

m0691

43rd Bomb wing
SEPT 1960

5 2014 22

4

1

D00034404

Department of Energy Declassification Review	
1 st Review Date: <u>12/1/12</u>	Determination: (Circle Number(s))
AU-60 Reviewer: <u>[Signature]</u>	<input type="checkbox"/> 1. Classification Retained
Authority: <input type="checkbox"/> DC <input checked="" type="checkbox"/> DD	<input checked="" type="checkbox"/> 2. Classification Changed To: <u>NSI</u>
Derived From:	<input checked="" type="checkbox"/> 3. Contains No DOE Classified info
Declassify On:	4. Coordinate With:
2 nd Review Date: <u>12/4/12</u>	5. Declassified
AU-60 Reviewer: <u>[Signature]</u>	6. Classified Info Bracketed
Authority: DD	7. Other (Specify): <u>Missing pp AG-48</u>

~~SECRET~~

MAIL ROOM
MAIL ROOM
MAIL ROOM

OF THE
 43D BOMBWING WING, MEDIUM
 1 SEPTEMBER 1960
 (UNCLASSIFIED TITLE)
 APPENDIX J
 RCR: AU 05
 2 AF 0-14 82

INFORMATION CONTAINED
 HEREIN IS UNCLASSIFIED
 DATE 11/11/03 BY 1057

~~SECRET~~

~~SECRET~~

James R. Johnson
 JAMES R. JOHNSON
 Colonel, USAF
 Commander 43d Bomb Wing

COPIES / of 4 COPIES
 VOLUME 2 OF 4 VOLUMES

EXCLUDED FROM AUTOMATIC
 REGRADING, AND DIRM 5200.10
 DOES NOT APPLY

Oct 11 32 AF 0-14 715

20140008149

2

B-58 TEST FORCE
MONTHLY PROGRESS REPORT
FOR
SEPTEMBER

TABLE OF CONTENTS

<u>Part</u>	<u>Title</u>	<u>Page</u>
-	Foreword	iv
-	Letter of Transmittal	v
I	Personnel	I-1
II	Operations	II-1
III	Maintenance	III-1
IV	Test and Evaluation	IV-1
	General Analysis	IV-1
	Aircraft Systems	IV-6
	Electronics Systems	IV-15
	Ground Support Equipment	IV-42
	Performance	IV-47
	Projects	IV-48
V	Supply	V-1
VI	Safety	VI-1
VII	Civil Engineering	VII-1
VIII	Comptroller	VIII-1

8

4

LIST OF CHARTS AND ILLUSTRATIONS

<u>Title</u>	<u>Page</u>
Airmen Manning Status	I-2
Maintenance Scheduled Inspections	III-1
Summary of B-58 Aircraft Utilization	III-1
FTD/MTD Training Summary	III-8
B-58 In Commission Rate	III-12
TF-102 In Commission Rate	III-14
Unscheduled Removals B-58 Aircraft	IV-8
Sub-System and Line Replaceable Unit Failures	IV-18
Line Replaceable Unit Failure Analysis	IV-20
Inherent Reliability	IV-24
Meantime Between Failure Summary--Acft 436	IV-26
Operational Reliability	IV-28
Sub-System FLM Man-Hour Summary	IV-30
Line Replaceable Unit Removal Summary	IV-31
Passive Defense System Reliability Summary	IV-34
Passive Defense LRU Failure Summary	IV-34
Passive Defense System Man-Hour Summary	IV-35
Active Defense System FLM Man-Hour Summary	IV-36
Active Defense System LRU Shop Man-Hour & MTBR Summary	IV-36
MD-7 Active Defense LRU Failure Summary	IV-37
MD-7 Active Defense High Failure LRU Summary	IV-37
MTBF Active Defense	IV-38
Percent Fireout/Mission	IV-38
Communications Systems Reliability	IV-39
Electronic Systems Reliability Data Summary	IV-41
TCSE RTFR Summary	IV-45
Total MPA'S	IV-46

FOREWORD

This is a monthly unclassified progress report published by the B-58 Test Force during the testing of the B-58 Weapon System. A classified supplement to this report has also been forwarded.

The purpose of these reports is to provide managers throughout the Air Force information on a timely basis concerning the status of the Air Force Flight Test Program on the B - 58. The contents include both technical and non-technical aspects of the program.

This report is confined to activity during September 1960.

to

B-58 TEST FORCE
United States Air Force
Carswell Air Force Base, Texas

13 OCT 1960

SUBJECT: September Progress Report

TO: See Distribution

1. Attached is the Monthly Progress Report of Category III Test Phase required by instructions contained in SAC Category III Test Plan, 1 June 1960 and AFR 8-14, 19 August 1958.

2. Indicated below are extracted summaries of major items of interest and problem areas affecting the development of the B-58 program. Suggested remedial actions have been indicated in some instances which would improve the conduct of Category III Test Phase and the development of the B-58 training program.

3. General.

a. During the month of September, B-58 flying activity closely paralleled that of August. The number of aircraft possessed decreased from 12 to 11.7. A total of 200 B-58 hours were flown resulting in an average of 17.1 hours per aircraft possessed and 20.4 hours per aircraft available. Two aircraft were at Convair for modification (Flash Up). The 60-9 schedule for September included 65 planned and 65 desired effective sorties. Deviations from schedule totaled six additions and 26 cancellations. One deviation was due to weather, 23 to maintenance and eight to other causes. The 60-9 schedule for October includes 67 planned sorties totaling 298 hours and 44 desired effective sorties totaling 262 hours. Test vehicles are included in planned but not desired effective sorties nor are they included in the weekly 60-9. Details of the 60-9 schedule are included in the Monthly Maintenance Order and deviation detail in the 2 SAC-V1.

b. Personnel from Headquarters SAC and 2AF met with representatives of the 43d Bomb Wing to develop an interim B-58 tactical doctrine. This proposal has been forwarded to 2AF for staff coordination.

c. The 43d Bomb Wing participated in "Sky Shield" and the SAC Combat Competition during September. Both "Sky Shield" flights were completely successful from the viewpoint of generation, launch, flight and recovery. The Wing won the bombardment crew bombing award in its initial SAC Combat Competition and placed fifth in overall standing. The B-58 program also completed one year of accident free Air Force flying during the month.

4. Maintenance.

a. The three shift maintenance schedule was modified on 1 September because of weaknesses in the area of supervision and shortages in certain skill areas. The present utilization of maintenance manpower is approximately 60 percent on the first shift, 30 percent on the second shift and ten percent on the third shift. The third shift works on aircraft scheduled for the following day and/or on the highest priority work orders issued.

b. A ground support equipment section has been organized in the armament electronics squadron to provide proper maintenance and control of the large quantity of ABE flight line equipment.

c. The September maintenance training totaled 29,305 manhours (26,449 hours on-base and 2,856 hours off-base). A meeting was held with representatives from 43DCM, Convair and 415th FTD relative to the proposed 12-week shutdown of Bomb/Nav Training required to complete modifications to training equipment. A plan was initiated to accelerate the present schedule and to provide interim training to personnel most seriously affected by the shutdown. Sperry Gyroscope Company also started a ten-hour introductory course on Bomb/Nav TGSE.

d. Calibration of B-58 fuel system gauges presents a current problem in that a great deal of difficulty is encountered during refueling. Basically, a 3.5 percent error is permissible; however, during the cycle of full to empty, the tolerance is exceeded at random points. The errors are determined through pit readings. Many variables can be experienced which compound the error. Since the tanks, at the present time, cannot be dipsticked, the variable errors cannot be pinpointed. The procedure is further complicated by the unorthodox aircraft positioning requirements. Interim procedures for refueling and firm calibration points must be established and a dip-stick capability provided.

5. Test and Evaluation.

a. In the electronics systems area, it was necessary to discontinue DECM Flight testing during the month until delay programmer malfunctions could be

resolved. Reliability analysis relating to overall system effectiveness and search radar improvements have been made for evaluating the many improvement items included in ECP 21-CX.

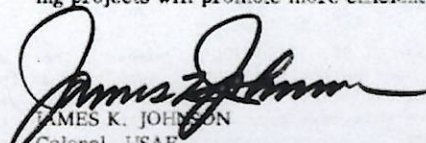
b. The reliability of the flight control system is still unsatisfactory despite special emphasis by the contractor. A formal project has been established which will aid in analyzing flight discrepancies and isolating faulty components. A formal project also has been initiated because of the continued high failure rate of the tactical generator drive.

c. Lack of technical data, calibration information and requirements plus its unknown compatibility with the prime system complicates the status of DECM TGSE. The ground air conditioners are continuing to give unsatisfactory performance.

d. ECP 1861, which provides improved lower leg, upper leg and arm restraint gear and improved hardware, has been costed and CCN given the contractor so that action can be expedited.

6. Supply. Supply effectiveness improved during the month. The substore effectiveness increased from 64.6 percent in August to 88.5 percent in September. Base supply effectiveness rose from 40.3 percent to 46.4 percent during the period. The average time for repair and return of units from Convair was 20 hours. During this period, 85 items were verified as AOCP and 14 items as ANFE. All were received in less than 24 hours. The mechanization of Consolidated Organizational Supply was completed prior to scheduled date.

7. Facilities. Inadequate facilities continue to hamper the effectiveness of the 43d Bomb Wing in the operations, maintenance and administrative fields. Base civil engineers are deterred by a lack of personnel in supporting existing programs; however, expeditious action by proper authority in processing projects will promote more efficient operation.


JAMES K. JOHNSON
Colonel, USAF
Category III Test Director

PART I - PERSONNEL

SECTION A: General Analysis

The personnel manning picture is mixed, in that there are problem areas where shortages exist. However, most previously reported shortages have been filled (assigned pending EDCSA) or have been programmed-in by Hqs SAC. Major shortages continue to exist within the rated officer career fields. This shortage is negated to a degree because Hqs SAC is programming input of crew personnel based upon the assignment of B-58 aircraft. Presently only 62% of required spaces are filled while 96% are assigned against UMD positions. The major personnel problem is training assigned personnel to meet requirements. Airmen manning has improved since the last report. Presently 1354 airmen are assigned and 82% are in required specialties. SAC Project 5054 is estimated to be 96% complete.

SECTION B: Specific Data

1. Officer manning is as follows:

<u>AUTHORIZED</u>	<u>ASSIGNED</u>	<u>IRS</u>	<u>% OF RQRD</u>	<u>% OF ASGD</u>
298	192	184	62	96

Major shortages continue to exist within the rated career fields; 1235B, Pilot B-58, short 43; 1525B, Nav-bomb, short 29; 1575A, Elect-warfare, short 25; and non-rated aircraft maintenance officer 4344, short 1; 2726 R&D administrators, short 3.

2. Airmen manning is as follows:

	<u>AUTH</u>	<u>ASGD</u>	<u>IRS</u>	<u>% OF RQRD</u>	<u>% OF ASGD</u>
DIRECT:	1091	1098	916	84	85
INDIRECT:	319	256	238	74.6	93

There is a shortage of 92, 32150-70G's; however, there are 101, 32130G's assigned against none authorized. Until such time as they can be up-graded to the five skill level, the IRS will be below standards. Efforts to improve this have been taken in the form of IPT program acceleration. Indirect airmen manning reveals major shortages in 603X0, short 5; 922X08, short 5, etc. See following chart:

CHART 1

MANNING BY AFS IN SHORTAGE AREAS

	<u>AUTH</u>	<u>CURRENT ASGD</u>	<u>PROJECTED ASGD</u>	<u>NUMBER SHORT</u>
223X1	5	2	2	3
344X0	9	7	8	1
43190	28	19	21	7
434X0	30	11	17	13
462X0	18	9	9	9
552X1	8	3	4	4
582X0	4	3	3	1
603XX	31	19	26	5
922X0B	16	10	12	4

3. A request is going forward under a separate report to place key NCO's in an "S" category to preclude their reassignment. This is considered necessary to insure that all phases of the program are expedited.

4. The job description of AFSC 423X3 was reported last month. It is recommended that it be redefined as AFSC 312X0 and indicated as a shred-out of "A" to designate the B-58 type of duties.

5. Command Post Manning, AFSC 274X0, is at 117%.

SECTION C: Problem Areas

Presently the UMD authorizes AFSC 1525B as the nav-bomb shred-out. This must be changed to properly reflect the duties of these personnel, both on the UMD, AFM 36-1, their individual records, and training on ASQ-42 equipment.

21

11

SECTION D: Recommended Action

Request that the UMD be changed in AFSC 1525B to 1525C.

SECTION E: Project Status

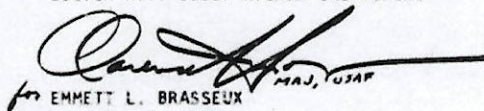
Project number: SAC 5054.

Project name: SAC Project 5054.

Current status: Satisfactory.

Estimated completion date: 1 November 1960.

Remarks: Information indicates that levies have been made for inputs in the 301XX, 344X0, and 321X0G career fields, and completed action will occur within the month.



MAJ, USAF

EMMETT L. BRASSEUX
Lt Colonel, USAF
Director of Personnel

101

13

PART II OPERATIONS

SECTION A General Analysis

1. Continued progress was made during September in the accomplishment of our flight training and Category III testing responsibilities. Flying time and sorties flown for each type aircraft fell slightly below the August figures but were still greater than any other previous month.

September Flying Time Summary

	<u>Total Time</u>	<u>Avg Time/Avail Acft</u>	<u>Last Month</u>
B-58	200.10	17.1/11.7	219.20/18.3
TF-102	153.35	29.7/ 5.5	165.35/33.1

2. SAC message DORQ 27754, 29 September, suggested that the mission nomenclature for B-58 flights be standardized so that flight activity reports would be universally understood. Accordingly, all B-58 flights will be scheduled and reported in accordance with the code outlined in 2AFR 66-7, 28 September (RCS 2ND-F3). This code is as follows:

a. Code 1: Special Missions - This includes all Higher Headquarters Directed missions, ORI's, USCM's, etc. This will include return flights from static displays if a full Category III or training mission cannot be accomplished on the return flight.

b. Code 2: Training Missions - Training missions are further broken down as follows.

(1) Code 2.1: TB-58 Sorties. TB-1, TB-2 (student's first or second flight), TB - Instrument Check, TB - Instructor Upgrading, etc.

(2) Code 2.2: CCTS. This type sortie will indicate those flights devoted solely to student training in the 65CCTS.

(3) Code 2.3: CCTM. This type will include all flying time by crews not categorized as students in the CCTS and devoted to their proficiency and up-grading. Category III items may be accomplished on these flights as a by-product, but the main purpose of the flight is for the training of the crew.

c. Code 3: All Category III test and evaluation sorties. This type will include all flights scheduled for accomplishment of Category III evaluation. Category III will be followed by symbols such as WSE, PTT, 491 Rotor, Polar Navigation, etc., indicating the specific type mission. Training may be accomplished on these flights as a by-product, but the main purpose of the flight is for Category III test and evaluation purposes.

d. Code 4. Functional check flights and all other maintenance sorties.

e. Code 5. Ferry Flights. Self explanatory.

3. September flying is shown below using the above criteria.

	<u>Code 1</u>	<u>Code 2.1</u>	<u>Code 2.2</u>	<u>Code 2.3</u>	<u>Code 3</u>	<u>Code 4</u>	<u>Code 5</u>	
	<u>Special</u>	<u>TB</u>	<u>CCTS</u>	<u>CCTM</u>	<u>Cat III</u>	<u>Test</u>	<u>Ferry</u>	<u>Total</u>
	<u>Missions</u>	<u>Sorties</u>				<u>(Maint)</u>		
Sorties Scheduled	5	13	19	13	11	0	2	63
Sorties Flown	6	7	10	19	3	7	2	54
Hours Flown	28:45*	20:00	44:35	64:20	11:50	17:35	13:05	200:10

*Includes "Boom Boom", "Sky Shield" and the Offutt fly-by.

4. Continuing effort is being placed on training additional staff and instructor personnel for the 43BW as rapidly as possible. Listed is a summary of B-58 crews as of 30 September:

a. Number of Crews Completed CCTS:

(1) Instructor	5
(2) Staff	3
(3) Simulator	1
(4) Combat	0

b. Number of Crews in CCTS 10*

c. Combat Ready Crews Assigned 2 (Instr)

d. Non-Combat Ready Crews Assigned 8

e. Crews Available for Training 10

f. Crews Upgraded to Combat Ready during Past Month 0

*Plus 3 staff pilots in Class 60-5.

5. Bids for modification of Building T-2-164, Project CRS 100-0 will be opened on 11 October 1960. Project CRS 101-0, modification of Building T-2-164A is under contract at the present time. It is anticipated that modification work on

these facilities to prepare them for CCTS classrooms will be completed by 15 December 1960. The lack of these facilities will definitely hamper the training program now starting in earnest.

6. It is anticipated that the first DSO flight simulator will be delivered to Carswell during the week of 20 October. It is now planned to install this simulator in the permanent simulator building rather than the temporary facility that had been prepared for it due to the long delay in receipt. An attempt will be made to tie this trainer together with the first pilot simulator by inter-phone communication to effect necessary crew coordination training.

7. Information has been received that our request for the third pilot flight simulator to be installed and operational at Carswell prior to the withdrawal of pilot flight simulator #1 for modification has been approved. This will allow the training program to continue unhampered during early 1961.

8. Personnel from Hq SAC and 2AF met with representatives of the 43BW to develop an interim B-58 tactical doctrine. A proposal was made which was taken to 2AF for staff coordination prior to being sent to Hq SAC.

9. 43BW participated in Operation "Sky Shield" with two B-58 aircraft. Both flights were completely successful from the 43BW's point of view insofar as generation, launch, flight and recovery were concerned. No evaluation of the B-58's effectiveness on the mission with respect to interception and tracking for ground radars is known at this level.

10. Lack of a proper command post is hampering our wing operations. Project CRS 21-1 was submitted to 2AF on 1 September. To date the Base has received no information as to its status. Little can be done until approval is received to modify Building T-2-160 into a Wing Headquarters.

11. The DCO, Training Division, Communications Electronics Division, Standardization Division and the 65ES all moved into different facilities during the month of September. In each instance modifications to the buildings needed for efficient operation of these organizations have not been started. It was determined, however, that the advantages of the change in location outweighed the disadvantages of the lack of modified facilities. These modifications are included in Project CRS 21-1.

SECTION B (Not applicable)

SECTION C Problem Areas

1. Lack of proper facilities continuously hampers the efficient operation of Operations functions. All activities are in temporary facilities ill designed for the purpose for which they are being used. Being temporary, communications equipment has been kept to a minimum to conserve funds for the permanent

PART III MAINTENANCE

SECTION A General Analysis

1. Three-shift Operation: The three-shift maintenance schedule began 1 August and was modified on 1 September. The present utilization of maintenance manpower is approximately 60% on first shift, 30% on second shift and 10% on the third shift. The regression from full three-shift operation was dictated by (1) a lack of fully trained and qualified supervisors in some areas and (2) a shortage of manpower to adequately man all work centers. The 10% manpower assigned to the third shift works on the aircraft for the next day or on the highest priority work orders issued.

2. Scheduled Inspection: There have been several recent adjustments in the scheduled inspections criteria for the assigned B-58 aircraft. Current inspection requirements are:

YRB-58A 55-0671	50-Hour Postflight/200-Hour Periodic
YRB-58A 55-1014	50-Hour Postflight/200-Hour Periodic
YRB-58A 55-1019	50-Hour Postflight/200-Hour Periodic
YRB-58A 58-1020	50-Hour Postflight/200-Hour Periodic
B-58A 59-2423	50-Hour Postflight/200-Hour Periodic
B-58A 59-2430	50-Hour Postflight/200-Hour Periodic
TE-58A 55-0670	50/200-Hour Area Cycle
B-58A 59-2428	50/200-Hour Area Cycle
B-58A 59-2431	50/200-Hour Area Cycle
B-58A 59-2432	50/200-Hour Area Cycle
B-58A 59-2433	50/200-Hour Area Cycle
B-58A 59-2434	50/200-Hour Area Cycle
B-58A 59-2436	50/200-Hour Area Cycle
B-58A 59-2437	50/200-Hour Area Cycle
B-58A 59-2438	50/200-Hour Area Cycle

3. Summary of the B-58 Aircraft Utilization:

Month	Aircraft Possessed	Sorties/ Aircraft	Sorties Flown	Fly/Hrs/ Aircraft	Flying Hours
September	11.7	4.6	54	17.1	200:10
August (best previous mo)	12	4.8	58	18.3	219:50
Averages for calendar year/month	12.8	2.7	34.8	11.8	151:20

NOTE: Aircraft down for TOC 1B-58-705 accounted for the loss of 23 aircraft days.

facilities. This further aggravates a bad situation. This is particularly true of the Command Post. Only a basic minimum communications capability exists at the present time.

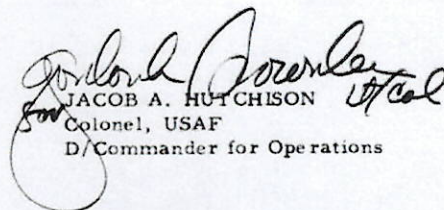
2. Lack of proper facilities for CCTS classrooms (Projects CRS 100-1 and 101-1) has and will adversely affect the B-58 ground program. Improvised facilities borrowed from other base activities will be used until Buildings T-2-164 and T-2-164A are modified for classroom use.

SECTION D Recommended Action

Approve and fund CRS 21-1 project for modification of Building T-2-160 as Wing Headquarters. This will allow for relocation and expansion of Command Post facilities. Proper communications equipment including master console may then be installed.

SECTION E Project Status

None.


JACOB A. HUTCHISON
Colonel, USAF
D/Commander for Operations

4. ZAF Assistance Team: A ZAF Assistance Team visited the 43d Maintenance organization during the reporting period and made suggestions for improving maintenance procedures. All suggested changes and improved procedures were immediately placed into effect.

SECTION B Squadron and Division Analysis

1. Organizational Maintenance Squadron:

a. Training Section: The squadron has a total of 72 airmen in the IPT program; 70 in training to the five level; one to the three level; and one to the seven level. Eight of our airmen enrolled in FTD have below-average grades. We have established additional training classes to aid these airmen in raising their grades. The personnel on IPT for 43150C (TF-102 personnel) are programed for pretesting by 15 October.

b. Equipment: The evaluation of the five portable B-36 nose docks for B-58 maintenance personnel during inclement weather is continuing. The wheels installed on the nose docks were inadequate. The nose docks were cumbersome to handle, difficult to position, and the wheels were worn excessively. New wheels are being procured and will be installed. Work Order Nr 689-61, dated 5 August, requesting the installation of tie downs for the portable shelter has not been completed since BDCE is awaiting the required parts.

2. Armament and Electronics Squadron:

a. Facilities:

(i) The split operation of the Armament and Electronics Maintenance function in two separate facilities creates an unsatisfactory management situation. This condition presents equipment handling problems and causes an excessive loss of man-hours. The Production Scheduling and Preissue Sections are located in Building P-1055 and equipment processed through shops located in Building T-1-133C must be transported between these two facilities. In addition the Analysis Section is located in Building T-1-133C and personnel dispatched from Building P-1055 must proceed to the Analysis Section in Building T-1-133C to review system histories prior to performing maintenance on the aircraft. To effectively employ armament and electronics maintenance management procedures outlined in AFM 66-1, the armament and electronics systems must be located in a single consolidated facility. The proposed 11,776 square foot addition submitted to Base Civil Engineers on 5 September 1960 is needed to alleviate this unsatisfactory condition.

(2) Several modifications are required to existing facilities in Building P-1055 to include a permanent hydraulic system for the Bomb/Nav and Flight Control Systems, a compressed air facility with oil/water separator for Bomb/Nav, Photo and Flight Control Systems, a monorail for Flight Control Systems, acoustical tile for the ceiling of the systems branch office and additional parking space for private vehicles. (CRS 20-1).

(3) The armament and electronics facilities in Building T-1-133C require modification to include a compressed air facility with oil/water separator for Comm/Nav, DECM, Fire Control and Weapons Systems. The access road on the east side of the hangar must be paved. In addition minor repair items need attention. These requirements were submitted to the Base Civil Engineers in August 1960. (CRS 15-1)

b. Production Control Branch:

(1) The Production Scheduling Section has been reorganized to effect more efficient processing and handling of equipment awaiting parts and those awaiting maintenance.

(2) The Dispatch Section has been modified by Base Civil Engineers to provide a more efficient layout for the console unit. A new console unit is to be built.

c. Ground Support Equipment Section: This section was recently organized by the Armament-Electronics Maintenance Squadron. This section was established to provide proper maintenance and control of mobile armament and electronics flight line test equipment. Since the 43d Armament-Electronics Maintenance Squadron is the first to possess armament and electronic flight line equipment in large quantities, the procedures for controlling and operating the section must be developed.

d. Bomb/Nav Photo Section:

(1) Floor space in the Bomb/Nav Photo Section is critical since both IGSE and TGSE must be maintained for an interim period.

(2) Forced air cooling for doppler units and flat harness assembly has recently been installed.

(3) WSPO representatives that recently visited this organization advised that the doppler tracker repair station could be retained, and it is presently in process of being set up.

(4) The demonstrations on the tactical inertial and amplifier testers are progressing, but the testers are still not ready for acceptance by the Air Force. The demonstration for WSPO and SAC personnel has slipped and a firm rescheduled date has not been established. The program of conducting these demonstrations at the using command site is considered to be highly successful and should be continued.

(5) The Bomb/Nav Mobile Tester has been delivered to Convair and demonstrations on this tester will be conducted at Convair with Air Force representatives in attendance during the next 30 days.

(6) The delivery of the Tactical Radar Tester and the Tactical Computer Tester is expected by 31 October 1960. Both of these testers will receive first article demonstrations as did the Inertial and Amplifier Testers. A suitability demonstration was conducted at Clearwater, Florida and Great Neck, New York with 43AEMS representatives in attendance and very favorable results were obtained.

(7) During this period the Interim Computer Tester was shut down for ten days so that it could be updated and calibrated. This tester has also been relocated to make room for the new Tactical Computer Tester.

(8) The Model "D" Search Radar Tester was shut down for one week while it was updated and calibrated.

(9) Aircraft 59-2428 has been delivered to Convair for supersonic cycle modification which will effect the installation of an independent search capability. This will bring all aircraft except 59-2436 up to the same configuration and will permit a more standard arrangement for bench maintenance.

e. Flight Control:

(1) First article demonstrations have been completed on the 13935, 13936 and 13938 testers. The 13935 CMA Tester was not approved and will be rescheduled at a later date. The evaluation team is still working on the 13935 and is making progress.

(2) New tapes and technical data are available for aircraft number 34.

f. Fire Control and Weapons:

(1) The radar range calibrator was sent to Convair for one week for modification and recalibration.

22

21

(2) Aircraft scheduling has not provided sufficient time to permit a complete run of the system test set. Due to the length of time involved in running a complete check with this tester, it is extremely difficult to acquire a tactical aircraft for the required time period.

(3) Convair personnel visited this section for two days to check the compatibility of the technical data with the system. All deficiencies in the technical data are to be corrected.

(4) Eight personnel were given limited instruction on the procedures for harmonization with the test trailer.

(5) The necessary test equipment required for aircraft ringout prior to pod loading is currently included on the Field Maintenance Squadron (Electrical Shop) UAL. This organization has submitted necessary paper work to the Unit Supply activity to effect a change to the ECL/UAL to include it on the Armament-Electronics Maintenance Squadron document.

g. Training: A meeting was held 15 September with representatives from 43AEMS, 43DCMT, Convair and 315th FTD to discuss the proposed 12-weeks' shutdown of Bomb/Nav Training that is necessary to complete modifications to training equipment. The 43AEMS initiated a plan to accelerate the present FTD Bomb/Nav training schedule to complete training of additional personnel prior to the shutdown. Interim training courses are also being prepared for those personnel most seriously affected by the shutdown. In addition the Sperry Gyroscope Company began a ten-hour introductory course on Bomb/Nav TGSE at Carswell Air Force Base on 29 September 1960. Four separate classes are scheduled so as to include all assigned Bomb/Nav personnel.

h. Com/Nav System: Outside interference from outlying radar creates interference on the air to air and air to ground Iff mobile tester and the beacon confidence checker.

i. DECM:

(1) A representative of the vendor, Sylvania, is currently on this station to correct malfunctions on the delay programmer in both T-2 and T-4 subsystems. The Helix spring and gear clutch required adjustment.

(2) Since the AN/ALR-2 tactical tester has not been delivered, Convair has been requested to support the maintenance on this equipment.

(3) A study is being made to check the compatibility between technical data, DECM equipment and tactical equipment. Deficiencies are to be corrected.

j. General: Calibration of specialized automatic testers is a continuing problem. The self tester cannot be solely depended upon to verify the condition of the testers. This is due to the possibility of value changes (reference voltages) and, therefore, leaves some doubt as to the proper functioning of the tester. Additionally, certain steps in the technical data for minimum performance require monitoring of wave shapes, pulses and voltages. Specialized test equipment is required but is not furnished with the tester. The tolerance required for satisfactory operation of this equipment is extremely critical, and must be exact to obtain accurate results from the tester. Calibration and maintenance on some testers are effected through contract maintenance; however, an established agency must be designated to certify calibration and maintenance on these testers to comply with provisions of T.O. 33-1-14. A list of affected equipment has been furnished to Base activities for their review of this problem.

3. Field Maintenance Squadron:

a. A safety hazard still exists in Building P-1050 due to the lack of emergency lighting and illuminated fire exit signs (Work Request Number 723-60). A power failure during the reporting period causing a great deal of confusion could have caused serious damage to test equipment.

b. Capability: DC Hell Arc Unit is required to enable the Welding Shop to repair certain J-79 engine components. Lack of electrical power (Project 141-60) adversely affects the Field Maintenance capability in the Hydraulic, Mechanical Accessories and Ground Support Equipment Sections. Contract is scheduled for award 1 November 1960.

c. Emergency power is required to operate Specialist Dispatch during power failure. (Work Order Request 213-61)

4. Maintenance Quality Control Division:

a. Technical Orders: Time compliance technical orders received during the month:

<u>Type Aircraft</u>	<u>Urgent Action</u>	<u>Routine Action</u>
B-58	4	7
TF-102	2	2

b. Unsatisfactory Reports: There were 28 quality control and six emergency UR's submitted during the reporting period.

46

23

5. Training Control Division. The September Maintenance Training totals are 26,449 man-hours of on-base training and 2,856 man-hours of off-base training for an overall total of 29,305 man-hours.

a. 43AEMS training:

Nontechnical	835
Technical	13,320
Off-base	<u>352</u>
Total	14,507

b. 43OMS training:

Nontechnical	968
Technical	9,796
Off-base	<u>408</u>
Total	11,171

c. 43FMS training:

Nontechnical	1,111
Technical	420
Off-base	<u>2,096</u>
Total	3,627

AIRB BOMB SQUAD RETRAINING TRAINING
as of 31 Sep 60

AFSC	AUTH	ASGD	ASGD	ASGD	AS'D	ASGD	NO	IN	COM
	40BW	43BW	43NS	43OM	43PM	43AW	TNG	TNG	TNG
1. (Radio) 301X0	36	34	3	0	0	31	1	0	33
*Test Equipment							34	0	0
2. (NavAids) 301X0	23	26	0	0	0	26	2	0	24
**Test Equipment							23	3	0
3. (DNOM) 301X0	36	44	2	0	0	42	3	6	35
*Test Equipment							31	7	6
4. Bomb/Nav 321X0G	137	146	2	0	0	144	42	59	45
5. (Fire Control) 323X0B	46	57	4	0	0	53	5	5	47
*Test Equipment							57	0	0
6. (Lit Control) 423X3	34	39	0	0	0	39	2	0	37
*Test Equipment							21	4	14
7. Photo Repair 402X0	7	8	0	0	0	8	0	0	8
8. Aaft Hydraulic Rep 421X2	30	30	0	0	30	0	0	1	29
9. Ground Support Equip 421X3	42	38	1	0	37	0	13	0	25
10. Instrument 422X0	24	29	0	0	29	0	0	0	29
11. Mech Acces 422X1	25	22	0	0	22	0	0	5	17
12. Electricians 423X0	32	37	0	0	36	1	0	0	37
13. Jet Mechanic 431X1C	23	25	0	25	0	0	13	3	9
14. Aircraft General 431X1E	403	358	31	179	36	0	14	46	298
15. Fuel System 431X5	23	18	0	0	18	0	0	2	16
16. Jet Engine 432Y0	83	88	5	0	83	0	0	2	86
17. Production Control 434X0	30	11	1	0	4	6	0	0	11
18. Weapons 462X0	18	9	0	0	0	9	0	0	9
19. Air Frame 534X0	39	45	0	0	45	0	5	5	35
20. Refrigeration 566X0B	14	12	0	0	12	0	1	3	8

*No training started due to lack of equipment and technical assistance and/or data.
**Training in IFF only

5. Analysis, Records and Reports Division:

a. Maintenance Analysis Section:

(1) Detailed maintenance statistics and analysis are presented monthly in the SAC U-78 Report. The aircraft scheduling and performance are reported in the 2AF (RCS: 2d-F3) Report.

(2) Over 300 job standards for the tactical B-58 aircraft have been published during this reporting period.

(3) Maintenance data will be coded in accordance with T.O. 1B-58-06, dated 15 August, beginning 1 October.

(4) Authority was granted by Hq AMC to code Area Cycle Work Order Prefix Look Phase and When Discovered Codes as devised by this organization. The approved codes are:

(a) Work Order Prefix

AW Phase I
AX Phase II
AY Phase III
AZ Phase IV

(b) IB-58A-06 - Aircraft Support General - Look Phase of scheduled inspection:

03600 Area Cycle
03610 Phase I
03620 Phase II
03630 Phase III
03640 Phase IV

(c) When Discovered Codes:

1 - area cycle predock
2 - area cycle indock
3 - area cycle postdock

NOTE: The above codes will be entered in the IB-58A-06 code book by all individuals.

(5) A conference was held to resolve problems concerning T.O. 00-25-06, Volume V, on 13 September with representatives from SAAMA, 43DCMA and 43AEMS in attendance. The completed final technical order is expected to be published in December 1960.

b. Reports and Administrative Section: All of the B-58 Test Force Maintenance Memoranda have been reviewed and those still applicable have been converted to 43d Wing Maintenance Standing Operating Procedures.

SECTION C Maintenance Problem Area and Recommended Solutions

1. Problem: B-58 Fuel Gaging:

a. The B-58 fuel gaging system design is such that considerable difficulty is being experienced during ground refueling operations. The system is designed to be most accurate at flight attitudes of $+2.5^{\circ}$ and up. The static ground attitude being -2.3° therefore, induces some error. Aircraft lateral movements controlled by the landing gear strut position can allow considerable error also.

b. System accuracy is checked by comparing pit gages with aircraft gages. Normal tolerance is 3.5%; however, this is often exceeded because of the variables mentioned above.

c. 43d Bomb Wg personnel have met with Convair Engineering in an attempt to resolve fuel servicing problems.

d. Recommended Solution:

(1) Check points at controlled aircraft altitude and intermediate fuel loads are desired for an interim fix.

(2) Dip-sticks are also desired.

(3) Design changes may be required if the above recommended changes do not eliminate the problems. Considerable time is involved in maintaining level conditions for present methods.

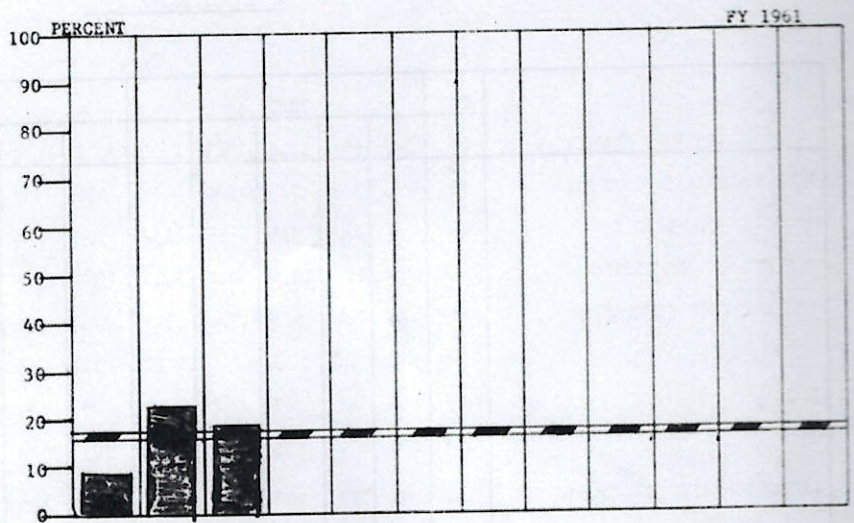
Robert C. Humant
for A. W. BLIZZARD, JR.
Colonel, USAF
Dep Comdr for Maintenance

This page left intentionally blank.

This page left intentionally blank.

III-12

B-58
IN
COMMISSION
RATE



	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
ACFT. HOURS ASSIGNED	9948	9397	8427									
HOURS IN COMMISSION	814	2034	1518									
% IN COMMISSION	8.2	21.6	18.0									

AVERAGE FISCAL YEAR 1960 

B-58 IN COMMISSION RATE

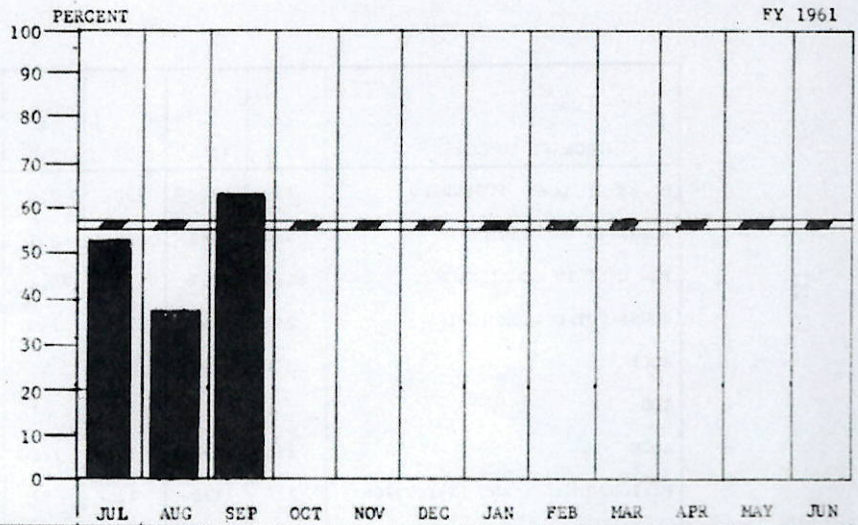
FOR SEPTEMBER 1960

AIRCRAFT NUMBER	TB	TEST					TACTICAL								TOTAL
	670	661	671	1014	1019	1020	2428	2429	2430	2431	2432	2433	2434	2436	
HOURS AIRCRAFT POSSESSED	720	476	720	720	720	457	330	720	720	720	720	720	24	660	8427
HOURS IN COMMISSION	167	0	0	135	16	138	10	299	266	124	138	82	7	136	1518
PERCENT IN COMMISSION	23.2	0.0	0.0	18.8	2.2	30.2	3.0	41.5	36.9	17.2	19.2	11.4	29.2	20.6	18.0
HOURS OUT OF COMMISSION	553	476	720	585	704	319	320	421	454	596	582	638	17	524	6909
AACP	26	0	24	3	0	10	14	16	18	54	6	52	0	29	252
TOC	29	0	24	27	0	27	3	27	27	104	44	49	0	21	382
ACCM	498	476	672	555	704	282	303	378	409	438	532	537	17	474	6275
PERIODIC MAINT AND INSPECTION	394	0	337	109	0	0	208	108	133	106	132	0	0	63	1590
MAL MECH DEFECTS & OPER DAMAGE	104	216	71	446	156	282	95	270	276	332	400	537	17	411	3613
OTHER	0	260	264	0	548	0	0	0	0	0	0	0	0	0	1072

CI-113

VI-III

TF-102
IN
COMMISSION
RATE



	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
ACFT. HOURS ASSIGNED	3458	3922	3948									
HOURS IN COMMISSION	1818	1462	2554									
% IN COMMISSION	52.6	37.3	64.0									

AVERAGE FISCAL YEAR 1960

28

31

TF-102 IN COMMISSION RATE

FOR SEPTEMBER 1960

III-15

AIRCRAFT NUMBER	1351	1356	1357	1358	1359	1362	4053	TOTAL
HOURS AIRCRAFT POSSESSED	720	720	720	720	720	182	207	3948
HOURS IN COMMISSION	480	280	684	505	528	69	8	2554
PER CENT IN COMMISSION	66.7	38.9	95.0	70.1	73.3	37.9	3.9	64.0
HOURS OUT-OF-COMMISSION	240	440	36	215	192	113	199	1435
AACP	1	42	2	86	68	0	46	245
TOC	1	1	1	1	1	0	1	6
AOCM	238	397	33	128	123	113	152	1184
PERIODIC MAINT AND INSPECTION	233	128	22	47	9	113	152	704
MAL MECH DEFECTS & OPER DAMAGE	5	269	11	81	114	0	0	480
OTHER	0	0	0	0	0	0	0	0

PART IV - TEST AND EVALUATION

Section A - General Analysis

1. The requirement for flight testing during September totaled 32 sorties, of which 3 were successfully accomplished, as shown in the summary below.

SEPTEMBER 1960 FLIGHT TEST SUMMARY

REQUIREMENT Type Sortie	SCHEDULED		SUCCESSFULLY ACCOMPLISHED	
	Nr.	Dates	Nr.	Dates
Profile	8	1, 16, 20	3	- - -
AST	7	2, 7, 8, 12, 14	5	- - -
Polar Nav	1	23	1	- - -
Max. Subsonic Range*	1	- - -	0	- - -
T-4	4	- - -	0	- - -
PTT & 491 Rotor	7	- - -	0	30
Fuel Dump	4	1, 8	2	1, 8
TOTAL	32		11	

*No maximum gross weight release from WADD

a. Three profile missions, developed for Category III flights were scheduled. Two of these missions were not flown because of ground aborts, one of which was a fuel leak and the other a booster pump failure. The third mission was an air abort due to failure of primary hydraulic system. Fifteen sorties were not scheduled because of (1) 7 conflicts with Project Boom-Boom, (2) - conflicts with AST program, (3) 3 conflicts with 51-19 training, and (4) 1 conflict with a higher headquarters directed mission. Project Boom-Boom and the AST program have tanker priority. Under the present allocation of one tanker per day, profile sorties cannot be scheduled the same date with AST or Boom-Boom sorties.

b. The AST sorties were not flown because of five maintenance cancellations. No additional ASI sorties were scheduled because

48

3

the AST engines were removed from #55-671 and installed on #59-2428 which is scheduled to return from Cycle I Flash-Up Modification 21 November 1960.

c. The scheduled Polar Navigation mission was air aborted due to flight control and air conditioning malfunctions.

d. The Max Subsonic Range mission was not scheduled because a requested one-time waiver of gross weight restriction has not been received from the B-58 WSPO.

e. Prior to 14 September no T-4 missions were scheduled because of Passive Defense Systems programmer malfunctions and TGSE incompatibilities. Scheduling of T-4 Testing during the last of the month was prevented by TGSE problems and conflict with 51-19 training.

f. Delivery date of #58-1019 from Convair was delayed until 23 September because of flight control write-ups. A 491 Rotor Test was successfully flown on 30 September. No phantom target testing was accomplished because of programmed maintenance to be accomplished on the airborne test equipment.

g. Fuel dump tests were not scheduled after 8 September. Evaluation of probe adaptors is dependent upon delivery of an additional prototype adaptor by Convair.

2. Flight test requirements for October* have been established at 20 total sorties as indicated below:

Type Sorties	Nr.	Hrs.	Total Hrs.
Profile	6	11	66
Polar Nav	1	11	11**
Subsonic Max Rng	1	8	8***
B/N, T-4, Refl.	4	4	16
PTT & 491 Rotor	4	3	12
Fuel Dump (8-10M)	4	4	4
	20		117

*The requirement for 13 AST Sorties for approximately 100 hours at 8 to 11 hours each was established and included in the monthly Test Order for October before the decision was firm on transfer of the engines from 671 to 428 (Ref. Hq SAC Msg. DORQ 26191, dated 26 September 1960). Inasmuch as 428 is not scheduled for return to the 43rd Bomb Wing from Cycle I Flash-Up modification until 21 November, this requirement has been deleted from the above as it will be impossible to schedule during October.

** Tanker Support Requested.
*** Weight Release Requested.

33

34

3. In the aircraft systems area:

a. It has become evident that in spite of special emphasis and progress by the contractor, reliability of the Flight Control System of the B-52 still is unsatisfactory. Consequently a formal project has been established to assist in analyzing flight discrepancies and isolating faulty components.

b. Tactical generator drive has continued to have a high failure rate (35.4 flight hours per failure). A formal project has been established to collect data, analyze causes and recommend corrective action.

4. In the electronic systems area:

a. Reliability and maintainability analyses relating to overall system effectiveness and search radar improvements have been made in order to evaluate the many improvement items included in ECP's 21CV and 21CX. ECP 21CX proposed for effectivity on A/C 97 and on, provides for greater overall search radar sub-system effectiveness primarily through redundancy.

b. It was necessary during the month to temporarily discontinue DECM flight testing until delay programmer malfunctions could be resolved, and incompatibilities between the DECM Mobile Tester, Tech Data and/or prime system could be investigated. The latter is still unresolved.

5. In the ground support equipment area:

a. Ground air conditioners are continuing to give unsatisfactory performance. Corrective actions for the most part have been non-effective.

b. Status of DECM TASE is one of confusion, because of lack of complete and reliable technical data, unknown compatibility with the prime system and lack of calibration information and requirements.

c. First Article Demonstration of two of the B/A automatic testers is continuing with close coordination between 43rd Bomb Wing, B-52 WSFO and the contractor.

6. A complete listing of Contractor-Air Force panels designed to resolve various weapon system and associated problems is included here for convenient reference by interested agencies.

B-58 CONTRACTOR & AIR FORCE WORKING GROUPS

<u>Name</u>	<u>Meeting Place</u>	<u>Approx. Meeting Interval & Date</u>	<u>Chairman</u>
E/N Engineering & Maint Review Meeting	Convair Ft Worth	Monthly 23 Sep 60	B-58 WSPO
Active & Passive Defense Engineering & Maintenance Review Meeting	Convair Ft Worth	Monthly 21 Sep 60	B-58 WSPO
Airframe Sys. Maintainability Group	Convair Ft Worth	Monthly 14 Sep 60	B-58 WSPO
J-79 Engine Reliability Group	Alt. G.E. & Convair	Monthly 13 Sep 60	Convair
GSE Sub-Committee to WSPG	Kelly AFB Carswell	6 Weeks 23 Aug 60	SAAMA
Tech Data Sub-Committee	Convair Ft Worth	Monthly 13 Sep 60	SAAMA - SAFR
E/N TGSE Problem Area Review Comm.	Sperry Great Neck	2 Months 5-6 Aug	B-58 WSPO
DECM & FCS TGSE Problem Review Comm.	Convair Ft Worth	6 Weeks 19-20 Sep	B-58 WSPO
TGSE Problem Area Review Comm.	Convair Ft Worth	Monthly 25-26 Aug	B-58 WSPO
Configuration Control Group	Convair Ft Worth	Monthly 24 Aug 60	B-58 WSPO
ECP Command Review Conference	Hq SAC	Monthly Week prior to CCG	SAC

The following is a recap of the problem status of each of these groups.

	Problems		
	Total	Classed	Open
Aircraft General (Maintainability Group)	157	149	8
Propulsion System Reliability Group	57	47	10
E/N Engr. & Maint. Problem Committee	339	282	57
DECM & FCS Engineering & Maint. Problem Committee	20	1	19
DECM & FCS TGSE	5	0	5
E/N TGSE Problem Area Review Committee	150	100	43
TGSE Problem Area Review Committee	45	12	33
Tech. Data Sub-Committee	14	0	14
GSE Sub-Committee to WSFO	27	0	19
TOTAL	814	609	205
PERCENT	100	74.8	25.2

7. Decision was made during the month by Hq SAC and WSFO to transfer the AST engines from Aircraft No. 071 (Art 12) to Nr. 428 (Art 31) presently in Cycle I Flash-Up modification which returns to 43rd Bomb Wing 21 November. It is directed that this aircraft will be flown on an accelerated basis with a goal of 30 hours per month.

8. ECP 186H, which provides improved lower leg, upper leg and arm restraint gear and improved hardware, has been costed and CCM given Contractor by WSFO to accelerate effectivity. TCPO 1-B58-708, dated 30 September, with 10 day compliance, provides non-slip hardware for the lower leg restraint, improved shoulder harness and crotch strap hardware and elastic keepers for upper leg restraints. The improved lower leg restraint (balance of ECP 186H provisions) will be accomplished by similar TCPO 1-B58-725 scheduled for release 1 December 1960.

Lonax Swathney
 LONAX SWATNEY
 Lt Colonel, USAF
 Director, Test & Evaluation

SECTION B - SPECIFIC DATA

I. AIRCRAFT SYSTEMS DIVISION

A. SUMMARY

1. Two new projects were initiated to determine engineering action required to correct system problems.

a. Project A-18, Titled: B-58 Flight Control System Reliability Improvement. The B-58 Flight Control System has not reached the degree of reliability desired for an operational weapon system. Flight discrepancies are occurring on 50% of all flights and most frequently in the autopilot or control surface dampers. This project was initiated to establish a special malfunction analysis so that faulty components needing improvement can be identified and corrected.

b. Project A-19, Titled: Tactical B-58 Generator Drive Evaluation. The tactical generator - drive assembly, P/N A50J237-6, incorporates several improvements over the test item, P/N A50J237-3A. However, a large number of failures of the drive (nineteen - 19 in 690:35 ft hours) indicates that engineering action is required to correct this problem.

2. Testing was continued on active projects during this reporting period (Section C-3).

3. Development, testing and monitoring was accomplished in areas not covered by active projects.

a. The J-79 engine 491 rotor test aircraft S/N 58-1019 was flown on four test flights with successful accomplishment attained on all flights. Two flights were to design speed and one flight was to 1.8 Mach. It is estimated that one additional flight will be required to complete the 491 rotor test minimum requirements.

b. Human Factors personnel of Eglin Air Proving Ground Center were at Carswell AFB during this period to make sound tests of ground power equipment operating under normal usage on the flight line and in hangars. In addition, audiograms are being taken on maintenance personnel. Results of these two tests will be used to develop more realistic noise level specifications for Ground Support Equipment and also to establish the requirement for noise protection devices for use by personnel working around ground powered equipment.

c. The ground refueling procedure as reported in this section in the previous progress report is still being operationally tested. The results of the test indicate that the procedure is expeditious, is relatively easy to perform and provides the required degree of safety. However, quantity indi-

ing system errors have caused some difficulty with ground servicing. This problem is being studied to determine if a better trouble-shooting method can be developed for isolating indicating system malfunctions.

4. The Unscheduled Aircraft Component removal list has been given additional item coverage during this period and has aided in pointing out two problem areas, resulting in establishment of Projects A-18 and A-19.

04

39

AIRCRAFT SYSTEM COMPONENTS

UNSCHEDULED REMOVALS - B-58 AIRCRAFT

NOTE: Unscheduled removals are for failures, repair or maintenance performed on component in aircraft.

SYSTEM: Component	AUGUST (HRS FLOWN 130-00)		SEPTEMBER (HRS FLOWN 163-20)		OCTOBER (HRS FLOWN _____)		NOVEMBER (HRS FLOWN _____)		TOTAL (HRS FLOWN 590-35)	
	Remov- als	Removal Rate Flt Hrs Per Removals	Remov- als	Removal Rate Flt Hrs Per Removals	Remov- als	Removal Rate Flt Hrs Per Removals	Remov- als	Removal Rate Flt Hrs Per Removals	Remov- als	Removal Rate Flt Hrs Per Removals
ELECTRICAL SYSTEMS										
Alternator	0	--	2	81.6					2	345.3
Constant-Speed Dr.	7	18.6	8	20.4					19	55.4
Control Unit Alt.	0	--	1	163.3					4	172.6
Power Contactors	0	--	1	163.3					1	690.5
Pwr Sup. 28v AC/DC	0	--	0	--					3	230.1
Pwr Sup. +150VDC	1	130	0	--					4	172.6
Pwr Sup. -150VDC	1	130	0	--					4	172.6
Pwr Sup. +250VDC	2	65	1	163.3					9	76.8
Fire Sensing Cable	4	32.5	1	163.3					4	172.6
Control Unit, Fire Sensing	1	130	2	81.6					11	62.9
Anti-Skid Gen.	0	--	0	--					1	690.5
Control Unit, Anti- Skid	0	--	0	--					0	--
Harness	1	130	1	163.3					4	172.6
Anti-Coll. Light	2	65	4	40.8					6	115.1
Nose Steer. Valve	1	130	1	163.3					2	345.3
Control Trans.	0	--	0	--					0	--
Position Trans.	1	130	0	--					1	690.5
HYDRAULIC SYSTEMS										
Primary Reservoir	0	--	0	--					0	--
Utility Reservoir	1	130.0	0	--					1	690.5
Hyd. Pump	12	10.8	2	81.6					24	29
Cooler	5	26	2	81.6					14	50
Expansion Gland	2	65	0	--					4	174
Filters	0	--	0	--					2	345.3
Surge Damper	1	130	0	--					4	174
Pressure Ind.	1	130	0	--					3	232
Quantity Ind.	0	--	0	--					1	690.5
Pressure Switch	5	26	3	56					15	46.5
Lines & Fittings	13	10	8	20					38	18.3

8-11

40

AIRCRAFT SYSTEM COMPONENTS, UNSCHEDULED REMOVALS - B-58 AIRCRAFT (CONT'D)

SYSTEM- Component	AUGUST (HRS FLOWN 130:00)		SEPTEMBER (HRS FLOWN 163:20)		OCTOBER (HRS FLOWN)		NOVEMBER (HRS FLOWN)		TOTAL (HRS FLOWN 690:35)	
	Remov- als	Removal Rate Flt Hrs Per Removals	Remov- als	Removal Rate Flt Hrs Per Removals	Remov- als	Removal Rate Flt Hrs Per Removals	Remov- als	Removal Rate Flt Hrs Per Removals	Remov- als	Removal Rate Flt Hrs Per Removals
AIR COND. & PRESS.										
Turbine Comp.	1	130	0	--					3	230.2
Cabin Temp. Con- troller	6	22	6	27.2					29	24
Air to Air Heat Exch.	0	--	0	--					0	--
Air to Water Heat Exch.	1	130	1	163.3					2	346.3
Cabin Press. Reg.	4	32.5	0	--					5	138.1
Cabin Safety Valve	0	--	0	--					0	--
Bleed Air Ck. & S/Off Valve	0	--	0	--					0	--
Modulating (Throt- tle) Val.	0	--	0	--					0	--
Cabin Air Flow Val	0	--	0	--					0	--
Recircul. Valve	1	130	0	--					1	690.5
Throttle Valve Control	2	65	0	--					3	230.2
Servo Press. Reg.	0	--	1	163.3					1	690.5
Wm. Air By Pass & Ck. Valve	0	--	0	--					0	--
Ram Air Eject.Val.	0	--	0	--					0	--
Press. Reducing Valve	0	--	0	--					0	--
Water Separator	2	65	2	81.5					7	98.5
High Press. Ck. Valve	0	--	0	--					0	--
Low Press. Ck. Val.	0	--	0	--					0	--
De-Fog S/Off Val.	0	--	0	--					0	--
Rain Removal S/Off Valve	0	--	0	--					0	--
Temp. Control Rheostat	0	--	0	--					5	138.1

11-9

24

41

3.
AIRCRAFT SYSTEM COMPONENTS, UNSCHEDULED REMOVALS - B-58 AIRCRAFT (CONT'D)

SYSTEM: Component	AUGUST (HRS FLOWN 130.00)		SEPTEMBER (HRS FLOWN 163.20)		OCTOBER (HRS FLOWN)		NOVEMBER (HRS FLOWN)		TOTAL (HRS FLOWN 690.35)	
	Remov- als	Removal Rate Flt Hrs Per Removals	Remov- als	Removal Rate Flt Hrs Per Removals	Remov- als	Removal Rate Flt Hrs Per Removals	Remov- als	Removal Rate Flt Hrs Per Removals	Remov- als	Removal Rate Flt Hrs Per Removals
AIR COND. & PRESS. (Cont'd)										
Pneu.Temp.Control	1	130	0	--					1	690.5
Cabin Press. Pneu. Cont.	0	--	2	81.5					2	345.3
Critical Temp.Ind	1	130	0	--					1	690.5
Temp. Sensor	0	--	3	54.5					3	230.8
Thermal Switch	0	--	2	81.5					2	345.3
Ducting (Cold Air)	0	--	2	81.5					2	345.3
Ducting (Hot Air)	0	--	0	--					0	--
Servo & Control Tubing	0	--	2	81.5					2	345.3
Canopy Seal Press Reg.	4	32.5	2	81.7					9	76.8
Canopy Seal Shuttle Val.	0	--	1	163.3					2	345.3
Canopy Cont. Val.	0	--	0	--					0	--
LIQUID OXYGEN SYS.										
LOX Converter	0	--	0	--					0	--
Fill-Bld-Up-Vent Valve	0	--	0	--					0	--
LOX Control Panel	0	--	0	--					0	--
LOX Sys. Plumbing	1	130	0	--					1	690.5
LOX Quan. Ind.Sys.	1	130	0	--					1	690.5
FLT CONT & A/P SYS										
Pwr Cont.Link Ass	9	14.4	8	20.4					32	21.6
Rate Gyro & Accel Pack.	3	43.3	3	54.4					9	76.8
A/P Amp. Comp.Ass	4	32.5	6	27.2					24	28.8
Air Data Computer	0	--	2	81.6					6	115.1
Rud.Damper Servo Ass	2	65.0	5	32.6					12	57.5

AIRCRAFT SYSTEM COMPONENTS, UNSCHEDULED REMOVALS B-58 AIRCRAFT (CONT'D)

SYSTEM: Component	AUGUST (HRS FLOWN 130:00)		SEPTEMBER (HRS FLOWN 163:20)		OCTOBER (HRS FLOWN _____)		NOVEMBER (HRS FLOWN _____)		TOTAL (HRS FLOWN 690:35)	
	Remov- als	Removal Rate Ft Hrs Per Removal	Remov- als	Removal Rate Ft Hrs Per Removals	Remov- als	Removal Rate Ft Hrs Per Removals	Remov- als	Removal Rate Ft Hrs Per Removals	Remov- als	Removal Rate Ft Hrs Per Removals
FLT CONT & A/F SYS (Cont'd)										
Rudder Act. Cont. Valve	0	--	0						0	
Elevon Act. Cont. Valve	1	130	1	163.3					2	345.3
Cont. Stick, Cables & Link.	1	130	2	81.6					8	80.4
Cont. Surface Ind System	1	130	1	163.3					5	138
Cockpit Switches	0	--	0	--					2	345.3
Throttle Servo	0	--	0	--					0	
DECELERATION CHUTE										
Parachute	5	26	8	20.4					13	53.2
Parachute Act. Mech.	1	130	0	--					2	345.1
INSTRUMENTS										
J-8 Attitude Ind.	2	65	2	81.6					11	62.8
EPR Transducer	2	65	2	81.6					13	53.2
EPR Indicator	1	130	1	163.3					2	345.3
Fuel Flow Trans.	3	43.4	4	40.9					13	53.2
Fuel Flw Ind.	1	130	1	163.3					4	172.6
Airspeed Ind.	3	43.4	5	32.7					10	69
FUEL										
Fuel Leaks A/C	8	16.3	16	9.5					54	12.0
Fuel Leaks Pod	0	--	4	40.9					17	40.8
105 Booster Pumps	0	--	0	--					0	--
106 Booster Pumps	0	--	0	--					0	--
Quantity Ind.	1	130	0	--					3	230.3

5.
AIRCRAFT SYSTEM COMPONENTS, UNSCHEDULED REMOVALS - B-58 AIRCRAFT (CONT'D)

SYSTEM. Component	AUGUST (HRS FLOWN 130:00)		SEPTEMBER (HRS FLOWN 163:20)		OCTOBER (HRS FLOWN _____)		NOVEMBER (HRS FLOWN _____)		TOTAL (HRS FLOWN 690:35)	
	Remov- als	Removal Rate Flt Hrs Per Removals	Remov- als	Removal Rate Flt Hrs Per Removals	Remov- als	Removal Rate Flt Hrs Per Removals	Remov- als	Removal Rate Flt Hrs Per Removals	Remov- als	Removal Rate Flt Hrs Per Removals
FUEL (Cont'd)										
Tank Probes	3	43.3	1	163.4					9	77
CG Calibrator	0	--	0	--					1	690.5
Pump Low Press. Switch	0	--	0	--					2	345.3
CG Indicator	0	--	0	--					1	690.5
Lines & Fitting	2	65	1	163.4					5	139
STRUCTURES										
Windshield Pilot Pigmented	0	--	0	--					0	--
Elevon Hinge Pins	0	--	0	--					0	--
Elevon	0	--	0	--					0	--
Rudders	0	--	0	--					0	--
Wing Skin Panels	0	--	1	163.3					1	690.5
Fuselage Skin Panels	0	--	0	--					0	--
Canopies	0	--	1	163.3					1	690.5
Main Gear Strut	0	--	0	--					0	--
Main Gear Act. Link.	0	--	0	--					0	--
Main Gear Doors	0	--	2	81.6					2	345.2
Nose Gear Strut	0	--	0	--					0	--
Nose Gear Act. Link.	1	130	0	--					1	690.5
Nose Gear Doors	0	--	0	--					0	--
*TIRES, WHEELS & BRAKES										
MLG Wheel	0	--	0	--					4	360.6
MLG Wheel Bearing	0	--	1	200.2					4	360.6

IV-12

5.
AIRCRAFT SYSTEM COMPONENTS, UNSCHEDULED REMOVALS B-56 AIRCRAFT (CONT'D)

SYSTEM: Component	AUGUST (HRS FLOWN 130:00)		SEPTEMBER (HRS FLOWN 163:20)		OCTOBER (HRS FLOWN _____)		NOVEMBER (HRS FLOWN _____)		TOTAL (HRS FLOWN 590:35)	
	Remov- als	Removal Rate Fit Hrs Per Removals	Remov- als	Removal Rate Fit Hrs Per Removals	Remov- als	Removal Rate Fit Hrs Per Removals	Remov- als	Removal Rate Fit Hrs Per Removals	Remov- als	Removal Rate Fit Hrs Per Removals
*TIRES, WHEELS & BRAKES (Cont'd)										
MLG Valve Stem	7	31.4	27	7.4					34	10.9
MLG Wheel	0	--	0	--					6	240.4
MLG Wh. Bearing	0	--	0	--					9	150.3
MLG Valve Stem	2	108.5	0	--					14	103.6
Tires (P/N 95-GL- 110TL)	51	4.2	33	6.1					696	2.1
Brakes	16	13.6	0	--					17	83.3
POWER PLANTS										
A/B Ignition Unit	0	--	1	200.2					3	480.6
A/B Fuel Control	0	--	2	100.1					3	721
A/B Fuel Pump	0	--	0	--					2	721
Anti-Icing Valve	1	219.8	1	200.2					2	721
Check & Vent Val.	0	--	1	200.2					4	360.5
CIT Sensor	0	--	0	--					4	360.5
Control Alternat.	2	110	0	--					7	206
Crossover Valve	0	--	0	--					2	721
Flow Divider & Selector Valve	1	219.8	0	--					4	360.5
Filter, Nozzle Area Cont.	0	--	0	--					7	206
Filter, Pilot Burner	0	--	1	200.2					1	1441.8
Fuel Nozzle, Main	2	110	0	--					3	888.4
Main Fuel Control	0	--	2	100.1					3	480.6
Main Fuel Pump	0	--	2	100.1					3	721
Main Ignition Unit	0	--	0	--					0	--
Main Lobe Pump	1	219.8	1	200.2					3	288.4
Nozzle Area Cont.	1	219.8	0	--					3	288.4

7.
AIRCRAFT SYSTEM COMPONENTS, UNSCHEDULED REMOVALS - B-58 AIRCRAFT (CONT'D)

SYSTEM: Component	AUGUST (HRS FLOWN 130:00)		SEPTEMBER (HRS FLOWN 163:20)		OCTOBER (HRS FLOWN _____)		NOVEMBER (HRS FLOWN _____)		TOTAL (HRS FLOWN 690:35)	
	Remov- als	Removal Rate Flt Hrs Per Removals	Remov- als	Removal Rate Flt Hrs Per Removals	Remov- als	Removal Rate Flt Hrs Per Removals	Remov- als	Removal Rate Flt Hrs Per Removals	Remov- als	Removal Rate Flt Hrs Per Removals
*POWER PLANTS (Cont'd)										
Nozzle Feed Back Cable	0	--	0	--					0	--
Pilot Burner Nozz.	0	--	0	--					1	1441.8
Press'g & Drain Valve	0	--	0	--					4	360.5
Primary Nozzle Actuator	1	219.8	0	--					2	721
Prim. Nozzle Pump	0	--	0	--					1	1441.8
Primary Nozzle Sensor	0	--	0	--					6	240.3
Scavenge Pump #2	0	--	0	--					1	1441.8
Scavenge Pump #3	0	--	0	--					1	1441.8
Second. Noz. Act.	0	--	0	--					2	721
Sec.Noz.Cont.Unit	0	--	1	200.2					1	1441.8
Second. Noz. Pump	0	--	1	200.2					14	103
Spark Plug A/B	0	--	0	--					2	721
Spark Plug Main	0	--	0	--					4	360.5
Sump Press. Valve	1	219.8	0	--					4	360.5
Tank Press. Valve	0	--	0	--					4	360.5
Temp. Amplifier	0	--	1	200.2					6	240.3
Thermocouple Top & Btm.	0	--	0	--					0	--
Torque Booster	0	--	0	--					1	1441.8
Valve, Fuel Signal	1	219.8	1	200.2					7	206

*Hours for Wheel, Tire, Brake, & Engine Components are total tactical plus test aircraft time.

August - 219:50 Hrs.
September - 200:10 Hrs.
Total from 1 December - 1441:45 Hrs.

II. ELECTRONICS SYSTEMS DIVISION SUMMARY

A. General comments.

1. The electronics systems on the B-58 aircraft are defined as the Bombing Navigation System, the Civil and Military Navigation Aids System, the Communications System, the Passive Defense System, and the Active Defense System.

2. Bombing Navigation Systems.

a. A significant portion of the Bomb-Nav engineering activity in September was devoted to reliability studies in relation to overall system effectiveness and Search Radar improvements. As a result of Air Force dissatisfaction with the changes originally proposed for the Search Radar at Aircraft ST, Convair, Sperry and Raytheon have reevaluated their proposal and have submitted a new proposal, EOP 21-CX. This EOP is a proposal to make major design changes in the Search Radar to improve the reliability and maintainability of this subsystem. The approach taken has been to simplify the radar as much as possible without sacrificing capability. In addition, redundancy has been added by providing alternate circuits in the Indicator Console Unit and an alternate Receiver Transmitting Modulator Unit. The selection of redundant circuitry was based on the high failure electronics circuits. As much as possible, the switching has been arranged to fail safe in the 60/60 range. This proposal is currently being studied by the Electronics Systems Division in relation to the failure pattern at Carswell during the period of December 1959 through August 1960.

3. Communication.

a. The emergency UHF radio, AN/ARC-74, is now installed on three of the delivered aircraft. Testing to date has been confined to ground checks from aircraft to the tower. No authority has been received to use the 242.5 mc or 243.5 mc frequencies during flight tests and the 243.0 mc frequency is restricted to emergency use only.

b. Beginning at Aircraft Nr. 59-2437 (Nr. 40) tactical aircraft will be provided with a "Mayday" emergency communications capability. In an emergency when the pilot energizes the Alert-Bailout switch the HACON, the Command or Emergency UHF and the IFF sets are turned on and the UHF radio set to the guard channel. At the same time "hot mike" interphones are provided to all three stations. When the pilot ejects, his seat energizes relays which cause the UHF set to transmit a 1000 cycle

tone and also keys the HACON. This last feature has caused a maintenance problem because the HACON radio is liable to be keyed when the pilot's seat is removed for maintenance. This is presently prevented by removal of the 28vdc interphone and "Mayday" fuses.

4. Military Nav Aids.

a. The major problem in the area of Military Navigation Aids is lack of ground support equipment. The confidence test set for the ARN-136 Position Indicating Beacon and the performance and component testers for both PI and Rendezvous Beacon have not yet been received. Two 43rd Bomb Wing aircraft are now equipped with APN-136 systems so that this system can now be flight tested.

5. Passive Defense System.

Between 1 and 14 September, T-4 flight testing was suspended because of Delay Programmer malfunctions. The lack of standardization among Traveling Wave Tubes requires the use of the Mobile Periodic Testers to determine the compatibility of LRU's within a system whenever a TWT is changed in any LRU. This requirement for frequent trailer checks of the system will affect turn around time.

6. Active Defense Systems.

The primary deficiency of the Active Defense System continues to be the ammunition feed system. Three fire-outs this month were incomplete because of stiff links, and T-15 feeder timing. Action is being taken at Carswell AFB, and Eglin AFB to isolate the key problem areas. At Carswell, each malfunction is carefully analyzed by Air Force engineers with Convair technical assistance. At Eglin, ground gunfiring tests are being accomplished with a simulated aircraft configuration, instrumented to determine detailed ammunition feed system characteristics.

B. Reliability.

1. General.

a. This section of the report presents the reliability for the following systems, Bombing and Navigation, Active Defense, Passive Defense, and Communications. Two

aspects of reliability, inherent and operational, are shown. The period covered is 1 December 1959 through 30 September 1960. The period 1 September through 30 September may be identified in most cases. Aircraft 428-435 was received on 3 September. Due to major changes in the Bomb-Nav System the reliability data on Aircraft 435 is shown separately from aircraft 428-434. However, this condition applies only to the Bombing and Navigation System since there were no major changes in the other electronic systems.

b. Definitions.

(1) Inherent Reliability is determined by considering only those failures which occur while the unit is installed on the aircraft and after the unit has operated satisfactorily for at least two hours.

(2) Inherent Reliability does not include failures which were due to deficient maintenance, defective new units, faulty test equipment or unconfirmed failures.

(3) Operational Reliability is determined by considering all failures regardless of cause and includes those failures used in computing inherent reliability.

(4) Both types of reliability are shown as meantime between failure (MTBF). MTBF (in hours) is determined by dividing the total "on time" by the total failures.

(5) Random failures are constituted by parts which fail only once during the mean life of a major assembly in which the failed part is used.

2. Primary Bombing and Navigation System Reliability (Aircraft 428-434 and 435).

a. Reliability.

(1) The following is a breakdown of failures by sub-system and line replaceable units (LRU's) showing failures in September and total failures to date. All LRU's in each sub-system are shown.

49

TABLE I
SUB-SYSTEM AND LINE REPLACEABLE UNIT (LRU) FAILURES

	<u>September</u>		<u>Total to Date</u>	
	<u>436</u>	<u>428-434</u>	<u>436</u>	<u>428-434</u>
<u>Computers:</u>				
Pilot's Data Indicator	0	2	0	11
Navigation Unit Structure	0	0	0	2
Astro Panel	0	1	0	13
Offset and Storage Panel	0	1	0	11
Malfunction Control Panel	0	1	0	5
Navigation Control Panel	3	3	3	18
Sighting & Test Panel	8	11	8	62
Navigation Rack	0	1	0	13
Heading Rack	0	3	0	5
Sighting Range Rack	0	6	0	30
Steering Rack	0	0	0	7
Sighting Rack	0	0	0	17
Airspeed Computer Rack	1	1	1	24
Voltage Regulator Rack	0	1	0	7
Precision Frequency Source	0	0	0	1
Tracking & Flight Control	0	0	0	1
Auxiliary Control Panel	0	0	0	1
Indicator Panel	0	6	0	41
Free Fall Bomb Pod Package	0	0	0	26
TOTAL	12	37	12	295
<u>Stabilization:</u>				
Prime Nav Stab Unit	1	5	1	29
Stab Computer Unit	0	0	0	3
Stab Computer Amplifier Unit	0	0	0	8
Auxiliary Reference Unit	0	4	0	24
Stab Amplifier Unit	0	9	0	22
TOTAL	1	18	1	86
<u>Astrotracker:</u>				
Tracker Unit	0	2	0	9
Astro Amplifier Unit	0	1	0	27
TOTAL	0	3	0	36

SUB-SYSTEM AND LINE RELEASABLE UNIT (LRU) FAILURES (Cont'd)

	September 430 430-434	October 435	November 436	Total to Date 430-436
<u>Search Radar:</u>				
Indicator Console Unit	3	22	0	111
Control Servo Unit	2	2	2	37
Indicator Power Supply	0	0	0	0
Photo Recorder Unit	1	1	1	28
Radome	0	0	0	0
Antenna Assembly	0	0	0	0
Receiver Transmitter Modulator	0	10	0	86
Waveguide & Parts	0	0	0	1
Filter Unit	0	2	0	31
TOTAL	6	53	6	306
<u>Doppler Radar:</u>				
Receiver Radome	0	0	0	0
Transmitter Radome	0	0	0	0
Receiver Antenna Assembly	0	2	0	8
Transmitter Antenna Assembly	0	0	0	2
Klystron Ierr. Controller	0	0	0	0
Waveguide & Parts	0	0	0	0
Electronic Package	0	8	0	67
TOTAL	0	10	0	77
<u>Radio Altimeter:</u>				
Electronic Control Amplifier	0	2	0	8
Receiver, Transmitter & Radome	0	0	0	6
TOTAL	0	2	0	14
<u>Inflight Printer</u>				
Printer Unit	1	3	1	25
Printer Control Unit	1	4	1	25
TOTAL	2	7	2	50

(2) Table II is a list of high failure LRU's showing failures to date and primary cause of failure. An LRU is classified as a high failure item if it exceeds the average failure per LRU for the sub-system in which it is used. The average failure per LRU is determined by dividing the total failures of the

sub-system by the number of LRU's within the sub-system. Where "unconfirmed" appears in the "primary cause" column, it indicates that the LRU was removed and bench checked but no discrepancies were found. Where "random" appears in the "primary cause" column, it indicates various sub-units within the LRU have failed only once. Aircraft 436 data is not included in Table II due to the short period of time 436 has been available.

TABLE II
LINE REPLACEABLE UNIT (LRU) FAILURE ANALYSIS

	<u>Total</u> <u>Failures</u>	<u>Primary Cause</u>
<u>Computers, Ave. 15.0</u>		
Navigation Control Panel	18	Unconfirmed 6 Motor tacks 2 Random 10
Sighting & Test Panel	62	Unconfirmed 8 Synchros 26 Counters & Gears 7 Pots 6 Clutches 4 Wiring 6 Random 5
Sighting Range Rack	30	Unconfirmed 6 Motor tacks 4 Synchros 7 Pots 4 Wiring & Pins 3 Amplifiers 5 Relays 1
Sighting Rack	17	Unconfirmed 6 Amplifiers 8 Random 3
Airspeed Computer Rack	24	Unconfirmed 9 Amplifiers 5 Relays 4 Pots 2 Resistors 4

LINE REPLACEABLE UNIT (LRU) FAILURE ANALYSIS (Cont'd)

	<u>Total Failures</u>	<u>Primary Cause</u>	
<u>Computers (Cont'd)</u>			
Indicator Panel	41	Unconfirmed	12
		Pots	3
		Fuses	3
		Wiring	6
		Random	12
		Counters	1
Free Fall Bomb Package	26	Unconfirmed	4
		Pots	8
		Amplifiers	5
		Random	9
<u>Stabilization, Ave. 17.2</u>			
Prime Nav. Stab Unit	29	Accelerometers	17
		PA-12 Amp.	4
		Gyros	4
		Random	3
		Unconfirmed	1
Auxiliary Reference Unit	24	Unconfirmed	7
		Overheated	4
		Random	11
		Gyro	1
		Relays	1
Stab. Amplifier Unit	22	SA2-2 Amp.	17
		Random	5
<u>Search Radar, Ave. 34.0</u>			
Indicator Console Unit	111	Unconfirmed	40
		Z-Cars	14
		Wiring &	
		Plugs	14
		Random	41
		Pwr Supply	2
Control Servo Unit	37	Unconfirmed	20
		AZ Reversal	
		Assy	8
		Synchros	2
		Random	3
		Amplifiers	2

LINE REPLACEABLE UNIT (LRU) FAILURE ANALYSIS (Cont'd)

	<u>Total Failures</u>	<u>Primary Cause</u>
<u>Search Radar (Cont'd)</u>		
Receiver Transmitter Mod- ulator	86	Unconfirmed 12 TR Tubes 5 Magnetrons 8 Low Voltage 6 Pwr Supply Local Oscil- 7 lators Diodes 13 Mod.Pwr.Sup. 5 Random 30
<u>In-flight Printer, Ave. 25.0</u>		
Printer Unit	25	Unconfirmed 9 Random 16
Printer Control	25	Unconfirmed 2 Z-1, 2 & 5 6 Random 17
<u>Doppler Radar, Ave. 11.0</u>		
Electronic Package	67	Freq Trackers 29 AF-IF 3 Coherency 2 Distribution 10 Panel Unconfirmed 13 Random 10
<u>Radio Altimeter, Ave. 7.0</u>		
Electronic Control Amplifier	8	Unconfirmed 2 Adjustments 3 Amplifier & 2 Tubes Random 1

(A/C 428 and 434). (3) Inherent Meantime Between Failure (MTBF)

(a) Figures 1 and 2 are the Inherent Reliability Graphs which show the MTEF for the seven sub-systems that comprise the Bombing and Navigation System. The point on the

THIS PAGE LEFT BLANK INTENTIONALLY

IV-23

55

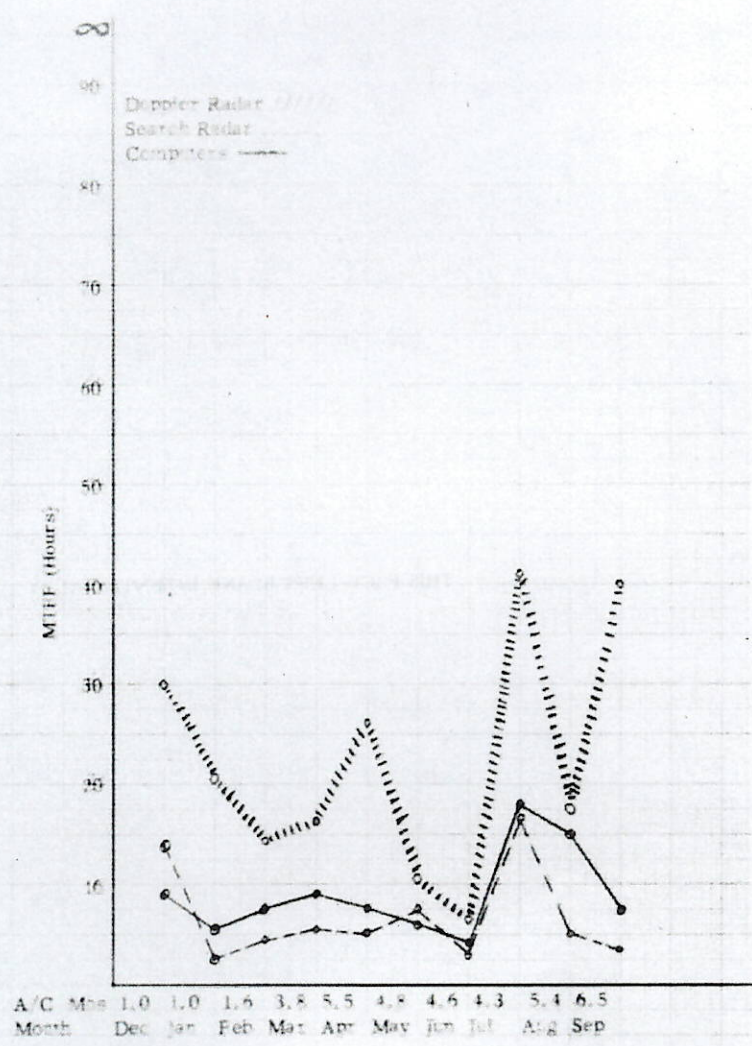
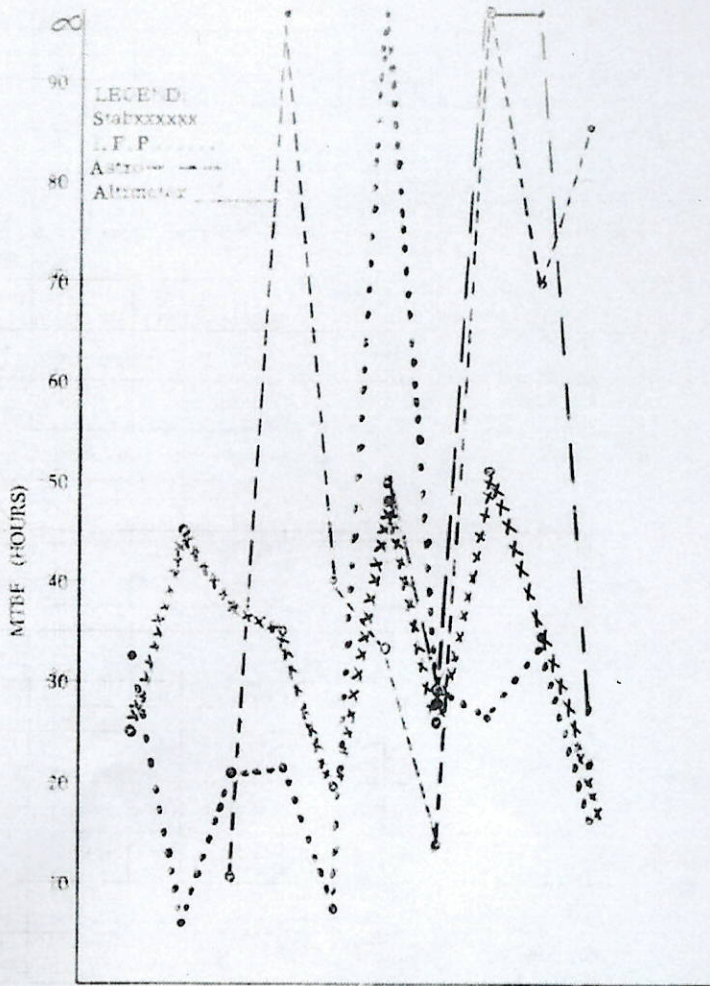


Fig 1. Inherent Reliability

IV-24



A/c Mos 1.0 1.0 1.5 3.8 5.5 4.8 4.6 4.3 5.4 6.5
 Month Dec Jan Feb Mar Apr May Jun Jul Aug Sep

Fig 2 Inherent Reliability

graph above each point represents that sub-system's MTEF for that particular month. The data is not cumulative.

(b) There were no failures recorded on the astrotracker during December 1959 and January 1960. There were no failures recorded on the radio altimeter during December 1959, January, February, March and April 1960. Therefore, the MTEF's for these sub-systems were indefinite for those months and no point appears on the graph.

(c) Points on the graph for each sub-system each month are connected to show trends.

(d) The operational and inherent MTEF's for aircraft 2436 are shown in Table III. Due to this aircraft having been in the inventory less than 30 days an insufficient amount of reliability data had been obtained for plotting on graphs.

TABLE III

MEANTIME BETWEEN FAILURE SUMMARY FOR AIRCRAFT 436

	<u>Inherent</u>	<u>Operational</u>
Computers	7.2	5.4
Stabilization	61.0	61.0
Search Radar	*Indefinite	6.0
Doppler Radar	*Indefinite	*Indefinite
In-flight Printer	13.5	13.5
Radio Altimeter	*Indefinite	*Indefinite

*Indefinite indicates no failures.

(4) Operational Meantime Between Failure (MTEF).

(a) Figures 3 and 4 are the Operational Reliability Graphs which represent the Operational MTEF per month for the seven sub-systems that comprise the Bombing and Navigation System. The point on the graph for any particular sub-system represents that sub-system's MTEF for that month's activity. The data is not cumulative.

(b) No failures were recorded against the astrotracker during December 1959 or January 1960 and no failures were recorded against the radio altimeter during December through April, both months inclusive. Therefore, the MTEF for these two

THIS PAGE LEFT BLANK INTENTIONALLY

IV-27

00

59

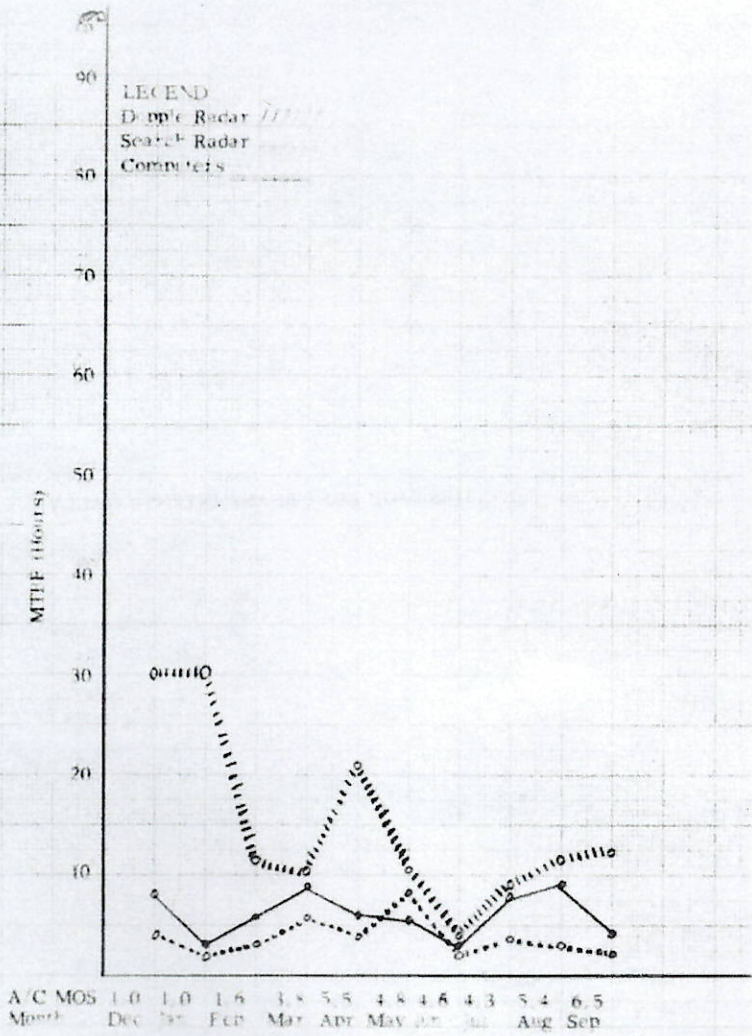


Fig. 3. Operational Reliability