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K410.01-8A
July-Dec. 1957
Vol. V
RETURN TO:
Director
Research Studies Institute
Attn: Archives Branch
Maxwell AFB, Alabama

CONAD / NORAD

HISTORICAL SUMMARY

(UNCLASSIFIED)

JULY - DECEMBER 1957

VOLUME V

SUPPORTING DOCUMENTS

183 Through 233

[redacted]

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COOP-T

Jul 25 1957

SUBJECT: Revised Plan for the Security Control of Air Traffic During A Military Emergency (SCATER)

TO: Commander, each CONAD Region

1. The Plan for the Security Control of Air Traffic during a Military Emergency (SCAT), dated 15 July 1952, has been superseded by the Plan for the Security Control of Air Traffic and Electromagnetic Radiations During an Air Defense Emergency (SCATER). This Plan was approved by the Secretary of Commerce and Secretary of Defense on 7 May 1957.

2. Principal features of the revised Plan are:

a. It is a consolidation of the former SCAT Plan and the basic Air Division (Defense) SCATER Plans.

b. It applies to all areas of United States jurisdiction.

c. It outlines the sequence of SCATER implementation actions and the related responsibilities of CONAD and the CAA in more detail. Particular attention is invited to the following:

(1) SCATER actions will no longer be initiated by use of Air Defense Warning conditions "Red", "Yellow", or "White", but by specific "AIR DEFENSE INSTRUCTIONS" to "IMPLEMENT FULL SCATER" OR "TERMINATE FULL SCATER", or "APPLY EMERGENCY SCAT RULES." This change, however, does not preclude aeronautical facilities from being notified of these warning conditions from civil defense or other sources. SCATER actions will not be taken on such notification except as prescribed in the instructions in parentheais under "A" of the SCATER Actions Forms.

(2) Simulated warning conditions "Applejack", "Lemon Juice", "SNOWMAN" and "Fadeout" will no longer be used for SCATER tests. Tests will be initiated and terminated by the use of "THIS IS A SCATER TEST" or "TERMINATE SCATER TEST."

d. It contains Emergency Rules for the Security Control of Air Traffic.

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COOOP-T, Subject: Revised Plan for the Security Control of Air Traffic During a Military Emergency (SCATER)

e. It directs Federal civil and military aeronautical facilities to participate in periodic tests of the SCATER Plan in accordance with procedures developed by CONAD and CAA.

f. It substitutes the term "Air Defense Emergency" for "Military Emergency."

3. The following implementing actions on the part of CONAD and CAA are necessary, and are being accomplished as expeditiously as possible.

a. Develop a CONAD/CAA SCATER Plan. This Plan will consist of:

(1) The Department of Defense/Department of Commerce SCATER Plan.

(2) CONAD/CAA Supplements developed jointly by Headquarters CONAD and CAA. These Supplements will contain basic instructions and information which are applicable throughout the CONAD area of responsibility and will prescribe format and content for Appendices and/or Attachments to be developed on a CONAD Region or Division basis, as required.

(3) Issue revised classified SCATER material in a CONAD/CAA classified SCATER Plan. This Plan will be disseminated by Headquarters CONAD under separate cover. Appendices and/or Attachments to this Plan will be developed by CONAD Regions and/or Divisions as prescribed in the Plan.

b. Prepare and issue revised SCATER Actions Forms to all civil and military aeronautical facilities and airport managers.

c. Distribute SCATER Tests Report Post Cards to all recipients of SCATER Actions Forms.

d. Publish a CONAD regulation delineating responsibilities of CONAD Commanders for SCATER Plan preparation and execution. Headquarters CONAD will also request that AFR 60-24, Control of Air Traffic During an Air Defense Emergency (SCATER), be superseded by a joint AF-Army-Navy regulation which will specifically direct the compliance by the forces of each of the military Services with emergency SCATER requirements and for participation in periodic SCATER tests.

4. Copies of the Department of Defense/Department of Commerce SCATER Plans, SCATER Actions Forms and SCATER Test Report Post Cards

COOOP-T, Subject: Revised Plan for the Security Control of Air Traffic During A Military Emergency (SCATER)

have been supplied to the CONAD Division CAA ADLO. Copies of CONAD/CAA Supplements will be forwarded to the CONAD Divisions under separate cover.

5. SCATER Actions Forms and detailed instructions for participation in tests will be completed by the CONAD Division CAA ADLO. These instructions and copies of the CONAD/CAA SCATER Plan will be distributed by the CAA ADLO in collaboration with the CONAD Division Commanders.

6. SCATER testing will consist of the following:

a. Periodic SCATER communications tests will be conducted not to exceed once each week. Those tests will originate in the CONAD COC through the Region and Division Control Centers to the ARTC Center. The tests will terminate at the ARTC Center.

b. SCATER tests will be conducted approximately every 60-90 days. Such tests will be initiated by the CONAD Divisions in collaboration with national, regional or division air defense exercises, wherever practicable. To insure full participation of all facility personnel, each test will be conducted in three phases a phase for each eight hour tour of duty (0000-0800, 0800-1600, 1600-2400 local time). Each phase will be terminated after sufficient time has elapsed for participating facilities to perform all test actions. Aeronautical facilities will participate in SCATER tests except where such participation will involve the safety of air traffic. In the event an ARTC Center is unable to participate, the Division Control Center will be advised, "Unable to participate." In such instances, the test phase or phases involved will be rescheduled for the corresponding period of the following day.

7. Although the Department of Defense/Department of Commerce SCATER Plan has received general distribution, CONAD/CAA requirements cannot be implemented or tested until all supplementary instructions and other material referred to above have been prepared and distributed. This headquarters, in coordination with CAA, has agreed that such material will be available at the CONAD Divisions in sufficient time to be effective on 1 October 1957. In the interim, SCATER actions will have to be implemented by use of instructions contained in existing SCATER plans and SCATER Actions Forms.

COOOP-T, Subject: Revised Plan for the Security Control of Air Traffic During A Military Emergency (SCATER)

8. Similar instructions will be issued by CAA to all CAA facilities.

FOR THE COMMANDER-IN-CHIEF:

Copy furnished:
CAA Liaison Office,
DCS/O, ADC
COCOC

/s/t/ HARVEY T. ALNESS
Major General, USAF
DCS/Plans & Operations

/s/t/ Major Fuss
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18 Jul 57

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Hq 34th CONAD Div, 31 July 57, SUBJ: DOD/DOC SCATER Plan

NOOOP-T 2d Ind SEP 10 1957

Hq North American Air Defense Command, Ent Air Force Base, Colorado Springs, Colorado

TO: Commander, Continental Air Defense Forces, Central CONAD Regio Richards-Gebaur Air Force Base, Grandview, Missouri

1. Reference paragraph 2a. Nothing is contained in paragraph 8a(4) of the SCATER Plan which states that aircraft will be grounded under Emergency SCAT Rules. However, paragraph 8a(4)(b) implies that traffic may be grounded in ADIZs since limitation on the traffic flow is authorized. Outside of ADIZs, it is expected that traffic will be allowed to operate within the restrictions specified in paragraph 7 of the SCATER Plan.

2. Reference paragraph 2b(1). The interpretation is not correct. Full SCATER differs from Emergency SCAT Rules to the extent that if a Division or Region Commander directs Full SCATER, civil and non-tactical military air traffic within the area designated will be grounded or diverted and navigational aids will be controlled. Emergency SCAT Rules were established to provide the Division Commander with a means of applying specific restrictions on air traffic in order that he might have more positive and immediate control over such traffic should Full SCATER be required.

3. Reference paragraph 2b(2). Division Commanders may implement Full SCATER, without prior approval or direction of higher headquarters in event a condition of Air Defense Emergency has been declared, or provided he has declared an Air Defense Warning Red for his area of responsibility prior to a declaration of Air Defense Emergency by CINCNORAD.

4. Reference paragraph 3a. This headquarters has no information that civil aircraft will be used to support tactical operations. However, in the event that this situation should arise, it is assumed that these aircraft will be given the tactical designator of the using agency and will be handled accordingly.

5. Reference paragraph 3b. The definition of an "Open Area" as contained in the DOD/DOC SCATER Plan is essentially the same as that contained in AFR 60-22 dated 24 October 1955. It has merely been modified to provide for ease of understanding by both civil and military agencies.

6. Reference paragraph 3c. Security Control Clearances are designed to insure that aircraft will be readily identified regardless of the area or route of operation. Security Control Clearances are used

DUPLICATE

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daily as DVFR flight plans or IFR flight plans when aircraft are penetrating air defense identification zones as stipulated in current Air Force and CAA instructions. CAA has issued specific instructions for guidance of all interested agencies, which are contained in their manual of operations, revised 1 March 1956, titled, "Standard Operating Procedures for Security Control of Air Traffic." This document was prepared by the Airways Operating Division of the Civil Aeronautics Administration. USAF guidance for security control clearances is as contained in AFR 60-22.

7. Reference paragraph 3c(1) and (2). As stated in paragraph 7b (2)(a) of the SCATER Plan, maximum altitude will normally be stated as 15,000 feet above terrain. This does not restrict the Division Commander from establishing a lower altitude or a higher altitude above terrain as the air defense situation may dictate. The word "identifiable" is intended to mean that IFR traffic will insure that they are on a proper flight plan and that CAA can identify this traffic to the radar at any time.

8. Reference paragraph 3e. Although the DOD/DOC SCATER Plan provides procedures and/or restrictions which may be applied to aircraft operating within an ADIZ, Defense Area, and/or Open Area, this does not make the entire country an ADIZ when SCATER action has been taken. It is true that the entire air route traffic control system will, in effect, perform an ADIZ function in the event of SCATER actions; however, aircraft allowed to operate in open or defense areas under Emergency SCAT Rules are still bound by ADIZ rules in addition to those restrictions established by the Division Commander. The implementation of SCATER and actions required by CONAD Commanders will be in accordance with the provisions of the DOD/DOC SCATER Plan as further amplified by NORAD regulations and plans pertaining thereto.

9. Reference paragraph 4a. This headquarters believes that sufficient basic ground rules for operation under SCAT Rules are contained in the SCATER Plan and amplifying NORAD directives. It is not the intent to standardize to the degree that the Division Commanders will be denied full freedom of action in applying Emergency SCAT Rules. These procedures should be used as a guide and should not restrict the Division Commander in his decisions relative to the degree of control desired when these rules are implemented.

10. Reference paragraph 4b. It is not the intent of this headquarters to establish hard and fast rules which will force a CONAD Division Commander to implement SCAT Rules simply because an adjacent Division has done so. Direction and guidance of this nature should rest with the Region Commander. However, under the initial condition of Air Defense Warning Yellow or Red, wherein one Division implements Full SCATER, adjacent Divisions will follow suit. This procedure will make the implementation of Full SCATER compatible with procedures contained in CONAD Regulation 55-3.

Record Evaluation: ☐ Permanent ☐ Long Time Value ☐ Temporary Until

CONAD HQ ... 4 previous editions of this form are obsolete

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11. Reference paragraph 5. The interpretation of paragraph 8a(2), reference a, is essentially correct; however, as stated in this paragraph, Full SCATER will be placed in effect during an Air Defense Emergency, normally when hostile aircraft are enroute to the United States or have penetrated the air defense system. It is not the intent to restrict the Division Commander from implementing Full SCATER, at his discretion, during an Air Defense Emergency. This headquarters foresees no requirement for implementing SCATER under any condition less than a state of Air Defense Emergency.

FOR THE COMMANDER-IN-CHIEF:

HARVEY T. ALNESS
Major General, USAF
DCS/Plans & Operations

CONAD

M/R Numerous questions were proposed by the 34th CONAD Division with regard to interpretations of the DOD/DOC SCATER Plan dated 7 May 57. The above indorsement answers each specific question in sufficient detail to provide necessary guidance to the Commander, 34th, and to the CAA ADLO of that division.

CINCONAD HCR
C of S HCS
SECRETARIAT SEC
4 Assistant 187 SAG
Auto Visual SAV
Pension SPL
INFO SERVICES NFO
DCS C&E ELC
System ESS
Plans & Ops EPR
Tech Radio EC
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1 Ops RPR
2 DCS Ops
Ops Analysis OGA
CONADC
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Major Fuss
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Record Evaluation: Permanent Long Time Value Temporary Unit

CONAD NO. FORM 4 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

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Hq 34th CONAD Division, Subj: DOD/DOC SCATER Plan, 31 July 57

CCPDP 1st Ind 1600 - 8 AUG 57

Hq CONAD Forces, Central CONAD Region, Richards-Gebaur Air Force Base, Missouri

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

1. Questions raised in paragraphs 2 and 3 of basic letter appear valid, but answering them will require interpretation of DOD/DOC SCATER Plan dated 7 May 1957. Because of the far reaching result such interpretation may create, it is felt that your headquarters should make such decisions as may be appropriate to answer these questions.

2. Reference paragraph 4, this headquarters does not concur with the recommendations in paragraphs 4a and b since the tactical situation will probably vary widely from one division to another and the recommended standardization could well prove detrimental to a CONAD Division Commander in fulfilling his obligation to permit the maximum flow of non-tactical air traffic consistent with the accomplishment of his primary mission.

FOR THE COMMANDER:

Incl: n/c

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HEADQUARTERS
34TH CONTINENTAL AIR DEFENSE DIVISION
(CONAD DIVISION)
Kirtland Air Force Base, New Mexico

SUBJECT: DOD/DOC SCATER Plan

TO: Commander
CONAD Forces, Central CONAD Region
Richards Gebaur Air Force Base, Missouri

1. References:

a. U.S. Department of Defense, U.S. Department of Commerce, Plan for the Security Control of Air Traffic and Electromagnetic Radiations During an Air Defense Emergency. (Short Title: SCATER).

b. Air Force Regulation 60-22 dated 24 Oct 55.

c. Hq 34th AD(D) letter, subject: Proposed Concept of Operation-Identification Readiness, dated 28 December 1956. (2nd Indorsement attached.)

2. The new SCATER Plan (Reference a) has provoked several questionable areas within this headquarters. The following comments and/or queries are made in the interest of resolving outstanding problem areas.

a. Emergency SCAT Rules: Do Division Commanders possess authority to impose restrictions on civil and non-tactical military air traffic to include grounding of aircraft? If so, does this policy apply to "open area" as well as ADIZ operations?

b. Full SCATER Rules:

(1) SCATER Rules as opposed to Emergency SCAT Rules by definition (Reference a) implies the basic difference could possibly be only the added control of Electromagnectic Radiation devices. Is this correct?

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HQ 34TH CONAD Div, Kirtland AFB, N.Mex, PO&R, SUBJ: DCD/DOC SCATER Plan .

Emergency SCAT Rules. It is recommended that the basic ground rules for operation under SCAT be standardized for all CONAD Divisions. This would, to some degree lessen the confusion of Inter-Division air traffic.

b. Further, it is recommended that when one (1) CONAD Division implements Emergency SCAT Rules or Full SCATER all other Divisions do the same. Again, this recommendation is made in the interest of Inter-Division control and to facilitate movement of air traffic.

5. Pending your answer and/or supporting plan to Reference a, this headquarters envisions only the implementation of Full SCATER in the event of an Air Defense Emergency in accordance with paragraph 4.a.(2), Reference a. Should this action not receive favorable consideration (for the interim) request this headquarters be advised.

Walter T. Carter

WALTER T. CARTER
Colonel, USAF
Deputy for Plans and Operations

1 Incl
a/s

HQ 34TH CONAD Div, Kirtland AFB, NMex, PO&R, SUBJ: DOD/DOC SCATER Plan

(2) Do Division Commanders possess authority to implement Full SCATER without prior approval or direction of higher headquarters?

3. Specific:

a. Reference a. para 1.k: Is the assumption that "military flights" include civil aircraft under military contract on tactical support missions correct?

b. Reference a. para 1.n: This definition does not appear to coincide with paragraph 3.b. of reference b.

c. Reference a. para 1.g., 1.p. and 5.d: Although the purpose of a Security Control Clearance is generally described, no guidance is provided for specific CONAD Division and/or CAA responsibilities.

d. Reference a, para 7.b. (2)(a):

(1) May Division commanders restrict VFR and DVFR traffic to less than 5,000 feet above the terrain?

(2) What is the meaning of the word, "identifiable"?

e. Throughout reference a, various procedures and/or restrictions are described or applied to aircraft operation within an ADIZ, Defense Area and Open Area. Air Defense Command has stated, "In the event of an emergency, SCATER takes effect and the whole country in fact becomes and ADIZ. The entire ARTC system then performs an AMIS function". (Reference para 2., HQ ADC, 2nd Indorsement to reference c.) Your attention is invited to date (25 Feb 1957) of subject indorsement and request clarification of its applicability under provisions of reference a.

4. Recommendations:

a. Rules applying to the restriction of air traffic are fairly clear when operating under Full SCATER as opposed to

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[redacted]

CWDPL, HQ CFWCR, 12 Sep 57, Subj: Evacuation Under SCATER

NOOP T 1st Ind 27 Sep 1957

Hq North American Air Defense Command, Ent Air Fo ce Base, Colorado Springs, Colorado

TO: Commander, Continental Air Defense Forces Western CONAD Region
Hamilton Air Force Base, Californai

1. The problem ref rred to in the basic communication has been discussed with Headquarte s USAF, and this headquarters has been advised that the Director of Operations, Headquarters USAF, is preparing a document for JCS action, limiting the number of priority mission s which may fly during a military emergency. It is anticipated that the USAF paper will be forwarded to the JCS within the next fifteen days. Until receipt of information relative to actions taken by the JCS on the USAF recommendations, any action by this hea quarte s regarding tactical air traffic of this nature is being held in abeyance.

2. As a matter of information, this headquarters is proposing to the Chief of Staff, USAF as Executive Agent for NORAD, that only SAC and Navy anti-submarine warfare aircraft be allowed unrestricted operations and that all other traffic regardless of catagory, be controlled through the Air Defense System.

3. Your headquarters will be advised when resolution of this problem has been effected.

FOR THE COMMANDER IN CHIEF:

JOHN H. HEFFUS
Colonel, USAF
Director of Operations

M/R Major of USAF recently visited NORAD Headquarters and was made aware of the problem. His office is presently preparing the correspondence to JCS establishing priorities to be used in conjunction with SCATER.

[redacted]

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HEADQUARTERS
CONTINENTAL AIR DEFENSE COMMAND FORCES
WESTERN CONAD REGION
HAMILTON AIR FORCE BASE, CALIFORNIA

CWDPL

SUBJECT: Evacuation under SCATER

TO: Commander-in-Chief
Continental Air Defense Command
Ent Air Force Base
Colorado Springs, Colorado

1. (UNCLASSIFIED) Reference is made to letter this headquarters, subject as above, 21 May 1957, and interim reply, your headquarters, 29 May 1957.

2. (CONFIDENTIAL) This headquarters has indirectly learned that aircraft factories in additional areas are planning on evacuating combat type aircraft from factories in an emergency. Such evacuation of factory products is contrary to the understanding of this headquarters regarding SCATER, and appears to be of sufficient volume to pose a serious threat to our identification capability and to the safety of these aircraft.

3. (UNCLASSIFIED) Request that resolution of this serious problem be expedited and this headquarters advised as soon as possible.

4. (UNCLASSIFIED) This letter is classified CONFIDENTIAL in accordance with paragraph 30c(2)(f), AFR 205-1.

FOR THE COMMANDER:

LYMAN L. WOODMAN
Lt Col, USAF
Adjutant

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JOINT MESSAGEFORM

SECURITY CLASSIFICATION

UNCLASSIFIED

SPACE BELOW RESERVED FOR COMMUNICATION CENTER

PRECEDENCE		TYPE MSG (Check)			ACCOUNTING SYMBOL	ORIG. OR REFERS TO	CLASSIFICATION OF REFERENCE
ACTION	PRIORITY	BOOK	MULTI	SINGLE			
INFO			X		AF	X	

FROM: CINCONAD

SPECIAL INSTRUCTIONS

TO: COMCFECR STEWART AFB NEWBURGH NY

COMCFCCR RICHARDS-GEBAUR AFB GRANDVIEW MO

COMCFWCR HAMILTON AFB CALIF

INFO: CAA W500 WASHINGTON 25 DC

UNCLASSIFIED From COOOP-T_____.

Subject is SCATER. Supplemental information and classified annexes to the DOD/DOC SCATER Plan dated 7 May 57, will be published by this Headquarters. Target date for completion of above actions is 1 October 57. CONAD Regions will not take action to amend or supplement the plan pending receipt of instruction from this Headquarters. In the interim, SCATER actions will be implemented in accordance with instructions contained in the 7 May plan and existing SCATER annexes. Amplifying instructions will be contained in a CONAD letter to be dispatched at an early date.

DISPATCHED
HQ CONAD COOOP

/ Run reverse side.

DATE	TIME
11	1630Z
MONTH	YEAR
July	1957

WRITER

SYMBOL: COOOP-T

TYPED NAME AND TITLE (Signature, if required): Major Fuss/bll

PHONE: 2088 | PAGE NO. 1 | NR. OF PAGES 1

SECURITY CLASSIFICATION: UNCLASSIFIED

RELEASE

SIGNATURE

TYPED (or stamped) NAME AND TITLE: [illegible] JR. [illegible], USA Asst Adjutant

UNCLASSIFIED

UNCLASSIFIED 186

M/R The new SCATE Plan was received on 5 July 1957. This Headquarters in conjunction with CAA is preparing appropriate implementing instructions. It appears that 1 October will be the earliest date this info can be sent to the field and adequately distributed to insure that all agencies, Civil and Military, are informed of new procedures. This message will be followed by a letter giving specific interim and implementing instructions.

HQ CONAD COSAD
DISPATCHED

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CONADR 55-18

CONAD REGULATION)
55-18)

HEADQUARTERS CONTINENTAL AIR DEFENSE COMMAND
Ent AFB, Colorado Springs, Colorado
8 August 1957

OPERATIONS

Memorandum of Understanding Between CONAD and the CAA

1. Purpose. The purpose of this Regulation is to inform all echelons of the Memorandum of Understanding between the Continental Air Defense Command and the Civil Aeronautics Administration.

2. Scope. This Regulation applies to all echelons of CONAD and military agencies under the operational control of CINCONAD except the 64th CONAD Division and the air defense elements of the Alaskan Air Command, and is for the guidance of other commands having collateral responsibilities in the conduct of air defense.

3. Responsibility. CONAD commanders will insure compliance with the contents of this agreement.
(COOOP-T)

FOR THE COMMANDER-IN-CHIEF:

MARSHALL S. CARTER
Major General, USA
Chief of Staff

OFFICIAL:

W. J. BIRMELE
Lt Col, USAF
Adjutant

DISTRIBUTION:
A,B,F & CAA

1 Attachment
Memorandum of Understanding
Between CONAD and CAA

UNCLASSIFIED

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MEMORANDUM OF UNDERSTANDING

CONAD and CAA

GENERAL

The Continental Air Defense Command (CONAD) is a joint command established under the Joint Chiefs of Staff charged with the mission of defending the Continental United States, Alaska, and the Northeast Area against air attack. The Commander-in-Chief, Continental Air Defense Command (CINCONAD) exercises operational control over the United States Air Force Air Defense Command, the United States Army Air Defense Command and Naval Forces, Continental Air Defense Command and the forces assigned, attached, or otherwise made available to these commands or made available to him by the Joint Chiefs of Staff or other proper authority.

The authority and responsibilities of the Civil Aeronautics Administration (CAA) are stated in the Civil Aeronautics Act of 1938, as amended, Public Law 778, and pertinent Executive Orders. By law, the CAA is charged with the responsibility for the establishment and operation of the common system of air navigation and air traffic control.

In accordance with the Joint Chiefs of Staff directive, CONAD is responsible for the development of plans and policies jointly with the CAA for establishment of a system for the identification and security control of aircraft and the control of air navigation aids.

The cooperation and active participation of the CAA is essential to the air defense of the country. Close coordination between CONAD, its component forces, and the CAA is imperative to carry out air defense requirements efficiently without undue restrictions to civil and non-tactical military aviation.

Contributing to the effectiveness of the air defense system and the CAA air traffic control system, are plans for the integration of CAA and CONAD radars and the possible future application of SAGE to air traffic control. Both agencies will continue to explore the possible joint use of these and other future electronic environments which will contribute to mission accomplishment.

PURPOSE

It is the purpose of this paper to set forth mutually agreed arrangements regarding responsibility, functions, and working relationships of the CAA and CONAD to insure that the air defense mission is accomplished in accordance with existing laws and directives.

RESPONSIBILITIES

CONAD - In carrying out his mission, CINCONAD will:

1. Coordinate with the Federal Civil Defense Administration, State Civil Defense Agencies, and other nonmilitary agencies on matters of participation in air defense.

Attachment #1

2. Coordinate with appropriate military, governmental and non-governmental agencies in the development of policy and broad plans for the security control of air traffic, the control of electromagnetic radiations and the control of illumination and, when appropriate, initiate implementing actions therefor in the defense of the Continental United States, Alaska and the Northeast area against air attack. (These policies and plans will be made known to the CAA through the Department of the Air Force, as Executive Agency for CONAD, and through CONAD membership on the SCAT Board.)

CIVIL AERONAUTICS ADMINISTRATION - The CAA is responsible for:

1. The operation of the Federal Airways System.

2. The development and implementation of plans for the security control of air traffic as may be necessary in the interest of national security, to include the designation of zones or areas in which it may be necessary to prohibit or restrict flights of aircraft. Such actions will be requested by the Air Force in accordance with mutually agreed plans and procedures and in conformance with the provisions of Public Law 778, 81st Congress, dated 9 September 1950.

3. The development and implementation of plans consistent with air defense requirements to control electromagnetic radiations pertaining to radio aids, to air navigation, and to CAA communications in accordance with Executive Order 10312.

4. The development of plans for CAA and other civil agencies' participation in the SCATER phases of air defense exercises.

LIAISON

The CAA will provide liaison with CONAD Headquarters, the Eastern, Western and Central CONAD Region Headquarters, and with the headquarters of each CONAD Division. The duties of the Liaison Officers at any of the CONAD levels include:

1. Advise the appropriate headquarters of the operational capabilities and limitations of the Federal Airways System with respect to participation in air defense functions.

2. Advise the appropriate headquarters of current policies and procedures originating with the Office of Air Traffic Control.

3. Assist the appropriate headquarters in the formulation of requests for services to be performed by the CAA.

4. The coordination with the appropriate offices of the CAA on air defense activities.

5. When, and as requested by CONAD or subordinate echelons, participate in the coordination of air defense activities with civil and military agencies.

6. When, and as requested by CONAD or subordinate echelons, participate in conferences dealing with air defense matters.

Liaison Officers on duty with CONAD Division will also be responsible for:

1. The preparation of detailed Division plans for the security control of air traffic and control of electromagnetic radiations in cooperation with the Division Commander.

2. The development of procedures to implement such plans.

3. The development of plans for CAA and other civil agencies' participation in the SCATER phases of air defense exercises.

4. Assistance to the Division in the development of interceptor scramble and recovery procedures, including the necessary coordination with CAA regional offices and air traffic control facilities as required.

5. Coordination with the CONAD Division Commander of requests for exemptions of the CAA Administrator's Regulations 620.

In the event of an air defense emergency, the CAA Liaison Officer assigned to any CONAD Headquarters level, or a suitable replacement therefor, will be readily available on a 24-hour basis. These personnel will be subject to military security regulations. The CAA will provide Headquarters CONAD with the degree of security clearance of personnel involved.

SECURITY CONTROL OF AIR TRAFFIC

The CAA is the primary source of available aircraft movement data. In order to facilitate the identification of aircraft, the CAA will:

1. Gather, process, and furnish such data to appropriate air defense facilities in accordance with mutually acceptable procedures.

2. Whenever an intercept results in determination that an apparent violation of military or civil regulations for the security control of air traffic has occurred, the CAA Air Route Traffic Control Center concerned will attempt to determine the reason for the alleged incident, and will prepare supporting documentary evidence when justified.

3. When requested, the CAA Air Route Traffic Control Centers will serve as a central agency for the collection, evaluation, and dissemination

of movement data for all flights of civil and military aircraft operations requiring identification in ADIZ's and in such other areas and under such conditions as may be agreed upon between CAA and CONAD.

REQUEST FOR SERVICE

Resources made available by CAA for air defense purposes may not provide for all the services required which may arise from unforeseen circumstances. Requests for services for air defense purposes which require additional CAA personnel, equipment and/or communications for which military funds must be provided will be directed to Headquarters CONAD for approval, who in turn will forward to Headquarters ADC for negotiation with CAA and USAF.

FISCAL AND ADMINISTRATIVE CONTROL

The CAA will pay all salaries and expenses of Liaison Officers.

The CAA will be reimbursed by ADC upon request by CONAD for AMIS and other special services, related equipment, and communications required in support of the air defense mission when such services have been requested by CONAD.

Administrative control of CAA personnel and facilities engaged in providing the required services shall remain with the CAA.

CONAD Headquarters, and Headquarters CONAD Regions and CONAD Divisions, will provide Liaison Officers with suitable office space and equipment.

Each CONAD unit to which a Liaison Officer is assigned as outlined herein will issue invitational letter orders authorizing necessary transportation (including travel in military aircraft), messing, billeting, and medical facilities, where available, normally accorded civil service personnel while on duty with CONAD units.

APPROVED:	APPROVED:
/s/Earle E. Partridge	/s/ James T. Pyle
EARLE E. PARTRIDGE	JAMES T. PYLE
General, USAF	Administrator
Commander-in-Chief, CONAD	Civil Aeronautics Administration

Attachment #1

UNCLASSIFIED

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CONADR 55-7

CONAD REGULATION)
55-7)

HEADQUARTERS CONTINENTAL AIR DEFENSE COMMAND
Ent AFB, Colorado Springs, Colorado
11 September 1957

OPERATIONS

Memorandum of Understanding Between CONAD and the FCC

1. Purpose. The purpose of this Regulation is to inform all echelons of the Memorandum of Understanding between the Continental Air Defense Command and the Federal Communications Commission.

2. Scope. This Regulation applies to all echelons of CONAD and military agencies under the operational control of CINCONAD except the 64th CONAD Division, and is for the guidance of other commands having collateral responsibilities in the conduct of air defense.

3. Responsibility. CONAD commanders will insure compliance with the contents of this agreement. (COOOP-T)

FOR THE COMMANDER-IN-CHIEF:

OFFICIAL:

W. J. Birmele

W. J. BIRMELE
Lt Col, USAF
Adjutant

MARSHALL S. CARTER
Major General, USA
Chief of Staff

DISTRIBUTION:
A, B, F & FCC

1 Attachment
Memorandum of Understanding
Between CONAD and FCC

UNCLASSIFIED

188

MEMORANDUM OF UNDERSTANDING
CONAD and FCC

General

The Continental Air Defense Command (CONAD) is a joint command established under the Joint Chiefs of Staff charged with the mission of defending the Continental United States, Alaska, and the Northeast Area against air attack. The Commander-in-Chief, Continental Air Defense Command (CINCONAD) exercises operational control over the United States Air Force Air Defense Command, the United States Army Air Defense Command and Naval Forces, Continental Air Defense Command and the forces assigned, attached, or otherwise made available to these commands or made available to him by the Joint Chiefs of Staff or other proper authority.

The authority and responsibilities of the Federal Communications Commission (FCC) are stated in the Communications Act of 1934, as amended, and pertinent Executive Orders which are filed with the General Council of FCC. The FCC is charged with the responsibility of regulating all interstate and foreign communication by wire and radio, and all interstate and foreign transmission of energy by radio which originates and/or is received within the United States.

Section 606 (c) of the Communications Act of 1934, as amended, authorizes the President, in the situations stated, to provide for the control of any station for radio communication, or any device capable of emitting electromagnetic radiations between 10 kilocycles and 100,000 megacycles, which is suitable for use as an air navigational aid beyond 5 miles (CONELRAD).

By Executive Order 10312, dated December 10, 1951, the President delegated to the Federal Communications Commission, the authority vested in him by Section 606 (c) with respect to radio stations, with the exception of radio stations belonging to and operated by any department or agency of the United States. With respect to the latter stations, the head of each department or agency, the stations of which are involved, was directed to prepare and put into effect such plans as are necessary to minimize the use of electromagnetic radiations of such stations as air navigational aids.

In accordance with the provisions of the aforesaid Executive Order, the FCC, the Secretary of Defense, and the head of each government department or agency the stations of which are involved, are authorized to issue appropriate rules, regulations, orders, and instructions, and to take such other action as may be necessary to assure the timely and effective operation of the plans to effect the control of electromagnetic radiations between 10 kilocycles and 100,000 megacycles (CONELRAD) and to carry out their functions thereunder. Executive Order 10312 as amended by Executive Order 10438, dated March 13, 1953, further provides that all CONELRAD plans shall be approved by the Secretary of Defense and the Director, Office of Defense Mobilization, before becoming effective.

The cooperation and active participation of the FCC is essential to the air defense of the country. Close coordination between CONAD, its component forces, and the FCC is imperative to carry out defense requirements efficiently, and to deny navigational assistance to hostile aircraft, guided missiles, and other devices capable of direct attack upon the United States. However, it is desirable, insofar as possible and practicable, to preserve and maintain normal conditions and relationships under which radio stations are operated while furthering the expeditious implementation of the aforesaid plans.

Contributing to the effectiveness of the air defense systems are plans for the integration during attack conditions, and with ultimate application to the SAGE environment, of certain non-government radio facilities licensed by FCC. CONAD and FCC will continue to jointly explore the possible use of existing civil communications facilities which will contribute to mission accomplishment.

Attachment #1

In carrying out most efficiently and expeditiously the directives of the aforementioned Executive Orders, it is essential that the FCC and CONAD undertake the responsibilities hereinafter set forth.

PURPOSE

It is the purpose of this memorandum to set forth mutually agreed arrangements regarding responsibility, functions, and working relationships between the FCC and CONAD so as to insure the effective accomplishment of the liaison functions set forth herein and, further, to insure that the air defense mission is accomplished in accordance with existing laws, directives, and Executive Orders.

RESPONSIBILITIES

CONAD - In carrying out his mission, CINCONAD is responsible for the following in effecting the control of electromagnetic radiations:

1. Furnish guidance and assistance, as required, to all government departments and agencies concerned in the development and implementation of their CONELRAD plans pursuant to the directives contained in Executive Order 10312.

2. Man CONELRAD operating positions at the Air Defense Control Centers (ADCC).

3. Initiate and disseminate the CONELRAD radio alert and initiate and disseminate the removal of same, with a CONELRAD radio all clear, for all radio stations, government and non-government.

FCC - In carrying out its mission pursuant to the directives in the Executive Order 10312, the Federal Communications Commission is responsible for the following:

1. Prepare and directly implement plans with respect to radio stations (except those belonging to and operated by any department or agency of the United States Government), to minimize the use of electromagnetic radiations of such stations, in the event of attack or imminent threat thereof, as an aid to navigation of hostile aircraft, guided missiles, and other devices capable of direct attack upon the United States.

2. Prepare plans for the Department of Defense with respect to radio stations belonging to and operated by any department or agency of the United States Government, to minimize the use of electromagnetic radiations of such stations, in the event of attack or imminent threat thereof, as an aid to navigation of hostile aircraft, guided missiles, and other devices capable of direct attack upon the United States. Such plans and all correspondence relating to implementation thereof will be forwarded through CONAD to the Secretary of Defense for action.

Liaison

The FCC will make personnel available at CONAD Regions and CONAD Divisions for liaison purposes with duties which include:

1. Advising the appropriate headquarters of the availability of existing non-government radio services with respect to participation in air defense functions.

2. Advising the appropriate headquarters of FCC policies and procedures regarding CONELRAD plans for non-government radio services, together with amendments and revisions thereof.

[redacted]

UNCLASSIFIED

[redacted] *NORADR 101-2 181

NORAD REGULATION)
101-2)

HEADQUARTERS NORTH AMERICAN AIR DEFENSE COMMAND
Ent AFB, Colorado Springs, Colorado
6 January 1958

ELECTRONICS SYSTEMS

Electronic Warfare Policy

1. Purpose. The purpose of this Regulation is to establish a policy for the conduct of electronic warfare activities within this command. The policies contained herein will be used as a guide in the determination of equipment, operational training, and personnel requirements necessary to insure that the effectiveness of the North American Air Defense system can be maintained in the presence of enemy electronic countermeasures.

2. Scope. The provisions of this Regulation are directive on each CONAD Region and Division commander, each component commander, and the commander of each tactical or field unit, regardless of component, under the operational control of CINCNORAD.

3. Definition of Terms. The following established definitions of terms are pertinent to the electronic warfare activities of this command:

a. Electronic Countermeasures (ECM) is that major subdivision of electronic warfare involving actions taken to prevent or reduce the effectiveness of enemy equipment and tactics employing or affected by electromagnetic radiations. Electronic countermeasures include:

(1) Passive Electronic Countermeasures. Search for electromagnetic radiations to determine, for the purpose of ECM use, the existence, origin, and pertinent characteristics of those electromagnetic radiations which the enemy (or potential enemy) may be using.

(2) Active Electronic Countermeasures.

(a) Electronic Jamming. The deliberate radiation, reradiation, or reflection of electromagnetic signals with the object of impairing the use of electronic devices by the enemy.

(b) Electronic Deception. The deliberate radiation, reradiation, alteration, absorption, or reflection of electromagnetic radiations in a manner intended to mislead an enemy in the interpretation of data received by his electronic equipment, or to present false indications to his electronic control system.

b. Electronic Counter-countermeasures (ECCM) or Anti-jamming is the major subdivision of electronic warfare involving actions taken to insure our own effective use of electromagnetic radiations in spite of the enemy's use of countermeasures.

4. ECCM Program. The mission of this command dictates our primary interest in electronic counter-countermeasures. It is assumed that future air defense operations will be conducted in an electronic countermeasures environment. The increasing degree of dependence that this command places on communications and electronic equipment to accomplish its mission, coupled with the indicated interest and

*This NORADR 101-2 supersedes CONAD Letter of Instruction COELC 1-56 dated 28 November 1956

[redacted] -1-

FF NO. 574

UNCLASSIFIED

[redacted]

recognized capability of the Soviet Bloc in electronic countermeasures, makes an effective ECCM program vital to our survival.

a. The ECCM Program can be divided into two major areas: 1) intensive operator training in order to utilize fully present and future air and ground equipment, and 2) full realization and consideration of the impact of ECM in the deisgn and development of new air defense weapons and ground environment. The over-all program is covered in the following subparagraphs. An effective ECCM program requires complete exploration and action in all of these areas:

(1) Training. It is essential that all facets of the air defense system be continually engaged in an aggressive ECCM training program. This program will include individual training conducted by operational units, appropriate individual indoctrinations at all levels, tactical training conducted by the Radar Evaluation ECM Flights, and that training received as a result of intercommand and service exercises.

(a) Continuous evaluations will be made by NORAD and the component staffs of appropriate exercises to determine weaknesses in the air defense system, necessary reorientation of training, modifications required of tactics, techniques, and equipment, as well as to determine the effectiveness of the system in the presence of various types of electronic countermeasures.

(b) The Air Defense Command will provide, within its capabilities, airborne ECM facilities for ECCM training of all components of the air defense system. Every effort will be made to present training under the most realistic conditions possible.

(2) Present Equipment. The communications and electronics equipment currently employed within this command, both airborne and ground, represents various degrees of sophistication relative to its vulnerability to electronic countermeasures. Certain of these equipments are extremely vulnerable to ECM, while others are less vulnerable. Since there is no timely measure of the Soviet capabilities in the electronic countermeasures field, the degree of vulnerability of our present equipment can only be surmised. With proper operational techniques, air and ground equipment currently in use can be operated against various hostile ECM techniques. It is therefore essential that every effort be made to exploit fully the capabilities of our present equipment.

(3) Future Equipment. The communications and electronics equipment employed within this command can be conveniently divided into two groups: 1) surveillance and tracking; 2) control and guidance.

(a) Surveillance and Tracking. Generally, the equipment required for detection, identification, and tracking of airborne objects will fall in this category. This includes ground, air, shipboard search radars, height finders, electronic identification systems, acquisition, and ground tracking radars. These constitute the data-gathering portion of the air defense system. Without an adequate flow of information from these elements, the balance of the air defense system (i.e., weapons) is heavily degraded. Every effort must be made to maintain the integrity of this portion of the air defense system in the presence of electronic countermeasures. Future equipment and systems must include all anti-jamming devices and techniques consistent with the state of the art. Full consideration must also be given to the frequency diversity concept in the development and employment of new equipment and weapons. Where the environment will permit, it is also considered essential that the equipment have a capability of operating in an active and/or passive mode when confronted with saturation jamming that cannot be overcome by other means. Incorporation of these facilities in heavy ground equipment will require the utilization of an extremely well-trained anti-jamming operator, with a broad background to exploit fully the potentialities of the equipment.

FF NO. 18-574

[redacted]

[redacted]

(b) Control and Guidance. Fire control systems, missile guidance systems, missile seeker systems, and ground-to-air communications are considered in the control and guidance category. These systems are equally as important to air defense as are the surveillance and tracking systems, and deserve the same degree of ECCM attention. For ground-to-air communications used for control and guidance, backup systems such as BROFICON, on alternate frequencies, should be considered if it is indicated that normal anti-jamming techniques may not provide a sufficient degree of protection. A passive mode of operation(i.e., a homing-on jamming mode) in the presence of countermeasures is considered necessary in missile seeker systems. Diversification of missile seeker, guidance, and control systems must be exploited fully to prevent one countermeasure being effective against more than one defense system. Diversification should include frequencies as well as all other parameters where possible.

b. Tactics and Techniques. A continuous effort must be made by all operational units to refine present ECCM tactics and techniques and to further develop new ones. Refined or new tactics and techniques that have been proven, will be disseminated through appropriate channels to all interested operational units for inclusion in unit SOP's. Proposals for new tactics and techniques which are beyond the originating unit's capability to evaluate will be expedited through channels to appropriate testing agencies. New tactics or techniques that are contingent on equipment modification or component replacement will be handled as a matter of priority under normal modification-procurement procedures or established quick reaction capability (QRC) procedures, as appropriate.

c. Quick Reaction Capability. Recognizing the continual fluid state of electronic warfare, it is necessary that all operational units be provided a means of rapidly coping with the current and anticipated ECM situation. The JCS have directed the services to establish a quick reaction capability in order to provide new ECM-ECCM devices and quipment modifications. It is essential that these QRC procedures be utilized fully to obtain field modifications, replacement of components, and such other devices or changes to organic equipment that may be required for operational units to perform their mission effectively. The normal lead time for minor equipment modifications and component replacement must be drastically reduced if a timely and adequate ECCM capability is to be achieved.

d. ECM Reporting. When unidentified or hostile jamming is encountered, the incident will be reported by a flash reporting system. Such reports have been designated as Cliff Reports. Cliff Reports are designed to present a timely picture of the air situation as pertains to electronic countermeasures activities. Because of the tactical urgency of this report, Cliff Reports are unclassified.

e. ECM Technical Followup Report. To provide a means of technical analysis, a detailed report will be submitted by units experiencing unidentified or hostile ECM activity conducted against ground, shipboard, and airborne radars.

f. Personnel. The development and implementation of an effective ECCM program are contingent on the availability and employment of well-qualified ECM personnel. The manning of all operational units and staffs should be reviewed to insure that an adequate number of qualified personnel are available to accomplish the planning and operational activities necessary for an effective ECCM program "in being."

5. Coordination of Activities. The air defense of the North American continent must be considered in the light of a fully integrated defense system. Therefore, it is essential that all matters where possible, pertaining to ECM-ECCM training, operations, development, and planning, be released and exchanged between the components employed in the North American Air Defense system, including the RCAF Air Defence Command as well as the Strategic Air Command, Tactical Air Command and the Alaskan Command.

[redacted]

FF NO X8-574

a. *RCAF-USAF Agreements. The Royal Canadian Air Force and the United States Air Force have agreed that:

(1) Effective ECCM for RCAF and USAF air defense units are indispensable to the over-all air defense of the North American continent.

(2) Additional facilities for conducting ECM operations and training missions in Canada and Alaska are vital to the mission of the Strategic Air Command and are important to the mission of the Tactical Air Command.

(3) Release and exchange of ECM, ECCM, and allied information, and of ECM and ECCM equipment between the RCAF and the USAF will be required to put the agreements in (1) and (2) above into effect.

b. Implementation of ECM-ECCM Activities.

(1) Whenever possible, the Strategic Air Command and the Tactical Air Command will plan, schedule, and conduct airborne ECM activities on routine training sorties and on unit simulated combat missions against air defense units in Canada and Alaska.

(2) The Air Defense Command and the Alaskan Air Command will plan, schedule, and conduct ECM radar evaluation flights against air defense units in Canada and Alaska to the maximum extent possible.

(3) Before conducting airborne ECM operations and ECM radar evaluation flights against air defense units in Canada, USAF commands concerned will notify Headquarters ADC and Headquarters RCAF.

c. Reports.

(2) The Air Defense Command will provide the Strategic Air Command and the Tactical Air Command with reports that show the:

(a) Scores of routine airborne ECM training sorties;

(b) Comprehensive ECM analysis and evaluation of unit simulated combat missions.

(2) The RCAF has agreed to provide similar reports.

(3) Headquarters USAF has directed the Strategic Air Command and the Tactical Air Command to provide the RCAF Air Defence Command with reports that show the size, type, and disposition of routine airborne ECM training sorties and ECM unit simulated combat missions that are conducted against all or parts of the Canadian-based portion of the air defense system in North America. These reports are necessary to enable the RCAF to evaluate the performance of that portion of the system and especially to adjudge the validity of its ECCM and techniques.

6. ECM Program. The ECM offense capabilities and future developments in this area must continue to be closely monitored to assess properly the threat and to insure a commensurate and adequate ECCM program. Currently, the primary interest in air defense ECM planning has been ground-based jamming.

*Air Force Letter No. 101-5, dated 25 October 1957

189

[redacted]

a. Ground-Based Jamming. There are two concepts of ground-based jamming. These are generally referred to as: 1) spot jamming, and 2) distributed area jamming. After investigation of the merits of the respective systems and operational testing, it appears that the distributed area jamming concept would best meet the requirements of this command. A qualitative operational requirement has been submitted for a distributed area jamming system. However, because of advances in bombing systems (such as doppler-inertial), the costs involved and the anticipated short life-span of the equipment, a revision to the original requirement has been considered. The distributed area jamming system will now probably be employed only on a limited basis in the defense of certain SAC "Hardened" targets.

b. Summary. In summary, the three most important actions that can be taken now to meet the hostile ECM threat are first, to emphasize operator and unit training with increased attention on ECCM tactics and techniques, to provide a maximum capability within our current weapons and ground environment; second, to retrofit our present weapons and ground environment with all possible proven anti-jamming devices; and third, to program the maximum anti-jamming features as well as diversity of weapons and frequencies into our future weapons and support equipments.
(NOEEW)

FOR THE COMMANDER-IN-CHIEF:

OFFICIAL:

MARSHALL S. CARTER
Major General, USA
Chief of Staff

R. E. Garvey Jr.

R. E. GARVEY, Jr.
Major, AGC, USA
Asst Dir, Administrative Services

DISTRIBUTION:
See page 6

[redacted]

[redacted]

NORADR 101-2 DISTRIBUTION

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RCAF (ADC) Hq	20
USAF ADC (see below)	367
USARADCOM (See below)	85
TOTAL	635

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FF NO. x8-574

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NOKEM

9 January 1958

SUBJECT: ADC Responsibilities for Providing Airborne ECM Training for NORAD Components

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

1. Consistent with the requirement to improve and maintain a high level of air defense against the ECM threat to the present North American defense operating radar units, it is desired to re-emphasize the need to maximize ECCM training within NORAD.

2. It is therefore considered that your mission does include the responsibility of providing increased airborne ECM training facilities for optimizing the ECM experience levels of the operating personnel at the defense radar units. This added responsibility is in support of all operating NORAD units and in consonance with NORAD Regulation 101-2, dated 6 January 1958. This will provide the needed augmentation of ECM training which in all probability will not be possible utilizing only SAC and ANG capabilities.

FOR THE COMMANDER-IN-CHIEF:

DUPLICATE

Copies furnished:
CG, USARADCOM
COMNAVFORCONAD
CCRS USAF, as
Base Agent for
NORAD

MARSHALL S. CARTER
Major General, USA
Chief of Staff

COMBACK NOBIC

MEMO FOR RECORD: Not Required.

CX8 73 ADC
CX8-74 Army
CX8-75 Navy
G-1434 C/8, USAF

[redacted]

[redacted]

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SLEMON
GARTER

NCEEW-W

4 OCT 1957

SUBJECT: ECM Training

TO: Chief of Staff, United States Air Force
As Executive Agent for NORAD
Washington 25, D. C.

1. The subject of ECM training aircraft has been treated extensively in the past in correspondence to HQ USAF originated by the Air Defense Command, as well as by CONAD. However, considering the apparent stalemate in the situation, it is felt that the subject should again be re-emphasized at this time.

2. This command has embarked on a major program to increase the operational effectiveness of air defense in an ECM environment. The staff, as well as various study groups, such as WSEG, considers that an intensive ECCM training program in an area that would provide one of the quickest and largest gains in operational effectiveness. The Air Defense Command does not have the capability to conduct such a program due to the lack of suitable ECM training aircraft.

3. A Qualitative Operational Requirement was submitted by the Air Defense Command, 9 Oct 54, covering their requirements for ECM training aircraft. Headquarters USAF approved this requirement and established GOR NR 197 on 7 Nov 55. In further correspondence from Headquarters USAF, it was indicated that 30 RB-57A's would be made available as an interim solution to the requirement. To date, neither the aircraft nor modification funds have been made available.

4. Considering the graveness of the ECM threat to the operational effectiveness of this command, it is strongly urged that every effort be made to provide the Air Defense Command, as expeditiously as possible, the required aircraft and modification funds necessary to an effective ECCM program.

E. E. PARTRIDGE
General, USAF
Commander-In-Chief

DUPLICATE

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ADOTS-E, Hq ADC, 27 Sept 57, Subject: Request for Waiver to CONAD Regulation 51-1

NOOOP-E

1st Ind

7 OCT 1957

Hq North American Air Defense Command, Ent Air Force Base, Colorado Springs, Colorado

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

1. Message was sent to SAC requesting waiver as outlined in basic letter. Due to limited time available for inter-office coordination at SAC, waiver could not be granted in time for use on mission "Boat Deck."

2. Representatives from NORAD will be at SAC Hq. on 8 and 9 October 1957 for conference on CONAD Regulation 51-1 and SAC Regulation 51-6. At this time an attempt will be made to modify the provisions of paragraph 6 L (1) and (2) of CONAD Regulation 51-1 in addition to other changes requested by the ADC Tactical Evaluation Group.

FOR THE COMMANDER-IN-CHIEF:

HARVEY T. ALNESS
Major General, USAF
DCS/Plans & Operations

CONAD

CINCONAD
SECRETAR
INFO SERVE
DCS C&E
DCS F
COMADC
COMNAVFORCO
CG ARAA COMD
RCAF LIAISON

Capt. Lockh
2664
4 Oct 57

mvl

10

M/R NOT REQUIRED

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HCONAD HCR
C of S HCS
SECRET/MAT SEC
Adjutant SAG
Audio-Visual SAV
Protocol SPL
INFO SERVICES NFO
C&E ELC
Systems ESS
Plans & Po EPR
Exc Sec EEW
DCS-I INT
Com & Elec ICD
Mil Pers IRE
Gen Intel IOI
DCS-O OPO
Plans & Po OPR
Operations OOP
Plans Analysis OPA
Combat Ion Center OOC
Ops Analysis
CONADC
COMNAVFORCONAD
CG ARAA COMD
RCAF LIAISON

DUPLICATE

NORAD

13 NOV 1957

SUBJECT: Reduction of the ECM Vulnerability of the Total U.S. Air Defense Weapons and Control Systems (C)

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

1. Attention is invited to copy of SM-651-57 attached, which was addressed to the Chiefs of the Services and CINCONAD.

2. Although it is recognized that the results of the WSEG Evaluation tests of the Air Defense systems and weapons may not become known for several months, it is considered timely that certain preparatory actions be taken without further delay. In this regard, it is requested that this headquarters be provided:

a. The current operational requirements for various Electronic Counter-Countermeasures for which your command is responsible, including those which may be used for planning purposes.

b. The relative priorities which your command considers to be appropriate for each of the requirements which may be listed above.

c. Information regarding any directives or instructions which may have been promulgated by the respective Chiefs of the Services to your command under SM-651-57.

3. In compliance with #2 above, it is not intended to request conflicting information, material, or format which may have been requested by the Chiefs of the Services. Listing of priorities and requirements may be by category viz (air, ground, weapons, control systems, etc.) in such manner as to objectively orient your overall ECCM defense requirements responsive to SM-651-57.

4. The above information should be provided as a matter of priority consistent with availability and current planning within your headquarters.

FOR THE COMMANDER-IN-CHIEF:

(Draft was Coordinated w/ 3 Components - all agreed)

Signed by (Signature)
Col Miller
2578 Telephone
7 Nov 57 Date
Refer to File No.
N7-11002
bb Typist's Initials

COMEBACK NOEC

MR: Not Required. This letter was also sent to Comdr, Naval Forces, CONAD and CG, US Army Air Defense Comd

Incl N/R for File

1 Incl:

F. F. WHEHANE
Brig General, USA
DCS/Comm and Elect

ADC - CX7-2007
Army CX7-2008
Navy CX7-2009

This correspondence
Record Evaluation: Permanent Long Time Value Temporary (not

CONAD HQ FORM 1 FEB 57 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

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20 January 1958

COEEW

SUBJECT: Reduction of ECM Vulnerability of the Total U.S. Air Defense Weapons and Control Systems (C NF)

THRU: Chief of Staff, United States Air Force
as Executive Agent for CONAD
Washington 25, D. C.

TO: Chairman
Joint Chiefs of Staff
Washington 25, D. C.

1. Reference is made to JCS SM-651-57, subject as above, dated 6 September 1957, which requests CINCONAD to outline his operational requirements in the field of electronic counter-countermeasures. This requirements list is to be used as a guide to the Services in developing their programs.

2. Inclosure 1 is a listing of ECCM operational requirements which are recommended to reduce the ECM vulnerability of CONAD weapon systems. This list is predicated on current intelligence information as to the ECM threat, and has been compiled after analysis of WSEG documents and NORAD-SAC monthly ECM exercises. It should be noted that this listing may be subject to future adjustments of priorities following the WSEG Operational Evaluation Tests now being undertaken.

DUPLICATE

3. It is requested that the inclosed CONAD listing of ECCM requirements be disseminated to the Services in accordance with JCS SM-651-57.

FOR THE COMMANDER-IN-CHIEF:

1 Incl
CONAD ECCM
Priorities

V. F. WORRAHE
Brig Gen, USA
DCS/Comm and Elect

Copy furnished:
WSEG

CONAD 88 1022

[redacted]

CONAD ECCM PRIORITIES

Priority

I. **ECCM Operator Training and Facilities**

*a. On-the-Job Training

b. ECM Simulator Devices

c. ECM Configured Hi-Speed, Hi-Altitude Training Aircraft

d. POL Funds for ECM Training Aircraft (SAC - ADC)

II. **ECCM Improvements for Ground Environment**

*a. AC&W Radars and Height Finders

b. Picket Ships, AEW, Texas Towers

c. Primary and Back-up Control Facilities (SAGE and Fire Direction Centers)

d. Ballistic Missile Defense Radars

e. Frequency Diversity Radars

f. Ground-to-Air IFF

g. Active-Passive System

III. **ECCM Improvements to Weapons Systems**

*a. Surface-to-Air Missile Systems (NIKE, TALOS, BOMARC, HAWK, IMX, etc.)

b. Air-to-Air Missile Systems (FALCON, SIDEWINDER, GENIE, etc.)

c. AI Fire Control System (MG-10, MA-1, etc.)

d. Air-to-Air IFF

e. Frequency and Weapons Diversity

IV. **Communications**

*a. Time Division Data Link

b. Scatter Communications

[redacted]

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CONAR ECCM PRIORITIES (Cont'd)

Priority

c. Single Side-Band Transmission

d. Data Link BRCFICON

V. Defensive ECM and Passive Systems

*a. Radar Absorption Materials

b. Reflective and Deception Devices

c. Distributed Area Jamming Systems

*The subheading listing is not necessarily indicative of the relative priority of the item.

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[redacted]

COOOP E

27 Feb 57

SUBJECT: (Uncl) Operations Exercise of the Air Defense System

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

1. This headquarters believes that an operational exercise of the Continental Air Defense System must be performed in the immediate future in order to determine the capability of each element to carry out its function and to determine the capability of the entire system to perfomr its mission.

2. In consideration of current global situation, commitments of other forces and services, economics, and our analytical capability it is believed that relatively small correlated operational exercises of all existing elements could best provide the desired information.

3. As operational exercise of existing elements of the air defense system would involve:

a. Ground Environment

(1) Contiguous radar coverage, including picket ships and AEW&C aircraft.

(2) Ground observer corps.

(3) Ground control intercept.

b. Area Defense.

(1) Manned interceptors, including augmentation units

c. Local defense.

(1) NIKE

It is contemplated that such an exercise would embody a coastal defense region with an Air Division Commander conduting a defense against a multiple target attach penetrating from outside the area of contiguous radar coverage. These attaching forces would consits of elements of SAC and the U. S. Navy, utilizing high, low, and very low altitude types of attack. In addition, it is considered that approximately four drones against air intercept and two drones against NIKE batteries should be brought into play, thereby, prividing all components with realistic targets. To achieve this realism, drones and/or drone

[redacted]

[redacted]

Hq CONAD (COOOP-E) Subject: (Uncl) Operational Exercise of the Air Defense System

configured aircraft must be able to simulate enemy high performance aircraft. Consequently, consideration is being given to such drone configured aircraft as the [illegible], [illegible], and [illegible]-80, [illegible]-84 (with radar reflectors), and true drones such as the Regulus, [illegible]-2 "Firebee", [illegible]-4, and [illegible]-5 (with radar reflectors).

4. Performing the first three functions of air defense - detection, interception, and identification - pose few problems, and have been done in past exercises. However, performing the last function - destruction - creates problems here-to-fore not associated with over-all defense exercises. The actual firing of live loads at realistic targets from operational sites limit the engagement areas and ranges to those over ocean areas near the physical locations of defense elements. Mobility of intercept squadrons and the broad and general locations and coverage of contiguous radar provide some flexibility in the selection of these ranges; however, the selection of established NIKE sites for this purpose is relatively static.

5. In pursuit of preliminary planning, it was felt that exploration in certain problem areas need be performed prior to receiving comments from your headquarters. Copies of the following [illegible] correspondence have been forwarded to Commander, ADC, for information and planning:

a. CINCONAD (COOOP-E) ltr of 12 Dec 56 to CG ARAACOM, Subject: Operational Exercise of the Air Defense System

b. CINCONAD (COOOP-E) ltr of 11 Jan 57 to COMNAVAIRCOMAD, Subject: (Same)

c. CINCONAD (COOOP-E) ltr of 18 Jan 57 to COMCFWCR, Subject: (Same)

d. CINCONAD (COOOP-E) ltr of 18 Jan 57 to COMCFWCR, Subject: (Same)

e. CINCONAD (COOOP-E) ltr of 23 Jan 57 to CINCSAC, Subject: (Same)

In addition, various staff visits and conferences with representatives of the components, services, and commands have been held.

6. Headquarters ARAACOM has indicated that the firing of NIKE missiles from on-site positions is feasible and has provided site [illegible] desirability as follows:

a. Forts Barry/Cronkhite complex, San Francisco, California

[redacted]

B-2-2

[redacted]

[redacted]

[illegible] COOCP-E [illegible] Operational Exercise of the Air Defense System

b. Fort Hancock, New Jersey

c. Fort Tilden, New York

d. Fort MacArthur, Los Angeles, California

An overwater NIKE/drone range of approximately 25 x 50 miles must be established normal to the beach line of the selected [illegible] site.

7. Preliminary studies of the major problems indicate that the most suitable staging area for an exercise of this envisioned type will be governed by:

a. Location of [illegible] site position.

b. Minimum of commercial air and surface traffic in or adjacent to the NIKE/drone and air intercept/drone ranges.

c. Exist [illegible] and/or establishment of active firing areas and ranges.

d. Existence of representative [illegible] sites for detection and/or [illegible].

e. Existence of normal picket vessel and [illegible] aircraft stations and their operating areas.

f. Proximity of [illegible] bases.

g. Proximity of air augmentation units.

8. In order to secure ocean engagement areas, drone/air intercept and drone/[illegible] firing ranges, procure the required number of drones, establish safety factors, effect a public relations program, arrange for striking forces, and plan for and carry out an exercise of this type, the extent and mode of active participation of each element of the Air Defense Command must be determined. It is requested that:

a. The feasibility of such a Defense Division exercise as involving ADC be investigated.

b. The possibility of procurement, extent, control, mode, and types of drones and/or drone configured aircraft be indicated.

MEMORANDUM FOR RECORD

c. Any comments or suggestions which would assist in planning be provided.

[redacted]

This correspondence is classified [illegible]

CONAD FORM 5
8-2-3

194

[redacted]

Hq CONAD COOP E SUBJECT (UNCL) Operational Exercise of the Air Defense System

For planning purposes, this exercise is expected to take plance during the second quarter of fiscal year 1958.

FOR THE COMMANDER IN CHIEF:

HARVEY T. ALNESS
Major General, USAF
DCS/Plans & Opeations

C
O
P
Y

[redacted]

[redacted]

COPY
195

C000P-E 19 Jul 1957

SUBJECT: Operational Exercise of the Air Defense System (Exercise FIR FLY)

TO: Commander
CONAD Forces
Western CONAD Region
Hamilton Air Force Base
Hamilton, California

1. Reference is made to the following correspondence:

a. CINCONAD Conf ltr C000P-E Subject: Operational Exercise of the Air Defense System, dated 15 January 1957.

b. COMCFWCR Conf ltr, Subject: Operational Exercise of the Air Defense System dated 3 April 1957.

2. From results of preliminary planning with interested agencies, units, commands, and services, it is considered that an operational exercise of the Air Defense system involving active firing from operational and on-site positions within the 27th and/or 28th ADD is desirable, feasible, and practical.

DUPLICATE

3. The Chief of Naval Operations has forwarded the following information: "The (Navy) force requirements can be most readily met during the week of 2 December when an ADEX has been tentatively scheduled with a SAM cruiser available to launch REGULUS I." The Chief of Naval Operations recognized that CINCONAD will have the ultimate responsibility for the safety of the exercise; however, he has pointed out the Navy must be assured that adequate safety measures exist to prevent Navy missiles from falling into densely populated areas. CNO approved the subject exercise for planning purposes, and authorized CINCPACFLT to conduct direct liaison with Continental Air Defense Commanders. Liaison with CINCPACFLT is currently being conducted by this headquarters.

4. A conference of participating principals is proposed to be held at Headquarters CONAD, Ent Air Force Base, Colorado Springs, Colorado, 0900 MST, 14 August 1957. Your concurrence by message, if acceptable, is requested. Subsequent to this conference, it is intended that COMCFWCR shall be designated as being responsible for planning, conduct and execution of Exercise FIR FLY, as the action agent for the CONAD organization. Until that time, official

[redacted]

[redacted]

COPY 195

COOOP-E Subject: Operational Exercise of the Air Defense System (Exercise FIR FLY)

liaison with CINCPACFLT and CNO shall continue to be performed by this headquarters.

5. Since a relatively abort period of time for preparation for FIR FLY remains, the program shall be accelerated and a priority placed on the exercise. Your attention is invited to applicable portions of paragraph 6 of reference cited in paragraph 1a, above, as being some of the several actions that must immediately be resolved and finalized. Inclosure 1, with the supporting Annexes, describes this headquarters proposed Preliminary Concept of Active Firing Exercises. It is recognized that changes and modifications may well be proper, advantageous, and necessary. Your comments and corrections are encouraged and desired.

FOR THE COMMANDER-IN-CHIEF:

1 Incl:
Prelim. Concept
Act. Firing Exer
w/5 Annexes
Copies furnished:
CINCPACFLT w/o Incl.
COM ADC w/o Incl.
CG USARADCOM w/o Incl.
COMNAVFORCONAD w/o Incl.

/s/t/ HARVEY T. ALNESS
Major General, USAF
DCS/Plans & Operations

/s/t/ Comdr. Smith
2664
17 Jul 57

M/R Not Necessary

cl

[redacted]

196

[redacted]

COOOP-E

30

SUBJECT: Exercise FIR FLY

TO: Commander
CONAD Forces, Western CONAD Region
Hamilton Air Force Base
California

1. Reference is made to CINCONAD letter COOOP-E, subject: Operational Exercise of the Air Defense System (Exercise FIR FLY), dated 19 July 1957.

2. In accordance with the above referenced letter and as discussed and resolved at the FIR FLY conference of 14 August, COMCFWCR is designated as the action agent for the CONAD organization and is responsible for the planning, coordination, conduct, and execution of Phases I and II of FIR FLY. In this connection, you are authorized to conduct direct liaison with COMFIRSTFLT and other Navy units. It is requested that copies of correspondence and messages as related to this exercise be forwarded to this headquarters for information.

3. COMFIRSTFLT's 202014Z message indicated that because of technical difficulties, a modified REGULUS I with suitable reflective characteristics cannot be provided. Discussions with Component Commands indicate a desire to conduct test flights in the 27th Division with the "clean" configured REGULUS I. It appears that there is no positive knowledge of the actual capability of each air defense radar to detect and track this missile. Procurement of such information would be of value, even should it be determined that the clean missile is not a suitable target for Phase II. By copy of this letter, COMFIRSTFLT is requested to continue with the test flights as previously discussed, and as coordinated with COMCFWCR.

4. It is desired that Phase I continue as planned. It is believed that air strikes of carrier and shore-based Navy aircraft should consist of maximum numbers available of the A3D and P2V (jet pod) types, predominantly conducting very low level types of attack, penetrating from outside the seaward extension of contiguous radar coverage. SAC faker aircraft should provide sufficient high altitude penetrations. The use of other types of carrier aircraft

DUPLICATE

X7-1542 - ADC
CX7-1563 - Army
CX1-1544 - Navy
G 351 - Western Con
G 352 1st Flt, LS.

This correspondence is classified
Record Evaluation ☐ Permanent ☐ Long Time Value

CONAD HQ FORM 1 PREVIOUS EDITION OF THIS FORM ARE OBSOLETE

[redacted]

196

[redacted]

COOCP-E, Subject: Exercise FIR FLY

and modes of attack, as provided and preferred by the Navy, should be encouraged. Saturation of a CONAD Division air defense system would be the optimum exercise condition.

FOR THE COMMANDER-IN-CHIEF:

HARVEY T. ALDES
Major General, USAF
DCS/Plans & Operations

Copies furnished:
COMFIRSTFLT
CGUSARADCOM
CONAD
COMNAVFORCONAD

[redacted]

UNCLASSIFIED

198

[redacted] when filled in) COPY OF INCOMING CLASSIFIED MESSAGE

(Reproduction of this message in whole or in part is prohibited without approval of CONAD Adjutant)

SEE CRYPTO SECTION BEFORE DECLASSIFYING

READING FILE

6 Dec 1957

CON0018A-96-06
R 062230Z
FM COMCFWCR HAMILTON AFB CALIF
TO COMNAVAIRPAC SAN DIEGO CALIF
INFO CINCNORAD ENT AFB COLO
BT
//[redacted]//CITE CWOOP 7S-1181. SUBJECT: OPERATION FIR FLY. FOR COMNAVAIRPAC, ATTENTION: CODE 31. THIS MESSAGE IN FOUR PARTS. PART I. SAC PARTIAIPATION IN PHASE 1 OF OPERATION "FIR FLY" WILL BE FULFILLED BY MISSION "BLOCK HOUSE." ACTIVITY WILL BE DIRECTED AGAINST THE 28 CONAD DIVISION AREA COMMENCING 10 JAN 58 AND CONTINUING THROUGH 13 JAN 58. PART II. IT IS SUGGESTED THAT PLANNING FOR USN PARTIAIPATION IN PHASE 1 FIR FLY BE ACCOMPLISHED ON THE GENERAL LINES OF NAVY EXERCISE "HOME RUN." IT IS RECOMMENDED THAT NAVAL AIRCRAFT STRIKES BE LAUNCHED SO AS TO REACH THE SAN FRANCISCO TARGET AREA COMMENCING 10-1500Z JAN 58. SAC AIRCRAFT WILL BE OUT OF THIS TARGET AREA PRIOR TO 1500Z EACH DAY. PART

ACTION: COOP
INFO COCC
X7-11,504

DUPLICATE

PAGE TWO A-96-06
III. LT COL G.W. HUNT AND CAPT C.T. NEEF OF THIS HEADQUARTERS WILL VISIT COMNAVAIRPAC 12 DEC 57 TO PROVIDE DETAILS OF SAC PARTIAIPATION AND TO COORDINATE CFWCR ASPECTS OF USN OPERATIONS FOR PHASE 1 FIR FLY. BOTH OFFICERS CLEARED TOP SECRET. PART IV. REQUEST NO COORDINATION BE ACCOMPLISHED WITH THE 28 CADD ON THIS MISSION.
BT
AC-PARAPHRASE NOT REQUIRED EXCEPT PRIOR TO CATEGORY B ENCRYPTION PHYSICALLY REMOVE ALL INTERNAL REFERENCES BY DATE TIME GROUP PRIOR TO DECLASSIFICATION NO UNCLASSINIED REFERENCES IF DATE TIME GROUP IS QUOTED.

///ADVANCE COPY OF THIS MESSAGE DELIVERED TO COC///

CONAD HOT FILE
601

UNCLASSIFIED

READING FILE

Copy 44 of 44 Copies

199

SECURITY CLASSIFICATION (If any)

[redacted]

DISPOSITION FORM

FILE NO.	SUBJECT
	Status of FIR FLY Phase II Tests

TO	FROM	DATE	COMMENT NO. 1
NOOPC A	NOOOP	18 December 1957	
C/S for Info —		Odd. Smith/2723/mvl	

1. Agreements with the Navy were entered into in September for a series of tests by all elements of the Air Defense System within the 27th Division against a "clean" REGULUS I--to determine if this missile would be a suitable target for use in Phase II of FIR FLY. Various specific tests were to commence in October and to be concluded in December. These tests have been operating reasonable well on schedule and are to be terminated on Friday, 20 December.

2. To date, results have not been too encouraging. It is considered that the most important and significant individual launches and flights of REGULUS I are those final two scheduled for 18 and 20 December. A RAM cruiser is launching REGULUS I's in the vicinity of Point Sur, to cruise parallel to the coast, and to be recovered at San Nicholas Island. WCR has reported to this Headquarters that detection, tracking, interception, and firing passes (by each appropriate element of air defense) will be attempted on these missiles. Fighters will operate from Oxnard and George AFB's.

3. By msg, this Headquarters has requested that complete consolidated reports, including REGULUS track overlays, be forwarded as soon as possible for review and study. Information of all previous flights that NORAD holds is insufficient and inconclusive. WCR believes they can have all consolidated reports, studies, and recommendations in our hands within two weeks subsequent to the final scheduled test.

JOHN H. JEFFES
Colonel USAF
Director of Operations

C-in-C P

Pre 19

[redacted]

DD FORM 1 FEB 50 96 REPLACES NME FORM 96, 1 OCT 48, WHICH MAY BE USED. 16—64801-6 ☆ U. S. GOVERNMENT PRINTING OFFICE

12-111

[redacted]

200

CINCONAD

C of S

SECRETARIAT
Adjutant
Audio-Visual
Protocol

INFO SERVICES

DCS C&E
Systems
Plans & Rqr
Elec Warfare

DCS I
Coll & Disem
Rsch & Estimates
Opn Intel

DCS P&O
Plans & Rqr
Plans Analysis
Combat Opn Center
Ops Analysis

COMADC
COMNAVFORCONAD
CG ARAA COMD
RCAF LIAISON

NOOOP-E

31 DEC 1957

SUBJECT: Exercise "Fir Fly" (Phase I)

TO: Commander, [illegible] Air Defense Command

Commander [illegible], US Army Air Defense Command

Commander, Naval Forces, CONAD

1. The NORAD directed exercise for January 1958 will be Exercise "Fir Fly" (Phase I). Exercise "Fir Fly" is scheduled for 10 January 1958 in the 28th CONAD Division of Western CONAD Region.

2. Request names of personnel desirous of attending this exercise as observers be forwarded to CINCNORAD, ATTN: NOOOP-E not later than 3 January 1958.

FOR THE COMMANDER-IN-CHIEF:

HARVEY T. ALNESS
Major General, USAF
DCS/Plans & Operations

J.W. Lockhart
Capt. Lockhart
[illegible] Telephone
30 Dec 57 Date
Refers to Fanfold No.
mvl Typists Initials

12-151

CONAD

Dec 19

M/R not required.

SECRET

ARMY - CX7-231[illegible]
ADC - CX7-2319
NAVY - CX7-232[illegible]

This correspondence is classified in accordance with Para AFR 205-1, or for reason(s) stated
Record Evaluation: Permanent, Long Time Value, Temporary Until

CONAD HQ FORM 25 FEB 57 5 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

57-2592

0013

[redacted]

201

NORTH AMERICAN AIR DEFENSE COMMAND

General Thomas D. White
Chief of Staff, USAF
Headquarters USAF
Washington 25, D. C.

Dear Tommy:

For more than a year, we have been considering a realistic firing exercise in NORAD employing a suitable drone target that would penetrate the ground environment system and have fighter interceptor aircraft and surface-to-air missile units attempt destruction from tactical on-site positions.

A study of the surface-to-air missile deployment in the continental United States indicated that the San Francisco area was most feasible for an initial exercise of this type, since fighter aircraft and Nike Ajax missiles can be utilized from tactical positions in this area.

We have worked with the Navy on the West Coast with the concurrence of the Chief of Naval Operations, and they offered us the Regulus I missile to be launched from outside the contiguous radar coverage making realistic penetrations into the San Francisco area. Some doubt as to the ability of our ground environment system and weapons systems to detect and track this small target was evidenced and, as a result, a series of tracking missions have been conducted with the Regulus I on the West Coast and we have concluded that the missile, in a clean configuration, cannot be adequately carried in the system. The Navy informs us that the missile cannot be augmented with spinners, reflectors, etc. to simulate a bomber type aircraft, so you can see that we have been stymied in these tests.

We have asked the USAF Air Defense Command and the US Army Air Defense Command to investigate the procurement of a suitable type drone for this type of exercise. However, this may be very time consuming, so we are asking that your headquarters look at the problem from an over-all resources viewpoint in order to assist us in the immediate procurement of a suitable drone for this purpose. Any drone

DUPLICATE

[redacted]

201

with a 400 mile radius, suitable reflectivity (of at least the B-47 profile) and adequate control would answer our requirements. This is our first attempt at this type of mission and, if successful, will be pursued in other suitable areas where live firings can be conducted.

We feel that this is a must in determining the capability of units deployed in tactical positions in air defense. We will appreciate any assistance that you can give us in resolving this requirement.

Sincerely,

E. E. PARTRIDGE
General, USAF
Commander-in-Chief

UNCLASSIFIED

[redacted] (When filled in) COPY OF INCOMING CLASSIFIED MESSAGE 202

SEE CRYPTO SECTION BEFORE DECLASSIFYING. 22 Oct 1957

CONAD HIST FILE
601

READING FILE

ACTION: NOCOP
INFO: NORAD & NUOPO
M7-12/96

PRIORITY

CON001SBA003
PP RJEDEN
DE RJWPSJ 3[illegible]C
P 2225157
FM COMCFZCR HAMILTON AFB CALIF
TO CINCNORAD ENT AFB COLO SPRINGS COLO
BT
[redacted] NUOOP 7S-11[illegible] SUBJECT: EXERCISE FIA FLY.//

THIS MESSAGE IN FIVE PARTS. PART I. REFERENCE PARAGRAPH 3, CONFIDENTIAL LETTER YOU HEADQUARTERS COMCFZ-E, 30 AUG 57, SUBJECT AS ABOVE. PART II. A TEST WAS CONDUCTED BY THE 27TH FD TO DETERMINE THE CAPABILITY OF THE AIR DEFENSE SYSTEM AGAINST A "CLEAN CONFIGURED" REGULUS MISSILE UNDER THE FOLLOWING RESTRICTED CONDITIONS: NAVY CONFINED FLIGHT ROUTE OF MISSILE TO CONTRACTORS RADE TRACK COURSE OFF SAN NICOLAS ISLAND (REGULUS RECOVERY BASE). PART III. RESULTS OF RESTRICTED TEST FOLLOWS: A. MAINLAND BASED GROUND RADAR TO INCLUDE AAA COULD NOT PARTICIPATE IN TEST DUE TO RESTRICTION SET

DUPLICATE

PAGE TWO RJWPSJ 3[illegible]C
FORTH IN PART II ABOVE. B. ICELAND BASED RADARS (P-15) AND (P-3[illegible]) COULD NOT ACQUIRE MISSILE DUE TO A.P. CONDITION AT TIME OF MISSILE FLIGHT. INFORMATION GAINED BY [illegible] UNSCHEDULED PARTICIPATION BY GROUND RADAR IN A SCHEDULED MISSILE FLIGHT REVEALS THAT GROUND RADAR [illegible] BE ABLE UNDER IDEAL WEATHER CONDITIONS TO ACQUIRE THE REGULUS MISSILE AT RANGES UP TO 70 MILES BY ACQUIRING THE CHASE PLANE AND SEARCHING THE IMMEDIATE AREA FOR THE MISSILE RETURN. C.// EIGHT F-8[illegible] AIRCRAFT, UNDER CONTROL OF NAVY POINT MUGU RADAR WERE COMMITTED
RPTING
NAVY POINT MUGU RADAR WERE COMMITTED IN ECHELON AT TWO MILE TRACK COURSE. TINTERCEPTS WERE ACCOMPLISHED AT 2[illegible],000 FEET. THE FIRST F-8[illegible] RECEIVED CONTACT AT 14 MILES, SECOND AIRCRAFT HAD NO CONTACT DUE TO POOR POSITIONING AND THE THIRD AIRCRAFT RECEIVED CONTACT AT NINE MILES. REASON FOR SHORT RANGE CONTACT OF THIRD AIRCRAFT WAS ANTENNAN TRAIN ANGLE. RADAR OBSERVERS REPORTED THAT PICKUP IS BETTER THAN RUNNING AGAINST AN F-8[illegible]. PART IV. CONCLUSION: A. TEST WAS INCONCLUSIVE FROM A GROUND ENVIRONMENT STANDPOINT DUE TO NAVY RESTRICTIONS ON COURSE AND TIME OF LAUNCH OF MISSILE. HOWEVER, INFORMATION GLEANED FROM PRICK TRACKING ESTS INDICATES THE REGULUS IS AN UNSUITABLE TARGET FOR GROUND RADAR

UNCLASSIFIED

READING FILE

[redacted] hen filled in) COPY OF IN[redacted]ING CLASSIFIED M[redacted] 202

SEE CRYPTO SECTION BEFORE DECLASSIFYING.

PAGE THREE RJWPS3 3[redacted]C
PARTICIPATION IN PHASE II OF SUBJECT EXERCISE. B. NO PROBLEM
APPEARS TO EXIST INSOFAR AS AIRBORNE RADAR PICKUP IS CONCERNED.
PART V. IT IS RECOMMENDED THAT PHASE II OF SUBJECT EXERCSISE BE
HELD IN ABEYANCE PENDING ACQUISITION OF A MORE SUITABLE TARGET,
I.E., DRONE AIRCRAFT OR A MISSILE WHICH CAN BE CONFIGURED OR
EQUIPPED WITH SUITABLE DEVICES WHICH WILL PERMIT REALISTIC
PICKUP RANGES BY GROUND RADAR.
BT
22/2327Z COCT RJWPS3

A-- PARAPHRASE NOT REQUIRED EXCEPT PRIOR TO CATEGORY B ENCRYPTION--
PHYSICALLY REMOVE ALL INTERNAL REFERENCES BY DTG-TIME-GROUP
PRIOR TO DECLASSIFICATION

//ADVANCE COPY DLVD TO CSC//

[redacted]

203

HEADQUARTERS
47TH ANTIAIRCRAFT ARTILLERY BRIGADE
Fort MacArthur, California

BRS3 353

23 NOV 1957

SUBJECT: AA Participation in REGULUS Test Firing (U)

TO: Commander-in-Chief
North American Air Defense Command
Ent Air Force Base
Colorado Springs, Colorado

1. Elements Los Angeles Defense participated in REGULUS TEST FIRING 222019Z (Launch Time) to 222030Z (Missile dumped 222026Z) Nov 57.

2. REGULUS launched 222019Z on course Los Coronadas Isle (EJ CC4520) direct to San Nicolas Isle (EJ AD3015). Preflight altitude 35-40,000 ft. Speed .85 Mach, actual speed or altitude unknown. Flight path in range of Long Range Detection Radars (53R, 52R, 78R, 04R) and acquisition radar sites (55, 40, 57, 32).

3. Following information received from 27th ADCC: Launch time, Dump time and report of two (2) Navy chase aircraft, Navy F-J type, showing mode 1 IFF.

4. Site 78R detected object (Track KJ301KJ) at 102 miles initial range (GEOREF EJ CC2030) at time 2022Z, Neg IFF, heading 310 degrees, estimated speed 800 knots. Site carried track for five minutes, reported lost contact at 2027Z. Target reappeared briefly at 2029Z with final lost contact at 2030Z. Site also reported two (2) A/C trailing approximately 20-25 miles showing mode 1 IFF. Signal return trailing A/C which appeared normal for Navy F-J type.

Site 52R reported initial detection of object at 90 miles range (GEOREF EJ CC2020) at 2020Z, Neg IFF, heading 305 degrees, estimated speed 700 knots. Site lost contact 2025Z. Reported two (2) or three (3) A/C trailing approximately 20 miles, showing mode 1. Normal signal return from trail A/C and a weak signal from lead object.

Site 53 R detected object at initial range 60 miles at 2025Z, lost contact 2026Z Neg IFF, heading 280 degrees, very weak signal return. Reported two (2) trail A/C mode 1 IFF, normal signal return.

[redacted]

XJ-14238

HQ47-1182 -C-5A

[redacted]

203

SUBJECT: AA Participation in REGULUS Test Firing.

Acquisition Radar site 55 reported initial plot on object at 106,000 yds, Neg IFF (GEOREF EJ BC1857) at 2025Z, lost contact at 112,000yds (EJ AD3820), extremely weak signal return. Site reported one (1) trail A/C, mode 1 IFF. Normal signal return.

5. Positive correlation of Radar contacts made unlikely due to lack of as-flown track data from Navy. However, it is felt that surveillance radars 53R, 78R, 52R and Acquisition Radar site 55 did acquire and track REGULUS Missile.

FOR THE COMMANDER:

John G. Sutherland

JOHN G. SUTHERLAND
MAJOR ARTILLERY
ADJUTANT

1 Incl
Surv Rdr Plot Record

Information Copies To:
CG, USARADCOM, Ent AFB, Colorado Springs, Colorado
CG, 6th RAADCOM, Fort Baker, California
Cmdr, 27th Air Div Def, NAFB, California

[redacted]

0247-1182 -C-57

[redacted] when filled in) COPY OF IN AING CLASSIFIED MESSAGE 204

SEE CRYPTO SECTION BEFORE DECLASSIFYING.

READING FILE

29 Nov 1957

CON005
SBA054 SBC002
MM RJEDDN RJWPJB
DE RJWPSB 257C
M 292300Z
FM COMCFWCR HAMILTON AFB CALIF
TO RJEDDN/CINCNORAD EN AFB COL
INFO/RJEDDN/COMDR ADC ENT AFB C
RJWPJB/COMDR 27TH CADD NORTON AFB COLO
BT

ACTION: COOPO
INFO: COOOP
X7-11279

[redacted] /CWHCR 7C-1177. PERSONAL FROM PARKER TO ALNESS. IN ACCORDANCE WITH THE INSTRUCTIONS IN YOUR CONFIDENTIAL MESSAGE NOOOP-E X037 CONCERNING OPERATION FIR FLY, PHASE II, WE HAVE BEEN CONDUCTING RADAR TRACKING AND AIRBORNE INTERCEPT TESTS AGAINST THE NAVY REGULUS MISSILE SINCE EARLY OCTOBER. THESE TESTS HAVE BEEN OBJECTIVELY DESIGNED AND CONDUCTED WITH EXCELLENT COOPERATION FROM THE NAVY. THROUGHOU THESE TESTS WE HAVE BEEN UNABLE TO DETECT AND TRACK THESE MISSILES WITH OUR GROUND RADAR, DESPITE ADVANCE KNOWLEDGE OF EXACT LAUNCHING LOCATION AND TIME. ON A FEW OCCASIONS, BY USING AN OFF-SET POSITION FROM THE NAVY CHASE

CONAD HIST FILE
601

READING FILE

[redacted] when filled in) COPY OF INCOMING CLASSIFIED MESSAGE 209

SEE CRYPTO SECTION BEFORE DECLASSIFYING.

PAGE TWO RJUPSB 257C
AIRCRAFT, WE HAVE BEEN ABLE TO OBSERVE SOME SCOPE RETURN OUT TO DISTANCES OF ABOUT 70 MILES, BUT WITH SUCH LOW BLIP SCAN RATIO THAT CONTINUOUS TRACKING HAS BEEN CONSIDERED IMPOSSIBLE. THIS POOR PERFORMANCE S DSSSSSSSSSS
REPEATING ABOVE LINE
PERFORMANCE IS DUE TO THE REFLECTING AREA OF THE REGULUS MISSILE BEING SIGNIFICANTLY BELOW THE DESIGN CHARACTERISTICS OF OUR GROUND RADAR. AIRBORNE INTERCEPT TESTS HAVE SHOWN THAT AIRBORNE PICK UP CAN BE ACCOMPLISHED AT ABOUT 14 MILES WITH MARGINALLY ACCEPTABLE LOCK ON CAPABLIITY. WITHOUT GROUND RADAR TRACKING CAPABILITY, AIRBORNE INTERCEPT CAN IN GENERAL BE ACCOMPLISHED ONLY BY VISUAL SIGHTING FROM COMBAT AIR PATROL TYPE MISSION. ONLY ONE REGULUS TRACK WAS POSITIONED WITHINRANGE OF AAA RADAR AND ON THIS MISSION THE ARMY REPORTED ONLY A "POSSIBLE" PICK UP AT A RANGE OF 52 NAUTICAL MILES. IT NOW APPEARS CERTAIN THAT THE CONCEPT OF FIR FLY, PHASE II, CAN BE REALIZED ONLY IF RADAR REFLECTING DEVICES CAN BE MOUNTED ON THE REGULUS MISSILE, HOWEVER, TO DATE THE NAVY HAS BEEN RELUCTANT TO PROVIDE THIS MODIFICATION IN VIEW OF THE RESEARCH AND ENGINEERING TEST ASPECTS OF THEIR AVAILABLE MISSILES. WITHOUTTHIS MODIFICATION IT IS BELIEVED THAT FURTHER TESTS ON FIR FLY, PHASE II, ARE UNWARRANTED AND REPRESENT A SERIOUS DISPERSION OF RESOURCES AND TRAINING POTENTIAL OF OUR 27TH AIR DIVISION, WHO HAVE BEEN CONDUCTING THESE TESTS. IT IS RECOMMENDED THAT YOU AUTHORIZE US TO IMMEDIATELY DISCONTINUE THESE FIR FLY TESTS AND THAT YOU RECOMMEND TO CINCNORAD THAT THIS PROJECT BE ABANDONED UNLESS MISSILES WITH ADEQUATE RADAR RETURN ARE MADE AVAI
ABLE.
BT
29/2309Z NOV RJUPSB

A--PARAPHRASE NOT REQUIRED EXCEPT PRIOR TO CATEGORY B ENCRYPTION--PHYSICALLY REMOVE ALL INTERNAL REFERENCES BY DATE-TIME-GROUP PRIOR TO DECLASSIFICATION

///ADVANCED COPY SENT TO COC///

[redacted] (when filled in) COPY OF IN[illegible]ING CLASSIFI[illegible] MESSAGE 205

SEE CRYPTO SECTION BEFORE DECLASSIFYING.

29 NOV 1

READING FILE

PRIORITY

CON000

SBA046JBA045I
PP RJEDDN RJWPSB
DE RJWPJB 5B
P 291734Z
FM COMDR 27TH AIR DIV DEF
TO RJEDDN/COMDR NORAD
INFO RJWPSB/COMDR WADF
BT

ACTION: CCOOP
INFO: CC[illegible]
X7-14259

NORAD HIST
601

29 NOV 1957

[redacted] FROM 270TH-A TAC K-1037.
SUBJECT: EXERCISE FIR FLY PHASE TWO. REGULUS DASH ONE FIRING WAS CONDUCTED BY FIRST FLEET 22 NOV 57. MISSILE WAS LAUNCHED ABOARD SURFACE SHIP NEAR THE LOS CORONADOS ISLAND, GEOREF EJCC 4520 TOWARD SAN NICHOLAS ISLAND GEOREF EJAD 3015. MISSLE WAS SCHEDULED TO FLY BETWEEN .85 AND .9 MACH AT 35 TO 40 M FEET. LAUNCH TIME 2019Z, 22 NOV 57. TWO CHASE AIRCRAFT ACCOMPANIED THE MISSILE. MISSILE WAS DUMPED AT 2026Z NEAR SAN CLEMENTIE ISLAND EJ 3050 DUE TO MALFUNCTION. UNITS OF THE 27TH CONAD DIVISION ATTEMPED TO TRACK THE MISSILE. THE 669TH,

DUPLICATE

PAGE TWO RJWPJB 5B
570TH AND 751ST ALL REPORTED NEGATIVE CONTACT. 47TH AA BRIGADE ORGANIZATIONS REPORTED TRACKS AS FOLLOWS:

STA	TRACK NO.	PICKUP	TIME	RANGE	C/L	TIME
52R	KJ301KJ	CC2020	2020Z	90KM	BC2035	2030Z
78R	KJ301KJ	CC2035	2022Z	102KM	AD5505	2030Z
53R	KJ301KJ	BC4050	2025Z	60KM	BC3045	2030Z
55	KJ301KJ	BC1857	2025Z	53KM	AD3820	2027Z

47TH AA BRIGADE REPORTED THAT POSITIVE CORRELATION OF RADAR CONTACTS MADE UNLIKELY DUE TO LACK OF AS-FLOWN TRACK DATA FROM NAVY. HOWEVER, IT IS FELT BY THEM THAT SURVEILLANCE RADARS 53R, 78R, 52R AND ACQUISITION RADAR SITE 55 DID ACQUIRE AND TRACK REGULUS MISSILE
BT
29/1739Z NOV RJWPJB
A--PARAPHRASE NOT REQUIRED EXCEPT PRIOR TO CATEGORY B ENCRYPTION--PHYSICALLY REMOVE ALL INTERNAL REFERENCES BY DATE-TIME-GROUP PRIOR DECLASSIFICATION

READING FILE

[redacted] (when filled in) COPY OF I MING CLASSIFIED TEXT 206

SEE CRYPTO SECTION BEFORE DECLASSIFYING. 4 Dec 1957

READING FILE

CONN002SBA05 2JBA002
RR RJEDDN RJWPSB
DE RJWPJB 14[illegible]
R 042211Z ZEX
FM COMDR 27TH AIR DIV DEF
TO RJEDDN/COMDR NORAD
INFO RJWPSB/COMDR WADF
BT

[redacted] /FROM 270TN-A TAC L-1016. SUBJECT: REGULUS II FIRING. REGULUS II FIRING WAS CONDUCTED AT EDWARDS AFB 27 NOVEMBER 57. MISSILE LAUNCHED IN VICINITY OF EDWARDS AFB TO FOLLOW PERIMETER OF RESTRICTED AREA 404. MISSILE WAS SCHEDULED TO FLY AT 2.0 MACH AT UNKNOWN ALTITUDES. UNITS OF 27TH AND 26TH CONAD DIVISIONS ATTEMPTED TO TRACK THE MISSILE. THE 750TH ACWRON WAS OFF THE AIR FOR UNSCHEDULED MAINTENANCE DURING ENTIRE MISSION. THE 659TH, 669TH, 665TH AND 663RD AC SQUADRONS ALL REPORTED NEGATIVE CONTACT. 47TH AA BRIGADE ORGANIZATIONS REPORTED AS FOLLOWS:

PAGE TWO RJWPJB 14B

STA	TRACK NO.	PICKUP	TIME	RANGE	C/L	TIME
78R	N-01	CE3545	1620Z	72NM	DF3505	1637Z
98	98-1	CE0554	1618Z	45NM	CE3059	1623Z
98R	R-01	CE2050	1620Z	60NM	DF3010	1636Z

47TH AA BRIGADE REPORTS POSITIVE CORRELATION NOT POSSIBLE DUE TO LACK OF PREFLIGHT OR ON-FLOW FLIGHT PLANS. NO CHASE OR OTHER AIRCRAFT DETECTED IN VICINITY OF MISSILE LAUNCH AREA.
BT
04/2218Z DEC RJWPJB

A--PARAPHRASE NOT REQUIRED EXCEPT PRIOR TO CATEGORY B ENCRYPTION--PHYSICALLY REMOVE ALL INTERNAL REFERENCES BY DATE-TIME-GROUP PRIOR TO DECLASSIFICATION
//ADVANCE COPY OF THIS MSG HAS BEEN DELIVERED TO COC AND SSO//

READING FILE

[redacted] (when filled in) COPY OF INC ING CLASSIFIED MESSAGE 207

SEE CRYPTO SECTION BEFORE DECLASSIFYING. 19 Dec 1957

POR009SBA003JBA007PHAMML
RR RJEDDN RJWPSB
DE RJWPJB 3B
R 100010Z ZEX
FM COMDR 27TH AIR DIV DEF
TO RJEDDN/COMDR NORAD
INFO RJWPSB/COMDR WADF
RJWPSB/COMDR 552ND AEW C WG
BT

READING FILE

ACTION: COCOP
INFO: COCOC
X7-14703

CO... FILE
601

[redacted] FROM 270TN-A TAC L 1054 PD
SUBJECT CLN EXERCISE FIR FLY CMM PHASE TWO PD
PART ONE CLN REGULUS ONE FLYING WAS CONDUCTED BY
FIRST FLEET ON FOUR DECEMBER ONE NINE FIVE SEVEN PD
MISSILE WAS LAUNCHED ZERO FOUR ONE SIX ONE TWO ZEBRA
ABOARD SURFACE SHIP IN VICINITY OF GUADALUPE ISLAND
PAREN ECHO HOTEL BRAVO QUEBEC FOUR ZERO ZERO ZERO
PAREN DIRECT TO BISHOPS ROCK PAREN ECHO JULIET ALFA
CHARLIE FIVE ZERO TWO ZERO PAREN CMM DUMP TIME
ZERO FOUR ONE SEVEN ZERO FIVE ZEBRA PD PROGRAMMED

DUPLICATE

PAGE TWO RJWPJB 3B
SPEED POINT EIGHT NINE MACH CMM ALTITUDE THREE
ZERO ZERO ZERO ZERO FEET PD
REPORTS FROM ALLRPT ABOVE LINE

ZERO ZERO ZERO ZERO FEET PD PART TWO CLN NEGATIVE
REPORTS FROM ALL AIRCRAFT CONTROL AND WARNING
SQUADRONS WITHIN TWO SEVEN AIR DIVISION PD NEAREST
POINT TO RADAR POSITIONS SEVEN ZERO NAUTICAL MILES PD
PART THREE CLN NEGATIVE REPORT FHEM FOUR SEVEN
ANTI DASH AIRCRAFT ARTILLERY BRIGADE PD NEAREST POINT
OF FLIGHT TO ANTI DASH AIRCRAFT ARTILLERY SURVEILLANCE
RADARS ONE ZERO ZERO NAUTICAL MILES PD PART FOUR CLN
FIVE FIVE TWO AIRCRAFT EARLY WARNINING AND CONTROL
WING REPORTED THRSA-4-53 POINTS IN LINE ABREAST
FORMATION WITH TWO OF THE THREE PAINTS SHOWING
IDENTIFICATION FRIEND OR FOE PD BLIP SCAN RADIO
WAS POINT TWO WITH ANTENNA TILL MINUS ONE HALF
DEGREES PD SKIN PAINT FADED AT LAST RECORDED
POSITION PD RADAR PLOTS WERE SIMILAR IN SIZE TO FOXTROT
EIGHT SIX OR TANGED THREE THREE BLIPS PD LOG OF AIRCRAFT
EARLY WARNING AND CONTROL WING PLOTS AS FOLLOWS CLN
TIME CLN ZERO FOUR ONE SIX TWO FIVE ZEBRA PD ZERO
FOUR ONE SIX THREE TWO ZEBRA. PD ZERO FOUR ONE SIX

[redacted] when filled in) COPY OF INC ING CLASSIFIED MESSAGE 207

SEE CRYPTO SECTION BEFORE DECLASSIFYING.

PAGE THREE RJWPJB 33
THREE THREE ZEBRA PD ZERO FOUR ONE SIX THREE FIVE
ZEBRA PD ZERO FOUR ONE SIX THREE FIVE ZEBRA PD
GEOREF POSITIONS CLN ECHO JULIET ALFA ALFA FIVE NINE
FIVE THREE PD ECHO JULIET ALFA BRAVO FIVE ZERO ONE
NINE PD ECHO JULIET ALFA BRAVO THREE NINE FOUR TWO
PD ECHO JULIET ALFA BRAVO THREE EIGHT FIVE ONE PD
ECHO KILO ALFA BRAVO THREE SEVEN FIVE EIGHT PD
BT
10/0024Z DEC RJWPJB

EEEEEEEEEXT A--PARAPHRASE NOT REQUIRED EXCEPT PRIOR TO CATEGORY B ENCRY
PHYX
A--PARAPHRASE NOT REQUIRED EXCEPT PRIOR TO CATEGORY B ENCRYPTION--
PHYSICALLY REMOVE ALL INTERNAL REFERENCES BY DATE-TIME-GROUP PRIOR TO
DECLASSIFICATION

208

JOINT MESSAGEFORM

SECURITY CLASSIFICA [redacted]

SPACE BELOW RESERVED FOR COMMUNICATION CENTER

READING FILE

PRECEDENCE	TYPE MSG (CHK) BOOK	MULTI	SINGLE	ACCOUNTING SYMBOL	ORIG. OR REFERS TO	CLASSIFICATION OF REFERENCE
ACTION DEFERRED						
INFO DEFERRED	X			AF	X	

FROM:

CINCNORAD

SPECIAL INSTRUCTIONS

TO:

CINCLANT NORFOLK VA

CINCPAC PEARL HARBOR T H

INFO: COMNAVFORCON-D [illegible] (COMNAVFORCON)

COMANDANORLANT NORFOLK VA

COMMESTSMAFRON SAN FRANCISCO CALIF

13

DUPLICATE

[redacted] from NOOOP X 073.

Current joint exercises involving Regulus missile indicate NORAD radar system continues to have marginal detection and tracking capability against submarine launched missiles. Maximum exploitation of this capability related to details of prior warning of launch. NORAD is completely dependent upon reports and evaluations by the responsible unified commanders in the Atlantic and Pacific for warning and imminence of missile attacks from submarines. Subject to your concurrence and at your convenience, at a place acceptable to you, it is recommended that a meeting of

DATE	TIME
26 MONTH	1715Z
Dec	1957

SYMBOL NOOOP

WRITER

TYPED NAME AND TITLE (Signature if required)

Col. Jeffus/mvl

PHONE 2130

PAGE NR. 1 NR. OF PAGES 2

SECURITY CLASSIFICATION [redacted]

RELEASER

SIGNATURE

TYPED (or stamped) NAME AND TITLE

J. W. LEDOUX
LCDR, USN
Asst Adjutant

DD FORM 1 MAY 55 173 REPLACES DD FORM 173, 1 OCT 50, WHICH WILL BE USED UNTIL EXHAUSTED

JOINT MESSAGEFORM - CON...UATION SHEET | SECURITY CLASSIFICATION [redacted] | 208

FM

CINCNORAD

our respective staffs be held for the purpose of informal discussion of this problem. The facilities at Ent AFB, Colorado Springs, Colorado are available for such a meeting, although it may be more convenient for all concerned to hold the meeting at Hq WESTSEAFRON.

SYMBOL	PAGE NR	NR OF PAGES	SECUR [redacted]	INITIALS
NOOOP	2	2		mv1

DD FORM 1 MAY 55 173-1

☆ U. S. GOVERNMENT PRINTING OFFICE: 1955—952236

209

[redacted]

C of S

SECRETARIAT

Protocol

INFO SERVICES

DCS C&E

Systems

Plans & Rqr

Elec Warfare

DCS I

Coll & Disem

Rsch & Estimates

Ops Intel

DCS P&O

Plans & Rqr

Operations

Plans Analysis

Combat Ops Center

Ops Analysis

COMADC

COMNAVFORCONAD

CG ARAA COMD

RCAF LIAISON

NCOOP-E

7 NOV 1957

SUBJECT: Procurement of Suitable Drones for Active Firing Exercises

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

1. Reference is made to the following correspondence:

a. Hq CONAD ltr COOOP-S of 21 Feb '57, subj: Operational Exercise of the Air Defense System.

b. Hq ADC 1st ind ADOOP-B of 29 Apr '57, to above ltr.

2. Phase I of Exercise "TIER FLY" has been scheduled for early January 1958. Phase II is still in the testing stage--to be completed in mid December 1957. The results of these tests, utilizing RADULUS I as the target drone, will determine the feasibility of its use for Phase II (active firing phase). It is considered that exercises involving active firing of the interceptor aircraft and of guided missiles from their tactical positions periodically should be conducted; therefore, procurement of suitable drone targets is a continuing requirement.

3. By the letter referenced in paragraph 1a above, Headquarters ADC was requested to indicate the possibility of procurement of the types of drones and/or drone configured aircraft to support operational exercises of the Air Defense System. In the indorsement referenced in paragraph 1b above, Headquarters ADC specified criteria, performance and operational characteristics, safety features, configurations, etc. required for a suitable drone. It was further stated that two years would be required for ADC to obtain drones which would possess adequate operational and safety characteristics.

4. It is requested that a report of the action taken to procure suitable drones for active firing exercises, and the earliest date that we can expect to have them available in the Air Defense inventory be provided.

FOR THE COMMANDER-IN-CHIEF:

HARVEY T. ALNESS
Major General, USAF
DCS/Plans & Operations

Memorandum for Record not required.

[redacted]

UNCLASSIFIED

210

SECRETARIAT

3

NOOOP-5

14 NOV 1957

SUBJECT: Procurement of Suitable Drones for Active Firing Exercises

TO: Commanding General
U. S. Army Air Defense Command
ent Air Force Base
Colorado Springs, Colorado

1. Phase I of exercise AIR FLY has been scheduled for early January 1958. Phase II is still in the testing stage to be completed in mid December 1957. The results of these tests, utilizing [redacted] as the target drone, will determine the feasibility of its use for Phase II (active firing phase). It is considered that exercises involving active firing of defense elements, including guided missiles, from fixed tactical positions should be conducted periodically; therefore, procurement of suitable drone targets is a continuing requirement.

2. Even though [redacted], subsequent to the completion of the afore mentioned tests may be a satisfactory target, the support as provided by the Navy will be limited to this initial active firing exercise. BuAer has been requested to initiate action to procure suitable drones and/or drone configured aircraft for exercise support. Headquarters ADC has indicated that two years will be required before suitable drones can be expected to be in the inventory.

3. It is requested that your headquarters indicate the possibility of procurement of the types of drones which would support operational exercises of the air defense system similar in concept to Phase II of AIR FLY.

E E Smith

11-059

[redacted] not required.

UNCLASSIFIED

[redacted]

211

HEADQUARTERS
UNITED STATES ARMY AIR DEFENSE COMMAND
Ent Air Force Base
Colorado Springs, Colorado

ADGCT 416

21 NOV 1957

SUBJECT: Procurement of Suitable Drones for Active Firing Exercises (U)

TO: Commander-In-Chief
Continental Air Defense Command
Ent Air Force Base
Colorado Springs, Colorado

Logged

1. Reference letter NOOP-E, Headquarters, North American Air Defense Command, 14 November 1957, subject as above.

2. There is no information available at this headquarters on an aerial target which fulfills the requirements for "FIR FLY".

3. A letter has been forwarded to Deputy Chief of Staff for Logistics, Department of the Army, requesting information on any existing or planned aerial target that will fulfill these requirements.

4. The data requested in reference 1 will be forwarded to your headquarters as soon as this information is received.

FOR THE COMMANDER:

27 Dec 57 -
Have we received
any data re par 4 above.
[illegible]

[signature]
B. B. JOHNSON
Brig Gen, CS
Chief of Staff

7 Feb 19

30 Dec
Negative
8

8
N. D.
[illegible]

REGRADING DATA CANNOT
BE PREDETERMINED

[redacted]

X7-14149

[redacted]

Extract COPY

212

8 August 1957

COOOP-E

SUBJECT: LANTSUBEX 1-58 As Support For A CONAD Exercise

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

1. Reference is made to _____Flt ltr _____, ser 0750/33 dated 23 May 1957, Subject: Annual Employment Schedule of the U.S. Atlantic Fleet for FY 1958.

2. Submarine launched missile attacks present one of the greatest threats to the Continental Air Defense System. The effectiveness of current _____weapons against this type of attack is not fully known, principally because controlled exercises have not been conducted. Training as well as evaluation would accrue from such an exercise.

DUPLICATE

3. The schedule as referenced in paragraph 1, above, indicates that an exercise for defense against submarine launched guided missiles is to be conducted by various units of the Atlantic Fleet off the east coast between 31 March and 4 April 1958.

4. For some time this headquarters has been planning for an exercise involving a simulated submarine launched missile attack against a coastal target of the United States. The preliminary basic concept is as follows:

Proposed Concept of Submarine Launched Missile Exercise

General

The Submarine Launched Missile Exercise will involve exemplary elements of air defense within the Eastern CONAD Region. The Commanders of the 85th and 26th CONAD Divisions will conduct a defense against a simulated submarine launched missile attack penetrating from outside the area of contiguous radar coverage. Norfolk, Virginia has been selected as the target complex. The attacking forces shall consist of three carrier launched, very high performance, Navy fighter type aircraft. Attacks shall be in three waves of one aircraft each, some thirty minutes between each wave. All functions of air defense, excluding destruction, shall be performed from various air defense element operational sites. ECM shall not be employed.

[redacted]

COPY

[redacted]

COOOP-E Subject: LANTSUBEX 1-58 As Support for A CONAD Exercise

Defense Forces.

1. Eastern CONAD Region

A. 85th CONAD Division

1. Seaward Extension of contiguous radar coverage.

(a) Picket Station #16
(b) Picket Station #18
(c) Picket Station #20

2. Airborne Early Warning and Control.

(a) AEW&C station #6
(b) AEW&C station #8

3. ACW Squadron

(a)	771st	Cape Charles	P-56
(b)	647th	Quantico	P-55
(c)	614th	Cherry Point	M-116
(d)	701st	Ft. Fisher	M-115
(e)	632nd	Roanoke Rapids	M-117
(f)	649th	Bedford	M-121
(g)	810th	Winston Salem	M-130

4. Fighter Intercepter Squadrons (ADC)

(a)	95th	Andrews AFB
(b)	48th	Langley AFB

5. Air Augmentation Squadrons

(a) Naval Air Units based at NAS Chincotoague
(b) Marine Corps Air Units based at MCAS Cherry Point
(c) Naval Air Units based at NAS Norfolk
(d) Naval Air Units based at NAS Oceana

6. NIKE Defenses - Norfolk Area.

(a) NIKE Site #63
(b) NIKE Site #52
(c) NIKE Site #96
(d) NIKE Site #25
(e) NIKE Site #02

[redacted]

[redacted]

COPY

COOOP-E Subject: LANTSUBEX 1-58 As Support For A CONAD Exercise

(f) NIKE Site #93
(g) NIKE Site #85
(h) NIKE Site #75

7. Harbor Defenses - Norfolk Area.

(a) AA weapons aboard U.S. Naval ships.

B. 26th CONAD Division

1. Seaward Extension of Continuous Radar Coverage.

(a) Picket Station #12
(b) Picket Station #14

2. Airborne Early Warning and Control.

(a) AEW&C station #2
(b) AEW&C station #4

3. Texas Towers

(a) Texas Tower #III

4. ACW Squadrons

(a) 770th	Polermo	P-54
(b) 646th	Highlands	P-9

5. Fighter Interceptor Squadrons (ADC)

(a) 46th	Dover, Delaware
(b) 98th	Dover, Delaware
(c) 96th	Newcastle, Delaware
(d) 97th	Newcastle, Delaware

6. Air Augmentation Squadrons

(a) Naval Air Units based at NAS Atlantic City
(b) Naval Air Units based at NAS New York

Aggressor Forces.

I. Simulated Submarine Launched Missile strike utilizing three Navy high performance fighter aircraft.

A. 1st wave. Single aircraft. Launch, maximum rate of climb to maximum cruise altitude, vertical descent attack.

[redacted]

[redacted]

COPY 212

COOOP-E Subject: LANTSUBEX 1-58 As Support For A CONAD Exercise

B. 2nd wave. Single aircraft. Launch, constant climb to maximum operating altitude midway between carrier and target, constant descent to target.

C. 3rd wave. Single aircraft. Launch, cruise to target very low level, attack very low level.

Engagement Areas.

I. Normal Combat Zone for Fighter Interception.

II. Local Area Defense as provided by NIKE defenses.

5. In order to carry out this type of an exercise, support from the Navy such as indicated above is necessary. It would appear that the three high performance Navy fighters could be launched from the CVS scheduled to participate in LANTSUBEX 1-58. Suitable targets other than the Norfolk area could be selected; however, this selection has been made because of proximity of all defense elements, importance of target area, location of probable aggressor support forces, etc. The Navy's conduct, results, and evaluation of LANTSUBEX 1-58 will be of great interest to this headquarters. In view that a CONAD Submarine Launched Missile Exercise is related in many areas, it is considered appropriate for the CONAD phase to be associated with LANTSUBEX 1-58. Therefore, it is requested that:

a. The feasibility of such a CONAD phase Submarine Launched Missile Exercise, as associated with LANTSUBEX1-58, be investigated.

b. The possibility of extent of participation by the Navy, as outlined above, be indicated.

c. Any comments or suggestions which would assist in planning be provided.

FOR THE COMMANDER-IN-CHIEF:

s/t/ Comdr Smith
2664
1 Aug 57

cl

/s/t/ HARVEY T. ALNESS
Major General, USAF
DCS/Plans & Operations

M/R not necessary.

[redacted]

[redacted]

213

NOOOF-F

8 Nov 1957

SUBJECT: [illegible] Simulated Submarine Launched Missile Exercise

TO: Commander
CONAD Forces
Eastern CONAD Region
Stewart Air Force Base
Newburgh, New York

1. Submarine launched missile attacks present one of the greatest threats to the North American Air Defense System. The effectiveness of current defense elements against this type of attack is not fully known, principally because controlled exercises have not been conducted. Training as well as evaluation would accrue from such an exercise.

2. For some time this headquarters has been planning for an exercise involving a simulated submarine launched missile attack against a coastal target of the United States. A preview of the concept of this exercise was given at the CONAD Commanders' Conference, Headquarters, Stewart AFB, 2[illegible] July 1957. Certain members of the staff were in attendance from [illegible].

3. The preliminary basic concept is as follows:

Proposed Concept of Submarine Launched Missile Exercise

General

The Submarine Launched Missile Exercise will involve exemplary elements of air defense within the Eastern CONAD Region. The Commanders of the 85th and 26th CONAD Divisions will conduct a defense against a simulated submarine launched missile attack penetrating from outside the area of continuous radar coverage. Norfolk, Virginia has been selected as the target complex. The attacking forces shall consist of six carrier launched, very high performance, Navy fighter and attack type aircraft. Attacks shall be in three waves of two aircraft each, some thirty minutes between each wave. All functions of air defense, excluding destruction, shall be performed from various air defense element operational sites. ECM shall not be employed.

11-032

Defense Forces

1. Eastern CONAD Region

a. 85th CONAD Division

1. Seaward Extension of Continuous Radar Coverage

DUPLICATE

G 967

[redacted]

Hq NORAD, SUBJECT: NORAD Simulated Submarine Launched Missile Exer

(a) Picket Station #16
(b) Picket Station #18
(c) Picket Station #20

2. Airborne Early Warning and Control

(a) [illegible] station #6
(b) [illegible] station #8

3. AEW Squadron

(a)	771st	Cape Charles	P-56
(b)	647th	Quantico	P-55
(c)	611th	Cherry Point	M-116
(d)	701st	Ft. Mosher	M-115
(e)	632nd	Roanoke Rapids	M-117
(f)	649th	Medford	M-121
(g)	810th	Winston Salem	M-130

4. Fighter Interceptor Squadrons (ADC)

(a)	95th	Andrews AFB
(b)	[illegible]	Langley AFB

5. Air Augmentation Squadrons

(a) Naval Air Units based at NAS Chincoteague
(b) Marine Corps Air Units based at MCAS Cherry Point
(c) Naval Air Units based at NAS Norfolk
(d) Naval Air Units based at NAS Oceana

6. [illegible] Defenses - Norfolk Area

(a) NIKE site #63
(b) NIKE site #52
(c) NIKE site #36
(d) NIKE site #25
(e) NIKE site #02
(f) NIKE site #93
(g) NIKE site #85
(h) NIKE site #75

7. Harbor Defenses - Norfolk Area

AA weapons aboard U. S. Naval ships

[redacted]

[redacted]

Hq NORAD, SUBJECT: NORAD Simulated Submarine Launched Missile Exe

B. 26th CONAD Division

1. Seaward Extension of Continuous Radar Coverage

(a) Picket Station #12
(b) Picket Station #14

2. Airborne Early Warning and Control

(a) AEW&C Station #2
(b) AEW&C station #4

3. Texas Towers

Texas Tower #III

4. ADC Squadrons

(a) 770th	Palermo	F-94
(b) 64[illegible]6th	Highlands	F-9

5. Fighter Interceptor Squadrons (ADC)

(a) 46[illegible]th	Dover, Delaware
(b) 95th	Dover, Delaware
(c) 96th	Newcastle, Delaware
(d) 97th	Newcastle, Delaware

6. Air Augmentation quadrons

(a) Naval Air Units based at NAS Atlantic City
(b) Naval Air Units based at NAS New York

Aggressor Forces

I. Simulated Submarine Launched Missile strikes utilizing six Navy high performance fighter and attack aircraft.

a. 1st wave: Two aircraft. Launch, maximum rate of climb to maximum cruise altitude, vertical descent attack.

b. 2nd wave: Two aircraft. Launch, constant climb to maximum operating altitude midway between carrier and target, constant descent to target.

[redacted]

[redacted]

213

Hq NORAD, SUBJECT: NORAD Simulated Submarine Launched Missile Exercise

c. 3rd wave: Two aircraft. Launch, cruise to target very low level, attack very low level.

Engagement Areas

I. Normal Combat Zone for Fighter Interception

II. Local Area Defense as Provided by SIKE Defenses

4. CINCLANTFLT has indicated a recment to support this exercise with carrier forces returning to CONUS for a Mediterranean deployment, and is part of the CENTEL Exercise UNITAS 3-58. The initial launch time will commence first night 24 February from a position some 500 miles seaward of Norfolk, Virginia. Due to the deployment and commitment of these Naval Forces, the support is inflexible with regards to time and location of launch.

5. Direct liaison between CINCLANTFLT and this headquarters has already been performed. Subject to your concurrence, a planning conference at this headquarters is scheduled for 0900, 21 November 57. It is suggested that in addition to representatives from your staff, you extend invitations to representatives from the 26th and 35th CONAD Divisions. Subsequent to this planning conference, it is intended to designate Commander, Naval Forces, Eastern CONAD Region as this organization's action agent to work directly with CINCLANTFLT, or his designated representative, in planning and arranging, and to be responsible for the conduct and consummation of the Air Defense portion of this exercise.

FOR THE COMMANDER-IN-CHIEF:

HARVEY T. ALNESS
Major General, USAF
DCS/Plans & Operations

CONAVFORCONAD
CO-ARAX-COND
REAF LIAISON

CONAD HQ

This correspondence is classified

Report Validation: Permanent Long Time Value

30c

[redacted]

[redacted]

EXTRACT COPY 214

NOOOP-E 3 Dec 1957

SUBJECT: NORAD Simulated Submarine Launched Missile Exercise (Exercise OCEAN WAVES)

TO: Commander Second Fleet
U. S. Naval Base
Norfolk 11, Virginia

1. Reference is made to the following correspondence:

a. CINCNORAD Conf ltr NOOOP-E, of 7 Nov 1957; Subj: _____ 3-58 as Support for a NORAD Exercise.

b. COMNAVFORCONAD Conf msg _____, Nov.

c. CINCLANTFLT Conf msg _____, Nov.

d. CINCLANT Conf ltr ser ____/33 of 18 Nov; Subj: _____ 3-58 as Support for a NORAD Exercise.

2. That conference as mentioned in reference 1a, above, was held at this headquarters 26 November 1957. Interested parties of the NORAD organization and of the component commands were in attendance. Certain arrangements, in addition to those previously discussed between CINCLANTFLT and this headquarters, were resolved. Those items as affecting the air defense efforts are as follows:

DUPLICATE

a. Exercise name: OCEAN WAVES

b. Objectives:

(1) An air defense equipments exercise, to determine system capabilities against submarine launched missile attacks.

(2) A maximum air defense training exercise, against submarine launched missile attacks.

c. Faker forces do not use ECM or IFF.

d. Forty-five minute spacing between attacks.

e. AEW&C (blimp) station to be repositioned as necessary.

f. Location of launching position to be mutually resolved by COMSECONDFLT and COMCFECR.

[redacted]

[redacted] EXTRACT COPY 214

Hq NORAD, Subj: NORAD Simulated Submarine Launched Missile Exercise

g. Faker altitudes and routes to be mutually resolved by COMSECONDFLT and COMCFECR.

h. Navy and Marine Air Augmentation Forces, as specified in references 1b and 1c above, shall be utilized.

3. Release of information to the public concerning the Air Defense aspects of this exercise is considered inappropriate, and should any agency consider making such releases, it is requested that clearance be procured from CINCNORAD's action agent.

4. By copy of this letter, COMCFECR is designated as the action agent of the NORAD organization and is responsible for the air defense planning, coordination, conduct, and execution of OCEAN WAVES. In this connection, COMCFECR is authorized to conduct direct liaison with COMSECONDFLT or other Navy units, keeping this headquarters informed of developments and progress.

FOR THE COMMANDER-IN-CHIEF:

Copies furnished:
CNO
CINCLANTFLT
COMNAVFORCONAD

/s/t/ HARVEY T. ALNESS
Major General, USAF
DCS/Plans & Operations

/s/t/ Comdr Smith
2723
2 Dec 57

mvl

[redacted]

[redacted]

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HEADQUARTERS
UNITED STATES ARMY AIR DEFENSE COMMAND
Ent Air Force Base
Colorado Springs, Colorado

ADOAA-3 O&T 354

12 Jul 19[illegible]

SUBJECT: CONAD Regulation 55-16

TO: Commanding General, 1st Region, U. S. Army Air Defense Command
Commanding General, 2d Region, U. S. Army Air Defense Command
Commanding General, 5th Region, U. S. Army Air Defense Command
Commanding General, 6th Region, U. S. Army Air Defense Command
Commanding Officer, 4th Region, U. S. Army Air Defense Command

1. References:

a. CONAD Regulation 55-16, 19 June 1956, subject: "Operations Exercises."

b. Message, this headquarters, ADOAA-3 O&T 351, July 1957.

2. Under provisions of referenced regulation subordinate CONAD commanders may require participation of ARADCOM units in CONAD exercises, to include exercises conducted at CONAD region and CONAD division level.

3. The following is the policy of this headquarters with respect to participation by ARADCOM units in CONAD exercises:

a. Appropriate region commanders should participate in the planning of CONAD exercises and in the evaluation and critique after the exercise is completed. The ARADCOM representative at the CONAD headquarters scheduling the exercise must be cognizant of the importance of the final evaluation with respect to the AAA effectiveness in a joint exercise and must provide the appropriate region commander with all advance information available.

b. Appropriate region commanders are requested to provide this headquarters with COMPORTs of AAA participation in CONAD exercises. As soon as possible after the evaluation of an exercise, a written summary of AAA participation and results attained is requested.

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c. Appropriate region commanders are requested to forward through ARADCOM channels a copy of any comments they furnish to the CONAD headquarters conducting the exercise as required by paragraph 6a(2) of referenced regulation.

d. As there may be instances when this headquarters will not be informed of the fact that a CONAD commander has scheduled a joint exercise involving ARADCOM units, request that region commanders notify this headquarters by electrical message when participation in a joint exercise is directed by a CONAD commander. The following specific information is desired:

(1) Code name of the exercise.

(2) Dates exercise will be conducted.

e. In any scheduled joint exercise the full capabilities of AAA units must be exploited. All available units are to participate in order that maximum effectiveness may be attained and that all radar operators may receive the benefit of the valuable training available with the opportunity to detect, acquire and lock on to high performance bomber type targets. It is recognized that launcher crews will receive the least benefit. Commanders may, at their discretion, excuse launcher and gun crews from participation in any phase or at any time as desired.

f. In any exercise, other than a CONAD joint exercise, a minimum of 50 per cent of units available are to participate.

g. This headquarters may at times desire to participate in a scheduled joint exercise conducted by a subordinate CONAD commander and require appropriate ARADCOM units to furnish normal TAC ONTs, STAPORTs, and COM ORTs. In such instances the region commander concerned will be so notified in advance of the date of the scheduled exercise. COM ORTs will include time and GEOREF location of tracks at time of engagement.

4. The frequency with which CONAD commanders may schedule joint exercises is unpredictable, depending as it does upon the availability of suitable high performance aircraft. It is probable that each region will be involved in at least one joint exercise each month. With this as a possibility, the usual monthly exercises conducted by this headquarters, reference b, with the exception of the period 12 - 14 July 1957, are suspended indefinitely.

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ADOAA-3 O&T 354
SUBJECT: CONAD Regulation 55-16

5. This letter rescinds letter, ADOAA-3 O&T 35[illegible].5 (G), this headquarters, 8 February 1957, subject: "ARAACOM Monthly Exercise Instructions".

FOR THE COMMANDER:

Copy furnished:
CI CONAD

F. T. FOLK
Colonel, GS
Deputy Chief of Staff

[redacted]

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ECM Training Aircraft

NCHCS

NCOPO

22 November 1957
Lt/Col Muskola/2664/mvl

1. Reference the question posed by Commander Western CONAD Region relative to obtaining suitable target-ECM training aircraft, NORAD and Air Defense Command's program to secure suitable aircraft has been in progress for over three years. Inclosure #1 lists in chronological order, with brief summaries, the more important actions over this time period. In addition to the actions listed in the inclosure, there are approximately fifty letters and wires pertaining to this subject on file in the USAF Air Defense Command.

2. It is apparent from the actions listed in the inclosure that every possible effort has been expended to secure ECM training aircraft organic to the USAF Air Defense Command. In view of the complete deletion of funds for modification, as stated in letter from Lt/Gen. Turner, dated 13 November 1957, paragraph y. of Inclosure #1, it is concluded that Headquarters USAF will not support the program under current fiscal conditions.

3. Recommend that the problem of providing adequate ECCM training to NORAD Forces be attained through continued emphasis on the SAC-NORAD/ADC joint training program. SAC-ECM training requirements and Air Defense Forces ECCM training requirements are not completely compatible, however, with continued effort on the part of all parties concerned, maximum training benefits will accrue.

1 Incl
#1 Chronological List of Actions taken by NORAD and USADC, etc.

HARVEY T. ALMESS
Major General, USAF
DCS/Plans & Operations

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Chronological List of Actions Taken by NORAD and USADC to Secure Suitable Radar Evaluation ECM Training Aircraft

a. Qualitative Operational Requirement submitted by the Air Defense Command, 9 Oct 1954, covering their requirements for ECM training aircraft.

b. Hq. USAF approved the Air Defense Command's GOR and established General Operational Requirement number 127 on 7 Nov 1955.

c. July 1955, ADC in letter to Hq. USAF requested production modification of B-57C aircraft.

d. September 14, 1955--Hq. USAF twx informed that Production Modification B-57C A/C had been cancelled.

e. 24 May 1956--ltr from Gen. Partridge to Gen. Twining urging that the latter's personal attention be given to procurement of A/C to provide adequate ECM training for the Air Defense Command.

f. 31 July 1956--ltr from ADC to Commander Air Material Command requested modification of 32 RB-57A aircraft in accordance with instructions from Hq. USAF. Stated the minimum modifications required to fulfill the mission. A/C to be available for modification in 1st & 2nd qtr's 1958. First A/C to be available to ADC in January 1959.

g. 18 September 1956--ltr from Gen. White to Gen. Partridge concurring in seriousness of ECM threat and suggesting that the intended modification of B-57A A/C appeared to offer the best ECM training capability prior to 1960.

h. 2 November 1956--ltr from Hq. USAF requested ADC to review it's requirement for ECM A/C.

i. 16 November 1956--ADC presented to Hq. USAF the requirement for 44 A/C equipped to perform Radar Evaluation and ECM Training.

j. 16 January 1957--ltr from Gen. Partridge to Hq. USAF, as Executive Agent for CONAD, concerning the electronic counter measures threat, with his recommendation for the development of alternate means of detection.

k. 21 January 1957--ltr from Lt/Gen. Atkinson to Chief of Staff USAF expressing grave concern over the inability of ADC radars to cope with the ECM threat. Recommended that priority be given to development of effective ECCM capability.

l. 4 April 1957--twx from Hq. USAF to ADC informed ADC that 28 RB-57A A/C would be made available to ADC for modification during 1st & 2nd qtrs FY 1958.

m. 8 April 1957--ltr from ADC to Hq. USAF reiterating the ECM threat and asking Hq. USAF to render all possible funding support for modification of RB-57A A/C.

Inc #1

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n. 11 April 1957--ltr from Maj. Gen. Mills Hq. USAF to Maj. Gen. Lynn Hq. ADC expressing concern over the current more than double estimated cost of modifying the B-57A A/C.

o. 14 May 1957--twx from ADC to Hq. USAF rejustifying the need for modification of RB-57A training-evaluation aircraft.

p. 24 May 1957--ltr from Lt/Gen. Atkinson to Chief of Staff Hq. USAF re-emphasizing need for ECM A/C and pointing up the urgency of the ECM program to ADC.

q. 10 June 1957--twx from Hq. USAF to ADC requesting the relative priority of RB-57A A/C modification comparative to other ADC class V A/C modifications.

r. 13 June 1957--twx to Hq. USAF from ADC stated that the RB-57A ECM A/C modification program be given second priority over all other class V A/C modifications. (The F-102 modification was given 1st priority.)

s. 25 June 1957--ltr from Gen. White Hq. USAF to Cmdr. ADC stated that even with a priority of two for the RB-57A A/C modification program it was doubtful if the program could be funded due to expected cuts in funds.

t. 15 July 1957--Maj. Gen. Grant ADC discussed the RB-57A A/C modification priority with Maj. Gen. Berquist Hq. USAF.

u. 19 July 1957--twx from Hq. USAF to SAC and ADC directed ADC and SAC to submit by 30 Aug 1957 a coordinated plan for joint ECM--ECCM training that would insure maximum accomplishment of both Command's training requirements. Further requested that ADC review its requirements for ECM aircraft in view of the above and so advise Hq. USAF.

v. 30 August 1957--ltr to Dir of Ops, Hq. USAF from ADC. Pointed out the incompatibility of SAC offensive ECM versus ADC defensive ECCM. Stated the fact that 75% of SAC's jamming capability is in the S-band range. Whereas, 75% of ADC radars operate in the L-Band range. Pointed out ADC's responsibility to provide ECM training for other service forces made available to CONAD for Air Defense purposes. In view of the above, ADC requirement for 44 RB-57A A/C remains firm.

w. 4 October 1957--ltr from Gen. Partridge to Chief of Staff USAF, as Executive Agent, summarized the effort to date by NORAD and ADC to secure evaluation-ECM aircraft and noted the apparent stalemate. Emphasized the importance NORAD gives to the ECM threat and the effort NORAD is expending on increasing the operational effectiveness of Air Defense in an ECM environment.

x. 15 October 1957--ltr from Dept. of Air Force to Air Material Command and copy to ADC. Due to lack of modification funds RB-57A A/C programed for ADC are being reassigned to the Air National Guard. Action being taken to fulfill ADC's training requirements through a coordinated SAC-ADC program.

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y. 13 November 1957--ltr from Lt/Gen. Tunner DCS/Op's Hq. USAF to CINCONAD shared NORAD's concern re meeting the ECM threat but could not make available funds for modification of the RB-57A A/C in the new fiscal environment. Pointed out that conferences were held at Hq. USAF and ADC resulting in formulation of SAC-ADC mutual ECM-ECCM training program. Hq. USAF will continue to monitor this program. Hq. USAF notes that the programs are not necessarily compatible but every effort will be made to realize maximum benefits from the above program. In view of the dollar limitations and potential in a mutually beneficial SAC-ADC ECM training program the ECM modification for RB-57A A/C will be deleted from the Class V modification list. However, the existing radar evaluation and training units will not be reduced until it can be demonstrated that SAC can satisfy the ECM training requirements of commands which supply forces to NORAD.

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NOKEW

9 January 1958

SUBJECT: Augmentation of ADC Support Facilities for Airborne ECM Training

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

1. Reference is made to letter, this headquarters, NOKEW, dated 9 January 1958, subject "ADC Responsibilities for Providing Airborne ECM Training for NORAD Components," which reflected the requirement for ADC airborne ECM flight facilities to support the ECM training for NORAD. Inclosures 1, 2, 3 and 4 outline the ECM and technical radar site evaluation requirements as informally submitted by the component representatives at a SAC-ADC-USAF conference held at Headquarters ADC on 19 and 20 September 1957.

2. It is understood that Headquarters USAF recently requested that your command confer with Headquarters SAC for the purpose of scheduling SAC ECM training flights which would provide high-speed, high-altitude ECM targets to meet ADC training requirements. It is realized that SAC has its own strategic and training commitments. Therefore, it will be necessary also to employ the ADC ECM radar evaluation flights in meeting the requirements outlined in the attached inclosures.

3. It is further understood that your headquarters and Headquarters USAF are conferring with the Air National Guard relative to the Guard furnishing B-57 and F-89 target aircraft for radar site evaluation requirements. Again, it is felt that the ANG will not be able to meet the large demand for radar evaluation flights, and it will therefore be necessary for the ADC ECM radar evaluation flights to satisfy the residual load to the maximum extent practicable.

4. This headquarters has repeatedly emphasized to the Executive Agent, our concern for the lack of provision and modification of high-speed, high-altitude ECM equipped aircraft as a replacement for the TB-29's. It is considered doubtful, at present, that the total command ECM training requirements can be satisfied by SAC and the Air National Guard elements because of conflicting missions.

5. Headquarters USAF's interim solution to this problem is supported until a more favorable capability has been provided. We

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Hq NORAD Ltr, NOEEW, Subj: Augmentation of ADC Support Facilities for Airborne ECM Training

will continue to stress the requirement for the proper aircraft to be configured and operated by your command to meet the expanding ECM training problem.

FOR THE COMMANDER-IN-CHIEF:

MARSHALL S. CARTER
Major General, USA
Chief of Staff

4 Incls
1. USARADCOM ECM Tng & Radar Eval Rqmts
2. ADC ECM Tng & Radar Eval Rqmts
3. NAVFORCONAD ECM Tng & Radar Eval Rqmts
4. RCAF/ADC ECM Tng & Radar Eval Rqmts

CONAD

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USARADCOM ECM TRAINING AND RADAR EVALUATION REQUIREMENTS

1. ECM Training Target Requirements.

a. Four NIKE-AJAX installations (17 to 25 fire units)
4 X 144 airborne ECM time per year — 576 hrs

b. Eight NIKE-AJAX installations (12 to 16 fire units)
X 96 hours airborne ECM time per year — 768 hrs

c. Ten NIKE-AJAX installations (4 to 8 fire units)
X 48 hours airborne ECM time per year — 480 hrs

TOTAL PER YEAR — 1824 hrs

d. 7th AAA Group, Thule, Greenland — 24 hrs

e. ARADCOM training requirements include electronic jamming in L, S, and X-bands, plus chaff.

2. Radar Evaluation. Sixteen NIKE complexes to be evaluated by 1960, 16 hours per NIKE complex.

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ADC ECM TRAINING AND RADAR EVALUATION REQUIREMENTS

1. ECM Training Requirements.

a. 6,200 fighter attacks per month, at or above 35,000 feet, using multiple aircraft targets. SAC and ADC radar evaluation aircraft to use X-band chaff, sweep jamming, UHF communication jamming, and IFF jamming.

b. 3,432 ZI surveillance radar sorties per month to achieve at least Condition III jamming at 80 miles. Use multiple aircraft targets.

c. 184 surveillance radar sorties per month against the 64th Air Division radar sites.

d. ECM training for 55 DEW Line radars. (to be shared with AAC radar evaluation flight)

2. Radar evaluation of 392 radar sites in the ZI. This requirement has been partially completed but will have to be repeated as new radars are installed. Radar evaluation averages 40 hours of flying time per site. It is anticipated that the high quality radar inputs required by SAGE will materially increase the number of radar evaluation hours of flying time. The above requirements do not include special evaluations of radar sites that develop periodically from miscellaneous sources which may require a considerable amount of flying time.

NAVFORCONAD ECM TRAINING AND RADAR EVALUATION REQUIREMENTS

1. ECM Training Requirements. Ten picket stations at 30 hours per month per ship.

2. Radar Evaluation. Forty hours flying time for each new type of radar configuration of a picket ship.

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RCAF(ADC) ECM TRAINING AND RADAR EVALUATION REQUIREMENTS

1. *ECM Training Requirements.

a. 900 ECM passes by RCAF fighters per month on SAC and ADC radar evaluation aircraft. (This is nine fighter-interceptor squadrons of 25 crews each with each crew making four passes per month.)

b. A total of 500 ECM hours against 23 radar sites per month using chaff and electronic jamming.

*c. These are net requirements after RCAF provided ECM training is subtracted.

2. Radar Evaluation.

a. Evaluate new radars as they come into the system.

b. There are four new surveillance radars with 18 more surveillance stations and 50 more gap filler sites by 1960.

c. The above does not include 08 radars on the Mid-Canada Line.

d. Surveillance radars average 40 hours each of flying time for a radar evaluation.

[redacted]

INTRODUCTION

While the NORAD-SAC ECM exercises are conducted primarily to furnish training, considerable effort has been made to evaluate the air defense system qualitatively and, within limitations, quantitatively, through observations and analysis of ECM effects. All of the exercises have yielded valuable qualitative information, but thus far only two of them have been well enough controlled to provide a basis for quantitative analysis.

STATEMENT OF OBJECTIVES

A. To study methods for evaluating the effects of ECM.

B. To determine quantitatively what effects specific levels of ECM effort have on the defense system.

C. To determine and correct shortcomings in the operation of the air defense system as a result of qualitative observation.

DESCRIPTION OF EXERCISES ANALYZED

A. Exercise Bald Eagle: Exercise Bald Eagle was a 3-day exercise run against the 27th Joint Air Division on 6, 7 and 9 April 1957. The size of the three waves and the strike routes were held nearly constant. Each wave penetrated in darkness. Sweep jamming was employed in 3 levels; 5 jamming aircraft with the first wave, 3 with the second and none with the third. Single unit chaff was employed by each wave. SEE SLIDE I.

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B. Exercise Ball Hawk: Exercise Ball Hawk was scheduled to repeat, in the 32d and 26th Divisions, the three waves and three levels of jamming employed in Bald Eagle. The first wave penetrated as scheduled with 5 jamming aircraft on 9 May during daylight hours. The second wave was delayed and penetrated on 11 May during hours of darkness without jamming support. The exercise was cancelled following the second wave. SEE SLIDE II.

ANALYSIS

A. Detections by land-based radar in Exercise Bald Eagle were plotted as cumulative percentages as a function of range and compared with average expected detection range. SEE SLIDE III.

B. Tracking on each aircraft was totalled for S-band stations and for the S-band and L-band stations combined in the network. Based on the average expected tracking, tracking percentages achieved on each cell were computed. SEE SLIDE IV. Average tracking capability as a function of jamming effort is shown on Overlay 1 to SLIDE IV.

C. Successful Interceptions tabulated for S-band stations and for the network were divided by the number of interceptors directed to obtain interceptor success rates for each wave. See Overlay 2 to SLIDE IV.

[redacted]

QUALITATIVE EVALUATION BASED ON OBSERVER REPORTS

A. Experience gained through exercises.

1. The training and experience derived by the air defense systems from ECM exercises is considered very valuable. Comments favor increasing the frequency of exercises of this type.

2. Exercises have served to re-emphasize difficulties or shortcomings in the system such as:

a. The lack of continuity in radar tracking.

b. The dangers of saturating the system with fighter-interceptors.

c. The delays and inaccuracies in lateral and forward telling.

d. The inability of operating personnel to assess the effects of ECM on the system.

3. Exercises have afforded an opportunity to experiment with tactics or techniques such as:

1. The employment of "trailer" aircraft.

2. Location of bombers by triangulating jamming strobes.

B. Observations Pertaining to Future Exercises:

It is realized that the present SAC ECM capability is based largely on the requirements dictated by the SAC combat mission and that this capability is not necessarily suited to exercising our air defense system. Comments or observations which may stem from this

[redacted]

lack of capability are offered because no discussion of the exercise results can be complete without them and not through a misunderstanding of SAC's operational problems.

1. Comments by commanders tend to favor intermediate size ECM efforts, perhaps equivalent to between 5 and 10 Blue Cradle aircraft, rather than very light or very heavy efforts.

2. Electronic jamming of only the S-band stations furnishes training to less than one fourth of the system.

3. It has been difficult to furnish a proportionate amount of training for Nike units. This has been due partly to technical problems and partly to the fact that a mission which exercises long range surveillance radars may not be exposed to Nike radars. Operations personnel of SAC Headquarters understand the problem and have been attempting to increase the amount of training given Nike battalions.

4. Many comments are received from air defense units not participating in the exercises. Since most exercises take advantage of SAC redeployment some areas of the United States virtually never see a realistic jamming effort. Here again SAC personnel are fully aware of the problem and it is hoped that missions can be diversified in the future.

(This comment is primarily for the benefit of NORAD representatives).

5. For a 3-month period beginning about 1 Nov, the 376th Bomb Wing will stand down. During this time the wing will be relocated

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to Lockbourne AFB and ultimately two ECM wings will be operational. While discontinuing the ECM training missions during this time is regrettable, it is hoped that the increase in SAC ECM capability will result in increased training benefits for the NORAD system.

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COPY 219

COOOP-E 22 Jul 1957

SUBJECT: Inspections and Exercises

TO: Commander, Air Defense Command

Commanding General, U. S. Army Air Defense Command

Commander, Naval Forces, CONAD

1. CONAD Regulation 55-16, dated 19 June 1957, sets forth the responsibility for Component Service training and exercises as a function of Component Commanders, and the responsibility for the control of operations and the evaluation of the integrated air defense system as a function of CONAD.

2. Experience indicates the desirability of conducting the operational phases of these separate activities at the same time, particularly when all or a majority of Component units within a CONAD Division are affected. This consideration is in no sense intended to preclude or substitute for normal unit or system training activities, in accordance with the responsibilities of Component Services. It is, however, proposed to establish a coordinated effort to provide for the operational activity connected with inspections of units by Component Services in accordance with their procedures and at the same time to permit CONAD to make evaluations of the integrated air defense system at CONAD Division level. This procedure will permit maximum mutual benefits for such efforts and will make economical use of available "faker" aircraft.

DUPLICATE

3. It is therefore proposed that:

a. All Component Service commanders concerned and Headquarters CONAD jointly schedule future operational type inspections and exercises with a mutual exchange of the results of such inspections and exercises.

b. The joint schedule employ all or the majority of elements within a CONAD Division and the "no warning" for such exercises apply only to one CONAD Division or elements thereof, and all other CONAD Divisions be alerted for possible participation in all exercises for training.

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COOOP-E, Subject: Inspections and Exercises

c. Complementary and common objectives be established for all training and exercise activities, in order to promote combined joint training in the conduct of air defense.

d. A method be mutually developed for scoring air defense exercises, in order to evaluate the capability of CONAD Divisions and Regions to carry out their respective missions.

4. Your comments concerning this proposal are requested not later than 26 July 1957.

FOR THE COMMANDER-IN-CHIEF:

/s/t/ HARVEY T. ALNESS
Major General, USAF
DCS/Pland & Operations

/s/t/ Col Jeffu
2130
16 Jul 57

daf

M/R: Many Component inspection activities (especially ORI's by ADC) have been scheduled and conducted independently of exercises monitored by CONAD. In some cases, an additional workload has been placed upon CONAD facilities to perform these activities. In addition, the performance results reported by Components are sometimes considerably different from those observed by CONAD observers. It is believed desirable to propose that all Component operation type inspections of related activities for all or the majority of the elements with/a CONAD Division be conducted at the same time, including CONAD observance in of the operational activities for integrated air defense system evaluation. The attached letter outlines a proposal of this nature for comments by Components.

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READING FILE

19 Sep 1967

RR RJEDEN
DE RJEPNB 299C
R 191933Z
FM COMCFECR STEWART AFB NY
TO CINCNORAD ENT AFB COLO
BT

ACTION: NOOOP
INFO: NOCOC
NOSEC
N7-11121

[redacted]/CFEOP 191. ATTN: NOOOP-E. REPORT FROM LT COL. AURAND ON EXERCISE BLUE LIGHT I AT HEADQUARTERS CFECR. EXERCISE AT THIS HEADQUARTERS CONDUCTED SMOOTHLY AND EFFECTIVELY. BATTLE STAFF OPERATED PERIOD OF EXERCISE. THREE HQ CFECR OFFICERS OBSERVED EXERCISE AT DIVISION FORCES. TIMELY AND EFFECTIVE OPERATIONAL CONTROL OF DIVISION FORCES WAS EMPLOYED. LATERAL TELLING FROM CANADA AND CENTRAL REGION WORKED VERY SMOOTHLY. CONSIDERABLE ECM ENCOUNTERED ON CELLS 5 AND 6. TWO MIS DUE TO ECM. DETAILED INFORMATION NOT AVAILABLE. REGION COMMENTED EXERCISE WAS TOO LONG IN DURATION AND NOT ENOUGH AIRCRAFT PENETRATING DEFENSE FOR AN EFFECTIVE EXERCISE.
BT
19/2042Z SEP RJEPNB

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A-- PARAPHRASE NOT REQUIRED EXCEPT PRIOR TO CATEGORY B ENCRYPTION-- PHYSICALLY REMOVE ALL INTERNAL REFERENCES BY DATE-TIME-GROUP PRIOR TO DECLASSIFICATION

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CONAD HIST FILE
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CONOS
SBA021SBC 0301RR RJEDEN
DE RJWPSB 183C
R M 1620000
FM VCNCFWCR HAMILTON AFB CALIF
TO CINCONAD ENT AFB COLO SPRINGS COLO
INFO COMADC ENT AFB COLO SPRINGS COLO
BT

ACTION: COOOP
INFO: COCOC
I7-8721

[redacted] CWOOP 7S1008. SUBJECT: FINAL REPORT ON EXERCISE HIGH SEAS. REFERENCE MY MESSAGE CWOOP CW7S-1077. DELETE PARTS TWO, THREE AND FOUR AND SUBSTITUTE THE FOLLOWING STATISTICS:A. OTAL FIGHTERS COMMITTED, 169. B. TOTAL FIGHTER MA'S, 101. C.TOTAL FIGHTER MISSED INTERCEPTS, 68. D. TOTAL ABORTS, 6. E. PERCENTAGE OF FIGHTERS COMMITTED ACCOMPLISHING MA'S, 59.1. F. TOTAL AAA MA'S, 42. NUMBER AND TYPE OF FIGHTERS, TO INCLUDE TACTICAL ACTION BY TYPE, FOLLOWS: A. F-86DAIRCRAFT: (1) TOTAL COMMITTED, 46. (2) TOTAL MA'S, 32. (3) TOTAL MISSED INTERCEPTS, 14. (4) ABORTS, ZERO. (5) PERCENT OF MA'S, 70. B. F-89D AND L: (1) TOTAL

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PAGE TWO RJWPSB 183C
COMMITTED, 123. (2) TOTAL RADAR MA'S, 42. (3) TOTAL VISUAL MA'S, 27. (4) TOTAL ABORTS, 6. REASONS FOR 68 MISSED INTERCEPTS LISTED ABOVE ARE AS FOLLOWS: A. PERSONNEL ERROR (GCI), 31. B. PILOT ERROR, 9. C. AIRBORNE EQUIPMENT FAILURE, 6. D. GEF, ZERO. EGM FALSE TRACKS (ECM),8. F. FADE PRIOR TO INTERCEPT, 3. G. TARGET EVASION (PLANNED TURN), 5. REFERENCE PART FIVE OF CITED MESSAGE, ADD FOLLOWING GENERAL REMARKS: NEW PARAGRAPH A. AAA FAILED TO ACHIEVE MA'S ON FIVE TRACKS WITHIN NIKE RANGE BECAUSE OF ECM. AAA RESULTS ARE THE COMBINED TOTAL FOR SAN FRANCISCO AND SEVERAL FAKER TRACKS DID NOT PASS WITHIN NIKE RANGE ND MA'S WERE NOT CREDITED UNLESS SIMULATED ENGAGEMENT AND LAUNCHING OF TWO NIKE MISSILES WAS SUCCESSFULLY ACCOMPLISHED AGAINST EACH INDIVIDUAL TARGET. NEW PARAGRAPH B. THE FLOW E SURVEILLANCE INFORMATION, TAC ACTION AND TAC RESULTS WERE CONSIDERED UNSATISFACTORY DURING THIS EXERCISE. CHAFF UNDOUBTEDLY CAUSED SOME CONFUSION BY CREATING TRACKS THAT STOPPED AFTER A FEW SWEEPS OF THE SCOPE. MANY TIMES, INTERCEPTORS WERE SCRAMBLED FOR OR VECTORED TO THESE FALSE TRACKS WHICH COMPLICATED TAC ACTION ACCOUNTING. IT IS APPARENT THAT CURRENT XORWARD TELL PROCEDURES ARE INADEQUATE UNDER ANY UNUSUAL TRAFFIC LOAD. FORCE AND CINCONAD COC'S RECEIVE I

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PAGE THREE RJWPSB 1830
A CONFUSED PICTURE OF TACTICAL EVENTS BECAUSE OF TARDY, INCOMPLETE AND ERRONEOUS REPORTING. IT IS RECOMMENDED THAT THE PRESENT PROCEDURES BE CRITICALLY REVIEWED AND ACTION TAKEN TO STREAMLINE FORWARD TELL PROCEDURES FROM THE ADCC TO CINCONAD. NEW PARAGRAPH 3. PICKET SHIP DETECTIONS WERE CONSIDERED EXCELLENT, HOWEVER. THIS EXERCISE WAS THE FIRST PARTICIPATION OF THE SEAWARD EXTENSION ELEMENTS IN ECM TRAINING, AND INITIAL RAID ASSESSMENT WAS ONLY FAIR. PICKETS TENDED TO OVER ASSESS NUMBERS OF AIRCRAFT BECAUSE OF CHAFF DROPS. NEW PARAGRAPH 4. DURING THE EXERCISE AEW&C DETECTION AND TRACKING APPEARED TO BE POOR. LATER ANALYSIS, HOWEVER, INDICATES AEW&C ACTUALLY DETECTED 11 OF THE 14 TRACKS WHICH PENETRATED, BUT SURVEILLANCE DATA WASNOT USED BECAUSE OF DUPLICATION BS PICKET SHIPS OR GROUND RADAR. IT IS REQUESTED THAT REDEPLOYMENT OF AEW&C AIRCRAFT TO A POSITION OUTSIDE THE PICKET LINE BE CONSIDERED AS A SOLUTION TO THE REQUIREMENT FOR ADDITIONAL EARLY WARNING GENERATED BYTHE INCREASED COMBAT RADIUS OF F-89J AIRCRAFT. DURING THE EXERCISE, F-89J AIRCRAFT WITH 600 GALLON TIP-TANKS WERE SCRAMBLED UPON INITIAL DETECTION BY PICKET SHIPS. ITHENLBECOMMITTED TO A SUBSEQUENT WAVE OF FAKERS (TWO MA'S PER SORTIE) AND WERE RECOVERED WITH APPROX IMATELY 5000

PAGE FOUR RJWPSB 183C
POUNDS OF FUEL OR OVER ONE HOUR FLYING TIME REMAINING. EMPLOYMENT OF AEW&C AIRCRAFT TO PROVIDE ADDITIONAL EARLY WARNING OUTSIDE THE PICKET SHIP LINE IS CLEARLY INDICATED IF THE F-89J RANGE CAPABILITY IS TO BE FULLY EXPLOITED. NEW PARAGRAPH ADDITIONAL CONCLUSIONS FOLLOWS:A. HAPHAZARD USE OF ECM CAN BE OF MORE BENEFIT TO THE DEFENSE THAN TO THE ATTACKING FORCE WHEN EMPLOYING HEAD-ON, SNAP-UP ATTACKS WITH F-89J AIRCRAFT. LIGHT STROBING AND CHAFF STREAMS HELP TO PINPOINT THE LOCATION OF ECM AIRCRAFT AND ASSIST IN THE INTERCEPT PROBLEM. B. ALTERNATE COMMUNICATIONS PROCEDURES (LF AND VHF) WERE ADEQUATE UNDER CONDITIONS OF UHF VOICE JAMMING. C. ASSUMING THE M2-1 WILL PERFORM AS CALCULATED, THE F-89J IS A VERY POTENT OPERATIONAL WEAPON. D. THE RESULTS OF THIS EXERCISE ARE VERY ENCOURAGING AND ARE FELT TO REPRESENT THE CURRENT CAPABILITY OF THE 28TH CAD TO REPEL A HOSTILE ATTACK UNDER CONDITIONS OF ADEQUATE INTELLIGENCE WARNIN

LN TDR

PRPTING OBOVE LINE E M
CONDITIONS OF ADEQUATE INTELLIGENCE WARNING MODERATE ECM AND ONLY PARTIAL SATURATION.
BT
16/2023Z JUL RJWPSB

UNCLASSIFIED

A--PARAPHRASE NOT REQUIRED EXCEPT PRIOR TO CATEGORY

[redacted] when filled in) COPY OF INCOMING CLAS' ED MESSAGE

222

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SEE CRYPTO SECTION BEFORE DECLASSIFYING

READING FILE

CONAD HIST 9 Jul 57

600

CON 010
SDA016SDC 0031
PP RJEDE
DE RJUPSD 88C
P M UPOUP
PZ

PRIORITY

ACTION: COCOC
INFO: COOOP,& COELC
X7-8511

FROM COMSFWCR HAMILTON AFB CALIF
TO RJEDEN/CINCONAE ENT ASD COLO SPRINGS COLO
INFO RJEDE /IONADC ENT AFB COLO SHJINGS COLO
BT

[redacted] CWOOPCW7S-1077. SUBJECT. PRELIMINARY REPORT ON EXERCISE "HIGH SEAS." THIS MESSAGE I SIX PARTS. PART 1. EXERCISE HIGH SEAS CONSISTED OF 48 B-47 TYPE AIRCRAFT FROM THE 22D BOMB WING PENETRATING THE 28TH CADD AREA ON 4, 5,A D 6 JULY. ON 4 JULY, TWO ECM AIRCRAFT FLEW AS SCREEN FOR FOUR CELLS OF 5, 4, 3 AND 5 AI CRAFT. ON 5 JULY, ONE ECM AIRCRAFT FLEW AS SCREEN SOR FOUR CELLS OF 4, 4, 4 AND 3 AIRCRAFT. ON 6 JULY, FOUR CELLS OF 4,3,3 AND 3 AIRCRAFT PENETRATED WITHOUT AN ECM SCREENING AIRCRAFT. CHASE WAS USED EXTENSIVELY ON ALL THREE DAYS BY ALL AIRCRAFT. VOIIE JAMMING WAS UTILIZED ON THE LAST DAY. PART 2. PRELIMINARY ANALYSIS OF

READING FILE

222

[redacted] (when filled in) COPY OF INCOMING CLA' FIED MESSAGE

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PAGE TWO RJUPSD 88C
TACTICAL ACTION TAKEN, BASED ON 28TH CADD CONTROL CENTER DATA, REVEALS THE FOLLOWING: A. TOTAL FIGHTERS COMMITTED, 187. B. TOTAL FIGHTER MA'S, 107. C. TOTAL FIGHTER MISSED INTERCEPTS, 74. D. TOTAL ADORTS, 6. E. PERCENT OF FIGHTERS COMMITTED ACCOMPLISHING MA'S, 57..2. F. TOTAL AAA MA'S, 42. PART 3 NUMBER AND TYPE OF FUGHTERS, TO INCLUDE TACTICAL ACTION BY TYPE, FOLLOWS: A. F-89J AIRCRAFT: (1) TOTAL COMMITTED, 50. (2) TOTAL MA'S, 36. (3) TOTAL MISSED INTERCEPT, 14. (4) ADORTS, ZERO. (5) PERCENT OF MA'S, 72. B. F-86D AND L. (1) TOTAL COMMITTED, 137. (2) OTAL RADAR MA'S, 30. (3) TOTAL VISUAL MA'S , 41. (4) TOTAL ADORTS, 6. PART 4. REASONS FOR 76 MISSED INTERCEPTS ENUMERATEDIN PART 2 ABOVE: A. PERSONNEL ERROR (GCI), 35. B. PILOT ERROR, ON . C. AIRBORNE EQUIPMENT FAILURE, 16. D. GROUND EQUIPMENT FAILURE, 3. E. FALSE TRACKS (ECM), 9. F. FADE PRIOR TO INTERCEPT, 8. PART 5. GENERAL REMARKS FOLLOW EXERCISE HIGH SEAS SIMULATED A REALISTIC ENEMY ATTACK FROM THE SEA AGAINST THE 28TH CADD. ECM ACTIVITY STARTED OUTSIDE THE PICKET SHIPS AND CONTINUED THROUGH HE SYSTEM AS FAR AS STOCKTON. GOOD WEATHER PREVAILED THROUGHOUT THE EXERCISE WHICH PERMITTED UNRESTRICTED USE OF AVAILABLE FORCES. PRELIMINARY ANALYSIS

[redacted] when filled in; COPY OF INCOMING CLAS IED MESSAGE

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SEE CRYPTO SECTION BEFORE DECLASSIFYING

THREE RJMPSD 88C
DICATES ECM ACTIVITY HADSOME ADVERSE AFFECT AGAINST AAA AND
FIGHTER-GCI CONTROL. AAA REPORTED "S" AND "L" BAND JAMMING FIRST
TWO DAYS WITH SOME REDUCTION IN EFFECTIVENESS CAUSED BY CHAFF ON
ALL THREE DAYS. JAMMING REACHED SUBSTANTIAL AND ONE TRACKS
WERE LOST D
E TO ECM. EXACT BREAKDOWN OF KI'S ACHIEVED AGAINST D-47
AIRCRAFT IN AN ECM ATMOSPHERE. PERFORMANCE OF F-89J AIRCRAFT
USING HEAD-ON SNAP-UP TACTIC WAS PARTICULARLY GRATIFYING. THIS
TACTIC MINIMIZES EFFECT OF ECM ACTIVITY UPON GROUND RADAR AND
EFFECT OF CHAFF UPON AIRBORNE RADAR. BASED UPON PAST RESULTS, AS
WELL AS THIS EXERCISE, IT IS FELT THE SUCCESS RATE OF THE F-89J
(72 PERCENT) CAN BE ACHIEVED UNDER ANY SIMILAR ATTACK CONDITIONS.
PART 6. A CRITIQUE OF THE EXERCISE WILL BE HELD AT THIS
HEADQUARTERS AT 1200 HOURS LOCAL ON 12 JULY. APPROPRIATE ACW,
FIS, AEW&C AND COMPONENT COMMANDERS WILL PRESENT DATA PERTINENT
TO THEIR PARTICIPATION. MEMBERS OF YOUR STAFF ARE CORDIALLY
INVITED TO ATTEND.
LT
09/2259Z JUL RJMTSC

--ADVANCE MSG COPY OF THIS MSG HAS BEEN DELIVERED TO COC--

224

[redacted]

CFSOP-W

28 OCT 1957

SUBJECT: (U) Fighter/Bomber Ratios

TO: Commander-in-Chief
North American Air Defense Command
Ent Air Force Base
Colorado Springs, Colorado

1. Reference is made to paragraphs 402b(3), 403c, 403e, and 403f of ADC Manual 55-5, dated 1 July 1957. These paragraphs establish flights of three interceptors as the standard formation for all types of interceptors other than the F-89J. The foreword of ADC Manual 55-5 states that the manual is directive in nature, and the paragraphs referenced above are so worded that alternatives other than employing flights of three are not permissable.

2. Under certain attack situations, employment of a fixed number of fighter interceptors in a flight will degrade the total kill probability. Flights of three are generally desirable against closely massed formations or when there are many fighters available to attack relatively few bombers. However, if the attacking force consists of a large number of individual aircraft, a bomber stream, or widespread small formations; or if there are few fighters available in relation to the number of bombers, the employment of a 3-to-1 ratio may be unsound.

3. The reattack capability of the aircraft which may be employed should be taken into consideration. If an interceptor has the capability to perform a second attack, assuming the first was unsuccessful, this would further increase the apparent fighter/bomber ratio.

4. In some instances, the airspace may be so saturated with fighters and bombers as to degrade the control capability of direction centers. At times commitment of fewer fighters will afford better control, hence a more orderly directed air battle.

5. The number of flights committed, coupled with the number of aircraft in each flight, will at times negate the control capability of an individual director. In this situation, fewer fighters per flight will enable the director to maintain better control of all aircraft in the groups of flights he may be controlling.

6. In exercise "Blue Light I", the 37th CONAD Division employed flights of two exclusively; in exercise "Hour Hand", flights of three were employed. Percentages of successful intercepts were considerably

[redacted]

[redacted]

higher in "Blue Light I" than in "Hour Hand". (All F-102 intercepts 93% vs. 65%; All intercepts 50% vs. 32%.) The greater success rate is not attributed solely to the use of smaller flights in exercise "Blue Light I"; however, this was a very important factor.

7. In any event, this headquarters is of the opinion that commitment and control of friendly forces is the responsibility of the commander fighting the air battle and that this commander must be given full latitude to employ tactics he deems necessary. Since the same battle situation will not present itself to all defenses in the same manner, a directive to the effect that flights will always consist of three fighters is considered unduly restrictive and therefore unsound.

8. In view of the above, recommend:

a. Paragraph 4c(3)b(3) be changed to read ".....Interceptors with the exception of the F-89J will normally be committed in a standard formation flight of three. Flights of varying amounts may be committed under specific attack situations when deemed appropriate. In any event, sufficient number of aircraft will be committed to insure...".

b. Those portions of other referenced paragraphs relating to specific number of aircraft to be committed in one flight be changed to allow the commander making the commitment to decide how many fighters each flight will contain.

Copies furnished:
EADF
37th CAID

ERNEST J. WHITE, JR.
Colonel, USAF
Chief of Staff

[redacted]

3-CFE-250-57

224

CFEOP-W, Hq CFECR, 28 Oct 57, Subj: (U) Fighter/Bomber Ratios

NOOOP-T 1st Ind 8 NOV 1957

Hq North American Air Defense Command, Ent Air Force Base, Colorado Springs, Colorado

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

1. This headquarters concurs in the concepts outlined in the basic letter.

2. Request your consideration to amend those appropriate paragraphs of your ADC Manual 55-9, concerning interceptor employment, which have been noted in the basic letter.

FOR THE COMMANDER-IN-CHIEF:

A. J. PIERCE
Brig. General, USAF
Acting DCS/Plans & Operations

M/R The Eastern CONAD letter specifies that certain paragraphs of ADC Manual 55-9, which specify, without reservation, that three interceptors will be scrambled on all active air defense scrambles. This tactic outlined ~~[illegible]~~ in ADC Manual 55-9 is directive in nature according to instructions in the Manual. Eastern CONAD Region has taken exception to this stringent tactic. We fully concur with their proposals that the number of interceptors scrambled should vary and that the commander concerned should have the authority to determine the number of interceptors required. We are, therefore, transmitting this letter to ADC, requesting this amendment to their Manual.

Retyped for deletion of last two sentences of paragraph 2.

57-12493 A

225

UNCLASSIFIED

CINCONAD
C of S
SECRETARIAT
4 DE

JUL 11 1957

Major General Robert H. Terrill
Director of Operations
Headquarters Strategic Air Command
Offutt Air Force Base, Nebraska

Dear Bob:

Many thanks for your letter concerning tactics utilized on the monthly SAC-CONAD AOM training exercises. My people agree that more rigid controls are necessary if meaningful evaluations are to be obtained from the monthly AOM exercises; however, it is not deemed advisable to institute strict controls on exercises conducted primarily for training purposes. For evaluation purposes, we intend to institute controls of the type outlined in your letter in the series of controlled exercises now in the planning stage with your headquarters.

The CONAD system has received valuable AOM training from the exercises conducted to date and though no extensive evaluation has been attempted, my Operations Analysis people are using these exercises to develop a system whereby future controlled exercises will be evaluated. I sincerely hope that our future cooperation on joint exercises may be expanded to the extent that joint evaluation of effectiveness can be achieved and that you concur in the above procedure.

Sincerely,

HARVEY T. ALMES
Major General, USAF
DCS/Plans & Operations

L/Col. Nuckol
266L
9 Jul 57

cl

W/R - See attached ltr.
This is an unclassified answer to a classified letter

UNCLASSIFIED

Record Evaluation: ☐ Permanent, ☐ Long Term Value ☐ Temporary

226

24 JUL 1957

Major General Robert M. Terrill
Director of Operations
Strategic Air Command
Offutt Air Force Base
Omaha, Nebraska

Dear Bob:

First of all, let me assure you that I sincerely appreciated your letter of two weeks ago concerning reports submitted by SAC observers following air defense exercises. At the same time, I must point out that the true target of your criticism is CONAD, not ADC. All Regional Operations Centers and Division Control Centers are CONAD facilities from which we exercise operational control of air defense resources provided not only by ADC but also by USAFAD(P) and NAVFORCONAD. Incidentally, Bob, my correct address is CONAD, not ADC.

I agree with you wholeheartedly that we must provide you a realistic test of your ability to penetrate our defenses. This involves three things, your ability (1) to detect and identify your "fake" aircraft, (2) to track them, and (3) to bring weapons to bear against them. The results of the first two actions can be evaluated with considerable accuracy by comparing actual "fake" tracks against target information forward told to our CONAD Division Control Centers. The determination of "kill probability" is somewhat more complex. Whereas in actual emergency conditions we would launch every fighter available, there are logistic and personnel considerations which make this impractical as a standard procedure in all training exercises. Further, the engagements made by surface-to-air missiles can, of course, be only simulated. Despite these artificialities, I feel that we can arrive at some fairly accurate conclusions as to probable results.

As to a "defeatist" attitude in CONAD, Bob, I can only say you've been ill-advised. As you say, we have a difficult mission. This mission in the past has been made even more difficult as a result of the rather antiquated equipment provided us.

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This equipment is now being replaced, however, with radars, fighters and missiles, both air-to-air and surface-to-air, which we feel give us the means of meeting your B-47's and B-52's (and more important, the Badgers, Bisons and Bears) on an equal footing.

As in all commands of this size, there may be instances when one of our subordinate echelons fails to measure up. When evidence of this is brought to your attention, I'll consider it a personal favor if you'll continue to let me know about it, with particulars as to time and place.

Just as SAC must rely upon COMAD to provide a means of measuring SAC effectiveness, COMAD must rely heavily upon SAC to provide a realistic basis for evaluating the COMAD system. Neither of us can afford a failure of the other to do his job in this respect. I intend to see that we fulfill our obligation, and I'm sure we can expect a continuation of the excellent cooperation we've had from SAC in the past.

Sincerely,

HARVEY T. ALNESS
Major General, USAF
DCS/Plans & Operations

CINCONAD
C of S
SECRETARIAT
Adjutant
Administrator
Members
INFO SERVICES
DCS C&E
Systems
Plans & Ro
Fleet Ranges
DCS
Cost & Sidem
Cost & Estimates
Fon Bar
DCS P&O
Plans & Ro
Operations
Plans Analysis
Lawsuit Don Gen
Ops Analysis
COMADC
COMNAVFORCONAD
CG ARAA COMD
RCAF LIAISON

Prepared by (Signature)
Col Seibert
2130 Telephone
23 Jul 57 Date
Refer to Facility No.
daf Typists initials

COPY

This correspond[redacted]
Record Evaluati[redacted]

227

JOINT MESSAGEFORM

[redacted]

CONAD RESTRICTED FILE
601

SPACE BELOW RESERVED FOR COMMUNICATIONS

READING FILE

PRECEDENCE	TYPE MSG (Check)			ACCOUNTING SYMBOL	ORIG. OR REFERS TO	CLASSIFICATION OF REFERENCE
	BOOK	MULTI	SINGLE			
ACTION ROUTINE		X		AF	X	
INFO ROUTINE						

SPECIAL INSTRUCTIONS

FROM: CINCONAD

TO: COMCFECR STEWART AFB NEWBURGH N Y
COMCFCCR RICHARDS-GEBAUR AFB MO
COMCFWCR HAMILTON AFB CALIF
COMCFCADD PEPPERRELL AFB NEWFOUNDLAND

INFO: CINCAL ELMENDORF AFB ANCHORAGE ALASKA
CONADC ENT AFB COLORADO SPRINGS COLO (COURIER)
COUSARADCOM ENT AFB COLORADO SPRINGS COLO (COURIER)
COMNAVFORCONAD ENT AFB COLORADO SPRINGS COLO (COURIER)

[redacted] From CINCONAD X0105.

Observation of Region Operations Center and Division Control Center operations during joint exercises with SAC has evidenced a lack of active participation by key CONAD personnel, particularly CONAD Commanders and Battle Staff. Since these exercises currently provide the most realistic means of simulating actual air attack, they must be fully exploited in developing new tactics and techniques, developing

DATE	TIME
12	1700Z
MONTH	YEAR
Jul	57

READING FILE

WRITER
SYMBOL: COOCP
TYPED NAME AND TITLE (Signature, if required): Cal Seibert/daf
PHONE: 2130
PAGE NR.: 1
NR. OF PAGES: 2
SEC [redacted]

RELEASER
TYPED (or stamped) NAME AND TITLE:
J. W. LEDOUX
LCDR, USN
Asst Adjutant

227

JOINT MESSAGEFORM - CON...UATION SHEET | SECURITY CLASSIFICATION [redacted]

OM: CINCONAD

operational procedures, evaluating present methods and systems, and providing individual training to all personnel involved in the conduct of the air battle. Further, SAC utilizes the results of these exercises in the development of tactical procedures. Unrealistic or sub-standard performance by our air defense system does not provide SAC with a fair appraisal of its offensive capability. Accordingly, this [redacted] it is imperative that CONAD Regions and Divisions engaging in joint exercises with SAC participate fully in these exercises, utilizing where possible the same supervision that would be employed in actual combat.

M/R: A personal letter from Gen. Terrill (D/O SAC) to Gen Almes indicated that SAC observers had noted a marked degree of non-concern with the successful application of air defense resources exercises. One example cited was "Bird Dog", which was run thru 58th Air Division on 27 May 57. This action results in inadequate training for CONAD units as well as SAC. The present message is prepared for the purpose of requiring greater interest of CONAD Commanders in exercises and in air defense procedures, tactics and techniques as a whole.

Col Seibert
2130
12 Jul 57

daf

SYMBOL | PAGE NR | NR OF PAGES | SECURITY CLASSIFICATION [redacted] | INITIALS

228

JOINT MESSAGEFORM

SECURITY CLASSIFICATION

UNCLASSIFIED

(SPACE BELOW RESERVED)

UNCLASSIFIED

601

PRECEDENCE	TYPE MSG	ACCOUNTING SYMBOL	ORIG OR ACKNOWLEDGE TO	CLASSIFICATION OF REFERENCE
ACTION PRIORITY	BOOK MULTI SINGLE		NOOOP-E 016 msg	UNCLASSI
INFO PRIORITY	X		CFEOP-W 355 msg	UNCLASSI

FROM:

CINCNORAD

SPECIAL INSTRUCT

TO:

CINCSAC OFFUTT AFB OMAHA NEBRASKA

INFO: COM 2ND AF BARKSDALE AFB LA

COM 8TH AF WESTOVER AFB MASS

COM 15TH AF MARCH AFB CALIF

COMADC ENT AFB (COURIER)

CGUSARADCOM ENT AFB (COURIER)

COMNAVFORCONAD ENT AFB (COURIER)

COMCFECR STEWART AFB NEWBURGH NEW YORK

COMCFCCR RICHARDS-GEBAUR AFB GRANDVIEW MISSOURI

COMCFWCR HAMILTON AFB CALIFORNIA

UNCLASSIFIED from NOOOP-E 053. Reference my msg NOOOP-E 016 dated 2 Oct 57, NOTAL and msg CCFECR, CFEOP-W 355 Subj: NORAD /SAC Exercises, dated 25 Nov 57, NOTAL.

CONAD Regions have been experiencing difficulty in obtaining from the numbered AF's Control Centers, mission data on NORAD/SAC Exercises, such as postponements, delays, and aborts. Request that necessary action be taken to insure that information of the

DUPLICATE

DISPATCHED 1215Z 12 Oct

HQ NORAD

DATE	TIME
29 MONTH	~~1000Z~~ YEAR
Nov	1957

SYMBOL: NOOOP-E

TYPED NAME AND TITLE (Signature, if required): Lt/Col Nuckols

SIGNATURE:

TYPED NAME AND TITLE: R. E. GARVEY, JR. Major, USA Asst Adjutant

WHS/DD

PHONE 2664

PAGE NR. 1

NR. OF PAGES 2

SECURITY CLASSIFICATION

UNCLASSIFIED

UNCLASSIFIED

DD FORM 1 MAY 50 173 REPLACES DD FORM 173, 1 OCT 48, WHICH WILL BE USED UNTIL EXHAUSTED

JOINT MESSAGEFO. - CONTINUATION SHEET

SECURITY CLASSIFICATION UNCLASSIFIED UNCLASSIFIED 228

FROM:

CINCNORAD

type noted above is expeditiously passed to both the NORAD COC and the Region COC's affected. This procedure to be standard in all cases excepting missions where specific arrangements are made to withold mission data.

MR: not required

UNCLASSIFIED

SYMBOL	PAGE NR	NR OF PAGES	SECURITY CLASSIFICATION
NOOOP-E	2	2	UNCLASSIFIED

DD FORM 1 MAY 55 173-1

229

[redacted]

NOOOP-E

1 OCT 195[illegible]

SUBJECT: (UNCLASSIFIED) NORAD-SAC Monthly Electronic Countermeasures Exercises

TO: Commanding General
Army Air Defense Command
Ent Air Force Base
Colorado Springs, Colorado

The monthly NORAD-SAC ECM Exercises are planned and conducted to provide maximum electronic counter-countermeasures training for all elements of the NORAD System. During fiscal year 1958 Strategic Air Command will not possess the capability to jam effectively S-Band Radars operating above 3250 megacycles. In order to receive realistic training in electronic counter-countermeasures it is suggested that NIKE Acquisition Radars operate in the 3100-3250 megacycles band whenever feasible during the conduct of the above exercises.

FOR THE COMMANDER-IN-CHIEF:

HARVEY T. ALNESS
Major General, USAF
DCS/Plans & Operations

DUPLICATE

CONAD

CINCONAD
C of S
SECRETARIAT
Admin
Audio Visual
Protocol
INFO SERVICES
DCS/C&E
Systems
Plans & Rqy
Elec Warfare
DCS/I
Coll & Disem
Rsch & Estimate
Ops Intel
DCS/P&O
Plans & Rqy
Operations
Plans Analysis
Combat Ops Cen
Ops Analysis
CONADC
COMMAYFORCON
CG ARAA CONAD
RCAF LIAISON

L/Col Nucl
2664
25 Sept 57
Refers to File
mvl Typist

Memorandum for Record: Members of ARADCOM staff have been contacted on this procedure and have informally stated that procedures requested in this letter are already being instituted for future exercises.

[redacted]

This correspondence is classified _____ in accordance with Para _____ AFR 205-1, or for reason(s) stated.
Record Evaluation: ☐ Permanent, ☐ Long Time Value _____, ☐ Temporary Until _____
CONAD HQ ____ 5 previous editions of this form are obsolete

[redacted] when filled ..) COPY OF INCOMING CLASSIFIED MESSAGE 230

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SEE CRYPTO SECTION BEFORE DECLASSIFYING S NOV 57

READING FILE

CONAD HIST FILE
CON0213RA030
RR RJEDDN
ZFD RJEDBR 601

RR RJWFKL RJEPED RJWPKN RJEDDN RJEPNB RJEDKF RJWPSB
DE RJEDBR 585
R 052250Z
FM CINCSAC OFFUTT AFB NEBR
TO RJWFKL/COMAF 2 BARKSDALE AFB LA
RJEPED/COMAF 8 WESTOVER AFB MASS
RJWPKN/COMAF 15 MARCH AFB CALIF
RJEDDN/CINCONORAD ENT AFB COLO
INFO RJEPNB/COMDR EADF STEWART AFB NY
RJWFKL/COMAIRDIV 4 BARKSDALE AFN LA
RJEDKF/COMDR CADF RICHARDS GEBAUR AFB MO
RJWPSB/COMDR WADF HAMILTON AFB CALIF
BT

ACTION: COOOP
INFO: COCOC, COOPO
I7-13220

[redacted] DOPLT 7170. SUBJECT: PARTICIPATION OF 376TH BOMBARDMENT WING IN SAC-NORAD JOINT TRAINING MISSIONS. PART I. REF DOPLT 2197 AND DOPLT 2136, BOTH DATED 7 JAN 57, AND SAC-CONAD CONFERENCE AT BARKSDALE AFB ON 13 DEC 56. DUE TO THE MOVE OF THE 376TH FROM BARKSALE TO LOCKBOURNE AFB DURING NOV TO AND THE ASSOCIATED DISTRUPTION OF NORMAL ACTIVITY FOR A PERRRRRRRRRRRRR RPTING ABOVE LINE

DUPLICATE

AND THE ASSOCIATED DISTRUPTION OF NORMAL ACTIVITY FOR A PERIOD AFTER THE PHYSICAL TRANSFER IS COMPLETED, THE 376TH WILL NOT BE AVAILABLE FOR PRRTICIATION IN SAC-NORAD JOINT TRAINING MISSIONS UNTIL APPROXIMATELY APRIL 1958. PART II. FOR 2AF, 8AF AND 15AF. REQUEST EACH AIR FORCE INCLUDE THE MAXIMUM AMOUNT OF ECM

PAGE TWO RJEDBR 585
ACTIVITY POSSIBLE INCLUDING USE OF PAHSE V CAPSULES WHEN PLANNING FUTURE MISSIONS IN ORDER TO PROVIDE MAXIMUM TRAINING FOR NORAD UNITS. PART III. THE AMOUNT OF EFFORT EXPENDED BY THIS HEADQUARTERS ON EVALUATION OF MISSIONS NOT INCLUDING THE 376TH BOMBARDMENT WING WILL BE BASED ON THE ECM LOADING OF BOMBER AIRCRAFT, NUMBER AND SPACING OF PHASE V CAPSULE AIRCRAFT EMPLOYED AND OVERALL TACTICS ASSOCAIATED WITH EACH MISSION. EACH OPERATING ORDER WILL BE REVIEWED BY THIS HEADQUARTERS PRIOR TO THE ESTABLISHMENT OF OBSERVER REQUIREMENTS.
BT
05/2309Z NOV RJEDBR

Copy 5 of 6 Copies

[redacted]

231

9000A

13 DEC 1957

SUBJECT: Transmittal of Exercise Design

TO: Commander-in-Chief
Strategic Air Command
ATTN: Operations Analysis Office
Offutt Air Force Base
Nebraska

In accordance with a telephone conversation on 4 December 1957 between Mr. Woffa and Mr Donegrom, the attached exercise design is transmitted for your review and comment.

FOR THE COMMANDER-IN-CHIEF:

1 Incl
Proposed Objectives and
Exercise Design for a Series
of Evaluation Exercises,
2 copies (Confidential)

RICHARD H. SLYTER, JR.
Acting Director,
Operations Analysis
Deputy Chief of Staff,
Plans and Operations

DUPLICATE

[redacted]

[redacted]

PROPOSED OBJECTIVES AND EXERCISE DESIGN
FOR A SERIES OF EVALUATION EXERCISES

A. INTRODUCTION

1. As the air defense system grows in size and complexity, the need for evaluating system effectiveness has become increasingly acute. At the same time, the problems involved in evaluating system effectiveness quantitatively have become more difficult.

2. While considerable information has been obtained from routine operations and from exercises, it has not been possible, in general, to gain quantitative knowledge of system effectiveness against specific offensive threats. The value of data from routine operations is severely limited by the fact that the routine function of the air defense system differs so greatly from the function of a system under attack. Attempts to evaluate exercises quantitatively have, for the most part, been inconclusive. Most air defense exercises have been undertaken to satisfy either extremely broad objectives or a large number of rather unrelated objectives. Either situation makes quantitative evaluation extremely difficult.

3. The NORAD staff recognizes the critical requirement for measuring the capabilities and shortcomings of the air defense system and has examined various steps which can be taken to satisfy this requirement. On the basis of past experience, it appears certain that many of the most important questions about defensive capabilities can be answered only by well-controlled exercises designed to meet specific objectives. It is believed that the results of such experiments or exercises would prove extremely valuable to the Strategic Air Command as well as to NORAD and its component commands.

4. Although evaluation in the general sense is a continuous process, a program of controlled exercises must, of practical necessity, be considered in terms of specific objectives and rather definite quantities of time and effort. The NORAD staff has outlined the present requirements for quantitative evaluation in terms of two general types of threat against two general areas of the continental defense system. These general parameters are the manned bomber and the submarine-launched missile threats against defenses, both in the coastal areas where advanced radar tracking is minimum and areas within the continent where threat warning is expected to be maximum. It is anticipated that at least two series of exercises extending over a considerable period of time will be necessary to meet these requirements.

5. Rather than undertake an entire program of this magnitude at one time, it was decided that the most profitable course would be to begin with a number of missions designed to answer two of the most critical questions about defense effectiveness against the manned bomber threat. The remainder of this discussion is concerned with the design of missions

[redacted]

which will permit an evaluation of system performance as it is affected by: (1) electronic countermeasures, and (2) increasing numbers of attacking aircraft (sometimes called saturation). It is not possible to state precisely how much of the total requirement for quantitative evaluation will be satisfied by this particular group of missions, but it appears at present that an evaluation of these two effects would satisfy a substantial part of one of the series referred to above.

B. BROAD OBJECTIVES

1. It is proposed that a series of missions be undertaken to fulfill the following broad objectives:

a. To evaluate the capability of a Joint Air Division to perform detection, identification, tracking, interception and simulated destruction of attacking forces of manned jet bombers employing varied tactics and penetration aids.

b. To afford joint training in defending against realistic bomber strikes.

c. To determine, through qualitative measures and observation, shortcomings in procedures, tactics and equipment.

C. SPECIFIC OBJECTIVES

1. It is proposed that objective 1.a. above be interpreted as follows: The specific objective of these missions is to evaluate the capability of a Joint Air Division against varied attacking force strengths and varied countermeasure efforts. It is anticipated that other aspects of bomber tactics will not be varied during the exercises. The phrase, "levels of attacking force strength," refers to numbers of bombers in the simulated attack. The phrase, "levels of countermeasure effort," refers to the amount of sweep jamming together with random chaff used by the attacking force. These phrases will be discussed further in subsequent paragraphs.

2. The second and third objectives need no further specification from the standpoint of the initial exercise design. These objectives can be achieved as by-products of virtually all exercises which employ realistic offensive threats and missions designed to fulfill the first, or "evaluation," objective will contain the degree of realism required by the other objectives.

D. PARAMETERS

1. For the missions considered in this proposal, then, the bomber tactics would be permitted to vary only in numbers of bombers and in the magnitude of sweep jamming employed in combination with random chaff. Three levels of bomber strength have been chosen to produce low, medium and high levels of saturation in a portion of the defense system. These levels, for a division similar to the [redacted], have tentatively been taken as 10, 20 and 30 bombers respectively. The three levels of countermeasures

[redacted]

effort have been taken as zero, [illegible] and 30 sweep jamming units (such as the ALT-6B) accompanied by single unit chaff dispensed by zero, 5 and 10 bombers. The sweep jamming should be divided approximately equally between S-band and L-band ground radars and the chaff should be effective against both L and S bands.

2. Evaluation of defense capability under conditions specified by the objectives requires that other aspects of bomber tactics remain fixed. That is, such items as bomber altitudes, speeds and spacing should remain fixed throughout the exercise.

a. It is proposed that bomber altitudes for these missions be as high as practical (40,000 feet or above if possible), and bomber spacing should be great enough to require the defense to track and intercept each bomber individually. It may be desirable to plan later missions to evaluate the defense capability against bombers at very low altitudes.

3. An implicit condition of this proposal is that quantitative measures of effectiveness can be found for the air defense functions such as detection, tracking and identification. Various measures have been used in the past, and although no single measure or set of measures has proven suitable for all types of analyses, it appears quite feasible to devise measures which will permit a satisfactory analysis of these missions. For example, detection capability can be expressed in terms of cumulative detection probabilities as a function of range. Further refinement can be achieved by considering detection probabilities as a function of aircraft type, altitude or aspect. Similarly, tracking capability may be analyzed in terms of tracking accuracy and the completeness of radar tracks. Throughout this discussion it is assumed that suitable measures of effectiveness will be devised for evaluating the air defense functions.

E. METHODS

1. The quantity and type of information required to accomplish the first objective depend upon a number of considerations. In addition to the particular measures of effectiveness, the design of the exercise is important. The term "design" implies the deliberate choice of specific exercise conditions such as bomber tactics and ECM conditions to be used in each exercise. Simple designs suffice for one-time spot-checking of division capability. Different designs are required if consistency of performance is also to be evaluated. More exacting designs can evaluate defense capability as it is affected by changes in attack conditions.

a. In this regard, there are two major types of effects which should be evaluated. The first is the effect upon the defense system if attack conditions are changed one at a time. For example, how is a division's capability affected if only the number of bomber tracks is changed. The second is the effect upon the defense system caused by simultaneous changes in more than one attack condition, i.e., the interaction effects of changing more than one attack condition at the same time. For example, how does capability change if the number of tracks is decreased while, at the same time, the total ECM effort is increased.

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[redacted]

b. Using an appropriate design, Division capability can be evaluated in each of the general areas mentioned above, namely:

(1) Division capability against various numbers of bombers and various quantities of ECM.

(2) Consistency or variability of division capability.

(3) Division performance as it is affected by changes in single attack conditions, i.e., numbers of bombers alone or magnitude of ECM effort alone.

(4) Division performance as it is affected by simultaneous changes in more than one attack condition, i.e., simultaneous variations in numbers of bombers and the magnitude of countermeasures efforts.

F. PROPOSED EXERCISE DESIGN TO ACCOMPLISH THE EVALUATION OBJECTIVE

1. The table in the next paragraph shows the proposed design for an exercise from which the types of information listed above may be extracted. It assumes that relatively uniform defense conditions will prevail and provides for changes in two attack conditions, namely: the level of attacking force strength (saturation) and the amount of ECM employed during the attack. The first of these attack conditions, saturation, is considered at three levels - 10, 20 and 30 tracks (simultaneously carried). The second, ECM effort, also is considered at three levels. These levels are designated below as 0-0, 40-5 and 80-2 to denote the number of jamming units or "black boxes" and the number of bombers in the strike employing single unit chaff. Aircraft to dispense chaff should always be selected from among those employing sweep jamming.

2. Table I below is interpreted as follows: Mission Number 1 generates 10 tracks simultaneously in the division and employs ECM level 0; similarly, Mission Number 2 generates 20 tracks and employs 40 sweep jammers and has 5 bombers employing "single unit" chaff, etc.

Mission Number	Number of Aircraft (Tracks Generated)	ECM Effort	
		Number of Jammers	Number of A/C Employing Chaff
1	10	0	0
2	20	40	5
3	30	80	10
4	10	80	10
5	20	0	0
6	30	40	5
7	10	40	5
8	20	80	10
9	30	0	0
Total Sorties	180		

Table I - Exercise Design

[redacted]

3. Nine missions, totaling 180 bomber sorties, are required to execute the design above. However, individual bombers could fly more than one of these sorties. This means that the total number of aircraft required by the design may be far less than 180. By flying three missions on each of three dates, the design would be executed.

4. Theory, as well as experience in the use of designs such as this one, have shown that the greatest pay-off can be obtained if certain restraints are observed.

a. The nine missions should be flown, as nearly as possible, under identical conditions of weather and defense environment. In anticipation that nearly identical conditions cannot be expected for all nine missions, three groups of missions are indicated in Table I. Missions within each group should be flown under nearly identical conditions. Changes in exercise conditions, unavoidable or otherwise, are less likely to jeopardize the exercise analysis if they occur between groups of missions rather than between missions within the same group.

b. The order in which groups are flown as well as the order in which missions within the same group are flown should be random. The specific schedule for accomplishing the missions should, however, be firmly established prior to the exercise.

5. The proposed design represents the minimum exercise effort which can provide a reasonably complete evaluation of the effects of sweep jamming and numbers of bombers on a defense system. However, such a minimum effort does not guarantee a successful evaluation. Variability in exercise conditions and inconsistency of division performance could make analysis inconclusive. However, the proposed design is much more likely to produce conclusive results than any other which requires so few missions.

[redacted]

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15 JUL 1957

SUBJECT: Nuclear Detonation Reporting

TO: Chief of Staff, USAF
as Executive Agent for CONAD
Washington 25, D. C.

1. Reference: Letter Joint Chiefs of Staff, Subject: "Establishment of Weather Data Collection and Atomic Detonation Reporting Systems," file SM 961-56-4 December 1956.

2. Paragraph b of referenced letter assigns this headquarters over-all responsibility for the establishment and operation of an atomic detonation reporting system in the continental United States, Alaska, and in the Northeast approaches to the United States.

3. Until an adequate remote reading indirect bomb damage assessment system is available, this headquarters has established an interim collection system consisting of observations received from the Ground Observer Corps, airborne personnel and installations and units under the jurisdiction of CINCONAD. This interim system for obvious reasons is not adequate.

4. In an effort to achieve a more reliable method of reporting nuclear detonations, this headquarters requested ADC to establish cameras at ACW sites located in the vicinity of Frenchman Flats, Nevada, for the purpose of taking radar scope photographs of nuclear detonations during Exercise Plumbbob. It is believed that if sufficient scope photographs could be obtained of various yields, types and ground zeros of nuclear weapons, a kit could be developed similar to an aircraft recognition kit. These kits and manuals would be furnished each air defense radar site and would have considerable merit in the training of radar operators in the reporting of nuclear detonations.

5. The Air Research Development Command has conducted numerous studies of indirect bomb damage assessment and similar studies in connection with quantitative evaluation of atomic detonations by radar and other means. Also, the Strategic Air Command has developed IBDA operational procedures that may be applicable.

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COOP-T, Headquarters CC AD, Subject: Nuclear Detonation Reporting

6. In order that this command can develop NUDET procedures, request that this headquarters be provided such technical data, reports, and instructions relating to this subject. Further request that the Air Force undertake investigations to optimize the use of ground radar and other appropriate techniques to increase CONAD's capability of reporting nuclear detonations.

FOR THE COMMANDER-IN-CHIEF:

MARSHALL S. CARTER
Major General, USA
Chief of Staff

CONAD

Major Kerr
2068
11 Jul 57

wdm

Context of this letter was not changed. Retyping was necessary due to a minor administrative error.

[redacted]

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rPS-3-4

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

COOOP

12 June 1957

SUBJECT: Nuclear Detonation Reporting

TO: Commander-in-Chief, Alaska, APO 942,
Seattle, Washington
Commander, Air Defense Command, Ent Air Force Base,
Colorado Springs, Colorado
Commanding General, United States Army Air Defense Command,
Ent Air Force Base, Colorado Springs, Colorado
Commander, Naval Forces, Continental Air Defense Command,
Ent Air Force Base, Colorado Springs, Colorado
Commander, Continental Air Defense Forces, Eastern CONAD Region,
Stewart Air Force Base, Newburgh, New York
Commander, Continental Air Defense Forces, Central CONAD Region,
Richards-Gebaur Air Force Base, Grandview, Missouri
Commander, Continental Air Defense Forces, Western CONAD Region,
Hamilton Air Force Base, California
Commander, 64th Continental Air Defense Division (CONAD Division)
APO 862, New York, New York

1. Reference letter this Headquarters file and subject as above, 8 March 1957.

2. Paragraph 7.i. of referenced directive is amended as follows:

DELETE

GEOREF Position	HF 6060	At Hotel Foxtrot Six Zero Six Zero

SUBSTITUTE THEREFOR

GEOREF Position	DKHF 5133	At Delta Kilo Hotel Foxtrot Five One Three Three

FOR THE COMMANDER-IN-CHIEF:

for HARVEY T. ALNESS
Major General, USAF
DCS/Plans & Operations

cc: AOC RCAF/ADC

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

COOOP

8 March 1957

SUBJECT: Nuclear Detonation Reporting

TO: Commander-in-Chief, Alaska, APO 942,
Seattle, Washington
Commander, Northeast Air Command, Pepperrell Air Force Base,
St. Johns, Newfoundland
Commander, Air Defense Command, Ent Air Force Base,
Colorado Springs, Colorado
Commanding General, Army Antiaircraft Command,
Ent Air Force Base, Colorado Springs, Colorado
Commander, Naval Forces, Continental Air Defense Command,
Ent Air Force Base, Colorado Springs, Colorado
Commander, Continental Air Defense Forces, Eastern CONAD Region,
Stewart Air Force Base, Newburgh, New York
Commander, Continental Air Defense Forces, Central CONAD Region,
Grandview Air Force Base, Grandview, Missouri
Commander, Continental Air Defense Forces, Western CONAD Region,
Hamilton Air Force Base, California

1. Detonations of multi-megaton weapons have served to focus attention on the serious nature of radioactive fall-out from high yield nuclear weapons. In the event of hostilities, the enemy will have the capability to employ large numbers of high yield nuclear weapons in the early stages of the conflict; therefore, it is necessary that an atomic detonation reporting system be established immediately for the continental United States, Alaska and the Northeast Air Command.

2. Until an adequate remote reading Indirect Bomb Damage Assessment system is available, an interim collection system will consist of observations received from all possible resources including: the Ground Observer Corps, airborne personnel, installations and units under jurisdiction of this headquarters.

3. Nuclear detonation reports will be forwarded immediately over normal surveillance telling circuits when received by any air defense agency. The duplication in connection with the reporting of detonations will be eliminated by direction centers and division control centers by requiring them to evaluate the reports prior to forwarding to higher headquarters. An increase in authorized strength to accomplish this task will not be granted. Reports will consist of the following:

a. Nickname - "NUDET"

b. Number - Begin with 01 and assign numerals to each weapon consecutively. Direction centers are responsible for assignment of numerical designators to all detonations of nuclear weapons

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in the sub-sector regardless of organization of support.

c. Suffix - Station designator of direction center in whose sub-sector detonation occurs.

d. Geographical reference coordinates of detonation

e. Time of detonation in minutes after the hour

f. Estimate of size - large or small

g. Type Detonation

	Code
(1) Aerial burst	A
(2) Ground burst	B
(3) Water burst	C

h. Display of report - Use two (2) inch circle of red cross-hatched with red diagonal stripes surrounding point of reported detonation. Retain on plotting board for 15 - 30 minutes following report. For purposes of planning fall-out action, location, time and description should be transcribed to overlay chart so that continual plotting of reports will not clutter plotting board.

i. Example of nuclear detonation report:

Item	Report as Forwarded	
	PLT/CW Report	Voice Report
Track Classification	NUDET	NUDET
Track Designator	NX03AJ	Track November X-ray Zero Three Alfa Juliett
GEOREF Position	~~HP 6060~~	~~At Hotel Foxtrot Six Zero Six Zero~~
Time	2216Z	Time: Two Two One Six Zulu
Estimate of Size	Large	Large
Type Detonation	A	Type Alfa

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Hq CONAD, COOOP, Subject: Nuclear Detonation Reporting (Cont'd)

4. The above procedure will be incorporated into CONAD Manual 55-1, presently under revision at this headquarters.

FOR THE COMMANDER-IN-CHIEF:

Harvey T. Alness

HARVEY T. ALNESS
Major General, USAF
DCS/Plans & Operations

cc: AOC RCAF/ADC