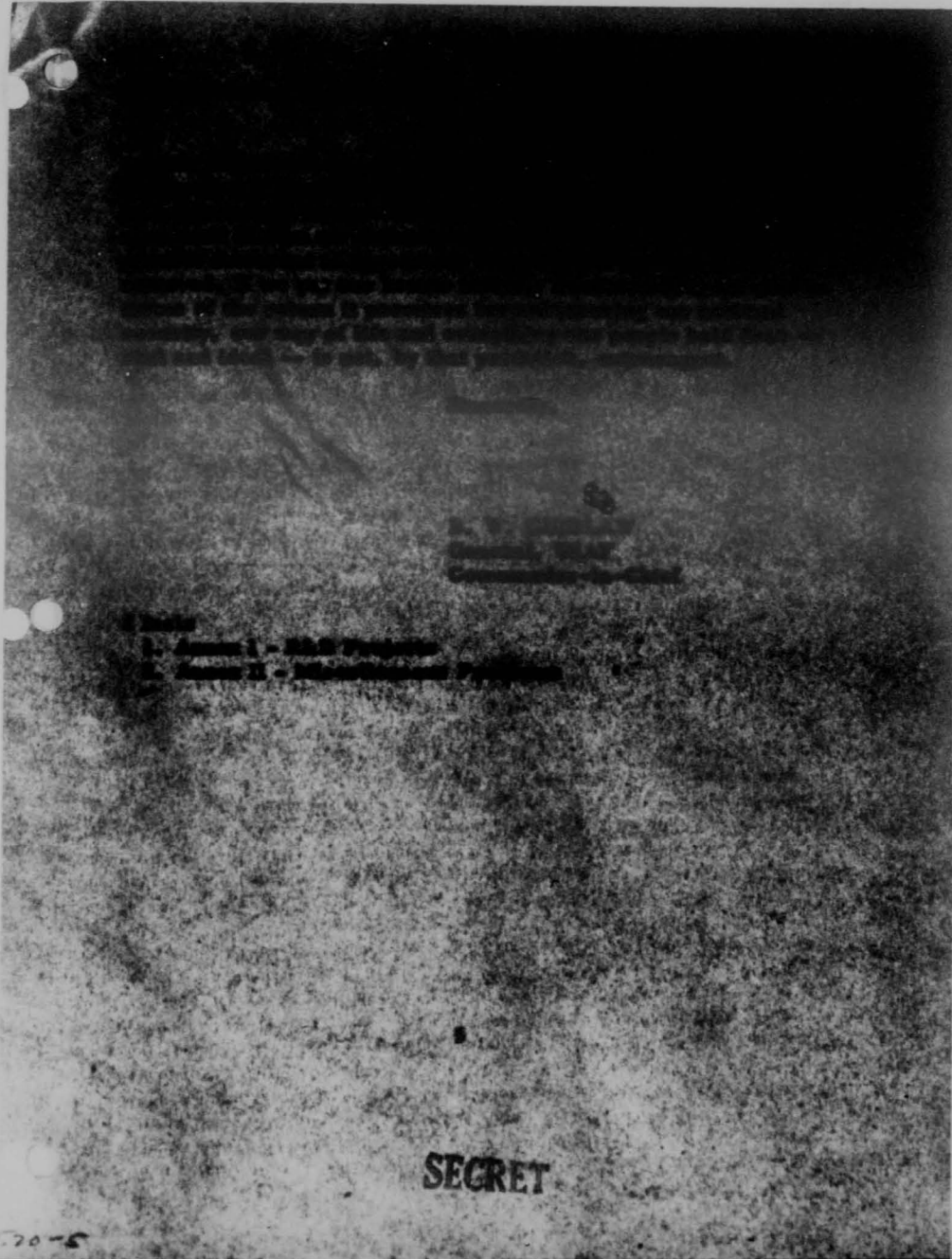
General Nathan F. Twining

procedure may soon be forthcoming from our good Canadian neighbors to move rather quickly toward a combined system. My point of caution is this: Let's plan well before we move. We should be looking forward to such action certainly, but we must see to it that it comes about through logical step-by-step evolution rather than a hasty "do it now" sort of commitment on our part. We still have a number of "joint" problem areas of CONAD to get fully squared away -- our own house in order across the board -- before I should care to see us tackle the still larger and naturally far more complex command problems incident to a "combined" establishment, desirable as the latter may be.

Note, this is probably the last official document I shall have occasion to write to you. I want you to know that the problem areas discussed herein represent, in my considered opinion, important problem areas which our defense establishment must face up to squarely if we are to build a truly adequate air defense system for our country. I realize, too, that most of these problem areas are known by you and your top Staff -- but I feel morally impelled to recall them here so that you may stress their importance to your Staff and Commanders from time to time, as these various matters come up for discussion.

In summation, I reiterate that we have made substantial progress. The establishment by JCS of the "Joint" Continental Air Defense Command was a distinct step forward. Each day brings further and gratifying evidence of a healthy "team-play" spirit between the various Service components of CONAD. I detect, too, a growing awareness throughout the Air Force of the importance of the air defense mission, though frankly I am unable to gauge just how much of this has been due to outside pressure and how much to the Air Force thinking through the problem itself. Regardless of cause, we here at ADC find it indeed heartening. In closing, I can only urge again as you have heard me urge on many occasions in the past that the Air Force, the Joint Chiefs of Staff, and the National Security Council continue to stress that our country's security rests upon the maintenance of a strategic striking force so powerful as to insure the destruction of the enemy, and an air defense

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ANNEX IDESIGN REQUIREMENTS - AIRCRAFT

(1) No programmed interceptor is capable of sustained operation above 50,000 feet until the post-1960 period. With the exception of the F-102B and the F-105, no interceptor aircraft attains supersonic speed at combat altitude. Supersonic speed is required for effective combat above 50,000 feet. A 20-25% speed advantage over the target is required to effect intercept, and also to maintain IAS above the point where deterioration of stability and control begins.

(2) Our programmed interceptors, by whatever means possible, must be capable of combating the T-37 BUCK bomber threat which has the potential of flying as high as 57,000 feet and at speeds of .80 - .85 Mach number. Normal growth of presently installed engines is estimated to permit operation as high as 57,000 feet by 1961. Studies, investigations, and hardware fabrication must be undertaken with the highest priority to attempt to determine techniques and/or devices which will result in destruction of this threat. The possible application of "cump-up" or climbing attacks with the FALCON or BING BONG missiles, and perhaps the utilization of auxiliary rocket boost assist to increase the ceiling of the interceptor or improve the transient attack capability, or any other possibility, should be exploited.

b. No programmed interceptor is capable of combating the NAVAHO type threat. Although the national intelligence estimate does not give the Soviet Union an intent to produce a NAVAHO type missile, it must be considered that such a device, the possible altitude in air breathing weapons, can be built and launched against this country in the 1960-65 time period. The early NAVAHO is designed to fly at Mach 2.75 at an altitude of 75,000 feet with ultimate development to

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Annex 1

Mach 3.25 at an altitude of 50,000 feet. It is considered mandatory that an interceptor be designed with a minimum capability against the earliest NAVARO with a growth potential sufficient to defend against ultimate NAVARO development. This requirement must provide for an aircraft with a measurable operational ceiling of 75,000 feet and sufficient speed advantage over Mach 2.75 to insure interception.

2. WEAPONS DEFICIENCIES - INTERCEPTOR MISSILES.

a. No interceptor missile will be capable of ranges beyond 125 nautical miles in the pre-1960 time period. A range of 250 nautical miles is required to provide for defense in depth and to provide for mutual support between adjoining air defense missile squadrons. A range capability of approximately 300 nautical miles is required in the post-1962 time period. Every effort should be made during the R&D phase of the interceptor missile program to provide for this extended range capability.

b. The interceptor missile seeker must be improved to provide for increased over-all capability. Specifically the areas wherein seeker improvement are required are these: A low altitude capability, below 5000 feet, must be provided by pursuing vigorously the R&D programs for CW and Pulse Doppler seeker systems. The possibilities of a "look through" IR seeker capable of seeing through the electronic seeker as well as an electronic seeker capable of hunting on ECM should be explored. This (the IR) would provide for a low altitude capability under certain weather conditions and effective functioning in the event of ECM. It is essential that the seeker be capable of functioning effectively during a massed air battle. This will require that the seeker be capable of discrete target discrimination and air-to-air IFF.

c. Internal information indicates that interceptor missiles may be available before the necessary support equipment is on hand. It is imperative that the R&D program be closely monitored to assure the early availability of every component of the system, properly time phased, so that a complete tactical weapons system results.

d. The ability of the SAGE system to provide the high traffic control capability required to exploit to the maximum the high fire power of the interceptor missiles is at present uncertain. This area should be explored and positive action taken to assure that SAGE will possess this capability.

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Annex I.

3. NUCLEAR ARMAMENT.

a. With the advent of enemy thermonuclear weapons, the destruction of this weapon carrier over friendly territory or near the target area will not afford protection from the weapons' effects. For, as we know, the fusion weapon can be designed to detonate at a preset altitude or upon contact with the surface. The destruction or pre-detonation of the weapon at altitude greatly reduces its effectiveness and, in addition, eliminates, for all practical purposes, the fall-out hazard. Because of these desirable features, an intensive program should be initiated to determine which detonation effect of our own nuclear weapons can best be utilized to destroy the enemy weapon. As soon as it is determined that a weapon kill is feasible, all air defense weapon systems should be designed to effect this type of kill.

4. ELECTRONICS - (WEAPONS).

a. Fire Control Systems. The development of airborne all-weather fire control systems has proceeded rapidly since the introduction of the first Hughes X-1 Fire Control System into the Air Defense inventory. We are now on the threshold of completely automatic interception and attack of hostile targets and of automatic aircraft recovery. The integration of automatic flight with the function of the interceptor computer system is projecting the capability of the human pilot into the realm of a faster moving air battle combining lead-collision rocket attacks with the higher supersonic speeds we are now capable of attaining. By giving the pilot fewer physical tasks to perform, we enhance his ability to monitor and evaluate the quality of the interception. Even with this highly advanced "state of the art" we find there are certain areas requiring further extensive development.

b. AI Detection Range. One of the most important areas for further development is that of greater detection ranges for the AI radar. Without this added range it will become increasingly difficult to utilize the performance of the supersonic interceptor and the nuclear armament which will be carried by these interceptors.

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1. Introduction

The primary purpose of this report is to describe the progress of the development of a new Air Defense system capable of employing multiple missile interceptors and interceptor missiles in a fast moving air battle. We believe that in order to accomplish rapid and accurate interception in a battle of this type, we must be able to distinguish between targets which are our own friendly aircraft and the targets which are hostile. I feel that the ultimate realization of this capability depends on the development of a reliable air-to-air electronic identification system. We are fully aware of the present development in this area and believe that there is one promise which must be accepted and pursued in development of this system. During an air battle, many aircraft of

our own are in the air. These aircraft are equipped with radar which can detect and identify other aircraft. This identification is accomplished by the use of a "look-down" target. After the target is identified, the system will then perform the necessary function of intercepting the target. This operation requires several added systems. The first addition is the need for performing these operations rapidly in "real time" which is done by the use of the detection range of the radar. Automatic identification could be accomplished by the use of a system of microcircuits, thereby allowing us to greatly increase the effective AI detection range. I would like to see this development pushed with the highest priority for our missile interceptors and interceptor missiles.

c. Identification - Air-to-Air. We are attempting to develop an Air Defense system capable of employing multiple missile interceptors and interceptor missiles in a fast moving air battle. We believe that in order to accomplish rapid and accurate interception in a battle of this type, we must be able to distinguish between targets which are our own friendly aircraft and the targets which are hostile. I feel that the ultimate realization of this capability depends on the development of a reliable air-to-air electronic identification system. We are fully aware of the present development in this area and believe that there is one promise which must be accepted and pursued in development of this system. During an air battle, many aircraft of

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mission operations may be moving in and through a combat zone. These are the battle force, Air Defense interceptors, Air Defense command from other commands including U. S. Navy and Marine Corps aircraft, SAC bombers proceeding with their missions and the necessary support aircraft for the many military operations placed in motion. Therefore, it is extremely important that the air-to-air identification system chosen shall be one which is common to all commands and services. It is essential that the Joint Chiefs of Staff provide us with the direction necessary to continue development and implementation of a common system for this function.

2. Communications: Data-Link. A ground-to-air command data link is essential to our future air defense system (SAGE, etc); however, no firm decision has been reached as to which system of data link transmission will be adopted. It may be necessary to start with the GE link to meet our 1956 requirement and switch to a more versatile time-division link at a later date to allow for increased traffic demands. In any event, we have been hampered by the lack of a definite policy upon which to base our future planning. A final decision should be reached at the earliest possible date.

g. Defense Against Electronic Countermeasures. It is felt that we are in fairly good shape, today, to combat ECM directed against our airborne fire-control systems. However, the current trend toward a vast increase in jamming potential threatens to make the pendulum swing in the opposite direction. Automatic jamming equipment now under development will pose an extremely serious problem in the near future. Although some excellent research and development work is being done in the anti-jamming field, it is questionable whether the over-all effort is sufficient in view of the magnitude of the problem. There appears to be a lack of guidance as to the anticipated ECM threat and insufficient coordination on new developments. Contractors should be given detailed information as to the nature of the ECM equipment we expect to encounter in the time period in which our future fire control systems will be operational.

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Annex 1

5. SEAWARD EXTENSION PROGRAM.

a. Texas Tower.

- (1) The outstanding problem areas in this program are:
 - (a) Point-to-Point communications.
 - (b) Video Transmission System.

b. AEW&C Program.

- (1) Low effectiveness of search and height finder radars.
- (2) Lack of suitable AMTI in present equipment.
- (3) A/G/A Communications.
- (4) Navigational accuracy.
- (5) Ground-air-video transmission system.

6. WEAPONS RECOVERY SYSTEMS.

Refinement and operational suitability testing of proposed systems; i.e., VOLSCAN, AGCA. Emphasis required to accelerate these programs.

7. RADAR EQUIPMENT LIMITATIONS.

A problem that exists throughout the Air Defense Command is the inability of our present radars to insure detection of either low altitude or high altitude high speed weapons. To insure the successful destruction of enemy airborne weapons (aircraft or missiles), our radars must have a blip scan ratio greater than 75% on all targets

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Annex I

regardless of the reflection surface or size. This problem has been emphasized many times, and such emphasis must continue until our research and development people have designed equipment that is capable of detecting within the defense system the presence of an enemy weapon regardless of position in space.

8. IDENTIFICATION PROBLEMS.

Assuming that advancement in radar performance continues, identification of the target must take place rapidly and effectively to obtain maximum utilization of our kill capability. To this end, every effort should be made to expedite development and installation of the selective identification feature on the Mark X IFF. In addition, a tremendous contribution to our identification capability can be realized by the adoption of regulatory measures requiring both military and civilian flights to participate in the Multiple Corridor Identification System employed along our coastal approaches.

9. PERSONAL EQUIPMENT.

With the advent of new highspeed and high-altitude interceptors being integrated into the Air Defense System, it is becoming evident that the personal equipment developments are not keeping pace with the aircraft capabilities. The high altitude personal equipment design and development is not matching the air crew requirements nor aircraft cockpit configurations. I am extremely concerned with the above condition, as a review of the planned future personal equipments reveals these items to be of such configuration that performance of air crew personnel will be greatly restricted. Air crew alert status performance will be limited by restrictions imposed by personal equipment. Therefore, items 8 and 9 which possibilities may not be possible. In addition, air crew in-flight performance will be limited to a point where mission accomplishment is hampered. Continuation of this condition will without doubt affect the Air Defense Command's combat capability.

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SECRET**ANNEX H****1. RADAR PROGRAM IN CANADA FOR EXTENSION OF COMBAT ZONE NORTHWARD.**

Lack of inter-governmental approval for agreement in principle on 4th phase prime radar and gap filler program. Specifically USAF has programmed 21 4th phase prime radars for installation in Canada. In March of this year a revised 4th phase program was jointly submitted by ADC to the USAF and by the RCAF-ADC to RCAF. This revised program included a total of 26 prime radars and additional gap filler radars. No decision had been rendered on this joint requirement and the entire 4th phase program awaits FEED action.

2. INSTANT EARLY WARNING LINE.

Lack of FEED decision of locating DEW line eastward from Cape York in Alaska via Cape Farwell, Greenland.

3. AUTHORITY TO MOBILIZE THE AWC.

Since the authority for the Commander, ADC, to mobilize units of the Air National Guard expired in June 1955, we anticipate a significant time delay between a detected enemy attack and effective response by AWC units. Unless present law AWC mobilization can only be accomplished by executive or congressional action. This time-in time delay certainly constitutes a significant risk of these forces. We understand that the proposed Executive Order delegating the mobilization authority to the Chief of Staff, USAF, has been reviewed by Mr. Tolson's office for full justification. The importance of this delegation of mobilization authority to our defense efforts cannot be overemphasized.

4. CONFLICTING TAC MISSION ASSIGNMENT.

A limiting factor in the use of TAC augmentation forces is the dual mission assignment on D-Day. On one hand, the TAC fighter wings are to begin immediate deployment to overseas areas on D-Day, while on the other hand, they are to augment the air defense system.

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Annex II

We continue to plan for the use of these forces since we know that air defense will be paramount if an air attack is directed toward this country. The overseas mission, however, precludes our deployment of elements of these wings to those critical target areas. Unfortunately, most of the TAC wings are poorly located from an air defense viewpoint. Further, this concentration of forces (each wing composed of two fighter groups possessing 75 aircraft each) is contrary to our concept of force employment. Therefore, I recommend that the war plans be rewritten to assure us full use of the TAC wings with authority for temporary redeployment if an air attack is detected enroute to the country.

1. AGREEMENTS WITH CANADA

A great deal of work remains to be done to remove national boundaries barriers to the employment of defense weapons in common. The requirement for defense weapons to be based and operated within continental United States, particularly in and over Canada, becomes more urgent every day. Existing agreements for the use of atomic and/or thermonuclear weapons over other than U.S. territory is one of the most difficult remaining tasks.

2. WEAPON TRAINING

In an attempt to achieve the highest possible level of combat capability in the Command, a training program has been established at West and Kinross. One limitation of the West program is the lack of authority to fly over Mexico. Utilization of the West wings could be significantly increased if this restriction could be obtained.

3. SEA

The primary objective in the Command's Sea Program is the lack of suitable training areas. We have conducted a study for the 1955-56 season to determine the feasibility of using ranges of land through the Command's range and test program.

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