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CONAD / NORAD

HISTORICAL SUMMARY

(UNCLASSIFIED)

JULY - DECEMBER 1957

VOLUME II

SUPPORTING DOCUMENTS

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PRIORITY

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PP RJEDEN
DE RJKDAG 5C
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FM CINCAL ELMENDORF AFB ALASKA
TO RJEDEN/CINCNORAD ENT AFB COLORADO
ZEN/CG USARAL FORT RICHARDSON ALASKA
ZEN/COMAAC ELMENDORF AFB ALASKA
BT

ACTION: NOOPR
INFO: NOOOP
NOELC
SUSPENSE: 18 OCT 1957
N7-12193

S1B Doc 49

[redacted] FROM OPN 5346 SUBJECT IS COLOCATED ADDC-AAOC'S (JOINT DIIRECTION CENTERS). TARGET OPERATIONAL DATE FOR FAIRBANKS AREA JOINT DIRECTION CENTER AT MURPHY DOME WILL BE OCTOBER 1958 PROVIDED JCS APPROVE ADDC-AAOC COLOCATION THERE. CINCAL HAS RECENTLY RECOMMENDED TO YOU THAT FI SLAND BECOME THE ANCHORAGE AREA JOINT DIRECTION CENTER, ALSO WITH OCTOBER 1958 OPERATIONAL DATE. THIS DATE WAS S ELECTED TO COINCIDE WITH EXPECTED OPERATIONAL DATE OF NIKE BATTALIONS IN ALASKA SO THAT COMMUNICATIONS BETWEEN NIKE UNITS AND JOINT DIRECTIONS CENTERS CAN BE PLANNED AND CONSTRUCTED IN FINAL FORM, COMPATIBLE WITH SEMIAUTOMATIC ENVIRONMENT, AND THUS ELIMINATE NEED FOR EXPENSIVE T

PAGE TWO RJKDAG 5C
TEMPORARY NETWORKS. IN ORDER THAT COMMUNICATION SUPPORT ITEMS MAY BE FUNDED IN THE CURRENT FISCAL YEAR AND CONTRACTS NEGOTIATED, YOUR AND JCS APPROVAL IS URGENTLY NEEDED NOW FOR MURPHY DOME AND FIRE ISLAND JOINT DIRECTION CENTERS. ARMY CHIEF SIGNAL OFFICER HAS INSTRUCTED CG USARAL THAT DETAILED SPECIFICATIONS FOR NIKE COMMUNICATIONS MUST BE SUBMITTED BY 1 NOV 57 TO MEET OCTOBER 1958 OPERATIONAL DATE.
BT
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JOINT MESSAGEFORM

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FROM: CINCNORAD

SPECIAL INSTRUCTIONS

TO: Chief of Staff, USAF, WASH D C

INFO: CINCAL ELMENDORF AFB ALASKA

[redacted] FROM NOORK X 005

Chief of Staff, USAF, as Executive Agent for NORAD. Reference Part two of my SECRET message COORK X-041, 9 Sep. This message is two parts. Part one. CINCAL recommends colocation of AADC-ADOC at Fire Island for Anchorage Area, based on budgetary limitations. Fire Island will provide satisfactory operations though other sites surveyed are considered operationally preferable. The preferred sites, however, would require funds which are not now available or likely to become available. Part two. Recommend that the Joint Chiefs of Staff approve colocation of ADOC-AADC at Fire Island for Anchorage Area. CINCAL has requested approval be expedited to permit utilization of currently available funds. Target date of operation of Fire Island and Murphy Dome Joint Direction Centers is 1 Oct 58.

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MEMORANDUM FOR RECORD:

1. CINCAL has previously notified this headquarters that a site selection survey for colocating the ADDC-AADC in the Anchorage Area was expected to be completed by 1 October 1957 and recommendations would be made by 5 October 1957 (CINCAL message OPN 5222).

2. CONAD message COOPR X-041 informed the Executive Agent on the status of the Anchorage area site for colocation.

3. CINCAL message OPN 5340 makes the recommendation for colocating the AAOC-ADDC at Fire Island, which is the present location of the ADDC. CINCAL stated in OPN 5222 that "USAF Ad Hoc Committee for FY 59 MCP has disapproved inclusion of new Joint Direction Center in Anchorage area and has recommended that existing Fire Island ADDC be expanded to become Joint Center."

4. Since this requires only an expansion of existing facilities the expenditure of funds should be minimized by colocating at Fire Island.

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29 NOV 1957

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FM HQ USAF WASH DC
TO RJEDDN/CINCONAD ENT AFB COLO
INFO RJKDAG/CINCAL ELMENDORF AFB ALASKA
ZEN/CHIEF OF STAFF ARMY WASH DC
ZEN/CNO WASH DC
BT
[redacted] TION AFXPD 53329
[illegible] IVE AGENCY MESSAGE.
REFERENCE YOUR COOPR X 335, 21 OCTOBER 1957, COOPR X 334,
22 OCTOBER 1957 AND COOPR X 014, 9 SEPTEMBER 1957, THE ADDC-AAOC
COLLOCATIONS AT FIRE ISLAND AND MURPHY DOME ARE APPROVED.
BT
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ACTION: COOPR
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26 Oct 1957

OPN 2/4

SUBJECT: (Unclassified) Semi-Automatic Ground Environment Systems

TO: Commander In Chief
North American Air Defense Command
Ent Air Force Base, Colorado

1. In the Alaskan Command Air Defense Requirements Plan (ADRP 57-66) CINCAL stated a requirement for BADGE equipment and two AN/MSG-4 anti-aircraft fire direction systems, to be operational in FY 1960. You approved this requirement and submitted it, with others, to the JCS for approval.

2. This headquarters has been attempting to follow the AN/MSG-4 development program so that planning for its use in Alaska can be conducted properly. This planning includes arranging for the integration here of programed BADGE equipment and the AN/MSG-4.

3. To determine the progress of AN/MSG-4 and BADGE development an officer of this headquarters recently visited the U. S. army signal and Electronic Laboratories, the U. S. Army Air Defense Board, Rome Air Development Center, and Hughes Aircraft Company. He was given the following information:

a. The digital exchange of data between the BADGE system and the AN/MSG-4 under present designs is not feasible.

b. Each system (AN/MSG-4) and (BADGE) was developed with the capacity solely to provide operational-type data for its own basic mission. To correct this, a joint committee was established to make BADGE and AN/MSG-4 operationally integral, but the committee members had little guidance as to the tactical requirements of an integrated air defense system for missiles and interceptors and had no authority to direct integrated development.

c. The BADGE program is not firmly established and may be reoriented at an early date, delaying production beyond FY 1961.

d. The AN/MSG-4 total system has been delayed but its BOC compenent could be made available in FY 1959. The BOC component shows promise of materially increasing the effectiveness of battalion-size NIKE defenses, but the presently planned BADGE will not be able to exchange data with the BOC.

[redacted]

[redacted]

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Hq ALCOM ltr CPS 2/4 to CINCNORAD, Subj: (U) Semi-Automatic Ground Environment Systems (cont'd)

4. This headquarters was briefed recently by representatives of Martin Aircraft Corporation on a proposal for a "Missile Master Jr.", which is intended to perform the same functions as the AN/MSQ-4 with the exception that it does not have a computation capability, a BOC sub-system, or an integral radar. The Missile Master Jr., however, is considerably less expensive.

5. Proper planning by this headquarters for equipping and operating joint direction centers in the Fairbanks and Anchorage areas is dependent upon our receipt of valid information concerning the semi-automatic systems discussed above, or others which may be allocated for the Alaskan ground environment. Based on the limited information on semi-automatic systems which has been obtained to date, a concept for joint direction center technical operations has been evolved which attempts to take advantage of new equipments as they become available. Three progressive modes of operation are tentatively planned, in order to take advantage of new equipment as it becomes available:

a. Manual mode -- NIKE batteries will be controlled from the Joint Direction Centers at Fire Island and Murphy Dome by voice-telling over microwave links. Fighter-interceptor aircraft will be controlled by UHF A/G voice circuits from the direction centers or other OCI sites.

b. Semi-automatic mode using AN/MSQ-18 and AN/GPA-37 -- The AA Battalion operations center will be a part of the joint direction center. NIKE batteries will be controlled by semi-automatic equipment of the AN/MSQ-18 (BOC) over microwave links. Fighter-interceptor aircraft will be controlled by the data link portion of the AN/GPA-37 Radar Course Directing Group and/or UHF A/G voice circuits from the Direction Centers or OCI sites.

c. Semi-automatic mode using AN/MSQ-4 and BADGE -- The weapons monitor center will be a part of the joint direction center. The AA battalion operations center will be at a remote location. Digital data will flow between components of BADGE and the AN/MSQ-4 system. Weapons monitor center data will be transmitted to and from battalion operation centers by microwave links. Fighter-interceptor aircraft will be controlled by the data-link portion of the AN/GPA-37 Radar Course Directing Group and/or UHF A/G voice circuits.

6. This headquarters is in need of further information which will assist in planning for the [illegible]location and eventual integration of Army

[redacted]

Hq ALCOM ltr OPN 2/4 to CINCNORAD, Subj: (U) Semi-Automatic Ground Environment Systems (cont'd)

and Air Force semi-automatic ground environment equipment in joint direction centers. Such information is continually sought through the Army and Air service components and their departments in Washington. This headquarters has directed the Alaskan Air Command, in coordination with U. S. Army, Alaska, to arrange for technical compatibility of equipment in the preparation of joint plans for the preceding phases of implementation. This letter is intended for your information and to solicit any comment or guidance you consider appropriate.

FOR THE COMMANDER-IN-CHIEF:

Copies Furnished:

CG USARAL
COMAAC

[redacted]

[illegible] Hq Alaskan Command, 26 Oct 57, Subj: Semi-Automatic Ground Environment System

[illegible] 1st Ind 15 Nov 57

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

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

1. Reference is made to paragraph 4d(1) CONAD letter, TOP SECRET (CONPR), dated 6 June 1956, to Chief of Staff, USAF, as Executive Agent for CONAD, Subj: Air Defense Requirements for Alaska.

2. The Concept of centralized control capability of system for successful accomplishment of the NORAD mission.

3. This headquarters has no direct control authority over the research and development efforts of the services. It is therefore recommended that the Department of Defense be requested to investigate possible incompatibilities suggested in the basic letter and undertake such remedial action as may be necessary. It is requested that this headquarters be advised of the action taken.

FOR THE COMMANDER IN CHIEF:

Copy furnished:
CINCAL

[redacted]

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[redacted]

MEMORANDUM FOR THE RECORD:

This leter from CINCAL is on the subject of SAGE systems. In the Alaskan Command Air Defense Requirements Plan 57-66, CINCAL status a requirement for certain equipment and systems to be operational in FY 60. We approved this requirement and submitted to JCS for approval. CINCAL has been attempting to follow this up so planning for its use in Alaska can be conducted properly. This planning includes arranging for the integration of programmed BADGE equipment and the AN/MSG-4. to determine the progress, CINCAL sent an officer to the USArmy Signal and Electronic Labs, the US army Air Defense Board, Rome Air Development Center, and Huges Aircraft Co. where he obtained certain information which apparently was dicouraging. CINCAL also was briefed by representaives of the Martin Aircraft Corp. on a proposal for a "Missile Master Jr." which is intended to perhaps replace some other gear or system. CINCAL states that proper planning by them is dependent upon receipt of valid information and they list 3 progressive modes of operation tentatively planned in order to take advange of new equipment as it becomes available. They need further information which will assist in planning for the collocation and eventual integration of Army and Air Force SAGE equipment in joint direction centers. Such information continually is sought through Army and Air Service components and their departments in Washington. CINCAAL sent their letter for our infomratim and to solicit any comment or guidance consider appropriate.

[redacted]

[redacted]

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SLB Doc 53

COESS 10 September 1957

SUBJECT: Technical Plan-SAGE/Missile Master

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

1. **References:** Department of the Air Force letter, subject: Technical Plan-SAGE/Missile Master, dated 11 March 1957; and Inclosure 1, Secretary of Defense Memorandum for the Secretary of the Army and Secretary of the Air Force, dated 28 January 1957.

2. In accordance with the above references, the enclosed Test Program is submitted as the recommended procedure for testing SAGE/Missile Master integration. This Program was prepared with the direct advice and assistance of Service Department representatives.

3. Request comments by the Departments of the Army and the Air Force on the CONAD recommended program be obtained and provided to the Office of the Secretary of Defense concurrent with the submission of the Test Program to that office for approval.

FAVichols
2029
5Sep57

FOR THE COMMANDER-IN-CHIEF:

M R. Representatives of Evans Sig. Laboratory, CONARC, WE-ADES, and Lincoln Labs assisted personnel of this Headquarters in the preparation of an overall program
1 Incl, for testing of SAGE-MM integration. Drafts
a/s (10 cys) of this program were provided the ADC and USARADCOM for comments, and these comments were officially provided to CONAD by letter. Revision of the draft was accomplished and coordination with component representatives. The component comments have been incorporated in the attchd document and this program meets with the approval of both ADC and USARADCOM. Further action by CONAD will be required as outlined in the Incl.

-COMEBACK COEIC-

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SZB Doc 54

T-E-S-T P-R-O-G-R-A-M

FOR

SAGE/MISSILE MASTER INTEGRATION

5 September 1957

[redacted]

SECTION I

OBJECTIVE

PART A TEST OBJECTIVE

A series of tests of an integrated SAGE/Missile Master System will be conducted to:

a. Determine the optimum air defense doctrine, concept, tactics and techniques for the employment of a SAGE/Missile Master System under various modes of operation.

b. Determine operational capability of the equipments used in the system.

c. Determine the adequacy of the operational procedures employed.

d. Determine the equipment, program and/or procedural modifications which may be required in the system, to insure that it meets CONAD operational requirements. These operational requirements, as currently defined, are stated in Section III.

e. Accomplish those specific objectives outlined in the "Technical Plan for Integration of the Missile Master Into the Continental Air Defense Environment" which was provided with the 28 Jan 1957 Secretary of Defense Memorandum to the Secretaries of the Army and the Air Force.

SECTION II

BACKGROUND

PART A MISSILE MASTER. The development and production of the Missile Master, the Antiaircraft Defense System AN/FSG-1, has resulted from the Army initiated Signal Corps Project 423C, and its forerunner Project 414A. Ten Missile Master Systems are in production, with delivery of the first item being scheduled in 1957 and the remainder during 1958-1959. These ten Systems are expected to be completely installed and operational by 1961.

PART B SAGE. The development and production of the SAGE System has resulted from an Air Force initiated Project "Lincoln Transition System" and various forerunners, including Project Charles. The SAGE System is in the process of installation. In all areas where the Missile Master is to be employed, the SAGE Direction Centers are expected to be operational by late 1960. Initially, SAGE equipment and associated computer program will not provide automatic target-to-AA fire unit assignments. By early 1960, SAGE is expected to have the capacity and capability to provide these assignments.

PART C OSD/CONAD ACTION.

1. In September 1956 CONAD recommended to the Secretary of Defense that ten Missile Masters be provided to the Continental Air Defense System. CONAD also recommended that these Missile Masters be co-located with USAF ADC (USAF Air Defense Command) Radar Sites. By memorandum dated 30 October, OSD (Office of Secretary of Defense) approved this recommendation. A recommended plan for the implementation of the ten co-located facilities has been prepared jointly by the USARADCOM (U. S. Army Air Defense Command) and the USAF ADC. This plan was approved by CONAD and forwarded on 2 May 1957 to the Chief of Staff, USAF, as Executive Agent for CONAD.

[redacted]

2. The OSD Memorandum of 30 October 1956 stated that a technical plan would be prepared by OSD Assistant Secretary for Research and Development for the integration of the Missile Master Systems into the CONAD Environment. The Plan was to be predicated on the operational concepts as proposed by CINCONAD. The plan was also to outline actions that must be initiated by contractors, the contracting agencies and operating agencies of the military departments, to achieve a timely and efficient adjustment of equipment development programs which would be affected. The technical plan was prepared and approved by OSD Memorandum dated 28 January 1957. This memorandum directed the USAF, as executive agent for CONAD, to request CINCONAD to prepare and submit an overall program for testing the integrated SAGE/Missile Master System.

3. On 11 March 1957, USAF requested CINCONAD to take the action outlined in the 28 January 1957 OSD Memorandum.

SECTION III

CONAD OPERATIONAL REQUIREMENTS

PART A GENERAL. In September 1956, CONAD established basic concepts pertinent to the integration of SAGE and Missile Master. These concepts were forwarded to the Secretary of Defense by letter, subject: (U) Integration of SAGE and Missile Master, dated 19 September 1956, together with the CONAD recommendation that ter Missile Masters be provided for the CONAD Syster. The OSD Memorandum, dated 30 October 1956, concurred with "the basic concepts of CINCONAD's plan." The requirements expressed in this Section are derived from that plan.

PART B GENERAL REQUIREMENT. The general requirement is a system of detecting and control facilities of sufficient accuracy and timeliness which can serve as Joint Direction Centers where the overall air situation is displayed, for a defined geographical area, and where operational control of all air defense weapons can be exercised.

PART C BASIC REQUIREMENTS

1. All air defense weapons are deployed and employed to provide the capability for integrated use in an air battle. (The use of one weapon will not preclude the use of another.)

2. Facilities are available within CONAD Direction Centers to permit exercise of weapons control over all air defense weapons in a designated geographical area.

3. The ten AN/FSG-1 Missile Master Operations Centers and [redacted] Manual Radar Direction Centers will be co-located.

4. The data input requirements for all air defense Weapons Control Systems must be fulfilled by an integrated detection and identification environment.

PART D MODES OF OPERATION.

1. The CONAD System must [illegible]

responsibility for conducting the air battle will be assumed by JMDC's (Joint Manual Direction Centers) or Air Defense Direction Centers (Manual). Within their areas of responsibility these centers will assume full operational control, coordinate all air defense actions, make target assignments, and coordinate weapon commitment to the maximum extent consistent with the tactical situation.

d. MODE IV. In the event that any air defense weapon system or unit loses all contact with the Direction Center (SAGE, Joint Manual or Air Defense Manual) under whose control it was previously operating, it will at once go onto Mode IV. Under this mode all weapons systems and/or units will operate autonomously, under such local control as may be operative within the system or unit, and responsibility for control will be assumed by the local unit or weapons system commander.

[redacted]

SECTION IV

DESCRIPTION OF SYSTEMS

PART A MISSILE MASTER. This system provides the electronic facilities for monitoring and/or controlling up to 24 NIKE batteries. The system provides for:

1. Automatic broadcast of SAGE and/or Missile Master generated reference data to all batteries on up to 48 targets, or direct battery-target designations by SAGE.

2. Transmission of battery tracking data from each battery to all other batteries in the system.

3. Transmission of battery tracking data to adjacent Missile Master Operations Centers and receipt of tracking data from the batteries of these Centers.

4. Monitoring and evaluating at the Missile Master Operations Center of both the SAGE reference data and battery action data.

5. Facilities at the Missile Master Operations Center permitting specific target-to-battery designations.

6. Generation of reference data from local radars and voice communications with adjacent JMDC's or MDC's (Manual Direction Centers) when SAGE data is unavailable.

PART B SAGE. This system is defined as that portion of the air defense system which provides the means for the semi-automatic processing of data and weapon control, and consists of:

1. Those facilities required to process and transmit air-surveillance data from existing and planned data-gathering sources to SAGE Direction Centers.

2. The Direction Centers where air-surveillance data, by means of electronic computers, is processed, evaluated and developed into air situations at sector level from which threat evaluation, weapons assignment and appropriate weapons guidance orders are generated.

[redacted]

3. Those facilities required to transmit situation data from SAGE Direction Centers to Combat Centers.

4. The Combat Centers, where situation data from the SAGE Direction Centers, by means of electronic computers, is processed, evaluated and developed into Division level air situations from which the utilization of weapon resources can be monitored and directed.

5. Those facilities required to transmit instructions from Combat Centers to SAGE Direction Centers.

6. Those facilities required to transmit the output data from the SAGE Direction Center to the input of the appropriate user's equipment, such as adjacent Direction Centers, Combat Centers, JMDC's, data-link transmitters, CAA Air Route Traffic Control facilities and individual Weapons Control Systems.

PART C

JMDC. A joint center at which the ADC Radar Direction Center and ARADCOM Missile Master Operations Center are co-located.

TEST AGENCIES AND ORGANIZATIONS

PART A TEST AGENCIES.

1. Test Group. Management of the test actions will be accomplished by a special designated joint Test Group. The Test Group will be composed of representatives of pertinent service agencies, and will convene periodically as specified by the Group Chairman. CONAD will provide the Chairman and Secretariat for the group.

a. Mission. The Test Group will have the following responsibilities:

(1) Initiating action to coordinate all existing schedules and plans for tests of SAGE/Missile Master.

(2) Preparing, or initiating action to have prepared, detailed plans for all required tests, including the definition of specific test objectives.

(3) Initiating action to have test plans approved and implemented.

(4) "On-the-spot" monitoring of all tests.

(5) Analysing and evaluating test results with regard to test objectives.

(6) Recommending equipment, program and/or procedural modifications which may be required in the system, to insure that it meets CONAD operational requirements.

b. Method of Operation. CONAD will directly supervise the Test Group functioning. CONAD, through the Chairman, will specify the dates and duration of each group meeting, and will also be responsible for providing such guidance as necessary. On matters which do not involve interservice disagreements or major policy, the Test Group will have the authority and responsibility for determining the action required, with representatives of the service commands or agencies concerned being responsible for appropriate follow-on action by their parent organizations. For interservice disagreements or major [illegible]

matters, the group will recommend to CINCONAD the action required. CINCONAD will render decisions on those matters which fall within the purview of his assigned authority, and will forward other unresolved matters, with pertinent recommendations, to JCS (Joint Chiefs of Staff) for final decision.

c. Personnel. Estimated composition of the Test Group is as follows:

(1) Supervisory Echelon: Committee type action, part time duty.

Chairman	- CONAD	- Colonel
Ass't Chairman and Secretary	- CONAD	- Lt Colonel
Senior Army Member	- CONARC	- Lt Colonel or Major
Senior Air Force Member	- ARDC or APC	- Lt Colonel or Major

(2) Planning and Monitoring Section: Full time duty, starting approximately January 1958.

Three Operations Officers - 1 USARADCOM, 1 USAF ADC, 1 USAF APC - Lt Colonel or Major

Three Electronic Officers - 1 CONARC, 1 ARDC, 1 Signal Corps - Lt Colonel or Major

Two Analysts - 1 USAF, 1 USA - Lt Colonel, Major, or Civilian

(3) Test Site Teams. Full time duty upon initiation of tests.

Three Test Team Chiefs - 2 CONARC, 1 ARDC - Major

Six Test Site Officers - 3 CONARC, 3 ARDC - Captain or Lieutenant

(4) Data Reduction Section: Full time duty upon initiation of tests. Facilities and personnel will be required by civilian contract agencies for the task of data reduction. Appropriate contract action by Army and Air Force agencies will be required. It is estimated that two (2) each five (5) man shifts will be required to operate Electronic Accounting Machines (EAM).

(5) Data Analysis and Evaluation. After data are collected and reduced, personnel of the Planning and Monitoring Section will perform the task of analysis and evaluation. CONAD has the responsibility for final evaluation but detailed actions in this respect will be accomplished by the Test Group. In performing this function, the Test Group will obtain the comments and views of appropriate service commands. Copies of any individual service analysis and/or evaluation reports are to be obtained and submitted with the Test Group report.

d. Training of Test Group Personnel. Test Group personnel must be completely familiar with both the SAGE and Missile Master Systems. It is to be expected that some specialized training of short duration will be required for individual members of the group. These needs must be determined on an individual basis after command representatives have been designated. Action to accomplish this training is to be taken by the command from which the representative is provided. Fort Meade, Maryland and Lincoln Laboratories, Lexington, Massachusetts will be the locations at which the majority of the training will be accomplished, but other facilities may be used if necessary (e.g. Martin Plant at Orlando, Florida; IBM Plant at Kingston, N.Y.).

2. Other Agencies.

a. The technical actions prior to actual test, and the conduct of the operational tests will be designated tasks for Army and Air Force Commands. The Test Group will be responsible for delineating these tasks, with specific Army and Air Force commands being responsible for accomplishing the required action. Appropriate service commands will advise and assist in the determination of the specific tasks to be accomplished.

[illegible] provided by the individual service commands and agencies as determined by the tasks designated by the Test Group. The organisation and procedure within the service command to accomplish these tasks will be the commands prerogative; however, it is to be expected that special separate Army and Air Force project groups within such commands as CONARC, ARDC or APGC will be required to support this program.

PART B OPERATIONAL ORGANIZATION.

1. The USAF Air Defense Command will be responsible for the maintenance and operation of the designated SAGE Direction Centers and associated ADC Radar Sites, and the Air Force equipment employed at co-located Missile Master/Radar Sites.

2. The U.S. Army Air Defense Command will be responsible for the maintenance and operation of the designated Missile Masters and their associated fire units, and will also be responsible for manning Army positions in the SAGE Direction Center.

PART C LOGISTICAL ORGANIZATION.

1. Logistical procedures will be established in conformance with joint agreement by the Army and Air Force agencies involved. The Departments of the Army and Air Force will designate appropriate commands to prepare and implement such joint agreements.

2. The Department of the Army will be responsible for the design, procurement, installation, operation and maintenance of all necessary Army instrumentation for the test. The Department of the Air Force will have similar responsibility for Air Force instrumentation.

3. Logistic support of the Test Group will be provided by the nearest USARADCOM or USAF ADC unit.

PART D ADMINISTRATIVE PROCEDURES. Administrative procedures for the test group will be in accordance with USAF SOP's (as is now required for CONAD) with such modifications as necessary, to insure compatibility with the requirements of the Army agencies involved.

[redacted]

PART E REPORTS.

1. Partial reports of tests will be prepared by the test group as appropriate, but no less frequently than once each three months, beginning with the initiation of the tests. A final report of the tests will be prepared by the test group as soon as practicable after completion of the tests. Drafts of all reports will be coordinated with appropriate Army and Air Force agencies. All comments by these agencies, as a result of this coordination, will be included in an appendix to the report.

2. CINCONAD will forward all pertinent reports, to include conclusions and recommendations, to the Secretary of Defense for final approval.

TESTS

PART A TEST SITE SELECTION.

1. A study of the JMDC and associated SAGE schedules (Tab A) has resulted in the conclusion that the CONAD operational tests should be held in the Detroit SAGE Sector with tie-in to the Detroit, Michigan and Pittsburgh, Pennsylvania JMDC's. This test site has the following advantages:

a. The SAGE DC may be tested with two JMDC's.

b. It avoids the complications associated with the earlier SAGE sectors located in the sensitive coastal areas.

c. It can employ realistic strikes from Canada.

d. It is a good location for testing the target hand-over problem.

e. It is one of the earliest available operational sectors.

2. According to the schedule shown in Tab A, initial CONAD operational tests may start in approximately September 1960, when the Detroit JMDC is scheduled to be available. The Pittsburgh JMDC may be integrated into the tests by December 1960. It is expected that the SAGE DC will have digital interconnection with the JMDC's and can send up to 48 reference tracks to each of these sites by the date at which the tests are initiated. By June 1960 the Detroit DC will have the additional capability of making target-to-battery assignments, and operational testing of this feature could begin.

3. It is essential that the SAGE-to-Missile Master digital interconnections be checked out and "debugged" prior to the operational tests. The earliest available sites for achieving this are the Fort Lee DC and the Fort Meade Missile Master sites. If the Computer Program which goes into the Fort Lee Sector in October 1958 has the capability for sending reference tracks

[redacted]

from SAGE to Missile Master and the acceptance of status data from Missile Master, some of the integration and system testing of this feature can be overlapped with, or may be part of, the Western Electric Air Defense Engineering System (WE ADES) tests. During this period the equipment and program should be examined for weaknesses and the necessary corrections should be made. After the operational date of Fort Lee, the operating procedures can be examined during the normal operation of the sector.

4. The developmental testing of the September 1959 computer modification and program revision, prior to the time it goes to the operational sites, should be done in the Experimental Subsector (ESS) with a tie between the Boston Missile Master and ESS Computer. It would be desirable if this tie were made available in the Spring of 1959; however, the present schedule availability date of the Boston Missile Master System is October 1960. Utilization of the completed Boston System in ESS could not, therefore, start before that date. As developmental testing of the revised program with a Missile Master System is of major importance, all possible action must be taken to accomplish an earlier installation date for the Boston system.

PART B ACTIONS REQUIRED PRIOR TO OPERATIONAL TESTS.

1. General. The Technical Plan provided with the OSD Memorandum of 28 January 1957 outlined "actions that must be initiated by contractors, the contracting agencies and other agencies of the Military Departments to achieve a timely and efficient readjustment of the equipment development programs effected." The test program outlined herein is based on the premise that the service departments concerned are taking all actions in this respect that were specified in the OSD Technical Plan. In addition, the questions posed in Section

[redacted] between SAGE and Missile Master must be established and the order placed by 1 September 1957 if interconnection is to exist by the initial operational date for the Washington SAGE Sector.

(3) The decisions on SAGE/Missile Master message format must be made as soon as possible. Lincoln Laboratory and the U. S. Army Signal Engineering Laboratory (USASEL) are now formulating these decisions.

3. Missile Master Battery Data Link (BDL) Information to SAGE.

a. A study group, under Air Force cognisance, has been appointed to determine the operational desirability of transmitting Missile Master BDL information to the SAGE DC. It is required that the recommendations of this group and a final CONAD decision to implement or not be made by January 1958. If the final decision is to send BDL information to SAGE, equipment and program changes will be required.

b. Action Required. CONAD to make final decision on the method for transmitting BDL data to SAGE not later than January 1958. When this decision is made, the phasing of any required implementation actions will be determined.

4. Operational Procedures and Training.

a. Both ADC and USARADCOM now have operator training programs for their respective SAGE and Missile Master Systems. Additional operator procedures and operator training is required with respect to features of the combined SAGE-JMDC System. This applies particularly to the special requirements caused by the combined operation, such as the procedures for the AA director at the SAGE DC. Inasmuch as October 1958 has been set as the target date for sending digital reference data from Fort Lee to the Fort Meade Missile Master, procedures should be defined so that trained operators can be available by October 1958. These procedures can be examined and revised, if necessary, during the period that the Washington Sector is under test.

[redacted]

III of the Test Plan are considered a part of the basic guidance to be used in the development of specific objectives and detailed plans for individual operational tests.

Further study has shown that certain of the actions outlined in the OSD Technical Plan, plus others, are of critical importance. These must be accomplished as a part of the overall test program, and most must be completed prior to initiation of operational tests. To insure priority attention, those matters considered absolutely essential are enumerated in the following paragraphs.

2. Interconnections between SAGE and Missile Master at Fort Lee/Fort Meade.

a. The Missile Master at Fort Meade is scheduled to be operational December 1957. When the Washington SAGE Sector becomes operational, CONAD desires that the capability exist for the Fort Lee DC to pass, by data link, reference track data (track position and identification) to the Fort Meade Missile Master and the Missile Master to return status data. Check out of this capability is required prior to the scheduled Washington SAGE Sector operational date of February 1959. The currently approved computer programming plans for the Washington Sector do not provide for passing 48 reference tracks by digital data link or for the SAGE System to accept status data by February 1959. By study of various alternatives, it has been concluded that action must be taken to achieve the above capability in the Washington Sector by October 1958 as reflected in paragraph 3, Part A.

b. Action Required.

(1) Lincoln/RAND will take the necessary action to implement the above indicated computer programming by October 1958.

Missile Master must be established and the order placed by 1 September 1957 if interconnection is to exist by the initial operational date for the Washington SAGE Sector.

(3) The decisions on SAGE/Missile Master message format must be made as soon as possible. Lincoln Laboratory and the U. S. Army Signal Engineering Laboratory (USASEL) are now formulating these decisions.

3. Missile Master Battery Data Link (BDL) Information to SAGE.

a. A study group, under Air Force cognizance, has been appointed to determine the operational desirability of transmitting Missile Master BDL information to the SAGE DC. It is required that the recommendations of this group and a final CONAD decision to implement or not be made by January 1958. If the final decision is to send BDL information to SAGE, equipment and program changes will be required.

b. Action Required. CONAD to make final decision on the method for transmitting BDL data to SAGE not later than January 1958. When this decision is made, the phasing of any required implementation actions will be determined.

4. Operational Procedures and Training.

a. Both ADC and USARADCOM now have operator training programs for their respective SAGE and Missile Master Systems. Additional operator procedures and operator training is required with respect to features of the combined SAGE-JMDC System. This applies particularly to the special requirements caused by the combined operation, such as the procedures for the AA director at the SAGE DC. Inasmuch as October 1958 has been set as the target date for sending digital reference data from Fort Lee to the Fort Meade Missile Master, procedures should be defined so that trained operators can be available by October 1958. These procedures can be examined and revised, if necessary, during the period that the Washington Sector is under test.

for defining the necessary operational procedures and initiating action to insure that trained operators are available by October 1958.

5. SAGE/Missile Master System Integration.

a. Starting October 1958, the Fort Lee SAGE Sector and the Fort Meade Missile Master will be ready for system integration if all of the foregoing actions have been completed. The system will be tested in accordance with previously established criteria. The SAGE/Missile Master System will be examined for weaknesses and any necessary corrective action will be taken as a prelude to the CONAD operational tests in the Detroit Sector.

b. Action Required. CONAD will initiate action with the Departments of the Army and Air Force to insure that the specific plans for and the actual conduct of systems integration is accomplished within established schedules.

6. Facility for Developmental Testing of the 1959 Revision.

a. There must be a facility for developmental testing of the 1959 SAGE Computer revision as it applies to the SAGE/Missile Master combination. This must take place at a site where there is a Direction Center complete with radars, a Missile Master, and a representative number of AA fire units, all of which are in the same geographical area. Examination of the available facilities and schedules indicates that the best place for such testing is in the Experimental Subsector area with the Boston Missile Master. The required facilities are expected to be available in 1960.

b. Action Required.

(1) CONAD will initiate action to provide for the utilization of the Boston Missile Master Complex in the Experimental Subsector. This utilization is to be accomplished on the basis that the operational mission of that facility will not be impaired.

(2) CONAD will examine the possibility of advancing the operational date of the Boston Missile Master and will initiate appropriate action.

7. Future Development and Test Facilities for Missile Master.

a. The present SAGE/Missile Master Program is handicapped by the fact that there is not an experimental Missile Master System similar to those SAGE facilities provided by the Lincoln Laboratory Experimental Subsector. An experimental Missile Master should be provided for future development and test of such requirements as addition of new and larger quantities of weapons, counter countermeasures facilities, and other capabilities which will be needed for the post 1960 threat. Two possibilities have been examined for location of an experimental Missile Master; namely, the Boston ESS area and the Orlando, Florida area. Inasmuch as the Army is now planning a training Missile Master facility at Orlando, at the Contractor's (G. L. Martin Company) Plant, it is concluded that this site should be used for the Army development and test facility. In order to accomplish this, it is necessary to expand the training Missile Master System to a complete system which can be used for both training and experimentation. SAGE tie-in may be possible with the Gunter, Alabama SAGE Sector for test purposes. However, since the Gunter DC will be an operational site, and also since the Orlando training Missile Master will be weapon limited in the foreseeable future, it is recognized that some types of experimentation and testing will not be feasible at Orlando. An example is the check out of the revised Computer Program as cited in paragraph 6, Part A, above. In these cases, the Boston Missile Master Complex may be used with the Lincoln Laboratory ESS.

b. Action Required.

(1) CONAD will request the Department of the Army to take necessary action to expand the Orlando Missile Master training facility.

existing doctrine and regulations.

(2) All defined modes of operation.

(3) Target-to-weapon pairing by a JMDC with track reference data being provided by the SAGE DC.

(4) Target selection at individual fire units based on reference data derived from the SAGE DC, the JMDC and BDL data.

(5) Use of active and passive ECM (Electronic Counter Measures).

(6) Both non-saturation and saturation conditions, through the combined usage of 'live' and synthetic tracks.

(7) Weapons control where an AA defense has the capability to engage targets in two SAGE Sectors, i.e., fire across a sector boundary.

(8) Conditions where weapons capability allows engagement of targets in adjacent sectors.

c. The Test Group will establish a set of criteria, prior to the initiation of the test, which can be used to determine the degree of operational capability of the system. These criteria will include a comparison of the number of successful penetrations versus the number of attacking aircraft.

d. An air defense operational capability in the Sector under test will be maintained during the test period.

4. Time and Location.

a. Tests will be conducted in the Detroit SAGE Sector with two JMDC's and will include the Syracuse Sector for cross-tell. The two JMDC's will be those in the Detroit and Pittsburgh complexes.

b. SAGE/JMDC System tests will take place after the operational date of facilities involved. It is expected that the tests will be initiated during the latter half of CY 1960.

5. Equipment Requirements.

a. Two co-located Missile Master/Radar Sites (JMDC) and associated fire units.

b. SAGE Direction Center with the large memory computer and the revised Computer Program.

6. Personnel Requirements.

a. The normal complement of operating personnel for the SAGE Sector, the DMCC's and the associated fire units.

b. Test personnel to supervise and monitor all tests, including those required to collect and analyze data.

7. Specific Tests.

a. Preparation of detailed plans for specific tests will be required, but need not be completed until 1959. The Test Group will initiate action by January 1958 to prepare these plans so that complete approved plans will be available by July 1959. The specific test plans will include such details as:

(1) Instrumentation. Special instrumentation will be required. These requirements will be dependent upon the test criteria referred to in paragraph 3c, Part C, above. Details of instrumentation will be specified in sufficient time to permit procurement, installation and check out prior to the initiation of the tests. These details will include:

(a) Common time base requirements.

(b) Type of instrument, i.e., tape recorder, KAM.

(c) Location of instruments.

(2) Data to be recorded. The type and amount of data to be recorded will be dependent upon the test criteria referred to in paragraph 3c, Part C, above. Details of data will be specified and will include:

(a) Points at which data will be collected.

(b) Form in which data will be recorded.

(c) Time period for data collection.

(d) Rate of collection.

(3) Aircraft Requirements.

(a) Subsonic and supersonic bomber type aircraft,

capable of performing at minimum and high altitudes, will be required for specified test periods (estimated as being approximately two hours flight time per mission, within the test area).

(b) For certain tests, ECM equipped aircraft will be required.

(c) In the determination of the requirements for test aircraft, due consideration will be given to utilizing simulated aircraft targets and targets of opportunity, where feasible.

(d) The detailed employment of test aircraft will be specified in the plans for each test. This will include:

1. Type and number of raids.

2. Raid composition, by type and number of aircraft.

3. Flight profiles, including such specifics as speed, approach angle, altitude, time-over-target.

b. In the assignment of the task of preparing a program for the testing of SAGE/Missile Master integration, the OSD specified that a cost estimate be prepared. The desirability and economic feasibility of various methods of testing were studied. It was concluded that an example method of testing could be prepared and used as a basis for cost estimates for operational tests. This example is outlined below:

(1) Three (3) subsonic and three (3) supersonic bombers (jet type) on a guaranteed basis, would fly an average of twice a week until sufficient data is obtained. Approximately 5 months would be required for completion of testing. No allowance is given in this estimate for aircraft aborts, or for aircraft travel between the test area and the aircraft base.

(2) Strike aircraft would fly in groups of three (3). High altitude attack would be in stacked echelon formation, and low altitude attack would be abreast.

[redacted]

(3) Simulated tracks supporting each strike mission would be 10, 25, 30 or 45, at the discretion of the Test Group. Tracks would be allocated in such a way that at the conclusion of testing, each target area would have been hit by the same number of strikes.

(4) Three fundamental strike tactics would be employed by test aircraft, high altitude, low altitude, and toss bombing.

(5) Flight paths for strike missions would be designed to permit each strike aircraft to attack both defended areas (Detroit and Pittsburgh).

(6) Intercepts by manned interceptors would be required for some tests. Interceptor aircraft from operational units would be used. This utilization of operational interceptors would be a part of normal unit training. Therefore, no additional flying hours for interceptors need be programmed.

(7) Based on the preceding paragraphs (1) through (6), estimated aircraft requirements would be:

(a) Number and type of aircraft: 24 jet type medium and/or heavy bombers, on call basis.

(b) Total aircraft flying time: 600 hours; 500 for Detroit Sector tests plus 100 for Washington Sector testing. (Actual flying time during test - does not include enroute time to and from test area.)

(2) CONAD will initiate action to determine the feasibility and desirability of tying the Orlando Missile Master facility to the Gunter DC.

8. Impact on SAGE Schedules. The actions outlined herein will have an impact on schedules and current test plans for SAGE. The ADES Project Office will determine and advise CONAD, through appropriate channels, the effect this action will have on SAGE schedules. For this purpose, a chart showing the time phased actions reflected in the preceding paragraphs has been prepared and is attached as Tab B.

PART C SAGE/MISSILE MASTER OPERATIONAL TESTS

1. General. This portion of the test plan is to provide guidance for use by the agencies charged with preparing the detailed operational test plans. In the preparation of the detailed plans, it is expected that some deviation from these guide lines will be required. These changes may be made by CONAD, or by other agencies with CONAD approval.

2. Purpose of Operational Tests. To determine the operational capability of an integrated SAGE/Missile Master System under various air situations, to include an indication of the most desirable method of exercising weapon control during specific air battle conditions.

3. Method.

a. Two JMTC's will be operated within a SAGE Sector. The SAGE FSQ-7 will provide data to the Missile Master facilities within the SAGE Sector. Appropriate target and status information will be exchanged between the SAGE ADIC and the JMDC facilities, under all control concepts. Raids composed of a combination of synthetic tracks and actual aircraft will be employed, including appropriate use of ECM.

b. The conditions of the test will include, but are not restricted to, the following:

[redacted]

SECTION VII

COST ESTIMATES

PART A GENERAL. In arriving at estimated costs only those expenditures required to conduct SAGE/Missile Master integration tests were considered. No consideration was given to either SAGE or Missile Master tests as independent systems. Also, no consideration was given to those developments of the two (2) systems which will normally be required as a result of evaluation. An estimated cost of $4,000.00 per hour per aircraft was used as a basis for flying time costs. Total estimated cost is 8.3 million dollars.

PART B TABULATION. Chart on page 26.

MISSILE MASTER AND ASSOCIATI SAGE SCHEDU NG

Missile Master Site	Instl. Date(5) of MM	Opnl. Date of Co-located Facilit.	Associated SAGE Sector	SAGE DC OPERATIONAL DATES W/Initial(1) Program	W/Digital(2) Intercom	W/Target(3) Btry Asgmt
Highlands, N. Y.	Jan '60	Jul '60	New York	Jul '58	Jan '59	Sep '59
Lockport, N. Y.	Feb '60	Aug '60	Syracuse	Jan '59	Feb '59	Dec '59
Belfridge, Mich.	Mar '60	Sep '60	Detroit	--	Apr '59	Jun '60
Boston, Mass.	Apr '60	Oct '60	Boston	Sep '58	Feb '59	Oct '59
Pittsburgh, Pa.	Jun '60	Dec '60	Detroit	--	Apr '59	Jun '60
Chicago, Ill	Jul '60	Jan '61	Chicago	--	May '59	Apr '60
Seattle, Wash.	Sep '60	Mar '61	Seattle	--	--	Feb '60
Philadelphia, Pa.	May '60	Nov '60	New York	Jul '58	Jan '59	Sep '59
Los Angeles, Calif	Oct '60	Apr '61	Los Angeles	--	--	Mar '61
Ft. Meade, Md	Dec '57	Jun '60	Washington	Feb '59	Mar '59	Mar '60
Orlando Tng Facility (Martin Plant)	May '58	--	Gunter(4)	--	--	Feb-Sep '5

Note 1. Initial program has limited track capacit. and provides teletype data to AADCPs.

Note 2. 1300 to 750 bit per second data converters will be available to provide digital track data only from SAGE DCs to Army Air Defense Command Posts (AADCPs).

Note 3. Target-to-battery assignments can be made at large memory computers and revised instructional program are available.

Note 4. Gunter will be used as a test sector for missile firing, and will also be used for 'check-out' of the revised Computer Program.

Note 5. Column headed Instl. Date of MM indicates dates that installation of Missile Master equipment will start (BOD), except for Ft. Meade and Orlando Tng Facility. The dates for the latter two are those at which installation of MM will be completed.

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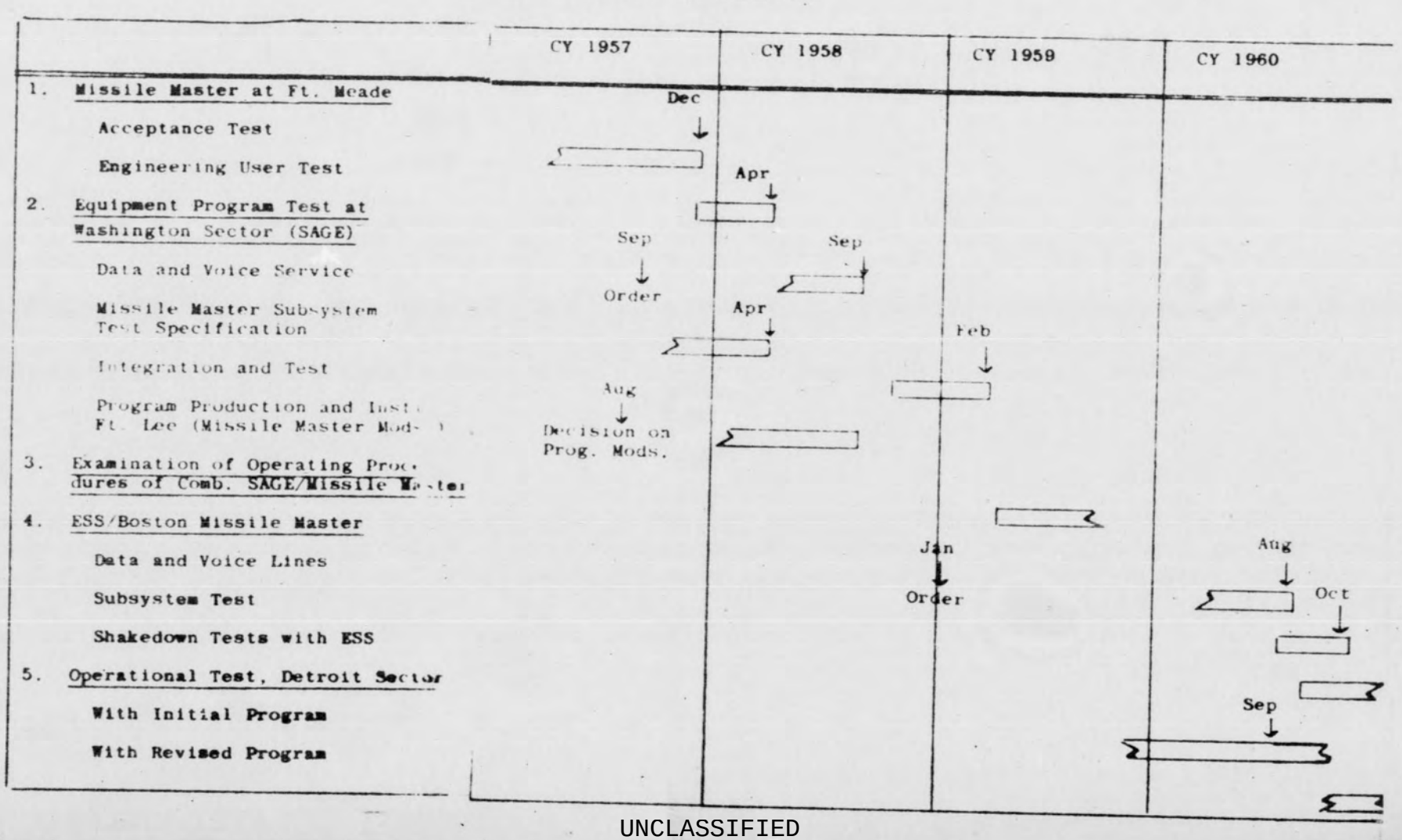
DEVELOPMENTAL TESTING SCHEDULE



ESTIMATED COSTS, BY FISCAL YEAR FUNDING

(Figures in millions of dollars)

Item	Service Dept.	FY-58	FY-59	FY-60	FY-61	Total
Instrumentation (for data gathering)	Army	0	0.1	0	0	0.1
	AF	0	0.1	0	0	0.1
Modification of Equipment (facilities used during actual test)	Army	0.1	0.3	0.3	0.1	0.8
	AF	0.1	0.2	0.2	0	0.5
Aircraft Flying Time	AF	0	0.4	0.4	1.6	2.4
Contractor Service (for test planning, execution & analysis)	--*	0.3	0.75	1.5	1.5	4.05
Test Group Administration (TDY, special training, administration)	--*	0.05	0.1	0.1	0.1	0.35
TOTAL		0.55	1.95	2.5	3.3	8.3

*Note: It is expected that a joint USAF/Army agreement will be required as Contractor Services, and possibly Administration as well, will involve both Army and Air Force civilian contractors.

UNCLASSIFIED

55

23 Dec 1957

57B Doc 55

NOR001 DNB001 TYD147HQB149
RR RJEDDN
DE RJEPHQ 901
R 2318537
FM HEDUSAF
TO CINCNORAD
BT
UNCLASSIFIED FROM AFDRD-AD 31626 EXECUTIVE AGENCY MESSAGE. REUR MSG NOESS-E 036. SUBJECT PLAN HAS BEEN REVIEWED BY BOTH HQ USAF AND HQ USA WITH GENERAL ACCEPTANCE, BUT SOME RESERVATIONS ON DETAIL. FURTHER INTER-SERVICE COORDINATION REQUIRED TO RESOLVE DIFFERENCES. COORDINATED ARMY-AIR FORCE POSITION SHOULD BE FORWARDED TO YOU BY 15 JANUARY 1958.
BT
23/1941Z DEC RJEPHQ

2946

ACT: NOELC
INFO: NOHCS

NOESS-E 036 PERTAINS TO REQUEST STATUS OF APPROVAL AND IMPLEMENTING ACTION FOR TEST PLAN SUBMITTED WITH OUR LETTER 10 SEPT 57, SUBJECT TECHNICAL PLAN — SAGE / MISSILE MASTER.

UNCLASSIFIED

56

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

D SECTION BEFORE DECLASSIFYING.

READING FILE

302.1

CONO 001

HQA022 COMLC
RR RJEDEN RJEDWP RJEPYB
DE RJEPHQ 117 X7-10807
R 101634Z
FM HQ USAF WASH DC
TO RJEDEN/COMAIRDEFCOM ENT AFB COLO
INFO RJEDWP/CONAMC WPAFB OHIO
RJEPYB/COMARDC BALTO MD
RJEDEN/CINCONAD ENT AFB COLO
BT
[redacted] FROM AFOAC-E/A 50121
DUE TO STRINGENT FY-58 BUDGET LIMITATIONS AND THE URGENT REQUIREMENT DTO PROVIDE AN IMPROVED ECCM CAPABILITY THROUGH THE USE OF FREQUENCY DIVERSITY RADARS, THE AN/GPA-27 PROCUREMENT WILL BE TERMINATED WITH FY-57 PROCUREMENT AND FREQUENCY DIVERSITY PROCUREMENT INITIATED IN FY-59. IN LINE WITH THIS ACTION AN/GPA-27 DEPLOYMENT IN THE CONTINENTAL U.S. IT TO BE REDUCED BY 24 SETS. REQUEST THIS HEADQUARTERS BE PROVIEDE BY 25 SEPTEMBER 1957 A LIST OF THESE SITES THAT WILL BE ELIMINATED FROM THE GPA-27 RADAR IMPROVEMENT PROGRAM. FOR YOUR INFORMATION IN PREPARING YOUR FY-59 PROGRAMS, PLANNED FY-59 PROCUREMENT REFLECTS THE FOLLOWING FREQUENCY DIVERSITY RADARS: 8 EACH AN/FPS-28'S, 8 EACH AN/FPS-35'S, 9 EACH AN/FPS-24'S AND 15 EACH AN/FPS-26'S.
BT
10/1706Z SEP RJEPHQ

A-- PARAPHRASE NOT REQUIRED EXCEPT PRIOR TO CATEGORY B ENCRYPTION--
PHYSICALLY REMOVE ALL INTERNAL REFERENCES BY DATE-TIME-GROUP
PRIOR TO DECLASSIFICATION
//ADVANCE COPY HAS BEEN DELEVERED TO COC//

READING FILE

UNCLASSIFIED

57

DISPOSITION FORM

[redacted]

FILE NO. [illegible]

SUBJECT: [illegible] Message Regarding [illegible]-27 Program Status

TO: CONCR [illegible] FROM: [illegible] DATE: [illegible] Sep 57 COMMENT NO. [illegible]

Lt Col [illegible]/sgl/

1. Attached [illegible] message from Hq [illegible] with info to CONAD. The message pertains [illegible] and is summarized as follows:

a. [illegible] and procurement of frequency diversity radars will [illegible] in FY 59. [illegible] due to stringent FY 58 budget limitations and the [illegible] to provide improved ECCM capability through use of frequency diversity radars.

b. GPA-27 [illegible] is to be reduced by 24 sets, with Hq USAF to be advised [illegible] will be eliminated from the GPA-27 program.

c. For guidance in preparing FY [illegible] program, the planned FY 59 procurement reflects the following FD radars: 8 [illegible] (400 mcps), 9 FPS-24 (200 mcps), and [illegible] FPS-26 (5600 mcps height finders).

2. The original [illegible] program was for [illegible] GPA-27's in the Continental U. S. CONAD and ADC personnel directly involved in this project agree that a reduction of 24 will not significantly reduce operational capability. ADC is preparing an overall plan for frequency diversity radar deployment and employment that is being coordinated with CONAD DCS/C&E personnel in its evolution. This plan will include the information requested by Hq USAF, reference paragraph 1b above. ADC project personnel advise that this plan will be officially coordinated with CONAD prior to submission to Washington.

1 Atchmt
Hq USAF msg AFCAC[illegible]
10 Sep 57

[signature]
[illegible]
Brig General, USA
DCS/Comm and Elect

Here is another example of a Service taking unilateral action on matters directly affecting NORAD.

FFM

NOESS-E

UNCLASSIFIED

[redacted]

57

FM [redacted] AF WASH DC

TO [redacted]

INFO [redacted]

[redacted] XT-10807

[redacted]

ST

[redacted] From AF AC-S/A 50121

Due to stringent FY-58 budget limitations and the urgent requirement to provide an improved SAGE capability through the use of frequency diversity radars, the AN/FPS-27 procurement will be terminated with FY-57 procurement and frequency diversity procurement initiated in FY-59. In line with this action AN/FPS-27 deployment in the Continental U. S. is to be reduced by 24 sets. Request this Headquarters be provided by 25 September 1957 a list of those sites that will be eliminated from the FPS-27 Radar Improvement Program. For your information in preparing your FY-59 programs, planned FY-59 procurement reflects the following frequency diversity radars: 8 each AN/FPS-28's, 8 each AN/FPS-35's, 9 each AN/FPS-24's and 15 each AN/FPS-26's.

BT
10/1704Z SEP DISTR4

58

[redacted]

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

OCT 8 1957

ADOCE-EG

SUBJECT: Deletion of AN/GPA-27's

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

1. Reference is made to your confidential message NOEPR-R X004, 23 September 1957.

2. Headquarters USAF has directed that 24 AN/GPA-27's be deleted from ADC's Zone of Interior Radar Program. In deleting this number the high altitude triple radar coverage will not be available in some low priority areas in time to meet SAGE operational dates. However, this deficiency will be eliminated with the installation of the Frequency Diversity Radars.

3. A copy of ADC letter to Headquarters USAF on the deletion of GPA-27's and ADC's revised Frequency Diversity Plan is inclosed for your information.

FOR THE COMMANDER:

James H. Weiner
JAMES H. WEINER
Colonel, USAF
Director, Communications-Electronics

2 Incls
1. Cy of Ltr Hq ADC to Hq USAF, subj as above
2. Cy of Ltr Hq ADC to Hq USAF, subj: ADC Frequency Diversity Plan, Revised

NAR
File 3 Dec 57
Maj Goodrich
11929

[redacted]

COESS-E-86

[redacted]

58

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

1 Oct 1957

ADORQ-E

SUBJECT: Deletion of AN/GPA-27s

TO: Director of Communications
Headquarters, United States Air Force
Washington 25, D. C.

1. References:

a. ADC SECRET message, ADOCE-EG 00828, dated 26 March 1957.

b. USAF SECRET letter, Subject: (U) ADC Frequency Diversity Plan, Paragraph 3, dated 11 June 1957.

c. USAF SECRET message AFOAC-E/A 50121, dated 10 September 1957.

d. ADC SECRET letter, Subject: Radar Improvement Program Requirements, dated 1 December 1954.

e. SAGE Operational Plan, dated 7 March 1955.

f. Lincoln Memo 6M3774-3A, Subject: Operation and Mathematical Specifications for Radar Data Inputs for Initial SAGE System, dated 1 April 1957.

2. Reference c indicates that, due to stringent FY58 budget limitations and the urgent requirement to provide an improved ECCM capability through the use of Frequency Diversity Radars (FD), the AN/GPA-27 procurement will be terminated with FY57 Procurement and FD procurement initiated in FY59. This results in the deletion of 24 GPA-27s from the Zone of Interior ground environment radar program.

3. The GPA-27s were initially deployed to provide the Air Defense Command with the capability of controlling weapons from 5000 to 60,000 feet, reference d. above. Subsequent to this date, a SAGE requirement for triple overlap coverage at all altitudes was accepted, with the corresponding increase in a number of programmed GPA-27s. Reference e and f above provide current guide lines for the deployment of our ground environment system in the SAGE Era; however, these references are not sufficiently specific to cover the triple radar coverage requirement. The latter requirement has come under much review

Copy

[redacted]

ADORQ-E, Subj: Deletion of AN/GPA-27s, to Hq USAF

at this Headquarters, so for the purpose of clarification and future planning, we have requested ADES Project Office to re-state SAGE Surveillance Requirements. A meeting between ADES and Lincoln Laboratories was held on 9 September 1957 for this purpose. ADES indicated that further study on Surveillance evaluation is required to re-affirm or modify the original SAGE requirements. Because of this uncertainty, ADC is reluctant to reduce the requirement for triple overlap coverage; however, based upon the unequivocal necessity to delete 24 GPA-27s from the program, it has been determined that the following radars, unmodified, will least degrade our ADC system:

AN/GPA-27

	Site		Location
	M-90		Walker AFB, New Mexico
	P-6		Tierra Amarillo, New Mexico
	TM-192		Gray AFB, Texas
	TM-191	33	Rockport, Texas
	M-97		Ellsworth AFB, South Dakota
	SM-134	31	Lake Andes, South Dakota
	P-70		Belleville AFS, Illinois
	P-68		Fordland AFS, Missouri
	P-30	24	Benton AFS, Pennsylvania
	P-55		Quantico MB, Virginia
	P-39		San Clemente Island, AFS, California
	TM-187		Osona, Texas
	P-25		Haure AFS, Montana
	SM-132	31	Bandette, Minnesota
	TM-177	29	Dickinson, North Dakota
	M-127	26	Winnemucca, Nevada
	M-94	24	West Mesa AFS, New Mexico
	P-64	20	Kirksville AFS, Missouri
	TM-190	33	Fort Isabel, Texas
	M-128	27	Kingman, Arizona
	P-81	20	Waverly AFS, Iowa
	P-40	9	Othello AFS, Washington
	TM-193	33	Lufkin, Texas
	SM-150	9	Cottonwood, Idaho
	*P-45	26	Montauk AFS, New Jersey

*With the installation of FPS-35, the FPS-20 at this site will be available for relocation. This would result in no savings of construction money, but would save the procurement of an FPS-20.

4. Under the current requirement concept, it is essential

[redacted]

ADORQ-E, Subj: Deletion of AN/GPA-27s, to Hq USAF

that improved radars of the Frequency Diversity family be provided at all sites listed in Paragraph 3 above. The priorities for these and other FD deployments will be submitted under separate correspondence to your Headquarters for approval.

FOR THE COMMANDER:

H. W. GRANT
Major General, USAF
Deputy for Operations

Copy 17

[redacted]

COPY

ADOCE/ADORQ

SEP 27 1957

SUBJECT: ADC Frequency Diversity Plan, Revised

TO: Director of Communications-Electronics
Headquarters USAF
Washington 25, D.C.

1. References:

a. ADC Frequency Diversity Plan, dated 20 January 1957.

b. USAF Secret letter AFOAC-E/A, 11 June 1957, subject: (U) ADC Frequency Diversity Plan.

c. USAF Secret message AFOAC-E/A 50121, 10 September 1957.

2. Reference 1a and in accordance with 1b above, the Air Defense Command Frequency Diversity Plan, dated 20 January 1957, is revised to include priorities for installation at specific sites. These priorities are based on the concept of initial establishment of perimeter coverage for weapons control followed by development in depth. Wherever feasible, FD radars were deployed to meet radar operations dates for SAGE sectors.

a. 200-400 MC

Priority	Site	Oprl Date	Location
1	P-30	6/59	Benton AFS, Pa.
2.	P-45	9/59	Montauk AFS, N.Y.
3	P-55	9/59	Quantico MB, Va
4	TM-197	9/59	Thomasville, Ala.
5	P-27	3/60	Fortuna AFS, Mich,
6	P-20	3/60	Selfridge AFS, Mich
7	M-130	6/60	Winston Salem, N.C.
8	P-13	6/60	Brunswick NAS, Me.
9	P-19	6/60	Antigo AFS, Wis.
10	SM-132	9/60	Baudette, Minn.
11	P-29	9/60	Finley AFS, N. Dak
12	P-46	9/60	Blaine AFS, Wash.
13	M-100	9/60	Mount Hebo, Ore.
14	SM-150	9/60	Cottonwood, Ida.
15	TM-178	9/60	Lewiston, Mont.
16	M-118	12/60	Burns, Ore.
17	P-37	12/60	Point Arena AFS, Calif
18	M-96	12/60	Almaden, Calif
19	SM-156	12/60	Fallon NAS, Nev
20	P-59	12/60	Boron AFS, Calif
21	SM-162	12/60	Vincent AFB, Aris
22	M-95	3/61	Las Cruces AFS, N. Mex.
23	M-114	3/61	Jacksonville NAS Fla.
24	M-93	3/61	Winslow AFS, Aris
25	P-8	3/61	Tierra Amarillo AFS, N. Mex.

[redacted]

ADOCE/ADCRQ, Hq ADC, Subj: ADC Frequency Diversity Plan, Revised

Priority	Site	Oprl Date	Location
26	M-89	3/61	Sweetwater AFB, Tex
27	P-75	3/61	Lackland AFB, Tex
28	M-125	6/61	England AFB, La.
29	TM-190	6/61	Port Isabel, Tex
30	SM-165	6/61	Flintstone, Ga.
31	SM-139	6/61	Wilmar, Minn.
32	P-82	6/61	Fort Knox, Ky
33	P-85	6/61	Hanna City AFS, Ill
34	M-95	9/61	Texarkana, Ark.
35	M-97	9/61	Ellsworth AFB, S. Dak
36	SM-134	9/61	Lake Andes, S. Dak
37	P-72	9/61	Olathe AFB, Kans
38	C-16	12/61	Sioux Lookout, Ont. Can.
39	C-21	12/61	Saskatoon, Alberta, Can.
40	C-10	12/61	Ramore, Ont., Can.

b. 600 MC

Priority	Site	Oprl Date	Location
1	M-126	9/60	Houma NAS, La.
2	P-25	9/60	Havre AFS, Mont.
3	TM-177	12/60	Dickinson, N. Dak
4	P-7	12/60	Continental Divide AFS, N. Mex
5	M-90	12/60	Walker AFB, N. Mex
6	TM-187	3/61	Ozana, Tex
7	P-49	3/61	Watertown AFS, N.Y.
8	TM-191	3/61	Rockport, Tex
9	TM-193	6/61	Lufkin, Tex
10	RP-62	6/61	South Park Military Reservation Pa.
11	M-121	6/61	Bedford, Va.
12	M-116	9/61	Cherry Point MCAS, N.C.
13	M-110	9/61	Bucks Harbor AFS, Me.
14	M-103	9/61	North Concord, Vt.
15	P-67	12/61	Fort Custer, Mich
16	P-73	12/61	Bellefontaine AFS, Ohio
17	P-81	12/61	Waverly, Iowa
18	SM-138	3/62	Grand Rapids, Mich
19	P-18	3/62	McChord AFB, Wash(Ft Lawton)
20	P-1	3/62	Chandler AFS, Minn.
21	TM-180	6/62	Klamath, Ore.
22	P-32	6/62	Condon AFS, Calif
23	SM-151	6/62	Geiger Field, Wash.
24	P-74	9/62	Madera AFS, Calif
25	RP-39	9/62	San Pedro Hill, Calif
26	M-128	9/62	Kingman, Aris
27	M-113	12/62	North Charleston AFS, S.C.
28	TM-200	12/62	Cross City, Fla.
29	TM-198	12/62	Tyndall AFB, Fla
30	P-66	3/63	Sault Ste Marie AFS, Mich
31	M-111	3/63	Dobbins AFB, Ga

ADOCE/ADCRQ, Hq ADC, Subj: ADC Frequency Diversity Plan, _evised

Priority	Site	Ovrl Date	Location
32	M-127	3/63	Winnemucca, Nev
33	SM-144	6/63	Union City, Penn
34	P-68	6/63	Fordland AFS, Mol
35	SM-153		Kamloops, B.C., Canada
36	P-47		Hutchinson NAS, Kans
37	C-15		Armstrong, Ont. Canada
38	N-24		Melville, Labrador
39	N-23		Stephenville, N.F.
	c. 2000MC		
1	TM-195	6/61	Crystal Springs, Miss.
2	P-9A	6/61	Gibbsboro, N.J.
3	TT-4	9/61	Shoal (Unnamed)
4	P-50	9/61	Saratoga Springs AFS, N.Y.
5	TT-2	9/61	Georges Shoal AFS
6	M-117	12/61	Roanoke Rapids AFS, N.C.
7	P-65	12/61	Charleston AFS, Me
8	P-61	12/61	Fort Austin AFS, Mich
9	P-43	3/62	Guthrie AFS, W.Va.
10	RP-31	3/62	Williams Bay AFS, Wis (Arlington Hts)
11	P-69	3/62	Finland AFS, Minn
12	P-70	6/62	Belleville AFS, Ill
13	P-17	6/62	Wadena AFS, Minn
14	M-99	6/62	Gettysburg , S.Dak
15	M-98	9/62	Miles City AFS, Mont
16	P-57	9/62	Naselle AFS, Wash
17	P-33	9/62	Klamath AFS, Calif
18	P-24	12/62	Cutbank AFS, Mont
19	P-40	12/62	Othello AFS, Wash
20	P-58	12/62	Mather AFB, Calif
21	P-15	3/63	Santa Rosa Island AFS, Calif
22	SM-163	3/63	Las Vegas, Nev
23	TM-181	3/63	Ajo, Ariz
24	M-94	6/63	West Mesa AFS, N. Mex
25	M-88	6/63	Amarillo AFB, Tex
26	SM-159	6/63	Aiken AFS, S.C.
27	P-60	9/63	Colville AFS, Wash.
28	TM-199	9/63	Eufala, Ala.
29	P-78	9/63	Duncanville AFS, Tex
30	P-79	12/63	Ellington, Tex
31	TM-188	12/63	Eagle Pass, Tex
32	P-71	12/63	Omaha AFS, Nebr
33	P-77	3/64	Bartlesville AFS, Okla
34	SM-145	3/64	Joelton, Tenn
35	M-119	3/64	Lowther, Ont., Canada
36	C-20	6/64	Baldy Hughes Mt Prince George BC, Ca
37	N-31	6/64	Frobisher, Baffin Island
38	N-29		Sagleg, Labrador
39	N-27		Cartwright, Labrador
40	N-25		Gander, Newfoundland

ADOCE-ADORQ, Hq ADC, Subj: ADC Frequency Diversity Plan, Revised

d. AN/FPS-7 Radar

Priority	Site	Oprl Date	Location
1	P-35	11/58	Osceola AFS, Wis
2	P-44	12/58	Neah Bay AFS, Wash
3	P-12	1/59	North Bend AFS, Ore
4	SM-149	2/59	Baker, Ore
5	TM-179	5/59	Kalispell, Mont
6	SM-133	7/59	Hastings NADep Nebr
7	TM-201	8/59	Sundance, Wyo
8	M-129	9/59	MacDill AFB, Fla
9	P-9	10/59	Highlands AFS, N.J.
10	TM-196	10/59	Dauphin Island, Ala
11	P-34	11/59	Empire AFS, Mich
12	P-10	12/59	North Truro AFS, Mass
13	P-56	1/60	Cape Charles AFS, Vt.
14	P-14	2/60	St Albans AFS, Vt
15	M-115	2/60	Ft Fisher AFS, N.C.
16	P-80	3/60	Caswell AFS, Me
17	P-21	4/60	Lockport AFS, N.Y.
18	P-53	4/60	Rockville AFS, Ind
19	P-76	5/60	Mt Laguna AFS, Calif
20	P-2	6/60	Cambria AFS, Calif
21	P-38	6/60	Mill Valley AFS, Calif
22	SM-164	7/60	Tonopah AFS, Nev
23	P-26	8/60	Opheim AFS, Mont
24	P-42	8/60	Lake City AFS, Tenn
25	M-92	9/60	Mt. Lemmon AFS, Ariz
26	TM-186	10/60	Pyote AFB, Tex
27	TM-189	10/60	Zapata, Texas
28	P-52	11/60	Oklahoma City AFS, Okla
29	TM-194	12/60	Lake Charles AFB, La
30	SM-143	12/60	Walnut Ridge AFS, Ark
31	N-26	1/61	St Anthony, N.F.
32	C-17	2/61	Beausejour, Man, Can
33	N-28	2/61	Hopedale, Labrador
34	C-19	3/61	Williams Lake(Puntzi Mt)BC, Can
35	C-14	4/61	Pagwa River, Ont. Canada
36	N-22	4/61	St Jonh, N.F.
37	C-34	5/61	Sydney, N.S.
38	M-102	6.61	Barrington, N.S. Canada
39	C-33	6/61	Clarke City(Moisie) Quebec

e. AN/FPS-20 or AN/FPS-3/GPA-27 equipments will be retained at the following locations:

Site	Oprl Date	Location
P-6	2/58	Curlew AFS, Wash
P-16	9/57	Calumet AFS, Mich
P-28	9/58	Minot AFS, N. Dak
P-51	6/58	Moriarity AFS, N. Mex
*P-64		Kirksville AFS, Mo
M-112	9/58	Hunter AFB, Ga
SM-147	11/58	Malstrom AFB, Mont
*SM-157		Red Bluff, Calif
*TM-192		Gray AFB, Tex
*M-30		Resolution Island, Canada

Site	Oprl Date	Location
TT-3	4/58	Nantucket Shoals

* Will be programmed from ADC assets made available by installation of new FD radars

31 Reference is made to paragraph 1b above and specifically to reduction of procurement of AN/FPS-6 height finders. The Air Defense Command requires two heigh finders at each heavy radar site. Our plans include deployment of one AN.FPS-26 height finder at each site to replace one AN/FPS-6. In line with this plan and provided that AN/FPS-26 height finders can become operational at the sites listed and on the dates specified, a reduction in procurement of 50 AN/FPS-6 height finders can be realized.

a. AN/FPS-26, 5600 MC Height Finder

Priority	Site	Oprl Date	Location
1	TM-201	1/61	Sundance, Wyo
2	M-97	1/61	Ellsworth AFB, S. Dak
3	P-25	1/61	Havre AFS, Mont
4	P-26	1/61	Opheim AFS, Mont
5	SM-133	1/61	Hastings NAD, Nebr
6	P-24	2/61	Cutbank AFS, N. Dak
7	P-71	2/61	Omaha AFS, Nebr
8	TM-178	3/61	Lewiston, Mont
9	SM-165	3/61	Lake Andes, S. Dak
10	M-130	3/61	Winston Salem, N.C.
11	SM-165	4/61	Flintstone, Ga.
12	P-42	4/61	Lake City AFS, Tenn
13	SM-141	4/61	Malmstrom AFB, Mont.
14	SM-145	5/61	Joelton, Tenn
15	P-82	5/61	Ft Knox, Ky
16	M-113	6/61	N Charleston AFS, S.C.
17	M-111	6/61	Dobbins AFB, Ga
18	M-93	7/61	Winslow AFS, Ariz
19	M-112	7/61	Hunter AFB, Ga
20	SM-159	7/61	Aiken AFS, S.C.
21	P-43	7/61	Guthrie AFS, W.Va.
22	M-114	8/61	Jacksonville NAS, Fla
23	M-92	8/61	Mt. Lemmon AFS, Ariz
24	P-7	9/61	Continental Divide AFS, N Mex
25	M-94	9/61	West Mesa AFS, N. M.
26	P-51	10/61	Moriarity AFS, N.Mex
27	M-95	10/61	Las Cruces AFS, N.M.
28	M-90	10/61	Walker AFS, N.M.
29	P-6	11/61	Tierra Amarilla AFS, N.M.
30	M-88	11/61	Amarillo, Tex
31	M-89	11/61	Sweetwater AFS, Tex
32	P-52	11/61	Tinker AFB, Okla
33	P-78	11/61	Duncanville AFS, Tex
34	TM-186	12/61	Pyote AFB, Tex
35	TM-187	12/61	Ozona, Tex
36	P-75	12/61	Lackland AFB, Tex
37	TTM-192	12/61	Gray AFB, Tex
38	M-91	12/61	Texarkanan, Ark

ADDCE-ADORQ, Hq ADC, Subj: ADC Frequency Diversity Plan, Revised

58

Priority	Site	Oprl Date	Location
39	P-77	1/62	Bartlesville AFS, Okla
40	TM-188	1/62	Eagle Pass, Tex
41	TM-189	1/62	Zapata, Tex
42	TM-194	1/62	Lake Charles AFB, La
43	M-125	1/62	England AFB, La
44	TM-190	2/62	Port Isable, Tex
45	TM-191	2/62	Rockport, Tex
46	P-68	2/62	Fordland AFS, Mo.
47	P-79	3/62	Ellington AFS, Tex
48	TM-193	3/62	Lufkin, Tex
49	SM-143	4/62	Walnut Ridge, Ark
50	SM-144	4/62	Union City, Tenn.

4. Possible reduction of AN/FPS-6 equipment procurement by utilization of the AN/FPS-27 as a replacement for one AN/FPS-6 at locations specified in paragraph 2c was considered and rejected at this time. It was considered that development of the AN/FPS-27 had not proceeded far enoguh to permit a commitment as of this date. Our experience with the AN/FPS-7 influenced this decision. The AN/FPS-27 program as related to height finder programming will be re-examined at a later date.

5. This headquarters is preparing a Preliminary Operational Concept for Frequency Diversity Radars. This document will be submitted to your headquarters for approval not later than 30 November 1957.

FOR THE COMMANDER:

JAMES H, WEINER
Colonel, USAF
Director, Communications-Electronics

Memo for Record: The USAF letter of 11 June (Reference 1b) requested assignment of priorities to sites and some minor changes to our plan of 20 Jan 57. We were also requested to review our FPS-6 & GPA-27 requirements and advise Hq USAF of any possible reduction in quanitites. A spearate letter from this Hq covered our GPA-27 procurement re uction. Present plan provides earliest coverage in perimeter followed by deployment in depth. Considers SAGE Ops dates, and wherever feasible provides FD radar prior to SAGE.

59

CONAD DIST FILE

302.1

RETENTION FILE

PRECEDENCE	TYPE MSG (Check)			ACCOUNTING SYMBOL	ORIG. OR REFERS TO	CLASSIFICATION OF REFERENCE
ACTION ROUTINE	BOOK	MULTI	SINGLE X	AF	AFOAC-E/A 50201 11 Sept 57	CONFIDENTIAL
INFO						

FROM: CINCNORAD

SPECIAL INSTRUCTIONS:

TO: COMADC (COURIER)

[redacted] FROM NOEPR-R X004 .

MESSAGE AFOAC-E/A 50201, HQ USAF, DATED 11 SEPT 57, INDICATES TERMINATION OF GPA-27 PROCUREMENT WITH END OF FY57 PROGRAM. REQUEST THIS HQ BE INFORMED OF THE IMPACT OF THIS ACTION ON YOUR NKS' RADAR IMPROVEMENT PROGRAM. IF GPA-27's ARE BEING ELIMINATED, REQUEST WE BE ADVISED OF CRITERIA USED TO DETERMINE WHICH SITES ARE AFFECTED AND A LIST OF THOSE SITES CONCERNED IF LIMITATIONS ARE IMPOSED.

M/R Not required.

FILE NOELC

MAJ DL FAULKNER
2040
23 Sept 57

N7-10841
sc

RETENTION FILE

DATE	TIME
23	1800Z
MONTH	YEAR
SEPT	57

WRITER

SYMBOL: NOEPR-R

TYPED NAME AND TITLE (Signature, if required): MAJ DL FAULKNER

PHONE 2040 | PAGE NR. 1 | NR. OF PAGES 1

SECURITY CLASSIFICATION [redacted]

30¢

RELEASER

SIGNATURE

TYPED (or stamped) NAME AND TITLE

J. W. LEDOUX
LCDR, USN
Asst Adjutant

[redacted]

COPY 60

ADORQ-C, Hq ADC, 21 Nov 57, Subj: Deletion of 32 Gap Fillers

NOOOP-T 1st Ind 10 Jan 1958

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

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

1. References:

a. Joint ARADCOM/ADC letter, subject: Plans for CONAD (Joint) Direction Centers at Ten (10) Locations, 30 April 1957.

b. ADC Long Range Limited Resources Plan '58-'67, dated 10 December 1957.

2. NORAD recognizes and accepts that two basic reasons exist for re-evaluation of the gap filler program for the Eastern and Western Interior ADIZ's. First, it is agreed that the development of the interior ADIZ's as now planned should be withheld in favor of early establishment of a Southern ADIZ. Second, current resource limitations for ground environment implementation necessitates some program realignment. It is believed, however, that these factors are not sufficient to justify deletion of program assets that are recognized as being inadequate in quantity as they now stand.

3. In this respect, it is noted that references 1.a. and 1.b. contain gap filler requirements that are not yet programmed. While such program deficiencies exist, it is considered more appropriate for your headquarters and the USAF to take action to re-allocate, redeploy, or defer implementation to later fiscal years of the 32 gap fillers listed in the basic communication, rather than to delete these facilities.

4. Therefore, it is requested that you reconsider this matter and take action in consonance with paragraph 3, above. Also, if your headquarters deems it necessary that the policies and concepts for low altitude coverage reflected in previously accepted gap filler criteria or requirements be changed, request NORAD be so advised.

FOR THE COMMANDER-IN-CHIEF:

/s/t/ Col. Allen
2088
23 Dec 57
X7-13897
bkm

M/R: Not Required

Retyped as per recommendations & proposed draft by C&E

3 Incls
n/c

/s/t/ MARSHALL S. CARTER
Major General, USA
Chief of Staff

DUPLICATE

[redacted]

60

[redacted]

HEADQUARTERS
AIR DEFENSE COMMAND
UNITED STATES AIR FORCE
ENT AIR FORCE BASE, COLORADO

TEL: MELROSE 2-5511
EXT _____

ADORQ-C

NOV - 7 1957

SUBJECT: Deletion of 32 Gap Fillers

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

1. Reference is made to paragraph 4.c. of your letter to this Headquarters dated 27 September 1957, Subject: "Surveillance and Identification". With the possible deletion or reduction to standby of the Eastern and Western ADIZ's, we will no longer have a requirement for 500 foot coverage in those areas. Since many of the gap filler radar sites programmed to support this requirement cannot be built and put into operation before the establishment of a Southern ADIZ, it is proposed that we delete the following sites where construction has not yet started.

P-18C	M-99D	M-128F	SM-144A
P-68A	M-111C	SM-133A	SM-149A
P-68B	M-118B	SM-133B	SM-156B
P-68C	M-118C	SM-134A	SM-156C
P-71A	M-127B	SM-134C	SM-163D
P-71B	M-127E	SM-139D	SM-164A
P-71C	M-128A	SM-143A	SM-164C
M-99A	M-128E	SM-143B	SM-164D

2. Incloaed herewith are three charts which illustrate the gap filler situation.

3. a. Inclosure No. 1 shows the 500 foot coverage of the United States that will be obtained when all radars, presently programmed, become operational. The gap fillers listed above are indicated by red circles, the chart shows that their deletion will not affect the 500 foot coverage around the perimeter of the United States.

b. Inclosure No. 2 shows the 2,000 foot coverage of the United States that will be obtained when all radars presently programmed become operational.

c. Inclosure No. 3 shows the 2,000 foot coverage of the United States that will be obtained when all radars presently programmed, except the 32 listed above,

[redacted]

XT-13897

[redacted]

60

ADORO-D, Subject: Deletion of 32 Gap Fillers

become operational. Comparing this chart with Inclosure No. 2 shows that the deletion of 32 gap fillers will have only a slight affect on the 2,000 foot coverage.

3. The estimated construction costs for these sites total $3.6 million, C&E equipment will cost $4 million (in addition to installation costs) and the annual operating cost is estimated to be $320,000.00.

FOR THE COMMANDER:

2 Incls
1. Chart, Radar Coverage, 500 feet.
2. Chart, Radar Coverage, 2,000 feet.
3. Chart, Radar Coverage, 2,000 feet less 32 sites.

CHARLES G. TASCHNER
Colonel, USAF
Director of Requirements
Deputy for Operations

[redacted]

[redacted] when fill... in) COPY OF INCOMING ...ASSIFIED MESSAGE 61

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SEE CRYPTO SECTION BEFORE DECLASSIFYING

READING FILE

CONAD HIST FILE 303

CON008
HCAC11AGC008
RR RJEDEN
DE RJKDAG 7C
R 270255Z
FM CINCAL ELMENDORF AFB ALASKA
TO CINCONAD ENT AFB COLO
INFO ZEN/COMAAC ELMENDORF AFB ALASKA
BT

ACTION: COELC
INFO: COOPR, COOOP
X7-9207

27 JUL 57

[redacted]/FROM CED 5278.
VICE REACHING THIS HEADQUARTERS INDICATES SHORTAGES OF
FUNDS WILL RESULT IN DEFERMENT OF ALL PROGRAMMED AN/GPA-27 EQUIPMENT
FOR ALASKA BEYOND FY 58. REQUEST YOU TAKE NECESSARY ACTION TO
INSURE THAT REPHASING PROVIDES SUFFICENT AN/GPA-27 EQUIPMENTS FOR
ALASKAN FPS-3 RADARS FOR ADEQUATE HIGH ALTITUDE COVERAGE BETWEEN CAPE
LISBURNE AND KING SALMON CONCURRENT WITH OPERATIONAL DATE OF ALEU-
TIAN DEW LINE EXTENSION PAREN MARCH 1959 PAREN. THIS PROGRAM CONSID-
ERED ESSENTIAL TO PRESERVE OVERALL INTEGRITY OF DEW LINE HIGH
ALTITUDE COVERAGE.
BT
27/0255Z JUL RJKDAG

A--PARAPHRASE NOT REQUIRED EXCEPT PRIOR TO CATEGORY B ENCRYPTION--
PHYSICALLY REMOVE ALL INTERNAL REFERENCES BY DATE-TIME GROUP PRIOR
TO DECLASSIFICATION--NO UNCLASSIFIED REFERENCES IF DATE - TIME
GROUP IS QUOTE.
//ADVANCE COPY TO COC//

READING FILE

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[redacted] (when filled in) COPY OF INCOMING CLASSIFIED MESSAGE 62

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SEE CRYPTO SECTION BEFORE DECLASSIFYING 23 Oct 1957

READING FILE

CONAD HIST FILE 302

CON004HQA008AGC005
RR RJEDEN
DE RJKDAG 1C
R 230005Z
FM CINCAL ELMENDORF AFB ALASKA
TO CINCNORAD ENT AFB COLORADO
BT
[redacted] FROM CED 5350
YOUR NOEPR-R X 003. THIS MESSAGE IN FOUR PARTS. PARTS
ONE AND TWO QUOTE AAC SECRET MESSAGE OC-3B 06752. PART ONE IS TEXT
OF AAC MESSAGE OC-3B 06658 WHICH IS ANSWER TO HQ USAF
MSG AFOAC-E/A50201. QUOTE SITES ELIMINATED FROM GPA DASH TWO SEVEN
PROGRAM ARE FOX NINE, FOX ONE FOUR, FOX TWO TWO AND FOX TWO FIVE.
DISTRIBUTION OF GPA-27S WITHIN ALASKAN AIR DEFENSE SYSTEM ASSUMES
AVAILABILITY OF FPS-7'S FOR FOX ONE AND FOX TWO BEFORE FY-60.
FURTHER SLIPPAGE OF FPS-7 MAY CAUSE ADDITIONAL REDISTRIBUTION OF
EQUIPMENT TO MEET INTERIM REQUIREMENTS AT FOX ONE AND FOX TWO. END OF

ACTION: NOSLC
SUSP DS : 25 Oct 57
NN-12194

DUPLICATE

PAGE TWO RJKDAG 1C
MESSAGE. PART TWO. PRIMARY CONCERN OF ALASKAN AIR COMMAND WAS LOCK
UP OF HIGH ALTITUDE COVERAGE FROM LISBURNE TO KING SALMON, THUS CON-
NECTING NORTHERN DEW WITH ALEUTIAN SEGMENT OF DEW. SECOND PRIORITY
WAS MAXIMUM HIGH ALTITUDE COVERAGE OF AN ANCHORAGE AND FAIRBANKS
COMPLEX AND PRIMARY ROUTES TO THESE TARGETS. IN ADDITION, HIGH
ALTITUDES COVERAGE MUST BE PROVIDED TO ALL DIRECTION CENTERS TO EFFEC-
TIVELY UTILIZE THE GPA-37 AND F-102 WEAPONS. PLACEMENT OF NINE GPA-27'S
HAS EFFECTIVELY FULFILLED ALL ABOVE REQUIREMENTS. CONTINUED SLIPPAGE
OF AN/FPS-7 AVAILABILITY DOES NOT PROVIDE TIMELY SATISFACTION OF FOX
ONE AND FOX TWO REQUIREMENTS, AND HAS CAUSED THIS COMMAND TO EXPLORE
OTHER POSSIBILITIES FOR EARLY SOLUTION TO THIS CRITICAL PROBLEM.
THE ALASKAN AIR COMMAND CAN EFFECTIVELY EMPLOY CURRENT WEAPON SYSTEMS
ONLY WITH EARLY SATISFACTION OF THE RADAR COVERAGE PROBLEMS AT FOX ONE
AND FOX TWO UNQUOTE. PART THREE. THIS HQS CONCURS WITH THE AAC PLAN
FOR THE DEPLOYMENT OF THE NINE REMAINING GPA-27'S WITHIN THIS THEATER
HOWEVER THESE GPA-27'S DEPLOYED AS PROPOSED ARE THE MINIMUM NUMBER
WHICH WILL SATISFY THE OPERATIONAL REQUIREMENT BY PROVIDING SOLID
COVERAGE FOR THE MOST LIKELY ROUTES OF ATTACK FROM THE SOVIET UNION.
PART FOUR. THE AN/FPS-7 EQUIPMENT FOR FIRE ISLAND (F-1) AND MURPHY
DOME (F2) WERE ORIGINALLY PROGRAMMED FOR FY-1958. REPEATED SLIPPAGES

[redacted] when fille. a) COPY OF INCOMING C SSIFIED MESSAGE 62

[redacted] this message in whole or in part is prohibited without approval of CONAD Adjutant)

SEE CRYPTO SECTION BEFORE DECLASSIFYING

PAGE THREE RJMDAG 1C
HAVE OCCURRED AND THIS EQUIPMENT WILL NOT NOW BECOME AVAILABLE UNTIL
THE SECOND QUARTER OF FY-62. THIS LATE OPERATION DATE IS HIGHLY
UNSATISFACTORY IN VIEW OF THE RECENT RECOMMENDATION TO COLOCATE THE AADC
FASM ADDC FOR ANCHORAGE AND FAIRBANKS AT FIRE ISLAND AND MURPHY DOME
WITH AN OPERATION DATE OF 1 OCTOBER 19[illegible]. THE SINGLE CHANNEL MEDIUM
ALTITUDE RADARS NOW IN USE WILL NOT PERMIT FULL UTILIZATION OF THE
HIGH PERFORMANCE WEAPONS TO BE CONTROLLED FROM THESE JOINT DIRECTION
CENTERS. RECOMMEND THAT THE AN/FPS-7 PROGRAM FOR F-1 AND F-2 BE
ELIMINATED AND THAT CONSIDERATION BE GIVEN TO DIVERTING SUITABLE DUAL
CHANNEL HIGH ALTITUDE RADARS FROM LESS CRITICAL LOCATION WITHIN NO-
RAD TO ALASKA PRIOR TO 1 OCTOBER 19[illegible].
23/0910Z EDT RJMDAG

NNNN

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

//ADVANCE COPY GIVE TO CSC//

63

ROUTINE
ROUTINE
CINCONAD

X AF CED 5278 SECRET

COFS USAF WASH DC

INFO:
CINCAL ELMENDORF AFB ANCHORAGE ALA
COMAAC ELMENDORF AFB ANCHORAGE ALA

[redacted] FROM COEPR [illegible].

CHIEF OF STAFF, USAF, AS EXECUTIVE AGENT FOR CONAD. FOLLOWING MESSAGE TO THIS HEADQUARTERS FROM CINCAL IS QUOTED: QUOTE CED 5278. INFORMAL ADVICE REACHING THIS HEADQUARTERS INDICATES SHORTAGES OF FUNDS WILL RESULT IN DEFERMENT OF ALL PROGRAMMED AN/GPA-27 EQUIPMENT FOR ALASKA BEYOND FY 58. REQUEST YOU TAKE NECESSARY ACTION TO INSURE THAT REPHASING PROVIDES SUFFICIENT AN/GPA-27 EQUIPMENTS FOR ALASKAN FPS-3 RADARS FOR ADEQUATE HIGH ALTITUDE COVERAGE BETWEEN CAPE LISBURNE AND KING SALMON CONCURRENT WITH OPERATIONAL DATE OF ALEUTIAL DEW LINE EXTENSION PAREN MARCH 1959 PAREN. THIS PROGRAM CONSIDERED ESSENTIAL TO PRESERVE OVERALL INTEGRITY OF

MAJ DLFAULKNER
2040
30July57

X7-9207
lc

30 2145
JULY 57

COEPR COMEBACK COELC
M/R not reqrd.

MAJ DLFAULKNER- Chf, Opnl Rqr Div
2040 1 2 30b

J W. LEDOUX
LCDR, USN
Asst Adjutant

X July59

63

CINCONAD

DEW LINE HIGH ALTITUDE COVERAGE. UNQUOTE. THIS INFORMATION, IF VERIFIED, CONSTITUTES A CONDITION OF IMMEDIATE CONCERN TO THIS HEADQUARTERS SINCE IT OBVIOUSLY WILL DEGRADE THE CAPABILITY TO PERFORM THE CONAD MISSION AS ASSIGNED BY JCS. REFERENCE RAFD MATERIEL PROGRAM RMP 57-1-2, TITLE: (U) AN/GPA-27, DATED 14 JUNE 1957. REFERENCED DOCUMENT INDICATED ALASKA AIR COMMAND's FIRST GPA-27 WOULD MEET AN INSTALLATION SCHEDULE OF 2Q58 AND WAS NUMBER 44 ON A PRIORITY LIST OF 176 SETS TO BE PROCURED. AS EXECUTIVE AGENCY FOR CINCAL AND CONAD, REQUEST YOUR HEADQUARTERS PROVIDE THE REPLY TO CINCAL ON THE ABOVE QUOTED MESSAGE, WITH INFORMATION COPY TO THIS HEADQUARTERS.

[redacted]

COMPS

[redacted]

64

ICONO18A023
RR RJKDAC RJEDEN
DE RJEPHQ 131
R 151902Z
FM HEDUSAF WASHDC
TO RJKDAC/CINCAL ELMENDORF AFB AL
INFO RJEDEN/COMCONAD ENT AFB COLO
RJKDAG/COMAAC ELMENDORF AFB AL
RJEDEN/COMAIRDEF COM ENT AFB COLO
BT

ACTION COPY

15 Aug 1957

ACTION: COEMC
17-9819

[redacted] /FROM AFOAC-S-A 59285.
…UTIVE AGENCY MESSAGE. REFERENCE CONAD MESSAGE COEPR-EX 0032 CONCERNING PRIORITY OF AN/GPA-27 EQUIPMENT PROGRAMMED FOR ALASKA. FY 58 FUNDS LIMITATION MAY FORCE PRIORITY REALLOCATION. THIS HEADQUARTERS FULLY COGNIZANT OF THE NECESSITY TO ACHIEVE HIGH ALTITUDE COVERAGE IN ALASKA PHASED WITH DEW LINE. PRESENT INDICATIONS HOWEVER ARE THAT PROVISION OF AN/GPA-27 IN SUFFICIENT QUANTITY TO MEET DEW REQUIREMENTS WILL MEET MARCH 1959 OPERATIONAL DATE OF UMNAK-NAKNEK SEGMENT OF THE DEW LINE.
BT
15/1930Z AUG RJEPHQ

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

ACTION COPY

UNCLASSIFIED

65

CONAD HIST FILE

JOINT MESSAGEFORM

SECURITY CLA [redacted]

SPACE BELOW REQUIRED ... COMMUNICATION CENTER

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READING FILE

303

PRECEDENCE	TYPE MSG	ACCOUNTING SYMBOL	ORIG. OR REFERS TO	CLASSIFICATION
ACTION: ROUTINE INFO: ROUTINE	BOOK / MULTI X / SINGLE	AF	AFOAC-EA 50201 11 Sept 57	CONFIDENTIAL

FROM: CINCNORAD

TO: CINCAL ELMENDORF AFB ALASKA

INFO: COMAAC ELMENDORF AFB ALASKA

SPECIAL INSTRUCTIONS

[redacted] FROM NOEPR-R X003.

REFERENCE USAF MESSAGE AFOAC-EA 50201, DATED 11 SEPT 1957, AND ACTION AAC. REQUEST THIS HEADQUARTERS BE FURNISHED A COPY OF AAC's REPLY TO REFERENCED MESSAGE. FURTHER, DESIRE COMMENTS RELATIVE TO REDUCTION IN OPERATIONAL CAPABILITY CAUSED BY REDUCTION OF GPA-27's WITHIN YOUR COMMAND.

M/R SUBJECT: GPA-27 Eliminations.
Referenced USAF wire indicated four GPA-27's would be eliminated from AAC's program due to stringent FY'58 budget limitations, and requested that AAC inform USAF of those sites to be eliminated.

FILE NOEL

MAJ DL FAULKNE
2040
23 Sept 57

N7-10841
sc

DATE	TIME	MONTH	YEAR
23	1730Z	SEPT	57

READING FILE

SYMBOL: NOEPR-R

WRITER: TYPED NAME AND TITLE (Signature, if required): MAJ DL FAULKNER

PHONE: 2040 | PAGE: 1 | NR. OF PAGES: 1

SECURITY CL [redacted]

RELEASER: SIGNATURE / TYPED (or stamped) NAME AND TITLE

UNCLASSIFIED

[redacted] (when filled in) COPY OF INCOMING CLASSIFIED MESSAGE 66

[redacted] TO SECTION BEFORE DECLASSIFYING. 15 OCT 57

READING FILE

CON 011

A-268-16
R M 151930Z
FM COMDR RAFD GRIFFISS AFB NY
TO COMDR AAC ELMENDORF AFB ALASKA
INFO/CHIEF OF STAFF USAF WASH DC
CINCNORAD ENT AFB COLO
BT

ACTION: NOBLC
INFO: NOOOP
M7-12192

[redacted]/CITE MRSW1200 FOR: OC AFOAC-EA
[redacted] (CLASSIFIED) DATED 11 OCT 57
REGARDING AN-FPS-7 SLIPPAGE. THE AN/FPS-7 PROGRAM HAS BEEN DELAYED BY FUNDS LIMITATIONS, RATHER THAN PRODUCTION SLIPPAGE. THE ABOVE INFORMATION WAS RECEIVED AT THIS DEPOT FROM HEADQUARTERS USAF, AFOAC-E/A.
BT

AC--PARAPHRASE NOT REQUIRED EXCEPT PRIOR TO CATEGORY B ENCRYPTION--PHYSICALLY REMOVE ALL INTERNAL REFERENCES BY DATE-TIME-GROUP PRIOR TO DECLASSIFICATION--NO UNCLASSIFIED REFERENCES IF DATE-TIME-GROUP IS QUOTED.

DUPLICATE

[redacted] when filled in) COPY OF INCOMING CLASSIFIED MESSAGE 67

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SEE CRYPTO SECTION BEFORE DECLASSIFYING 1000 Z 1

CON007
A-179-10
R 1000057
FM COM AAC ELEMENDORF AFB ALA
TO COMDR RAFD GRIFFISS AFB NY
INFO COFS HQ USAF WASH DC
CINCNORAD ENT AFB COLO
[redacted]

ACTION: NOBLC
INFO: NOOOP
N7-11984

DUPLICATE

[redacted]/FROM OC-3B 06732. EXTENDED SLIPPAGE OF AN/FPS-7 PRODUCTION HAS CAUSED CONSIDERATION OF OTHER POSSIBILITIES FOR EARLIER SATISFACTION OF F-1 AND F-2 RADAR COVERAGE PROBLEMS. LIMITED DATA AVAILABLE ON AN/FPS-6 MODIFICATIONS INDICATES A POSSIBLE SOLUTION THROUGH USE OF HIGH GAIN ANTENNAS, IMPROVED MTI, DUAL CHANNEL CAPABILITY, AND OTHER REFINEMENTS DESIGNED FOR AN/FPS-6 OR "TRACER" DEVELOPED FOR CAA. REQUEST STATUS OF THESE EQUIPMENTS, AND ESTIMATE OF AVAILABILITY FROM CURRENT OR PLANNED PRODUCTIONS.
BT

AC--PARAPHRASE NOT REQUIRED EXCEPT PRIOR TO CATEGORY B ENCRYPTION--PHYSICALLY REMOVE ALL INTERNAL REFERENCES BY DATE-TIME GROUP PRIOR TO DECLASSIFICATION--NO UNCLASSIFIED REFERENCES IF DATE-TIME GROUP IS QUOTED.

Copy 4 of 5 Copies

[redacted]

1368

NOSSS-F

SUBJECT: Radar Improvement Program for Alaska

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

1. CINCAL has advised this headquarters that a serious problem exists in Alaska relative to the phasing and programming of the AN/GPA-27 improvement kit and AN/FPS-7 radars. Attached is a copy of the CINCAL message which provides the detailed information on this subject. This headquarters concurs with the views of CINCAL and considers it to be essential that high-performance radars be available by 1959 at the two specific sites (Y-1 and Y-2) mentioned in the message.

2. It is requested that you review your radar programs to determine if two dual channel, high-performance radars can be made available by 1 October 1959. If not, so advise, and this headquarters will query the Department of Air Force for possible allocation through that source.

FOR THE COMMANDER-IN-CHIEF:

DUPLICATE

1 Incl
1 cy msg CINCAL
JRD 5356, 23 Oct 57

F. F. WHEELAND
Brig Gen, USA
DCS/Comm and Elect

69

UNCLASSIFIED

ROUTINE X AF CKD 5358 UNCLAS.

CINCNORAD

CINCAL ELMENDORF AFB ANCHORAGE ALASKA

UNCLAS. NORSS-E C 22

REFERENCE YOUR CKD 5358, 23 OCT 57, SECRET. THIS HEADQUARTERS IS ENDEAVORING TO LOCATE SUITABLE RADAR EQUIPMENT TO SATISFY YOUR REQUIREMENT CONTAINED IN THE ABOVE REFERENCED MESSAGE. YOUR HEADQUARTERS WILL BE INFORMED OF THE OUTCOME OF THE ABOVE EFFORT.

COMEBACK NORSS-E

M/R: CINCAL requested that the FPS-7 radar at F-1 and F-2 be replaced with radars that could be available by 1 Oct 58. This headquarters endeavoring to locate two radars that will fill the requirement.

21 1645Z
NOV 1957

NORSS-E

Maj.W.R.Goodrich, Chief Electronics Div.
2039 1 1

R. E. CARVEY, Lt. Col. USAF
Asst Adjutant

UNCLASSIFIED

UNCLASSIFIED

70

JOINT MESSAGEFORM

SECURITY CLASSIFICATION: [redacted]

SPACE BELOW RESERVED FOR COMMUNICATION CENTER

PRECEDENCE	TYPE MSG (Check) BOOK / MULTI / SINGLE	ACCOUNTING SYMBOL	ORIG. OR REFERS TO	CLASSIFICATION OF REFERENCE
ACTION: ROUTINE	SINGLE: X	AF	CED 5358	CONF.

FROM: CINCNORAD

TO: CINCAL ELMENDORF AFB ANCHORAGE ALASKA

INFO: COMADC ENT AIR FORCE BASE COLORADO SPRINGS COLO (COURIER)
AAC ELMENDORF AFB ANCHORAGE ALASKA

[redacted] NOESS-E XC26 .

REFERENCE YOUR MESSAGE CED 5358, 23 OCT 57, SECRET. USAF AIR DEFENSE COMMAND INDICATES AVAILABILITY OF TWO FPS-20 EQUIPMENTS FOR RELOCATION TO ALASKAN AIR COMMAND PRIOR TO 1 OCT 1958. THESE EQUIPMENTS ARE IN ACCORDANCE WITH YOUR REQUIREMENTS EXPRESSED IN ABOVE REFERENCED MESSAGE. ADC HAS BEEN REQUESTED TO ARRANGE DETAILS IN DIRECT COORDINATION WITH ALASKAN AIR COMMAND.

COMEBACK NOELC

DUPLICATE

PARAPHRASE NOT REQUIRED EXCEPT FROM TO CATEGORY [illegible] ... ION - PHYSICALLY REMOVE ALL INTERNAL REFERENCES BY DATE [illegible] GROUP PRIOR TO DECLASSIFICATION

M/R: Alaskan Air Command requested this headquarters take action on locating some radar equipment to replace the FPS-7's programmed for that Command in 1960. This action necessary due to late programming of FPS-7's and immediate need for an operational capability in support of the Air Defense of Alaska.

DATE	TIME
13	2000Z
MONTH: DEC	YEAR: 1957

SYMBOL: NOESS-E

TYPED NAME AND TITLE: M W.R. Goodrich, Jr., Ch. Elec. Div. 2039

PAGE NR. 1 OF PAGES 1

SECURITY CLASSIFICATION: [redacted]

SIGNATURE:

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

UNCLASSIFIED

DD FORM 1 MAY 55 173 REPLACES DD FORM 173, 1 OCT 49, WHICH WILL BE USED UNTIL EXHAUSTED

[redacted]

COPY 71

CFECR, Hq CONAD Forces Eastern CONAD Region, Stewart AFB, NY 14 Oct 57, subj: Deployment of AEW&Con Aircraft & Picket Ships

NOOOP-T 3rd Ind 17 Dec 1957

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

TO: Commander, Continental Air Defense Forces, Eastern CONAD Region, Stewart AFB, Newburgh, New York

1. Attention is invited to preceding indorsement.

2. Your headquarters was authorized to deploy the AEW&Con aircraft and picket ships on stations other than as shown in CONAD OPLAN 9-57 for the purpose of conducting your test, by message NOOOP-T X068, this headquarters, 12 December 1957.

FOR THE COMMANDER-IN-CHIEF:

ROBERT B. DINGLE, JR.
Colonel, USA
Acting Director of Operations

(Re-written final preferred for Col Jeffus's signature)

/s/t Maj Reeves
2078
12 Dec 57

X7-12269-C
bkm
12-071

DUPLICATE

M/R Not Required

[redacted]

[redacted] COPY

71

CFECR, Hq CONAD Forces Eastern CONAD Region, Stewart AFB, NY 14 Oct 57, subj: Deployment of AEW&Con Aircraft & Picket Ships

ADOOP-O 2d Ind 10 Dec 1957

HEADQUARTERS Air Defense Command, Ent Air Force Base, Colorado Springs, Colorado

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

1. The attached study by Headquarters, CONAD Forces Eastern CONAD Region, has been reviewed.

2. Since there is insufficient data available to make a satisfactory evaluation of the advantages and disadvantages of the proposed deployment of the AEW&Con forces, it is recommended that CONAD Forces Eastern CONAD Region and Eastern Air Defense Force be authorized to conduct a test of these forces as requested in the attached study.

3. This headquarters is very interested in the development of factual data on the capability of the AEW&Con forces and will assist EADF in carrying out this test in every way possible. A requirement to install new radars in the RC-121D to improve its capability is in the hands of Headquarters USAF, but action is being held in abeyance pending the evaluation of an AMTI modification of the APS 20E search radar. It is understood that sufficient data will be available on this modification by the end of December 1957.

FOR THE COMMANDER:

1 Incl
n/c

/s/t/ HAROLD W. GRANT
Major General, USAF
Deputy for Operations

[redacted]

COPY

[redacted]

CFECR, Hq East CONAD Region, Subject: Deployment of AEW&Con Aircraft and Picket Ships (Cont'd)

sufficient time to scramble additional AEW&Con aircraft or airships to fill the surveillance gaps in the recommended deployment. Should the validity of this concept be questioned, I strongly recommend that a test be conducted as soon as possible to secure data in order to achieve the optimum utilization of the present ground environment facilities.

5. This letter is classified SECRET in accordance with paragraph 30b (2)(b), AFR 205-1.

1 Incl:
Study re Deployment
of Seaward Extension
Elements

/s/t/ E. H. UNDERHILL
Major General, USAF
Commander

[redacted]

71

CFBCR, Hq East CONAD Region. Subj: Deployment of AEW&Con Aircraft and Picket Ships

NOOOP-T

1st Ind

29 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. Attention is invited to letter COMAVFORCONAD, subject: "Relocation of Picket Ship Stations in the Contiguous System," 25 September 1957, referred to your headquarters by 1st indorsement, this command, 18 October 1957.

2. Request that your headquarters coordinate with COMAVFORCONAD to determine the feasibility of implementing the recommendation contained in paragraph 3 of basic communication.

3. Request correspondence be returned to this headquarters, Attention: NOOOP-T, not later than 15 November 1957.

FOR THE COMMANDER-IN-CHIEF:

1 Incl
n/c

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

CONAD
COMAVFORCONAD
CG ARAA COMD
RCAF Liaison

Maj J Reeves
2078
24 Oct 57

wdm

1 of 33

COPY

[redacted]

HEADQUARTERS CONAD FORCES
EASTERN CONAD REGION
Stewart Air Force Base, New York

CFECR

SUBJECT: Deployment of AEW&Con Aircraft and Picket Ships

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

1. CONAD Operation Plan 9-57 establishes the present deployment of the Seaward Extension elements within the Eastern CONAD Region and is predicated upon the operational requirement to extend the contiguous radar coverage and weapons directing capability of the Air Defense Combat Zone farther to seaward. A majority of studies conducted on the required deployment have been based on the desired contiguous radar coverage concept and have neglected the weapons directing capability of the present manual air defense system. As recently as 1 July 1957, Operations Analysis Technical Memorandum No. 20, issued by Air Defense Command, recommended that stations be moved nearer the shore in order to achieve the maximum degree of possible contiguous coverage. The present capability of air-to-air weapons and the maximum combat radius of the F-89J and F-102 introduces the new operational concept of extending our control capability to the maximum limits of available weapons.

2. Attached hereto is a study concerning the deployment of the seaward extension elements which embraces both the radar surveillance and weapons directing concepts. In all instances, only theoretical ranges of airborne radar aboard Airborne Early Warning vehicles have been depicted. The study has not taken cognizance of the well recognized limitations of APS-20E radar and its unacceptable blip scan ratios which make the tracking of targets at very high or low altitudes very unlikely. Despite using theoretical ranges, it is apparent that it is impossible to provide a contiguous coverage, unless all elements are moved a considerable distance toward the target complexes. It is apparent from the "sea clutter" areas of AEW&Con radars that close controlled intercepts directed by this element against low altitude high speed targets are improbable at best; that if these intercepts could be conducted at all, they would take place in the immediate vicinity of the target complexes.

3. Recommend the seaward radar elements of the Eastern CONAD Region be deployed as depicted in Suggested Deployment #2; picket ships to remain on their present stations and AEW&Con stations to be approximately 140 miles east of the picket ship stations.

4. The basis for the present deployment was established prior to the existence of the facilities within the Remote Information Zone. Threat warning from the DEW Line and the Atlantic Barrier should allow

[redacted] NORAD H7 12269 10-133

[redacted]

COPY

HEADQUARTERS CONAD FORCES
EASTERN CONAD REGION
Stewart Air Force Base, New York

CFEOP 7 October 1957

MEMORANDUM FOR CHIEF OF STAFF

SUBJECT: Deployment of Seaward Extension Elements

PROBLEM:

1. To re-evaluate the deployment of the Seaward Extension elements of the eastern seaboard contiguous air defense system in order to exploit their air surveillance capability and their control capability to best advantage.

FACTORS BEARING ON THE PROBLEM:

2. The facts are:

a. The inherent line-of-sight characteristics of radar limits the low level detection capabilities of ground and shipborne radars (see Tabs A & B).

b. AEW&Con radars have a greater line-of-sight capability as a result of the altitude flown and therefore, a greater capacity for low level detection (see Tabs A & B).

c. AEW&Con radars, because of present equipment design, have a permanent echo area ("sea clutter") in which detection and tracking are impossible. The "sea clutter" displayed on AEW&Con radar scopes is dependent upon sea state; i.e., size of swells or waves, surface wind, and the altitude at which the mission is flown (see Tab C & D).

d. Radar coverages at altitudes of 10,000 feet and above are contiguous due to the overlap of coastal radars and picket ship radars in the areas where attack routes are most probable.

e. The destruction capabilities of new air-to-air defense weapons and the extended combat radii of the F-89J and F-102, together with the speed and altitude capabilities of modern bombers, dictate extension of our detection capability so that interceptors may be ordered off in time to attack well forward from target areas. These same factors dictate extension of control capability to maximum radius of available interceptors, because some airborne orders will be issued on the basis of Atlantic Barrier contacts.

3. It is assumed that the actual radar coverage provided by the seaward extension elements is less than the theoretical coverage as depicted.

[redacted]

[redacted] COPY

CFEOP, 7 Oct 57, Subject: Deployment of Seaward Extension Elements (Cont'd)

DISCUSSION:

4. There have been many suggestions for the redeployment of the seaward extension elements of the air defense radar system. Each of these suggestions has merit; each has limitations. However, before it can be determined which offers the greatest advantages to the conduct of the air battle, the mission of the seaward extension elements must be defined.

5. Enemy low level penetration poses a definite threat to the well being of this country and must be guarded against. Therefore, the connotation placed on the word "contiguous", when used in the placement of primary mission responsibility, must mean vertical as well as horizontal overlap coverage of the system's radars. Due to the inherent line of sight limitation of all radars, low level detection becomes the most difficult portion of the assigned mission to accomplish. As a result, this study is concerned with the low level detection capabilities of seaward extension radars and is also based on the promise that medium and high level coverage accrue as a by-product.

6. At this point in the development of radars, because of the line of sight limitations, low level detection must be a function of an airborne radar. The higher the radar platform is established, the further extended is the line of sight detection capability, and one radar set flown at 20,000 feet might feasibly do the same job as two flown at 10,000 feet. However, in the present AEW&Con equipment the sea clutter factor reduces the capability of its radar. It is possible to overcome the sea clutter limitation by equipping the AEW&Con radar with an electronic circuitry which eliminates all but moving targets from the scope display (AMTI circuitry).

7. In addition to considering the requirements for contiguous radar coverage, equal consideration must be given to the requirement for early warning surveillance necessary for timely issuance of scramble orders to insure intercepts well forward of the target area. Also, consideration must be given to the requirements for a control capability at the maximum combat radius of available interceptors. In any deployment certain factors must be sacrificed in order to achieve a more desirable goal. To extend the early warning capability and the control capability the contiguous radar coverage must be degraded. As a result of the above considerations, three plans for deployment have evolved. Each of the plans is evaluated below:

a. Present deployment (see Tab E & F). (NOTE: This deployment depicts the stations as outlined in CONAD Ops Plan 9-56 and does not take into account the slight modifications of this deployment contained in CONAD Ops Plan 9-57.) This deployment is designed to provide both high and low altitude radar coverage consistent with theoretical capabilities

[redacted]

[redacted]

COPY 71

of the air defense equipment available. This deployment recognized the line-of-sight limitations of ground based and shipborne radars and sought to solve the problem by elevating the radar site and thus extending the line-of-sight capabilities. The limitation of this deployment lies in the equipment available to AEW&Con. The elevation of a radar site within an AEW&Con aircraft increases the permanent echo area in direct relation to the altitude flown (see Tab C). It therefore creates an area, as in any deployment, in which contiguous coverage is not possible.

(1) Advantages of the present deployment:

(a) It most nearly approximates contiguous radar coverage (see Tab F).

(b) It allows the utilization of clear channel UHF frequencies on two stations for forward telling. The saturation point of UHF is much higher than HF in terms of forward telling air defense data.

(2) The disadvantages of the present deployment are:

(a) It does not provide theoretical low level early warning beyond approximately 280 miles seaward. Thus, there are only approximately 30 minutes available from initial detection to bomb release point -- 30 minutes to establish a track, pass the information to the direction center, make the decision to scramble, scramble, set up and complete an intercept, and fire.

(b) It provides less early warning surveillance data than any of the suggested plans of deployment.

(c) Control capability at all altitudes is limited because of "sea clutter" areas of AEW&Con radars. Even if fighters were scrambled early enough, it is doubtful that fighter intercepts would be accomplished against low level high speed penetrating targets.

(d) It is possible for picket ships, AEW&Con, and coastal sites to be reporting the same penetrating track. As a result, duplicating and conflicting air defense data can confuse the tactical situation.

b. Suggested Deployment #1 (see Tab G and H).

(1) This plan redeploys both picket ships and AEW&Con stations. Picket ships are moved within 185 miles of the coastal radar sites. The AEW&Con stations are moved outboard of the picket ships by approximately 50 miles in such a position as not to exceed UHF range.

[redacted]

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[redacted]

CFEOP, 7 Oct 1957, Subj: Deployment of Seaward Extension Elements (Cont'd)

(2) Air defense data collected by the AEW&Con would be forwarded to the picket ship which would, in turn, forward tell filtered information to the coastal ADDC. The design of this deployment is intended to more closely knit the picket ship and the AEW&Con stations.

(3) This deployment would be more vulnerable to communications breakdown and saturation in that two HF sets available to the AEW&Con aircraft would not be utilized when forwarding tracks to the picket ship.

(4) The advantages of suggested deployment #1 are as follows:

(a) It provides overlap radar coverage between coastal sites and the picket ships similar to the overlap coverage between perimeter coastal sites.

(b) Coastal direction centers would have fewer extension elements reporting air defense data. Picket ships would be responsible for filtering any duplicating air defense data provided by AEW&Con.

(c) UHF facilities between picket ships and AEW&Con would provide for a theoretical 100% communications capability between these two elements.

(d) Early warning surveillance and a limited control capability would be extended slightly seaward beyond the present deployment.

(5) The disadvantages of suggested deployment #1 are as follows:

(a) It does not provide semi-contiguous radar coverage in the seaward extension from the eastern seaboard seaward. A larger gap in the radar net would exist at low altitudes between the picket vessels and the coastal sites (see Tab H).

(b) The control capability would be non-existant at low altitudes in the area mentioned in paragraph (a) above.

(c) It would require more enroute time than the present deployment and, as a result, provide less on-station time per mission.

(d) The duplicating overlap coverages, obtained by the overall inward movement of the picket ship radars would result in an uneconomical use of these elements.

(e) It would not provide early warning surveillance data at high or medium altitudes to utilize the F-89J or F-102 at maximum combat radius.

[redacted]

[redacted]

COPY

CFECP, 7 Oct 1957, Subj: Deployment of Seaward Extension Elements (Cont'd)

c. Suggested Deployment #2. AEW&Con aircraft are deployed to a position approximately 140 miles east of the picket ships. Forward telling by the AEW&Con aircraft could be accomplished through either the picket ship or directly to the coastal sites.

(1) The intent of this suggested deployment is to extend the early warning and control capability of the seaward extension elements at all altitudes. It is enhanced, but not necessarily promised on the ability of an AEW&Con aircraft to scramble and take positions filling the gap created by the redeployment of the AEW&Con stations. (See Tab I).

(2) It is desired that under this deployment the Commander, CFECR, would have two to four hours warning of an attack from one or a combination of several sources: intelligence, DEW Line; and/or the Atlantic Barrier. This warning would allow sufficient time for the scrambling of AEW&Con aircraft as the threat warning information was obtained and dead reckoned to point of penetration. F-89Js would scramble for control by AEW&Con aircraft or the picket vessels if the airborne radars are unable to provide sufficient continuity of tracking of the enemy aircraft. (See Tab I).

(3) This deployment would result in a possible "kill" at the maximum combat radius of all inventory interceptors.

(4) Advantages of Suggested Deployment #2 are as follows:

(a) It extends the detection capability of the seaward extension elements at all altitudes, thus permitting timely fighter scrambles with intercepts conducted forward from the target areas.

(b) It allows the air battle to be fought at the maximum range of the interceptors provided threat warning is afforded by the Remote Information Zone (DEW Line, Mid-Canada Line, Atlantic Barrier) (see Tabs J & K).

(5) Disadvantages of Suggested Deployment #2:

(a) It does not provide a semi-contiguous radar net seaward prior to the air battle. At low altitudes a gap would be created in that area between the picket ships and the coastal sites.

(b) Destruction of a low level attack by interceptors under control of seaward extension elements would be dependent upon threat warning provided by the DEW Line and Atlantic Barrier -- to the extent that intercepts can be directed by AEW&Con aircraft because of "sea clutter".

(c) It would cause increased AEW&Con enroute times.

[redacted]

CFEIP, 9 Oct 57, Subj: Deployment of Seaward Extension Elements Contd

[redacted]

CONCLUSIONS:

8. Low altitude surveillance and control should be the primary function of AEW&Con radars because of the inherent low altitude detection limitations of surface radars. Therefore, any suggested deployment of AEW&Con aircraft should be based upon theoretical low altitude radar coverages. However, "sea clutter" areas of AEW&Con radars render improbable close controlled intercepts of low altitude high speed targets.

9. Based on the existing limited knowledge concerning AEW&Con capabilities for either low or high altitude surveillance, the present deployment most nearly approximates a contiguous radar coverage; however, it does not provide true contiguous coverage.

10. The present location of AEW&Con stations with their low altutude capability does not provide a defense against a high spped alow altutude attack. The time factor above renders controlled intercepts highly improbable.

11 11. Any redeployment of AEW&Con to a position outboard of the picket ships will result in more aew&con enroute time and less on station time per scheduled mission.

12. Suggested Deployment #1 has the least merit of the 3 deployment plans under study. This plan would result in an inward movement and a "bunching" of the seaward extension elements and, as a result, provide less early warning surveillance. This deployment, if it were adopted, would result in a shortening of the seaward combat zone.

13. Suggested Deployment #2.

a. This plan has the most merit in that it extends seaward the medium and low level early warning surveillance capabilities of the seaward extension radars. In extending the early warning capability it also extends the medium and high altitude control capability, and interceptors can be utilized at the extent of their combat radii (see Tabs J& K.

b. Present deployment of AEW&Con aircraft does not provide a defense against high speed low altitude bombers. In the event threat warning is not provided by intelligence sources or the Remote Information Zone, suggested deployment #2 will at least provide sufficient warning to alert AA defenses and the populace.

c. Early threat warning provided by the Remote Information Zone (DEW Line, Atlantic Barrier, etc.) will afford semi-contiguous radar coverage seward. The low level gap in the seaward extension radar that results from the eastward deployment of the AEW&Con stations would be filled by AEW&Con aircraft scrambled as a result of data received from the Remote Information Zone.

[redacted]

[redacted]

CFEOP, 7 Oct 57, Subj: Deployment of Seaward Extension Elements (Contd) 71

RECOMMENDATIONS:

14. That deployment plan #2 of AEW&Con aircraft to new positions approximately 140 miles east of the picket ship be implemented.

/s/t/ DEAN W. DUTRACK
Lt.Col., USAF
AC/S Operations

[redacted]

[redacted]

COPY 71

11 December 1957
(Date)

From: Hq ADC (2nd Ind) Dated: 10 Dec 1957

Classification: SECRET FF: X7-12269 Suspense: None

Action Office: COOOP

SUMMARY: Basic letter from CFECR, 14 Oct 57, Subj: Deployment of AEW&Con Aircraft & Picket Ships. The Commander, Eastern CONAD Region forwards a study showing the deployment of AEW&Con aircraft and picket ship determined on the capability of the weapons directing mechanism rather than the inherent ability of the searching radar. This matter relates to CONAD Ops Plan 9-57.

1st Ind Hq NORAD dtd 29 Oct 57 signed by Maj Gen Alness to ADC, requested that ADC coordinate with COMNAVFORCONAD to determine the feasibility of implementing the recommendation contained in the basic communication, to be returned to this Hq NLT 18 Nov 57.

2nd Ind returned 10 Dec 57 states that since there is insufficient data available to make a satisfactory evaluation of the advantages and disadvantages of the proposed deployment of the AEW&Con forces, it is recommended that CONAD Forces, Eastern CONAD Region and EADF be authorized to conduct a test of these forces as requested in basic communication. This Hq is interested in the development of factual data on the capability of the AEW&Con forces and will assist EADF in carrying out this test in any way possible. A requirement to install new radars in the RC-121D to improve its capability is in the hands of Hq USAF, but action is being held in abeyance pending the evaluation of the AMTI modification of the APS 20E search radar. It is understood that sufficient data will be available on the modification by the end of December 1957.

SIGNED BY: Maj Gen H. W. Grant, USAF, Deputy for Operations, Hq ADC.
/s/t/

[redacted]

[redacted]

72

CFEOP S Hq CFECR, 25 Sept 57, Subj: (Uncl) Report on Elements of the the Seaward Extension

NOOOP T 1st Ind 24 October 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. For your information and necessary action.

2. Request that your headquarters accomplished the following actions:

a. Supervise and submit your recommendations to this headquarters on the study mentioned in paragraph 1 of basic communication.

b. Reference paragraph 3 of basic communication, it is the responsibility of component commanders to place under the operational control of CINCNORAD combat-ready forces. Therefore, in coordination with NAVFORCONAD, request that training requirements for picket ship and airship directors be esta lished. It is realized that while picket ships are on station, ADC interceptors cannot provide profitable training for directors of picket ships while these ships are en route to and from their station.

3. Reference paragraph 4 of basic communication, Headquarters Strategic Air Command has been furnshed coordinates of all picket stations and a blanket request has been made for SAC Fakers to tailor their tracks, whenever possible, to include these seaward element pos tions during NORAD-SAC exercised.

FOR THE COMMANDER-IN-CHIEF:

M/R Re-typed for administrative correction

1 Incl
N/C

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

[redacted]

72

CFEOP-S 25 SEP 1957

SUBJECT: (Uncl) Report on Elements of the Seaward Extension

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

1. Attached hereto are two copies of a report by the Tactical Evaluation Directorate of Headquarters Eastern Air Defense Force. This headquarters does not necessarily concur with the recommendations contained in paragraph 4 of the basic report. However, a detailed study of this suggested deployment is being conducted jointly by personnel assigned Headquarters CONAD Forces, Eastern CONAD Region, and Headquarters Eastern Air Defense Force.

2. Some of the statements contained in the report are not entirely accurate and are based on observations by members of the Tactical Evaluation Team at the time of the exercise. As an example, your attention is invited to operation FISH BAIT in which the surveillance capability of the airship is given as complete coverage from sea level to 40,000 feet at a distance of 150 miles.

3. Reference recommendation Nr. 3 of FISH BAIT. This headquarters believes that firm requirements for the training of picket ship and airship directors should be established by your headquarters and that ADC interceptors should be made available for this training. It is imperative that intercepts be conducted as far from shore as possible if the East Coast is to be adequately defended. We are prepared to direct scrambles on Atlantic Barrier contacts to achieve this end. It follows that directors assigned to the seaward elements must receive continuous and adequate training. Recommendation Nr. 4 of this section has already been acted upon, and direct communications now exist between Lakehurst NAS and the Control Center at Roslyn, New York.

4. It was obvious to the observers that all elements of the seaward extension were enthusiastic concerning their participation in these evaluations and all elements desired additional exercises of this nature. We believe that future exercises should include realistic targets for the seaward elements provided by SAC units in order to arrive at more valid conclusions concerning the relative operational capabilities of these elements.

S-CIFE-1987-57

[redacted]

CFEDP-S, Hq East CONAD, Subject: (Uncl) Report on Elements of the Seaward Extension (Cont'd)

5. In reviewing the Tactical Evaluation report, it should be borne in mind that T-33 target aircraft were operating with IFF turned on.

6. This letter is classified SECRET in accordance with paragraph 30b(2)(b), AFR 205-1.

FOR THE COMMANDER:

1 Incl:
Rpt on Elements of
the Seaward Ext (S)
(2 cys)

JOHN E. MANNON
Major, USAF
Adjutant

Copy furnished:
26th CADD

[redacted]

UNCLASSIFIED

DISPOSITION FORM

SECURITY CLASSIFICATION (If any) [redacted]

FILE NO.	SUBJECT: Report on elements of the Seaward Extension		
TO: NOCOP-T	FROM: [illegible]	DATE: [illegible] 1957	COMMENT NO. 2

[illegible]/2723/mvl

1. Refer basic [illegible].

a. Concur with [illegible], [illegible] some of the statements contained in the Tac Eval report are not entirely accurate. As examples:

(1) The [illegible] is a commissioned ship of the line--not USNS.

(2) There is no such place as Davisville NAS, RI.

b. Concur with [illegible], wherein training of picket ship air controllers be established and ADC interceptors [illegible] be made available for this training; however, unless interceptor range is greatly increased to reach picket ships that have radar capabilities of operating even further seaward, this training program at on station positions cannot be consummated. (See paragraph 2, below)

c. Refer paragraph [illegible]. [illegible] SAC has been sent coordinates of all picket stations and a blanket request has been made for SAC [illegible] to tailor their tracks, whenever possible, to include these seaward element positions during NORAD-SAC exercises. It is considered that the Regional Commanders should likewise work with the numbered Air Forces to achieve this goal for Regional and Divisional exercises.

2. Refer EADF Tac Eval report on elements of the seaward extension.

a. Refer basic covering letter. Do not concur with [illegible]. All picket ships by July 1958 are to be equipped with SPS-17 radars which will increase average detection range to [illegible]. The first YAGR is to be RFS with the "17" gear on 19 November 1957. In view that present day interceptors are very limited in range, it is not considered advisable to sacrifice the potential of these ships because of limitation of a companion element. In fact, it is recommended that the pickets after installation of this new radar be repositioned further to sea, and NAVFORCONAD has so recommended.

1 Incl
N/C

[illegible], JR.
Colonel USA
Ch, Training & Exercise Div

[redacted]

UNCLASSIFIED

DD FORM 1 FEB 50 96 REPLACES NME FORM 96, 1 OCT 48, WHICH MAY BE USED.

10-103

72

COMMANDER NAVAL FORCES
EASTERN CONTINENTAL AIR DEFENSE REGION
STEWART AIR FORCE BASE, NEW YORK

FF5-10/East
A9/20
Serial: 009-57
1 October 1957

From: Commander Naval Forces, Eastern Continental Air Defense Region
To: Distribution List

Subj: Report on Elements of the Seaward Extension

Encl: (1) EADF factital Evaluation Report on Elements of the Seaward Extension - July 1957

1. Enclosure (1) is forwarded for information and retention.

2. Your attention is invited to the following sections, which are considered pertinent.

a. Page 1, paragraph 3.

(1) A cross-training program has been carried out for several years with the ships. ZW-1 has established close liaison with its associated ACWRON.

(2) A more comprehensive training program is required

(3) COMNAVEASTCONADREG For the past two years, has requested quotas for air controller training from EADF and AUC. To date, only one quota has been granted

(4) COMNAVEASTCONADREG has hosted two "working level" symposiums for ACWRON, picket ship, and AEW personnel during the past two years. Commander, CONAD Forces, Eastern CONAD Region, presently expects to hold another conference of this type in the near future.

(5) EADF has a regulation requiring cross-training visits to picket ships for personnel of ACWRON's on the coast

(6) The picket ships and Airship AEW Squadron ONE are continuing to send personnel to ACWRON's for cross training.

b. Page 2, paragraph 4:

(1) Since the Junior Station referred to herein is not covered in CINCONAD Operation Plans or CFECR or EADF Operation Plans, its day to day use in the system is not understood.

[redacted]

FF5-10/East
A9/20

c. Operation "SEAGULL".

(1) The "normal radar search range" without IPP, based on one year's averages, has been 143 miles with maximum average ranges for high altitude targets (35-40,000') of 185 miles.

(2) It is unfortunate that all the electronic gear, which is normally operational, was not functioning on the TAGR used for this test.

(3) Communications Reliability Reports indicate 93% reliability (vice 80%) for H/F ship to shore circuits for ships on station during the past year

(4) Air control training with Air Force interceptors has been nil during the past two years. Recently, the 20th CONAD Division has emphasized this requirement and aircraft are now scheduled for the ships on the days they leave or return to port With proper supervision, this will be part of the answer to the problem.

(5) COMNAVEASTCONADREG concurs in the recommendations on pages 3 and 4 of this enclosure

d. Operation "SUSIE".

(1) COMNAVEASTCONADREG will make no comment concerning this section of the report except that there is believed to be a requirement for H/F cross telling between picket ships and AEW aircraft and/or airships. This would have to be H/F due to ranges involved. It is not known what the H/F capability is for simultaneous operation of a telling circuit, a cross-telling circuit, and a director to director circuit for passing control of fighters to AEW&C aircraft.

e. Operation "FISHBAIT"

(1) It is to be noted that the height finding radar (APS-62) is aboard but not operational. The delivery date of the height potentiometer from the prime contractor is not known.

(2) It is noted that "skin paints" on T-33 target aircraft were made intermittently at ranges to 150 miles and with IPP tracking, was solid to that range.

(3) ZW-1 - ACWRON H/F communications during time on station have been 92-94% reliable since 1 July 1957.

[redacted]

72

[redacted]

FF5-10/East
A9/20

(4) Item 4 of the Recommendations has been accomplished. ZW-1 has a red phone to the 26th CONAD Division which can give him connection to the listed stations, as will any other unit in that network. Action is being taken to install an extension from the CINCLANTFLT red phone to the COMFAIRWINGSLANT Operations Center so that as ZW-1's Operational Commander, he will also be in this tactical network.

3. COMNAVEASTCONADREG GENERAL COMMENTS

a. The achievement of training of Navy air controllers in the methods of control, as given in ADC Manual 55-5, is of prime importance.

b. The height finding radar (APS 67) is a highly desirable piece of equipment and effort should be directed toward the early procurement of the one lacking element (height potentiometer) needed to make the gear operational.

c. The potential of the AEW airship, especially with the capability of carrying a much larger search antenna, is indicated by their outstanding performance since 1 July 1957, when they became operational in the contiguous system.

4. COMNAVEASTCONADREG will

a. Continue to encourage picket ships and ZW 1 to send personnel to ACWRON's for cross training.

b. Re-submit requests for quotas in ADC controlled air controller courses.

c. Continue to maintain liaison with Headquarters, EADF and subordinate commands to insure maximum use of available Air Force interceptors for air control training.

d. Take whatever action is indicated to increase the utilization of the air defense potential inherent in the picket ships and AEW airships.

FRED L. BATES

Distribution List:
CNO (OP-34)
CNO (OP-554) (2)
COMNAVFORCONAD (2)
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YAGRDIV 21
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NAVDEP 85th CONAD DIV
NAVDEP 32nd CONAD DIV
HQ, New York Air Defense Sector
HQ, Boston Air Defense Sector

[redacted] when fille .) COPY OF INCOMING C SSIFIED MESSAGE 73

SEE CRYPTO SECTION BEFORE DECLASSIFYING 16 Jul 57

CONCOOO4TNDCO91
PP RJEDEN RJEPNY
DE RJEPND 193C
P R 151635Z
FM COMCFECR STEWART AFB NY
TO RJEDEN/CINCONAD ENT AFB COLO
INFO ZEN/COMDR EADF STEWART AFB NY
RJEPNY/COMDR 26CADD ROSLYN AFS NY
BT

PRIORITY

ACTION: CCCOP
INFO: CCCOC
X7-3670

[redacted] CFEOP-S 111. THIS HEADQUARTERS WILL CONDUCT A SMALL SCALE TACTICAL EXERCISE ON 16-17 JULY 1957 IN ORDER TO COLLECT CURRENT DATA CONCERNING THE CONTROL CAPABILITY OF AEW&C AIRCRAFT. IN ORDER TO PROVIDE MAXIMUM DETECTION OF TARGET AIRCRAFT, THIS HEADQUARTERS WILL MOVE THE AEW&C AIRCRAFT FROM THEIR NORMAL POSITION ON STATION TWO FROM 42 DEGREES N 66 DEGREES W TO 42 DEGREES N 67 DEGREES W. THIS TEMPORARY ADJUSTMENT TO THEIR NORMAL DEPLOYMENT IS IN ACCORDANCE WITH CONAD OPS PLAN 9-56.
BT
16/1642Z JUL RJEPNY

A

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

75

FPS-10/302, COMNAVFORCONAD, Ent AFB, Colo Sprgs, Colo, 25 Sep 57, Subj: Relocation of Picket Ship Stations in the Continuous System

NPOP-T 3rd Ind 17 OCT 1957

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

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

1. Attention is invited to paragraph 3 of preceding indorsement.

2. Request that your test of elements of the continuous radar system include the proposed deployment of picket ships, equipped with the AN/SPS-17 radar, as shown in Inclosure 2 of basic communication.

FOR THE COMMANDER-IN-CHIEF:

2 Incls
w/d 2 incls - 3 and 4

ROBERT S. BINGLE, JR.
Colonel, USA
Acting Director of Operations

DUPLICATE

UNCLASSIFIED

75

[redacted]

FF5-1C/302, COMNAVFORCONAD, Ent AFB, Colo Sprgs, Colo, 25 Sep 57, subj: Relocation of Picket Ship Stations in the Contiguous System

ADOOP-C   2d Ind   10 Dec 1957

HEADQUARTERS Air Defense Command, Ent Air Force Base, Colorado Springs, Colorado

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

1. This headquarters has always been of the opinion that when new radars were installed on the picket ships there should be a realignment of the ships to take advantage of the increased performance provided by the new equipment.

2. COMNAVFORCONAD's proposal has been examined in conjunction with personnel from that force and the following comments are submitted on the proposed deployments on the East and West Coasts:

a. __East Coast__. The proposed deployment along the East Coast, besides increasing the interval between stations to 272 NM, moves them between 100 NM and 300 NM farther to the East. These relocations seem reasonable except that Station 18 should be moved inward as suggested in your 1st Indorsement. The major impact of this proposal on the current system concerns the utilization of the AEW&Con forces. If these forces are utilized as outlined in the current operations plan there is little change required, but if they are deployed outboard of the picket ships their enroute time to and from station will be increased considerably with a resultant decrease in on-station capability.

b. __West Coast__. The proposed deployment of the picket ships along the West Coast follows a more standard pattern with major emphasis being placed on extending the interval between the stations to approximately 272 NM only. This deployment seems satisfactory and should have very little effect on the utilization of the AEW&Con forces in that area.

3. It is recommended that the proposed utilization of the picket ships be carried out as a part of Naval Forces Eastern Contl Region's contemplated test of the AEW&Con forces in that region.

FOR THE COMMANDER:

4 Incls:
n/c

HAROLD W. GRANT
Major General, USAF
Deputy for Operations

[redacted]

UNCLASSIFIED

Sq Ldr Anderson/tmd   ADOOP-C   29 Nov 57   2760   H-44922

[redacted]

Com Nav Forces, Hq CONAD, 25 Sep 57, Subj: Relocation of Picket Ship Stations in the Contiguous System

NOOOP-T   1st Ind   18 OCT

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. It certainly is gratifying to note the increased detection capability as a result of the installation of the AN/SPS-17 search radar on picket ships, and it appears that the plan for their redeployment has considerable merit.

2. Request that your headquarters coordinate with the Commander, Naval Forces, to determine the feasibility of accomplishing the recommendation outlined in paragraph 5 of basic communication.

3. Reference is made to inclosure 2 of basic communication. Suggest that consideration be given to employing picket ship on station 18 inboard so that contiguous radar coverage will be maintained. It is believed that the shore-based radar on Bermuda might provide radar surveillance for a portion of the area suggested to be covered by station 18.

4. If the relocation of picket ships stations in the contiguous system is feasible, it is further requested that appropriate deployment plans be submitted to this headquarters for inclusion in Operation Plan 9-57, this headquarters, "Seaward Extensions to the Contiguous Radar Coverage System," 1 August 1957.

FOR THE COMMANDER-IN-CHIEF:

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

Cy furnished:
COMNAVFORCONAD

Reeves
2078
17 Oct 57
N7-11299
gk

DUPLICATE

M/R - Not required.

[redacted] 30b

57-6937

[redacted]

From: Commander Naval Forces, Continental Air Defense Command
To: Commander in Chief, North American Air Defense Command

Subj: Relocation of Picket Ship Stations in the Contiguous System

Ref: a. CADOP 56-66

Encl: (1) Chart of Present East Coast Coverage
(2) Chart of Proposed East Coast Coverage
(3) Chart of Present Weast Coast Coverage
(4) Chart of Proposed West Coast Coverage

1. In view of budgetary reductions which resulted in the decisions by the Navy that force levels for the surface element of the Contiguous System are fixed at that level which is required to man five (5) stations off each coast, a preliminary study has been made attempting to achieve a higher return in the utilization of forces available. The study is base on an increase in detection capability as a result of the installation of the AN/SPS-17 search radar on YAGR types. Because of the limited low level surveillance capability of the picket ships, high altitude targets were considered to be the prime-responsibility of the picket ships.

2. The extent of contiguous radar coverage required in the off shore areas as outline in reference (a), placed a requirement of nineteen (19) picket stations as necessary to attain the desired coverage. Based on target altitude of 25,000 feet, it is believed that the proposed relocations will furnish approximately 85% of the required CADDOP coverage off the West Coast, and 75% off the East Coast. Increases in target altitude will extend the detection ranges further to seaward but will not appreciably increase the lateral coverage along the coastline.

3. Commander, Operational Development Force final report "Evaluation of an AN/SPS-17 Radar" dated 3 July 1957, was used as a date source for SPS-17 performance. A detection range of 170 N.M. was used in stationing picket ships based on average detection range curves obtained by OpDevFor on single jet aircraft (F3D or TV-2) at altitudes from 17,000 to 42,000 feet. Unfortunately, aircraft were not available to investtigate the altitudes above 42,000 feet. The theoretical coverage indicates this coverage extends above 60,000 feet. The 170 N.M. detection range utilized corresponds to a larger altitude of 25,000 feet.

4. In determining the proposed locations for picket stations, the axis of the picket line was located 100 miles inside the limits of the contiguous radar covera e required in reference (a). The laterval between picket stations was fixed at 272 N.M. based on a desired coverage factor of 1.25 at target altitude of 25,000 feet. The coverage attained along the axis of the picket stations is the proposed relocation is as follows:

Target Altitude	Coverage Factor
15,000	1.01
20,000	1.14
25,000	1.25
30,000	1.34
35,000	1.45
42,000	1.61

Details of coverage attained by present and proposed stations are forwarded herewith as enclosures (1) through (4).

5. It is recommeded that tests be initiated to test the validity of st this station relocation concept. Should the concept prove sound it is further recommeded that problem areas resulting from this relocation (particularly communications) will have been explored and resolved prior to July of 1958 so that the relocation of stations could be fully implemented at this time. On the East Coast the SPS-17 installation has already started and is scheduled to be completed by June 22, 1958, on all eight (8) YAGR. On the West Coast the installation the installations will start 1 November and will be completed 31 May 1958, on the four (4) YAGR now in commission and tentatively in June 1958, on the four (4) additional programmed YAGR conversions.

G. L. KOHR
Chief of Staff

[redacted]

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

OFFICE OF THE ASST SECY OF ADMINISTRATION

NOTICE OF IMPORTANT INCOMING CORRESPONDENCE

11 December 1957
(Date)

TO: Chief of Staff
Assistant Chief of Staff
_____
_____

For your information, the following correspondence has been received:

From: ADC Dated: 10 Dec 1957

Classification: [redacted] Fanfold# XT-11299-C Suspense: None

Action Office: COOOP

SUMMARY: Subject is relocation of picket ships in the contiguous system. With budgetary reductions in mind, a preliminary study was made in an attempt to achieve a higher return in use of forces available. Details of coverage attained by present and proposed picket stations were enclosed. It is recommended that tests be initiated to test the validity of the station relocation concept.

The 1st Ind by NORAD dtd 18 Oct 57, signed by M/Gen Almess to ADC, requested that appropriate deployment plans be submitted to the Hq for inclusion in Ops Plan o-57. (Seaward Extensions to the Contiguous Radar Coverage System dtd 1 Aug 57).

The return Ind from ADC states that COMNAVFORCONAD's proposal has been examined in conjunction with personnel from that force and the following comments are submitted on the proposed deployments on the East and West coasts: a. East Coast. Besides increasing the interval between stations to 272 NM, moves them between 100 NM and 300 NM farther to the EAST. These relocations seems reasonable except that Station 18 should be moved inboard as suggested in your indorsement. Major impact of this proposal on the current system concerns the utilization of the AEW&Con forces. If these forces are utilized as outlined in the current Ops Plan there is little change required, but if they are deployed outboard of the picket ships their enroute time to and from station will be increased considerably with a resultant decrease in on-station capability. b. West Coast. Proposed deployment of picket ships along the West Coast follows a more standard pattern with major emphasis being placed on extending the interval between stations to approximately 272 NM only. This deployment seems satisfactory and should have very little effect on the utilization of the AEW&Con forces in that area.

It is recommended that the proposed utilization of the picket ships be carried out as a part of CONAD Forces, Easter CONAD Region's contemplated test of the AEW&Con forces in that region.

SIGNED BY: Maj General H. W. Grant, USAF, Deputy for Operations, Hq ADC.

NORAD SECYT [redacted]

JOINT MESSAGEFORM

[redacted]

76

302.12

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

FROM: CINCNORAD

SPECIAL INSTRUCTIONS

TO: COMAEWFORCONAD MT AFB COLO (COURIER)

INFO: COMAIRDEFCOM ENT AFB COLO (COURIER)

COMNAVFORCONAD MT AFB COLO (COURIER)

[redacted] From NCOOP-T X068. Reference recent conversation between Colonel White, Lt. Colonel Dutrack of your headquarters, and Colonel Jeffus of this headquarters pertaining to the redeployment of elements of the Contiguous Radar Coverage System. You are authorized to deploy the AEW&Con aircraft and picket ships on stations other than as shown in CONAD OPLAN 9-57 for the purpose of conducting your test. Upon completion of the test, a report of your findings with recommendations will be forwarded to this headquarters.

/s/ not required.

DATE 11 TIME 2330Z

MONTH Dec YEAR 57

SYMBOL NCOO -f

RELEASER

TYPED NAME AND TITLE (Signature, if required)
Major Fred D. Reeves, Jr.

PHONE 2078

SIGNATURE

TYPED NAME AND TITLE

J. W. LEDOUX
CDR, USN
Adjutant

[redacted]

UNCLASSIFIED

DD FORM 1 MAY 55 173 REPLACES DD FORM 173, 1 OCT 48 WHICH WILL BE USED UNTIL EXHAUSTED

77

JOINT MESSAGEFORM

SECURITY CLASSIFICATION [redacted]

SPACE BELOW RESERVED FOR COMMUNICATION CENTER

PRECEDENCE		TYPE MSG (Check)			ACCOUNTING SYMBOL	ORIG. OR REFERS TO	CLASSIFICATION OF REFERENCE
		BOOK	MULTI	SINGLE			
ACTION	PRIORITY		X		AF	0209	UNCLAS
INFO	PRIORITY						

FROM:

CONAD

TO: COMAADF SYRACUSE AFB NY

COMAADF PAULTON AFB CALIF

INFO: CINCONAD PT AFB COLO SPRINGS COLO (COURIER)

COMAIR 55TST AIRCON WG OTIS AFB MASS

COMAIR 552ND AIRCON WG MCCLELLAN AFB CALIF

SPECIAL INSTRUCTIONS

[redacted] FROM ADOOP-S 0098. THIS MESSAGE IN TWO PARTS. PART ONE. THIS CHANGES OUR MESSAGE 0209 DATED 20 AUG 57. AS A RESULT OF REDUCED BUDGETARY LIMITATIONS FOR FY 58, YOUR FLYING HOUR PROGRAM FOR RC-121 AIRCRAFT HAS BEEN REVISED AS FOLLOWS:

	2ND QTR	3RD QTR	4TH QTR
LADF	7,575 HRS	12,045 HRS	12,051 HRS
WADF	7,830 HRS	13,095 HRS	13,095 HRS
	15,405	25,140	25,146

PART TWO. BECAUSE OF RESTRICTIONS IMPOSED BY HQ USAF, YOUR COMMAND NOT REPEAT NOT AUTHORIZED TO BORROW FROM 3RD AND 4TH QTR PROGRAM IN ORDER TO SUPPLEMENT 2ND QTR ALLOCATION. DIRECT COMMUNICATION BETWEEN LADF AND WADF AUTHORIZED TO EFFECT FULL UTILIZATION OF THE 15,405 HRS

DATE 19 TIME 2052

MONTH AUG YEAR 1957

WRITER

SYMBOL ADOOP-S

TYPED NAME AND TITLE (Signature, if required)
Capt Ingram/abg

PHONE 2602 PAGE NR. 1 NR. OF PAGES 2

SECURITY CLASSIFICATION [redacted]

RELEASER

SIGNATURE

TYPED (or stamped) NAME AND TITLE
JOHN M. KONOSKY
Colonel, USAF
Director of Operations
Deputy for Operations

CONAD X7

DD FORM 1 MAY 58 173 REPLACES DD FORM 173, 1 OCT 49, WHICH WILL BE USED UNTIL EXHAUSTED

JOINT MESSAGEFORM - CONTINUATION SHEET

77

FROM: COMAIDC

ALLOCATED. YOU ARE NOT AUTHORIZED TO EXCEED THE TOTAL 2ND QTR ALLOCATION.

SYN: ADOOP-S

INITIALS

DD FORM 1 MAY 55 173-

JOINT MESSAGEFORM

SECURITY CL[redacted]

78

SPACE BELOW RESERVED FOR COMMUNICATION CENTER

PRECEDENCE		TYPE MSG	ACCOUNTING SYMBOL	ORIG. OR REFERS TO	CLASSIFIC. OF REFERE
ACTION	ROUTINE	BOOK / MULTI / SINGLE			
INFO	ROUTINE	X	AF	ADOOP-S 0098 dtd 11 Sep 57	SECRET

FROM:

COMDR ADC

SPECIAL INSTRUC

TO:

CINCONAD ENT AFB COLORADO SPRINGS COLO (COURIER)

COMEADF STEWART AFB NY

COMWADF HAMILTON AFB CALIF

INFO: COMDR 552ND AEW&CON WING MCCLELLAN AFB CALIF

COMDR 551ST AEW&CON WING OTIS AFB MASS

[redacted] FROM ADOOP-S 0099.

Reference my message ADOOP-S 0098, dated 11 Sep 57. Subject: Flying Hours. This message in three parts. Part I. FOR ALL. In establishing the allocated flying hours for the AEW&Con units for the Second Quarter of FY 58, the EADF total of 2525 hours per month and the WADF total of 2610 hours per month were broken down as follows: A total of at least 2268 hours WADF and at least 2125 hours EADF will be spent on primary ADC missions. The balance of the time may be varied, but for planning was allocated as follows: Maintenance and test 70 hours, proficiency 150 hours, transition 105 hours, long range navigation and other; WADF 17 hours, EADF 75 hours. This LRN

DATE	TIME
11	2100
MONTH	YEAR
SEP	1957

SYMBOL: ADOOP-S

TYPED NAME AND TITLE: H. C. DEWEY, Captain, USAF

PHONE: 2680 | PAGE NR. 1 | NR. OF PAGES 2

SECURITY CLASSIF [redacted]

SIGNATURE

TYPED NAME AND TITLE: JOHN M. KONCSKY, Colonel, USAF, Director of Operations, Deputy for Operations

CONAD X71.08

DD FORM 173 REPLACES DD FORM 173, 1 OCT 49, WHICH WILL BE USED UNTIL EXHAUSTED

JOINT MESSAGEFORM - CONTINUATION SHEET

SECURITY CLASSIFICATION [redacted]

78

FROM

COMDR ADC

and other includes all time necessary to ferry aircraft to and from Phase II modification at LASO during second quarter. Part II. FOR RADF. AEW&Con time that must be utilized to accomplish mandatory SAGE flight testing is to be taken from primary ADC hours. Part III. FOR CONAD. Enough flying hours have been allocated during the Second Quarter FY 57 to man only two AEW&Con stations continuously on each coast. Request you advise this headquarters by 20 September 1957 how you would like this time utilized. Either (A) Used to cover the two highest priority stations on each coast continuously, (B) Used to cover the maximum number of stations on each coast during the hours of darkness, (C) Some other method.

[redacted]

DD FORM 1 MAY 56

79

DUPLICATE

ADOOP-T

SUBJECT: Reduction of Flying Hours for AEW&C Aircraft

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

1. References:

a. Message your headquarters, ADCOP-36-0099, 11 September 1957.

b. Operation Plan 9-57, this headquarters, subject: "Seaward Extensions to the Contiguous Radar Coverage System," 1 August 1957.

c. Letter CINCONAD, Subject: "Revised Continental Air Defense Planning," dated 5 September 1956.

2. Loss of on-station time resulting from a reduction of flying hours for the AEW&Con aircraft by approximately 40 percent, referenced in paragraph 1a, is not concurred in by this command. Directive mentioned in paragraph 1b, concurred in by your headquarters, states that all stations are to be manned continuously. The plan further states that AEW&Con aircraft on-station flights are designated "Active Air Defense Missions" and are to receive the necessary priorities to accomplish same. The revised ADC plan referenced in paragraph 1c provides that the radar surveillance system will operate on a 24-hours-a-day, 7 day-a-week basis.

3. AEW&Con aircraft are utilized to cover the low and medium altitude gaps in the radar coverage between the shore-based radars and the picket ships. Thus reduction in flying hours for these aircraft effecting station time, will seriously impair the early warning coverage within the continuous air surveillance system for the defense of the United States. Early warning information provides the basic step for not only timely air defense actions but also for retaliatory actions and others related to national survival. Thus assurance of early warning is essential.

4. It is requested that a review of the proposed reduction of flying hours be conducted by your headquarters to determine if sufficient flying hours can be restored to permit continuous AEW&Con coverage. If not, it is strongly recommended that the Air Defense Command reclama this out to Headquarters USAF. This headquarters will support such action in any way possible. Failing this, it is

[redacted]

79

requested that all flying time of AEW&Con be utilized on-station with the elimination of all other flying activities except proficiency requirements (scheduled and end of mission instrument approach practice) and essential engineering test flights to the extent necessary to insure continuous AEW&Con coverage of at least four stations on each coast. In the event this capability cannot be fully restored, the absolute minimum AEW&Con aircraft on-station time should be as indicated:

a. East Coast

Station No.	On-Station Time
2	During hours of daylness
4	24-hours-a-day, 7 day-a-week basis
6	"
8	Occasionally
10	Unmanned

b. West Coast

Station No.	On-Station Time
1	Unmanned
3	16 hours per day
5	"
7	"
9	Occasionally

5. AEW&Con time should not be used to accomplish SAGE flight testing. It is believed that the Air Research Development Command could provide funds necessary for support of this project. If this is not practicable, recommend that flying hours utilized for SAGE flight testing be charged to R&D funds rather than O&M funds.

FOR THE COMMANDER-IN-CHIEF:

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

wdm

4-237

M/R Not required.

[redacted]

UNCLASSIFIED

80

SECURITY CLASSIFICATION

CONAD HIST FILE
302.12

OUTGOING MESSAGE FORM

READING FILE

PRECEDENCE		NO. MSGS		SYMBOL	ORIG. OR REF. NO.	CLASSIFICATION REFERENCE
ACTION	PRIORITY	X		AF	ADOOP-S 0099	[redacted]

FROM: CINCNORAD

SPECIAL INSTRUCTIONS

TO: COMCFECN STEWART AFB NEWBURGH NY

COMCFWCN HAMILTON AFB CALIF

[redacted] From NOOOP-T X 009. Reference ADC Secret message ADOOP-S 0099. CINCNORAD does not concur in the reduction of AEW&Con Surveillance indicated in referenced message. This headquarters will request ADC to review proposed reduction of AEW&Con flying hours to determine if sufficient time cannot be restored to permit continuous AEW&Con coverage of currently manned stations; if this is not possible, to request that all flying time of AEW&Con aircraft be utilized on station with the elimination of all other flying except essential engineering test flights to the extent necessary to insure continuous AEW&Con coverage of currently manned stations. In the event this capability cannot be fully restored, to request that available AEW&Con flying hours be utilized to insure

DATE	TIME
13	2000Z
MONTH	YEAR
Sep	1957

SYMBOL: NOOOP-T

WRITER — TYPED NAME AND TITLE: Col Allen

PHONE: 2078/20[redacted] PAGE [redacted] NR OF PAGES 2

SECURITY CLASSIFICATION [redacted]

RELEASER — SIGNATURE

TYPED NAME AND TITLE

READING FILE

UNCLASSIFIED

89

JOINT MESSAGEFORM - CONTINUATION SHEET | SECURITY CLASSIFICATIO [redacted]

FROM: CINCNORAD

coverage of all currently manned stations during the hours of darkness and at such other times as the allocated flying hours will permit. Your comments with respect to the above are requested on or before 18 September 1957.

M/R Not required.

SYMBOL	PAGE NR	NR OF PAGES	SECURITY CLASSIFICATION	INITIA
[redacted]	2	2	UNCLASSIFIED	

U. S. GOVERNMENT PRINTING OFFICE: 1959—

81

[redacted] when fill) COPY OF INCOMING CLASSIFIED MESSAGE

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SEE CRYPTO SECTION BEFORE DECLASSIFYING 18 Sept 57

CONAD HIST FILE

READING FILE

CON0025 302.12
T

NBC170
PP RJEDEN
DE RJEPNB 255C
P 181846Z
FM COMCFECR STEWART AFB NY
TO CINCNORAD ENT AFB COLO
BT

ACTION: NOOOP
INFO: NOOPO
M7-11073 PRIORITY

[redacted]CFEOP-S 188. THIS MESSAGE IN 2 PARTS. PART I. REFERENCE YOUR SECRET MESSAGE NOOOP-T X009, DATED 17 SEPT 57, SUBJECT: REDUCTION OF AEUC SURVEILLANCE. THIS HEADQUARTERS CONCURS WITH YOUR REQUEST TO ADC FOR REVIEW OF THEIR PROPOSED REDUCTION OF AE

C FLYING HOURS. PART II. REFERENCE ADC MESSAGE, SECRET, ADOOP-S 0099, 12 SEPT 57, SUBJECT: FLYING HOURS. 25-5 FLYING HOURS PER MONTH WOULD ALLOW CONTINUOUS MANNING OF STATIONS NBR 4 AND NBR 6 AND PARTIAL MANNING OF STATION NBR 2 DURING DARKNESS HOURS WITH APPROXIMATELY 500 HOURS REMAINING TO ACCOMPLISH MANNING OF STATION NBR 8 OCCASSIONALLY, CONDUCTING ENGINEERING TESTS, DIRECTOR TRAINING, SNOOPER MISSIONS, AND TRANSITION TIME.
BT
18/1900Z SEP RJEPNB

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

READING FILE

COPY OF INCOMING CLASSIFIED MESSAGE 82

19 Sep 58

CON 020 SBA145SBC059
PP RJEDEN
DE RJUPSB 337C
P 192050
FM COMCFUCR HAMILTON AFB CALIF
TO CINCNORAD ENT AFB COLO SPRINGS COLO
BT

PRIORITY

ACTION: NOOOP
INFO: NOOPO
NOSEC
B7-11111

[redacted]FROM CUOOP7S-1132. REFERENCE YOUR NOOOP-T X009. DURING WINTER MONTHS. PILOTS NEED INSTRUMENT APPROACH PRACTICE. PRACTICE GIVEN AT THE END OF A MISSION CONSUMES AS MUCH FLYING TIME AS SCHEDULED PROFICIENCY FLIGHTS DO. PROFICIENCY FLYING TIME IS A MUST. TRANSITION TRAINING FOR NEW PILOTS CAN BE STOPPED FOR 3 MONTHS. MAINTENANCE AND TEST CAN BE HELD TO A MINIMUM. IN VIEW OF THE ABOVE, THE FOLLOWING IS SUGGESTED: 1. THREE STATIONS CAN BE MANNED DURING HOURS OF DARKNESS PLUS, ON 18 DAYS, ONE STATION CAN BE MANNED AROUND THE CLOCK, 2. THREE STATIONS CAN BE MANNED LEAVING AN 8 HOUR OPEN PERIOD ON EACH STATION EACH DAY. THIS OPEN PERIOD CAN ROTATE ON A

PAGE TWO RJUPSB 337C
CLASSIFIED SCHEDULE. THIS WILL GIVE TWO STATIONS MANNED AT ALL TIMES. AIR ATTACKS AGAINST US TARGETS COULD NOT BE PLANNED TO PENETRATE AN UNMANNED STATION. SUGGESTION NUMBER 2 IS RECOMMENDED. THIS HEADQUARTERS HAS NO INDICATION OF THE EXTENT OF FLYING HOUR CUT FOR INTERCEPTOR AIRCRAFT FOR 2ND QUARTER FY58. ON RECEIPT OF THE INTERCEPTOR PROGRAM, ADDITIONAL HOURS OF RC-121 TIME MAY BE MADE AVAILABLE TO COVER 3 STATIONS.
BT
19/2054Z SEP RJUP

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

Copy 5 of 5 Copies

[redacted] COPY OF INCOMING C [illegible]SIFIED MESSAGE 83

SEE CRYPTO SECTION BEFORE DECLASSIFYING 19 Sep 57

302.12

READING FILE

PRIORITY

ACTION: NOOOP
INFO: NOOPO
NOSEC

N7-11112

ON021NBC162
PP RJEPNY RJEPJM RJEDEN
DE RJEPNB 297C
P R 191942Z
FM COMCFECR STEWART AFD NEW YORK
TO RJEPNY/COMDR 26CADD ROSLYN AFS NEW YORK
RJEPJM/COMDR 65CADD ANDREWS AFB WASHINGTON 25 DC
ZEN/COMNAVEASTCONADREG STEWART AFB NEW YORK
INFO RJEDEN/CINCNORAD ENT AFD COLORADO SPRINGS COLO
ZEN/COMDR EADF STEWART AFB NEW YORK
ZEN/COMDR 551ST AEW&C WING OTIS AFB MASS
BT
[redacted]/CFEOP-W 192. SUBJECT IS MANNING OF STATION 8 BY AEW AIRSHIP SQUADRON NO. 1. THIS MESSAGE IN FOUR PARTS. PART I. COMMENCING 1000 HOURS Z ON 21 SEPT AEW AIRSHIP SQ 1 WILL REPLACE THE 551ST AEW&C WING ON STATION 8 FOR A FOUR DAY PERIOD. PART II. FOR 551ST AEW&C WING ONLY. PRIORITY WILL BE GIVEN TO MANNING STATIONS FOUR AND SIX AROUND THE CLOCK FOR THE REMAINDER OF SEPTEMBER. REMAINDER OF FLYING HOUR ALLOCATION SHOULD BE UTILIZED FOR THE MANNING OF STATION 2 DURING THE HOURS OF DARKNESS. PART III. WHILE ON STATION 8 AEW AIRSHIP SQUADRON WILL TELL SURVEILLANCE INFORMATION TO JITNEY IN ACCORDANCE WITH THE PROVISIONS OF AP-

PAGE TWO RJEPNB 297C
PENDIX ONE TO ANNEX INDIA, CFECR OP PLAN 1-57. PART IV. FOR COMNAVEASTCONADREG ONLY. REQUEST YOU DIRECT AEW AIRSHIP SQUADRON NUMBER ONE TO FORWARD COPIES OF THEIR SURVEILLANCE LOGS FROM 21 TO 24 SEPT TO COMMANDER, 65TH CADD, ATTN: DIRECTOR OPERATIONS AND TRAINING.
BT
19/2040Z SEP RJEPNB

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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JOINT MESSAGEFORM

SECURITY CLASSIFI ON [redacted]

89

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		BOOK	MULTI	SINGLE			
ACTION	PRIORITY		X		AF	ADOOP-S 0099	SECRET
INFO	PRIORITY						

FROM: COMDR ADC

SPECIAL INSTRUCTIONS

TO: COMDR WADF HAMILTON AFB CALIF

COMDR EADF STEWART AFB NY

INFO: COMDR 552D AEW&CON WG MCCLELLAN AFB CALIF

COMDR 551ST AEW&CON WG OTIS AFB MASS

COMDR CFWCR HAMILTON AFB CALIF

COMDR CFECR STEWART AFB NY

[redacted]FROM ADOOP-O 0119 .

MY CLASSIFIED ADOOP-S 0099, 11 SEP 57, NOTAL, PART III. IN ANSWER TO OUR QUESTION, NORAD, IN THEIR SECRET LETTER DATED 20 SEP 57, STATED QUOTE: IN THE EVENT THIS AEW&CON CAPABILITY CANNOT BE FULLY RESTORED, THE ABSOLUTE MINIMUM AEW&CON ON-STATION TIME SHOULD BE AS INDICATED:

A. EAST COAST

STATION NO.	ON-STATION TIME
2	DURING HOURS OF DARKNESS
4	24 HOURS A DAY, 7 DAYS A WEEK BASIS

DATE	TIME
26	2314Z
MONTH	YEAR
SEP	1957

WRI

SYMBOL: ADOOP-O

TYPED NAME AND TITLE (Signature, if required): MAJ KALIMAN/csl

PHONE: 2781 PAGE NR. 1 NR. OF PAGES 2

SECURITY CLASSIFICATION: [redacted]

RELEASER

SIGNATURE

TYPED (or stamped) NAME AND TITLE
JOHN M. KONOSKY
COLONEL, USAF
DIRECTOR OF OPERATIONS
DEPUTY FOR OPERATIONS

UNCLASSIFIED

DD FORM 1 MAY 55 173 REPLACES DD FORM 173, 1 OCT 49, WHICH WILL BE USED UNTIL EXHAUSTED

COPY

COPY

JOINT MESSAGEFORM - CON UATION SHEET | SECURITY CLASSIFICATION [redacted] | 84

FROM:

COMDR ADC

STATION NO.	ON-STATION TIME
6	24 HOURS A DAY, 7 DAYS A WEEK BASIS
8	OCCASIONALLY
10	UNMANNED

B. WEST COAST

STATION NO.	ON-STATION TIME
1	UNMANNED
3	16 HOURS PER DAY
5	16 HOURS PER DAY
7	16 HOURS PER DAY
9	OCCASIONALLY

UNQUOTE. DESIRE YOU COMPLY WITH THE QUOTED PROVISIONS OF THE NORAD LETTER. A COPY OF THIS LETTER WILL BE FORWARDED BY MAIL FOR YOUR INFORMATION.

SYMBOL	PAGE NR	NR OF PAGES	SECURITY CLASSIFICATION	INITIALS
ADOOP-O	2	2	[redacted]	

DD FORM 1 MAY 55 173-1

COPY

U. S. GOVERNMENT PRINTING OFFICE: 1955—882234

85

[redacted]

NOOOP-T, Hq NORAD, 20 Sep 57, Subj: Reduction of Flying Hours for AEW&C Aircraft

ADOOP-O

1st Ind

18 OCT 1957

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

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

1. This headquarters agrees that a loss of on-station time resulting from a reduction of flying hours for the AEW&Con system is not in the interest of the most effective operation. It must be realized, however, that our interceptors are also "active air defense missions" and must be flown to keep our pilots current and proficient. Paragraph 1, Annex A, CONAD Operation Plan 9-57, 1 August 1957, states: "All stations are to be manned continuously within the resources of the task organization concerned." Our present resources preclude additional AEW&Con station manning without a severe reduction in our interceptor operational capability.

2. Every effort will be made to channel additional flying time into the AEW&Con program. Both Eastern and Western Air Defense Forces will be instructed to comply with the intent of your letter to the maximum extent possible without degrading other major elements of the air defense system.

3. Reference paragraph 4 of the basic letter; this headquarters has already taken reclama action to Headquarters USAF on the flying hour reduction. Additional support from your headquarters may aid in preventing additional or future reductions in our flying hour program.

4. We have advised Headquarters USAF of your desires concerning the use of AEW&Con flying time to accomplish SAGE flight testing. We are also investigating the possibility of changing this type flying to R&D funds rather than O&M funds.

5. Your desires for the utilization of the se[illegible] FY 1957 flying time for the AEW&Con on-station missio[illegible] forwarded for implementation (Inclosure 1).

FOR THE COMMANDER:

1 Incl
Cy msg ADOOP-O 0119,
26 Sep 57

for HAROLD W. GRANT
Major General, USAF
Deputy for Operations

12314

NORAD NZ[redacted]

[redacted]

[redacted]

86

SECRET

27 Sep

SUBJECT: Reduction of flying hours for [redacted] aircraft

TO: Chief of Staff, USAF
as Executive Agent for the
Washington [illegible]

1. Based upon a directed reduction in the flying hours program for the second quarter Fiscal Year 1958, the Air Defense Command reduced the [redacted] aircraft station coverage by approximately forty percent. Also, as a result of a Chief of Naval Operations directive, CINCLANT reduced on-station time of [redacted] aircraft on the Atlantic barrier between Argentia and the Azores by fifty percent. These losses of on-station time by [redacted] aircraft are not concurred in by this command.

2. [redacted] aircraft are utilized to cover the low and medium altitude gaps in the radar coverage between the shore-based radars and the picket ships. Thus, reduction in flying hours for these aircraft effecting station time will seriously impair the early warning coverage within the air surveillance system for air defense of the United States. Early warning information provides the basic step for not only timely air defense actions but also for retaliatory actions and others related to national survival. Thus assurance of early warning of enemy air attack is essential.

3. It is requested that an urgent review be made of the resources made available to [redacted] and those to the Air Defense Command in order that the early warning information from the [redacted] aircraft on-station within the contiguous radar coverage will not be reduced. Further, request that the Chief of Naval Operations ascertain the feasibility of restoring flying time allocation to insure continuous operation of at least four [redacted] aircraft on the Atlantic barrier between Argentia and the Azores.

FOR THE COMMANDER-IN-CHIEF:

Info Copy [illegible]

MARSHALL S CARTER
Major General, USA
Chief of Staff

DUPLICATE

[redacted]

5

[redacted]

87

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

22 OCT 1957

SUBJECT: Reduction of Flying Hours for AEW&Con Aircraft

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

1. [redacted] This is an Executive Agency Letter. Reference your letter of 27 September 1957 on the impact of flying hours reductions as they affect early warning coverage by AEW aircraft. The Chief of Naval Operations and Headquarters USAF are undertaking a review of flying time allocation in light of your expressed concern.

2. (UNCLASSIFIED). It is estimated that a final reply, to include the results of Air Force and Navy review of this matter, will be furnished to you on or about 31 October 1957.

3. (UNCLASSIFIED). The classification of this letter is Secret in accordance with para 30 b (2) (c) AFR 205-1.

FOR THE CHIEF OF STAFF:

Glen W. Martin

GLEN W. MARTIN
Brigadier General, USAF
Deputy Director of Plans, DCS/P&P

XPD10794Z 57 [redacted] Encl #1 NORAD N7 12741

UNCLASSIFIED

[redacted] when fil ed COPY OF INCOMING ASSIFIED MESSAGE 88

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SEE CRYPTO SECTION BEFORE DECLASSIFYING

302.12

ACTION COPY

CON004SBA014N004
PP RJEDEN RJWPSB
DE RJWPSB 002C
P 3022402
FM COMCFWCR HAMILTON AFB CALIF
TO RJEDEN/CINCNORAD ENT AFB COLO SPRINGS COLO
INFO RJEDEN/COMADC ENT AFB COLO SPRINGS COLO
RJWPSB/COMDR 552DNAEW&C WG MC CLELLAN AFB CALIF
BT

PRIORITY

ACTION: NOOOP
N7-11501

[redacted] C/OOOP 7S-1142. REFERENCE ADC CLASSIFIED MEYAGE
AFOOP-30099 AND ADOOP-00113. TGIS MESSAGE IN FOUR PARTS. PART I.
MANNING STATIONS 3, 5 AND 7 INTERMITTENTLY WILL GIVE RADAR COVERAGE
TO THE SAN FRANCISCO TARGET COMPLEX ONLY. PART II. THE FOLLOWING
AEW&C STATION MANNING DURING REDUCED FLYING HOUR CAPABILITY IS
REQUESTED: MAN TWO STATIONS TWENTY-FOUR HOURS PER DAY. THE TWO
STATIONS RECOMMENDED ARE LOCATED AT 53-55N 126-40W AND 51-25N
134-30W. THESE LOCATIONS ARE AN EXTENSION OF THE PICKET SHIP LINE
AND WILL GIVE MAXIMUM EARLY WARNING REPORTING WITHIN OUR PRESENT
CAPABILITIES FOR THE SAN DIEGO, LOS ANGELES, SAN FRANCISCO AND

PAGE TWO DE RJWPSB 002C
SEATTLE TARGET COMPLEXES. PART III. MANNING THESE STATIONS WOULD
NOT BE SCHEDULED UNTIL 7 OCT BECAUSE OF A REVISED AEW&C SCHEDULE
FROM 1 OCT TO 7 OCT DUE TO THE 27TH ADD ORI. PART IV. REQUEST
AUTHORITY TO MAN THE TWO AEW&CSSTATIONS AS LISTED IN PART II
ABOVE.
3.
01/01242 OCT RJWPS.

see NOOOP-T X019

A-- PARAPHRASE NOT REQUIRED EXCEPT PRIOR TO CA[redacted]YPTION--
PHYSICALLY REMOVE ALL INTERNAL REFERENCES BY DA[redacted]OUP
PRIOR TO DECLASSIFICATION
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ACTION COPY

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CONAD SECRT [redacted]

UNCLASSIFIED

89

JOINT MESSAGEFORM

SECURITY CLASSIFICATION [redacted]

SPACE BELOW RESERVED FOR COMMUNICATION [redacted]

READING FILE

PRECEDENCE	TYPE MSG (Check)	ACCOUNTING SYMBOL	ORIG. OR REFERS TO	CLASSIFICATION OF REFERENCE
ACTION PRIORITY INFO DEFERRED	BOOK: / MULTI: / SINGLE: X	AF	CWOOP 7S 1142 30 Sep 57	SECRET

FROM: CINCNORAD

SPECIAL INSTRUCTIONS

TO: COMCFWCR HAMILTON AFB CALIF

INFO: COMDR ADC ENT AFB COLO (COURIER)

[redacted] From NOOOP-T X 019

Your CWOOP 7S 1142. Authority is granted to man the two AEW&C stations as listed in Part II of your message during the period 7 Oct 1957 through 31 Dec 1957.

M/R Due to the reduced flying hours for AEW&C aircraft on station time, CFWCR requested authority to man two stations coordinates 33° [illegible]'N - 12[illegible]°40'W and 31° 25'N -124°30'W twenty-four per day. These stations are an extension of the picket ship line and will give maximum early warning within the present capabilities for the San Diego, Los Angeles, San Francisco and Seattle target complexes. Under the provisions of the curtailed flying hour program, the currently manned AEW&C stations afford radar coverage for the San Francisco target complex only.

[illegible] PRIOR TO [illegible] ASSIFICATION BY DATE [illegible]

DATE	TIME
2	2145Z
MONTH	YEAR
Oct	57

WRITER — SYMBOL: NOOOP-T

TYPED NAME AND TITLE (Signature, if required): Major Reeves

PHONE: 2078 — PAGE NR. 1 — NR. OF PAGES 1

SECURITY CLASS [redacted]

RELEASER — SIGNATURE:

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

UNCLASSIFIED

[redacted] ...en filled in)

COPY OF INCOMING C... SIFIED MESSAGE

90

...message in whole or in part is prohibited without approval of CONAD Adjutant)

CONAD HIST FILE 802.12

SEE CRYPTO SECTION BEFORE DECLASSIFYING

PRIORITY

8 OCT 57

READING FILE

ACTION: NOOOP
INFO: NOCOC
NOELC

N7-11867

A-132-08
P/R 080010Z
FM COMWADF HAMILTON AFB CALIF
TO COMDR AEW AND C WG 552 MCCLELLAN AFB CALIF
COMDR ADIV DEF 27 NORTON AFB CALIF
COMDR ADIV DEF 28 HAMILTON AFB CALIF
COMDR ACWRON 666 MILL VALLEY CALIF
COMDR ACWRON 669 US NAV ADVANCED BASE DEPOT PORT HUENEME CALIF
INFO CINCNORAD ENT AF COLO
COMACWRON 779 SABRIA CALIF
BT

[redacted] //ADOTN-X 73178D. THIS MESSAGE IN 5 PARTS.

PART 1. REDUCTION IN AEW AND C FLYING HOURS HAS CURTAILED THE NUMBER OF STATION THAT CAN BE MANNED. TO OBTAIN MAXIMUM RADAR EARLY WARNING FROM ELEMENTS OF THE NAVY TICKET SHIPS AND AEW AND C AIRCRAFT., THE FOLLOWING AEW AND C LOCATIONS WILL BE MANNED 24 HOURS PER DAY EFFECTIVE 0800Z 8 OCT 57: AEW AND C STATION 7A, 33-55 N 126-40W; AEW AND C STATION 9A, 31-25 N 124-30W. STATION LOCATIONS ARE UNCLASSIFIED.

PART II. AEW AND C STATION SEVEN A, EVEN THOUGH LOCATED IN 27 ADD AREA OF RESPONSIBILITY, WILL MAKE ALL REPORTS TO SLIPHORN

PAGE TWO A-132-08

UTIZIZING CALL WORD, FREQUENCIES AND TRACK NUMBERS AS SET UP FOR AEW AND C STATION 7 IN CFUCR OPERATIONS ORDER 5-56. AEW AND C STATION 9A WILL REPORT INTO ART UTILIZING CALL WORD, FREQUENCIES AND TRACK NUMBERS AS SET UP FOR AEW AND C STATION 9.

PART III. AEW AND C STATION 7A WILL MAKE ALL REPORTS TO SLIPHORN BECAUSE THE MAJORITY OF THE TRACKS PICKED UP BY THIS STATION WILL DEVELOP IN THE 8 ADD APOSTROPHI S AREA OF RESPONSIBILITY. TRACKS UP IN THE 27 ADD APOSTROPHI S AREA BY THIS AIRCRAFT WILL BE CALLED INTO SLIPHORN. WILL PASS THE INFORMATION TO ART BY LANDLINE THROUGHT PASSPORT.

PART IV. STATIONS SEVEN A AND 9A WILL BE MANNED UNTIL FURTHER NOTICE. ANY CHANGES, ADDITIONS OR DELETIONS TO THIS SCHEDULE WILL BE MADE FROM THIS HEADQUARTERS.

PART V. TILT SETINGS FOR THESE 2 STATIONS WILL BE OBTAINED BY TRACKING INBOUND AIRCRAFT DEPARTING STATION AT 10000 FEET

BT

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

READING FILE

Copy 5 of 6 Copies

[redacted]

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

3591

2760

4 NOV 57

ADOOP-O

SUBJECT: Manning AEW&Con Stations 2, 4 and 6

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

1. Attached is message EACOT-FW 1320 from Eastern Air Defense Force on manning of AEW&Con Stations 2, 4 and 6 during the period Texas Tower 2 is shut down for modification.

2. Because of the reduction in flying hour program during 2d Quarter, FY 58, this headquarters is unable to provide the additional flying hours requested. However, since Texas Tower 2 is within the radar coverage of AEW&Con stations 2 and 4, it is considered that the shut down of the tower can be compensated by the manning of the two mentioned stations in accordance with your latest desires for 2d Quarter, FY 58. This is not a desirable situation, but it is the best that can be suggested under the current flying hour restrictions.

3. Request you advise CFTOP of your decision on this matter with information copy to this headquarters.

FOR THE COMMANDER:

DUPLICATE

1 Incl
EADF msg EACOT-FW
1320, 23 Oct 57
(Secret), 1 cy

JOHN K. KONOSKY
Colonel, USAF
Director of Operations
Deputy for Operations

[redacted]

ADOOP-O, Hq ADC, 4 Nov 57, Subj: Manning AEW&Con Stations 2, 4 and 6

NORAD OP-T 1st Ind 7 NOV

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

TO: Commander, Continental Air Defense Forces, Eastern CONAD Region, Stewart AFB, Newburgh, New York

1. Attention is invited to provisions of paragraph 2 of basic communication.

2. This headquarters informed Air Defense Command on 20 September 1957, that the absolute minimum AEW&Con aircraft on-station time for the East Coast would be as outlined in your message CFAOP-S 188, 18 September 1957.

3. This headquarters dispatched a letter to Chief of Staff, USAF, as Executive Agent for NORAD, on 27 September 1957, stating that the loss of on-station time by AEW&Con aircraft, as a result of a reduction in the flying hours program, was not concurred in by this command. Recently NORAD was informed by USAF that the impact of the flying hours reduction as affects the continuous radar coverage system was being reviewed by that headquarters. The letter further stated that the results of the review would be forwarded to this headquarters on or about 8 November 1957. Your headquarters will be kept informed of further developments in this matter.

FOR THE COMMANDER-IN-CHIEF:

1 Incl
n/c

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

Copy furnished:
COM ADC

UNCLASSIFIED

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[redacted]

AGO 012
A-375-24
R 231950Z
FM HQ EADF STEWART AFB NY
TO COMDR ADC
COMDR 26 AD ROSLYN AFB NY
COMDR 551ST AEW AND C WG OTIS AFB MASS
INFO CFECR STEWART AFB

8737

B[redacted] EADOT-FW1320. SUBJECT: MANNING AEW AND C STATIONS 2, 4 AND 6. THIS MESSAGE IN 3 PARTS.

PART 1. FOR ADC. 26 AIR DIVISION TWX, SECRET, OCC 0600, 15 OCT 57, IS QUOTED FOR YOUR INFO: "SUBJECT: MANNING AEW AND C STATIONS 2, 4 AND 6. REFERENCE IS MADE TO PROPOSED SHUT DOWN OF TEXAS TOWER NBR 2 FOR 75 TO 90 DAYS ON OR ABOUT 17 OCTOBER 57 TO PERMIT INSTALLATION AND MODIFICATION OF C AND E EQUIPMENT. DURING THIS PERIOD TEXAS TOWER NUMBER 2 CANNOT PROVIDE ANY AIR DEFENSE RADAR COVERAGE. DAILY 24 HOURS MANNING OF STATIONS 2, 4 AND 6 IS

PAGE TWO A-375-24

CONSIDERED ESSENTIAL." PRESENT FLYING HOUR ALLOCATIONS DO NOT PERMIT REQUESTED COVERAGE. IF COVERAGE IS DEEMED DESIRABLE BY HQ NORAD, REQUEST ADDITIONAL FLYING HOURS BE ALLOCATED 551. UNDER PRESENT OPERATING CONDITIONS, APPROXIMATELY 18 HOURS PER DAY IS REQUIRED. LOCAL CONVERSATIONS WITH CONAD EAST INDICATES REQUESTED COVERAGE BY 26 AIR DIVISION IS DESIRABLE.

PART 2. FOR 26 ADIV (DEF). ATTENTION IS CALLED TO PART 1. UNTIL FLYING HOUR PROBLEM IS RESOLVED, LITTLE, IF ANY, ADDITIONAL COVERAGE ON STATION NUMBER 2 CAN BE EXPECTED.

PART 3. FOR 551 AEW AND C WG. ANY AOC TIME SCHEDULED FOR STATION NUMBER 8 PLUS ANY AOC TIME SAVED BY RECENT EXTENSION OF NAVY BLIMP OPERATION THRU 25 OCTOBER WILL BE SCHEDULED ON STATION NUMBER 2. SCHEDULING OF THIS TIME SHOULD BE COORDINATED WITH 26 AIR DIVISION (DEF)

BT

A-- PARAPHRASE NOT REQUIRED EXCEPT PRIOR TO CATEGORY 3 ENCRYPTION--PHYSICALLY REMOVE ALL INTERNAL REFERENCES BY DATE-TIME GROUP PRIOR TO DECLASSIFICATION.

UNCLASSIFIED

[redacted]

92

JOINT MESSAGEFORM

SECURITY CLASSIFICATION: UNCLASSIFIED

UNCLASSIFIED

SPACE BELOW RESERVED FOR COMMUNICATION CENTER

PRECEDENCE	TYPE MSG (CRYPT)	ACCOUNTING SYMBOL	ORIG OR REFERS TO	CLASSIFICATION OF REFERENCE
ACTION DEFERRED INFO	BOOK / MULTI X / SINGLE	AF	302.12	

FROM: CINCNORAD

SPECIAL INSTRUCTIONS

TO: COMCONAC STEWART AFB NEWBURGH NY

COMCONAC HAMILTON AFB CALIF

UNCLASSIFIED From NCOOP-T 059. The following message was received from Comdr. ADC and is quoted for your information. Quote The flying hour restriction previously imposed on ADC&C operation is no longer a limiting factor through 31 December 1957 Unquote.

DUPLICATE

1/2 See attached message.

DATE	TIME
10	2315Z
MONTH	YEAR
Dec	1957

WRITER

SYMBOL: NCOOP-T

TYPED NAME AND TITLE (Signature, if required): Maj. Reeves

PHONE: 2078 | PAGE NR. 1 | NR. OF PAGES 1

SECURITY CLASSIFICATION: UNCLASSIFIED

RELEASER

SIGNATURE

TYPED (or stamped) NAME AND TITLE: [illegible] JR

UNCLASSIFIED

DD FORM 1 MAY 55 173 REPLACES DD FORM 173, 1 OCT 49, WHICH WILL BE USED UNTIL EXHAUSTED

93

[redacted]

FF5-10/302:dmm
A4-3
Ser: -57

AUG 1957

THIRD ENDORSEMENT on ADOCO-C, Hos ADC ltr dated 22 May 1957

From: Commander Naval Forces, Continental Air Defense Command
To: Commander in Chief, Continental Air Defense Command

Subj: Navy AEW&CON Activities

1. By paragraph 2 of the Second Endorsement to the basic letter, COMNAVFOR-CONAD was requested to advise CNO of CONAD requirements for blimp operations which included an airship base on the East Coast which would allow coverage of Station 10 and an airship base on the West Coast which would allow coverage of Station 1.

2. The following information has been received from CNO relative to the above requirements of CINCONAD:

a. NAF Elizabeth City, North Carolina, will be decomissioned on 1 October 1957 and Lakehurst is considered to be the only station from which it will be practicable to operate ZW-1. Station 10 would be about 360 miles from Lakehurst and about 430 miles from NAS Glynco, Georgia, and in view of the transit time involved it would appear to be unproductive to man Station 10 with airships. Furthermore, the manning of Station 10 would place the airships in an area from which there would be no readily accessible alternate in the event of emergency or unfavorable weather. It is therefore believed that ZW-1 would be utilized more effectively by assignment to Stations 6 or 8.

b. Certain assumptions contained in paragraph 1.c(1) of CONAD Operations Plan 9-56 are no longer valid. It is not currently planned to establish an LTA station on the West Coast nor to commission a ZW squadron for West Coast operations. Two of the presently scheduled total of four ZPG-3W will not become available for use until completion of service evaluation trials expected to be completed in the summer of 1960. Six of the ZPG-2W/3W airships are programmed for assignment to ZW-1 for operations in the contiguous system off the East Coast. The two remaining airships will be retained as back-up.

G. L. KOHR

[redacted]

93

ADOCO-C, Hq ADC, 22 May 57, Subject: Navy AEW&Con Activities

ADOCO-C 2nd Ind

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

THRU: Commander, Naval Forces for CONAD, Ent AFB, Colorado Springs, Colo.

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

1. Coordination with NAVFORCONAD has resulted in the following actions being taken on the recommendations stated in paragraph 5, basic letter.

a. Reference paragraph 5a: As the Navy airships assume full operational status on 1 July 1957, insufficient time remains to effectively accomplish this action.

b. Reference paragraph 5b: Captain Bollinger, NAVFORCONAD, indicated that the Navy has recently decided to inactivate Weeksville NAS; therefore, this recommendation is no longer feasible.

c. Reference paragraphs 5c and 5d: AEW&Con elements on the East Coast are operationally under the control of Commander CONAD Forces, Eastern CONAD Region. They will man their stations as he directs. CONAD Operations Plan 9-57 (presently being published) establishes an alternate Station 10 for blimp operations if and when airship operations on this station become practical.

d. Reference paragraph 5e: Present indications are for the Navy airships to man Station 8 half the time each month. This is considered to be their maximum operational time available under normal conditions. It is considered feasible and the best type operation available at this time. Flying hour allocations will limit AEW&Con aircraft operations to approximately three and one-half stations on the East Coast. With Navy airship operation being most desirable at one end of the line, their coverage on Station 8 meets our present needs.

2. The Chief of Naval Operations should be advised of the CONAD requirements for blimp operations so that they may be included in future planning. This should include:

a. An airship base on the East Coast which will allow coverage of Station 10.

AD000-0, Hq AAC, 22 May 57, Subject: Navy AEW&Con Activities

AD000-0 nd Ind (Cont'd)

b. An airship base on the West Coast which will allow coverage of Station 1. Airship operations on this coast seem doubtful. A firm position on this operation must be established.

ROY H. LYNN
Major General, USAF
Wing Commander

UNCLASSIFIED

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ADOCO-C. Hqs A[illegible] Subject: Navy AEW Con Activities

COOOP-

13 JUN

Hqs Continental Air Defense [illegible], Ent Air Force Base, Colorado Springs, Colorado

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

1. [illegible] that [illegible] headquarters coordinate with CO[illegible]NAV-CONAD to determine the possibilities of accomplishing the recommendations of paragraph [illegible] of the basic correspondence.

2. Problem areas should be expeditiously resolved because of the early operational date of the Navy LTA unit, and appropriate employment plans submitted for inclusion in CONAD Operations Plan [illegible]-5[illegible].

FOR THE COMMANDER-IN-CHIEF:

for [signature]

HARVEY T. A[illegible]
Major General, USAF
DCS Plans & Operations

UNCLASSIFIED

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[redacted] hen fill l   COPY OF INCOMING C SSIFIED MESSAGE   94

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

CONAD HIST FILE 302.12   SEE CRYPTO SECTION BEFORE DECLASSIFYING   18 Sep 57

READING FILE

ACTION: NOOPO
INFO: NCOOP
N7-11099

CONSC NBC 98
RR RJEDEN RJEPNY
DE RJEPNE 25C
R 181657Z
FM COMSFLOT STEWART AFB NY
TO RJEDEN/CINCNORAD ENT AFB COLO
INFO RJE COMNAVEASTSEAFRONDREC STEWART AFB NY
RJEPNY/CONDR 26CADD ROSLYN AFS NY
BT
[redacted] CFNOP-S 187 PD REFERENCE YOUR MESSAGE NOOPO-SS. PD SUBJECT IS EVALUATION OF AEWC AIRSHIP SQUADRON ONE PD THI MESSAGE IN THREE PARTS PD PART I PD EVALUATION OF THE AIRSHIP IN ITS PRESENT DEPLOYMENT WITHIN THE SEAWARD EXTENSION IS LARGELY A MATTER OF SUBJECTIVE JUDGMENT AT THIS TIME PD OPERATIONS PERSONNEL ASSIGNED 772TH ACWRON AND 26TH CADF WHICH ARE DIRECTLY ASSOCIATED WITH THE AIRSHIP CMM REPORT THAT IT PROVIDES A BETTER QUALITY OF CONTINUOUS TRACK INFORMATION THAN EITHER RC 121 AIRCRAFT OR PICKET SHIP PD THE EXCELLENT WORKING RELATIONSHIP THAT THIS NAVY UNIT HAS WITH BOTH THE DIVISION AND

PAGE TWO RJEPNE 25C
THE ACWRON HAS POSSIBLY CONTRIBUTED TO THIS EVALUATION OF THEIR PERFORMANCE PD PART II PD THE 26TH CADF HAS COMPILED SURVEILLANCE DATA FOR THE PAST TWO MONTHS ON THE PERFORMANCE OF ALL SEAWARD EXTENSION ELEMENTS BUT THE RESULTS OF THEIR ANALYSIS HAVE NOT YET BEEN FORWARDED THIS HQS PD PART III PD THE TAC EVAL TEAM FROM HQ EADF CONDUCTED A SMALL SCALE EXERCISE DURING THE MONTHS OF JULY AND AUGUST INVOLVING ALL OF THE UNITS OF THE SEAWARD EXTENSION PD THEIR REPORT INDICATES THAT THE AIRSHIP HAS THE BEST CONTROL CAPABILITY OF ANY OF THE ELEMENTS DURING THE PERIOD OF THE EXERCISE PD THEIR REPORT CMM ALONG WITH THE 26TH CADD ANALYSIS CMM WILL BE FORWARDED YOUR HEADQUARTERS BY SEPARATE CORRESPONDENCE PD
BT
18 1752Z SEP RJEPN

A-- PARAPHRASE NOT REQUIRED EXCEPT PRIOR TO CATEGORY B ENCRYPTION--PHYSICALLY REMOVE ALL INTERNAL REFERENCES BY DATE-TIME-GROUP PRIOR TO DECLASSIFICATION
..ADVANCE COPY HAS BEEN DELIVERED TO COC

95

[redacted]

4 DEC 1957

NCOOP-T

SUBJECT: Report of Staff Visit to YAGR Division 21

TO: Commander
Naval Forces
Continental Air Defense Command
2nd Air Force Base
Colorado Springs, Colorado

Transmitted herewith for your information, is a copy of a report of a staff visit to YAGR Division 21 by personnel of CONAD forces, Eastern CONAD Region, during the period 3-7 November 1957.

FOR THE COMMANDER-IN-CHIEF:

1 Incl
Rept of Staff Visit
to YAGR Div 21, 22
Nov 57

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

DUPLICATE

[redacted]

UNCLASSIFIED

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[redacted]

HEADQUARTERS CONAD FORCES
EASTERN CONAD REGION
Stewart Air Force Base, New York

CFEOP-S 25 NOV 1957

SUBJECT: (U) Report of Staff Visit to YAGR Division 21

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

1. Inclosed are two copies of a report of a staff visit to YAGR Division 21 by personnel assigned this headquarters. Sufficient copies have been made for distribution to each of the picket ships as well as the CONAD divisions and ACWRONs associated with the Seaward Extension elements.

2. A majority of the statements concerning the present control capability of the picket made in the report corroborate the conclusions reached by the Tactical Evaluation Directorate of Headquarters Eastern Air Defense Force as a result of exercise "Sea Gull" during July 1957. The importance of the picket ship in extending the weapons directing capabilities to seaward is emphasized in CFECR Manual 55-1 and is being given additional stress in a revised edition to this document. Your headquarters has signified its interest in this problem by recently securing a quota of six spaces for picket ship directors to attend each controllers class at Tyndall Air Force Base, Florida.

3. It is encouraging to note that the 26th CONAD Division has been recently making a strong effort to provide interceptors for picket ship director training. It is the opinion of this headquarters that additional assistance is required by all of the ACWRONs associated with the picket ship in order to achieve the maximum control potential of this element of the Seaward Extension.

4. Upon withdrawal of inclosure, the classification of this letter will be cancelled in accordance with paragraph 37h, AFR 205-1.

FOR THE COMMANDER:

JOHN E. MANNON
Major, USAF
Adjutant

1 Incl:
Rpt of a staff visit to YAGR Div 21, (S), 2 cys

UNCLASSIFIED

[redacted]

K1-14248

11-173

CE S-2408-57

[redacted]

HEADQUARTERS CONAD FORCES
EASTERN CONAD REGION
Stewart Air Force Base, New York

CFEOP-S

22 November 1957

MEMORANDUM FOR CHIEF OF STAFF

SUBJECT: Report of Staff Visit to YAGR Division 21

1. During the period 3 November 1957 through 9 November 1957 staff personnel from CONAD Forces, Eastern CONAD Region observed CIC operations aboard the U.S.S. YAGR 10 the "Outpost" while operating on Station 16, as well as its operations enroute to this station from Davisville, R.I. On 9 November, CFEOR personnel were transferred to the U.S.S. "Vigil" and observed CIC operations aboard until they arrived at their home port on 8 November. Captain Fred L. Bates, USN, Commander, Naval forces, Eastern CONAD Region, and Commander Lamiman, Commander YAGR Division 21, were aboard these ships for the purpose of a routine inspection during this period. Lt. Col. Maurice A. Gouchoe, Chief, Ground Environment Branch, CFEOR, and Major Maurice R. Strand, CFEOR Combat Operations Center, represented this headquarters.

2. General Observations

a. Communications and Electronic Equipment. With the exception of the U.S.S. "Lookout", all of the YAGRs are equipped with the SPS-12 as the primary search radar. The "Lookout" possesses the SPS-17 as its primary search gear and all of the YAGRs are programmed for similar equipment. The SPS-8 is used as the back-up search equipment and in addition is utilized to supplement the normal surveillance provided by the SPS-12. This method of operation for this back-up equipment is considered desirable because of some "screening" in the radiation pattern of the SPS-12. The SPS-8 is the prime height determining radar aboard, and generally compares favorably in performance with height finders available to the AC&W squadrons. The SPS-5, the equipment used to detect surface targets, also provides a good capability against low level penetrations to a range of thirty miles. Loran and IFF are the remaining electronic equipment installed on these ships. All of the YAGRs will retain these radars after the SPS-17 program is completed. In addition, there is a considerable amount of high frequency radio, UHF and radio teletype in the Communications Section. It should be noted that all of this communications and electronic equipment is maintained by a Warrant Officer and four or five enlisted men. Usually two of these seamen are at the STRIKER or apprentice skill level.

b. Physical Layout of Combat Information Center. Despite the amount of electronic equipment within the CIC, the picket ships have more than ample space for their operations. Considering the unusually large space available to the CIC, there is still ample room within each ship for quarters, dining hall and recreational facilities. Morale appeared very

[redacted]

INCL 1 (2)

S-CFE 2708-57

High on both YAGRs and it was readily evident that all personnel were aware of the importance of their mission. It should be noted that the key personnel had made several trips to associated Direction Centers in attempting to solve some of their operational problems. It is emphasized that these visits were made at the individual's own expense, as there is a limited amount of TAD money available for YAGR Division 21 personnel.

3. Problem Areas.

a. Director Proficiency.

(1) The "Outpost" and "Vigil" were both scheduled for interceptor operations enroute to and from station and in both instances the 26th CONAD Division met this commitment by providing two F-102s from the 52nd Fighter Interceptor Squadron based at Suffolk, New York. Both training missions were unsuccessful due to a combination of several reasons. The mission with the "Outpost" was a failure because of the inability to identify the interceptors due to the fact that the IFF aboard the "Outpost" was inoperative. The interceptors could still have been identified by positioning the interceptors over known control points as provided by EADF Supplement No. 1 to ADC Manual 55-5, but this document was not available to picket ship personnel. The training mission with the "Vigil" was a failure because of communications difficulties. The directors were able to contact the aircraft on the ADC frequency, but due to the saturated traffic on this channel were not able to conduct a mission on this frequency. The directors did not know how the aircraft were channelized and could not properly instruct the pilots to switch to the alternate channels available.

(2) It was also noted that the pickets did not possess the latest edition of ADC Manual 55-5 and had little or no knowledge of the capabilities of the F-89J and the tactics and techniques to be employed with this interceptor. COMNAVEASTCONAD[illegible] has requested copies of this ADC manual for the East CONAD Naval units, but has not received any as of this date. There were no controller aids available and no weather information posted on the status board. It was readily apparent that picket ship personnel must receive a good deal of assistance from ACWRON and CONAD division personnel as well as more support from higher headquarters if their weapon directing capability is to be fully exploited.

(3) Action required.

(a) That AC&W squadrons comply with the intent of EADF Regulation 55-3 and ADC Regulation 50-12 by alternating skilled directors on TDY aboard the pickets while on station. In addition to solving some of their mutual problems, these Air Force directors could provide instruction on the Celver Computer and with tactics and techniques employed by the ACWRON directors.

(b) That Commander, YAGR Division 21, request additional TAD money for CIC personnel to crosstrain with associated ACWRONs and FISs. (NOTE: Mission Directive for picket ship as outlined in CONAD Operations Plan 9-57 and COMNAVEASTCONAD Operation Plan 1-55 should provide ample justification for these funds.

(c) That 26th CONAD Division monitor more closely the progress of training available for directors assigned the picket ships. Detailed SOPs are required for the passing of control from the 773rd ACWRON to the training stations of the pickets while enroute to and from station. It was obvious that these SOPs are non-existant during the training missions of the week of 3 November 1957.

b. Exchange of Essential Information Between the Picket Ships and ACWRONs. It was evident that much of the information available to the ACWRON is not disseminated to the picket ships. Winds aloft, position of weather fronts and other data essential for the picket to execute the weapons control portion of their mission is not disseminated to them by the ACWRONs. In other instances, RAREPs are not passed by the picket ships to the ACWRONs, even though weather within the area of the air battle should be known by the direction center. In some instances, the radar of the picket ship may operate at such a low efficiency that they do not detect targets well within their normal capabilities, and yet the ACWRONs do not make the pickets aware of this condition. Picket ship personnel stated that the 647th ACWRON (Jitney) makes a sincere effort to supply information of this nature to pickets on Station 20, disseminating altitude information, flight path, and type of aircraft that have recently passed through the picket's area of surveillance.

Action required:

(1) That all ACWRONs disseminate weather data to their associated Data Collecting Agencies and that picket ships forward RAREPs in accordance with current directives.

(2) That all ACWRONs disseminate flight plan information to the pickets in the same quantity that is passed to the AEW&C aircraft for the Quality Control analysis. This information would provide a rudimentary quality control system for the picket.

c. Communications and Electronic Maintenance.

(1) Observations concerning communications maintenance were superficial, but the quality of air-ground and point-to-point communications appeared to be satisfactory on these ships. The general limitations of all HF communications are well known and this method of communications will continue to be a limiting factor in the accomplishment of their mission.

None of the HF frequencies available for the picket ships have actually been designated for the function of command and status, and this operational requirement has been referred to the appropriate staff personnel at Headquarters EADF. Due to "skip" distances and ground wave attenuation, it is often impossible to communicate with the 773rd ACWRON while the pickets are operating close to their home station, and it is believed that a UHF channel should be designated for this purpose. This problem too has been referred to the C&E Directorate at Headquarters EADF.

(2) Radar maintenance presented a serious problem in that on one patrol the "Outpost" reported only a 5% capability for their SPS-8 equipment. In other instances, it was apparent that the SPS-12 had been operating well below its normal capability, but due to lack of a quality control program, this was not apparent until several hours after the radar required an obvious peak job. As was stated above, the entire C&E maintenance program aboard the YAGRs is conducted by four or five Navy personnel. An ACWRON with similar search and height determining radar would be authorized a minimum of 21 military spaces in addition to one civilian Technical Representative or Contractor Technician. In addition, the ACWRONs are authorized a minimum of seven spaces for communications equipment similar to that installed on the YAGRs. In many instances, a Contractor Technician or Technical Representative is also assigned to the Communications Section.

(3) From statements above, it is obvious that the C&E maintenance personnel aboard the YAGRs are doing an outstanding job in maintaining their equipment, but are not equalling the maintenance levels desired. Outage reports as reported by the picket ship are often misleading and clarification of instructions are required in this area. It was apparent that equipment is reported as operational when the gear is operating much below a 70% capability.

Action required.

(a) That the present manning spaces for picket ships be reviewed by YAGR Division 21 with the object of requesting adequate authorizations for the vital C&E maintenance function.

(b) Headquarters EADF request 4713th Radar Evaluation Flight (ECM) to provide Radar Coverage Indicators and instructions in their use as well as assistance in developing a quality control program.

4. Problems of a Minor Nature. A lack of manuals, directives, CEIs, and other publications required by the picket ships has been brought to the attention of appropriate agencies and some remedial action has already been

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[redacted]

CFEOP-S, Subj: Report of Staff Visit to YAGR Division 21 (Cont'd)

accomplished by CFECR and COMNAVEASTCONAMREG. Directives have been amended with the intent of clarifying questions as to station phase-out reports and other status information required from the YAGRs.

5. Summary. CFECR personnel are of the opinion that the YAGRs are providing the air defense system with close to the maximum amount of detection and warning against aerial attacks that can be achieved by these ships consistent with the limitations of their present equipment. In order to achieve the maximum potential of this element in respect to the weapons direction portion of their mission, YAGR Division 21 must receive considerably more assistance and interest from the associated ACWRONs, CONAD divisions, and higher headquarters.

DEAN W. DUTRACK
Lt. Colonel, USAF
AC/S Operations

[redacted]

S-CFE 2908-57

UNCLASSIFIED

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JOINT MESSAGEFORM

SECURITY CLASSIFICATION: UNCLASSIFIED

SPACE BELOW RESERVED FOR COMMUNICATION CENTER

302 / 2

PRECEDENCE		TYPE MSG	ACCOUNTING SYMBOL	CLASSIFICATION OF REFERENCE
ACTION		BOOK / MULTI / SINGLE		
INFO	DEFERRED			

FROM: CINCNORAD

TO: COMCFECR STEWART AFB NEWBURGH NY

INFO: COMUSAFADC ENT AFB COLO (COURIER)

COMNAVFORCONAD (COURIER)

UNCLASSIFIED From NOOOP-T 009 . Request your headquarters prepare a plan for the cross-training of ACs and picket ship personnel. For guidance in the preparation your plan, CFWCR plan on this subject was forwarded your headquarters several weeks ago.

M/R Not required.

DATE: 16 Jun 57

SYMBOL: NOOOP-T

TYPED NAME AND TITLE: Maj Reeves

PHONE: 2071

PAGE NR: 1 NR. OF PAGES: 1

SECURITY CLASSIFICATION: UNCLASSIFIED

SIGNATURE

TYPED NAME AND TITLE

DUPLICATE

DD FORM 173 REPLACES DD FORM 173, 1 OCT 49, WHICH WILL BE USED UNTIL EXHAUSTED

[redacted]

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NOESS-C

25 OCT 1957

SUBJECT: Contiguous Picket Ship Communications

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

1. Reference Department of Air Force letter, AFOAC-S/O to CINCONAD, subject as above, dated 3 Oct 57, with copy to CNO, ADC, and COMNAVFORCONAD.

2. The requirements for Direction Center - Picket Vessel voice communications, as expressed in NORAD Operations Plan 9-57, are considered to be operationally justified and are valid. Request you proceed with the necessary programming action for these facilities and coordinate with COMNAVFORCONAD in the resolution of the problems posed in paragraph 4 of referenced letter.

FOR THE COMMANDER-IN-CHIEF:

DUPLICATE

Copies furnished:
C/S USAF as Exec
Agent for NORAD

COMNAVFORCONAD

PAUL H. LONG
Colonel, USAF
Ass't DCS/Comm and Elect

Lt Col K.N. Keyt
2039
25 Oct 57

bb

ref: Directing ADC's attention to USAF letter AFOAC-S/O to CINCONAD, Subject: Contiguous Picket Ship Communications, dated 3 Oct 57, and requesting their coordinated programming action with COMNAVFORCONAD in accordance with NORAD 9-57 regarding resolution of ship versus shore station equipment compatibilities, operating dates and validation of voice communication requirement. Validation of the voice requirement established in NORAD 9-57 was confirmed via telephone to Major Reeves NOOCP.

[redacted]

UNCLASSIFIED

C/S USAF as Exec Agent for NORAD
NAVY-CXT-1859

[redacted]

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

AFOAC-S/O

3 OCT 1957

SUBJECT: (U) Contiguous Picket Ship Communications

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

1. This is an Executive Agency Letter.

2. Reference:

a. CONAD letter COESS-E, subject as above, dated 21 February 1957.

b. CNO letter to USAF, Serial 003782P30, Subject: Contiguous Radar Coverage Ship/Shore Communications, dated 25 February 1957.

c. USAF Memorandum to CNO, AFOAC-S/O, Subject: Contiguous Radar Coverage - Ship/Shore Communications, dated 18 March 1957.

d. Director of Naval Communications memorandum to Director of Communications-Electronics, USAF, Serial 003812P30, dated 15 August 1957.

3. Reference a. requests guidance on an appropriate program to provide adequate Ship/Shore Contiguous Picket Ship Communications; reference b. withdraws previous Navy concurrence to provide both ship and shore radio stations; reference c. requests the Navy to reconsider the withdrawal of such concurrence; and reference d. states the Navy's inability to support the shore station requirement.

4. In view of the above the United States Air Force will provide the shore terminals for Direction Center - Picket Vessel communications and the United States Navy will provide the required shipborne terminals. Because of present and anticipated budgetary limitations, the operational requirement for Direction Center - Picket Vessel voice communications should be very carefully scrutinized. If the requirement is not fully justifiable your Operations Plan should be modified accordingly. Programming actions taken by the component commanders in accordance with their respective departmental regulations will, of course, be based on the operational requirements expressed in your Operations Plan. Necessary coordination as to operating date, equipment nomenclature, and equipment compatibility should be effected by your headquarters.

[redacted]

[redacted]

Ltr to Commander-in-Chief, Continental Air Command, Ent AFB, Colorado
Subject: (U) Contiguous Picket Ship Communications (Cont)

5. The United States Navy has advised that they are presently operating a SSB Ship/Shore voice radio circuit. To date the operation of this circuit is highly satisfactory. Therefore, it is felt that arrangements for a pre-programming test of Direction Center - Picket Ship SSB communications is not necessary and would only cause further delay.

FOR THE CHIEF OF STAFF:

Bernard M. Wootton

4 Incls
1. CONAD Ltr, 21 Feb 57
2. CNO Ltr, 25 Feb 57
3. USAF Memo, 18 Mar 57
4. Dir NavCom Memo, 15 Aug 57

BERNARD M. WOOTTON
BRIGADIER GENERAL USAF
Deputy Director of Communications-Electronics

Copies furnished:
CNO
ADC
COMNAVFORCONAD

[redacted]

Op-3031/efm
Ser 003782P30

25 FEB 1957

[redacted]

From: Chief of Naval Operations
To: Chief of Staff, U.S. Air Force

Subj: Contiguous Radar Coverage Ship/Shore communications

Ref: (a) COMNAVFORGONAD ser 0071-56 of 3 July 1956
(b) CNO ser 004821P30 of 2 Oct 1956
(c) DAF memo AFOAC-S/E of 14 Dec 1956

1. Reference (a) proposed that the Navy assume full responsibility for all Ship/Shore communications in the Contiguous Radar Coverage systems. References (b) and (c) agreed in principle with COMNAVFOR-GONAD's proposal.

2. After further study of the foregoing proposal, it has been determined that direct communication between picket ships and Air Force Direction Centers offers the most practical and economical arrangement of satisfying the concurrent operational requirements for speed and reliability. Accordingly, it is considered that inclusion of an additional relay at Naval Radio Stations would only serve to introduce another possible source of circuit failure. In view thereof, the Chief of Naval Operations withdraws concurrence with reference (a).

3. Reference (c) suggested use of single sideband as a possible means of improving Ship-Direction Center voice circuit reliability. The Chief of Naval Operations concurs that the use of single sideband techniques may provide better service. In this connection, the Navy can provide suitable interim equipment for one Air Force Direction Center and one ship to permit realistic evaluation of those techniques on a single sideband system basis. Subsequent to successful completion of this evaluation, the Navy can further provide similar interim equipment for other ship terminals at an early date. Additionally, ships are currently capable of operating a separate radio teletypewriter circuit direct to Air Force Direction Centers together with CW back-up facilities either direct to Air Force Direction Centers or through normal U.S. Navy Ship/Shore radio stations. In event this arrangement appears satisfactory, the U.S. Navy is prepared to coordinate with regard to equipment, installation and scheduling to assure early completion of the proposed single sideband evaluation.

[redacted]

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[redacted]

21 Feb 57

[illegible] Communications

[illegible] Chief of Staff, [illegible] the Air Force
[illegible] executive [illegible]
[illegible] publication 25, [illegible].

1. References:

a. C [illegible] CONAD letter to CNO, Serial 0071-56, dated 3 July 1956, subject: Contiguous Picket Ship Communications.

b. CNO letter to Chief of Staff, USAF, Serial 004821 P-30, dated 2 Oct 1956, subject as above.

c. Hq USAF letter to Director of Naval Communications, CNO, file AFOAC-3/E, dated 14 Dec 1956, subject as above.

2. Reference (a) is a proposal regarding Navy assumption of full responsibility for the operation of picket ship communication circuits. Reference (b) is the CNO concurrence to this proposal. Reference (c) contains Hq USAF concurrence and recommendations to apply Single Side Band technique to the problem of reliable picket ship/shore communications.

3. Immediate programming actions are required, by the Air Defense Command, in support of the picket ship communication requirement. These actions cannot be initiated prior to the receipt of a mutually agreed upon detailed plan for Navy control and location of the ship/shore communication facilities.

4. It is of utmost importance and concern to this Command that an early resolution of the details associated with this proposal be forthcoming to preclude untimely integration of these shore facilities into the Air Defense Ground Environment.

5. It is requested that immediate action be taken by Hq USAF and the CNO to provide the CONAD component commanders concerned with the appropriate guidance to enable them to initiate programming actions in support of this program.

FOR THE COMMANDER-IN-CHIEF:

UNCLASSIFIED

HASKELL E. NEAL
Brig General, USAF
[illegible] and Plans

cc: CNO
CINCNAVFORCONAD
CINCARC

[redacted]

Op-[illegible]
Ser 0[illegible]F30
25 Feb 1957

As a matter of information, the Navy plans to discontinue operation of special CW back-up reporting circuits as soon as reliable direct communications between ships and Air Force Centers can be established due to urgent need for economy in the use of personnel.

/s/ H. C. BRUTON
H. C. BRUTON
Rear Admiral, U. S. Navy
Director, Naval Communications
By direction

Copy to:
COMNAVFORCONAD
CINCONAD
CINCLANTFLT
CINCPACFLT
COMNAVEASTCONAD
COMNAVWESTCONAD
COMWESTSEAFRON
COMEASTSEAFRON
NAVCOMMSTA Newport
COMYACRDIV 21
COMONE
Op-301P
Op-302R
Op-303E
Op-302J

[redacted]

COPY

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MEMORANDUM FOR THE CHIEF OF NAVAL OPERATIONS, DEPARTMENT OF THE NAVY
ATTENTION: DIRECTOR OF NAVAL COMMUNICATIONS

SUBJECT: Contiguous Radar Coverage - Ship/Shore Communications

1. Reference is made to CNO Serial 003768P30, dated 25 February 195[illegible], in which the Chief of Naval Operations withdrew his concurrence for the Navy to assume full responsibility for Picket Ship communications.

2. Request the Chief of Naval Operations reconsider the proposal for the Navy to assume full responsibility for operation of Picket Ship communications, in light of the following:

a. Subsequent to the COMNAVFORCONAD proposal (mid-Calendar Year 1956) the Air Defense Command took no further action to implement permanent shore communications facilities.

b. Based on the fact that both the Navy and the Air Force agreed to the change in concept of operations, the FY 1957 and 1958 C-E Budget Estimate and construction planning was adjusted accordingly.

c. The re-establishment of a separate Air Force program would require a lead-time of approximately two years to provide adequate facilities.

d. We understand adequate facilities are in existence at Navy stations. The requirement for separate transmitting and receiving facilities at each Direction Center, rather than to one central point under the Navy Plan, would not provide an economical utilization of personnel, equipment, and frequencies. ?

e. The requirement for the receipt of data from Picket Ships is similar to that of the DEW Line. Data from the latter will be provided to CINCONAD forces from centralized points and distributed by a system of teletype sequencing equipments similar to that as originally proposed by COMNAVFORCONAD. These type arrangements eliminate transmission delay factors, and are, in effect, the equivalent of direct circuits.

f. In addition, C[illegible]CONAD is amending Operations Plan 9-56 to delete the requirement f[illegible] voice communications which will greatly simplify point-to-point communications problems, particularly frequencies.

15 Aug 1957

From: Director, Naval Communications
To: Director of Communications-Electronics, U. S. Air Force

Subj: Contiguous Radar Coverage Ship/Shore Communications

Ref: (a) USAF Secret memo AFOAC-S/O of 18 Mar 1957
(b) CNO Secret ltr ser 003782P30 of 25 Feb 1957

1. As requested in reference (a) the proposal that the Navy assume full responsibility for furnishing all ship/shore communications in the Contiguous Radar Coverage systems has been reconsidered. The Director, Naval Communications considers that these systems should remain under control of the Air Force for reasons as follows:

a. The ships, while on station, are under the operational control of Commander in Chief, Continental Air Defense Command.

b. Direct communications between the ships and the Air Force Direction Centers are feasible and in accordance with good communication principles.

2. Reference (a) states an understanding, on the part of the Air Force, that there are adequate facilities in existence at Naval Stations for meeting the ship/shore communication requirements of the proposed system. This is erroneous information. The Navy would be required to provide additional receiving, transmitting and relay facilities. The lead time for this program would be approximately the same under either service.

3. In view of the present personnel situation, the Navy can no longer afford to maintain shore communications activities for the sole purpose of providing a CW back-up function. The Navy must start programming the activities which perform this service out of existence at the earliest practicable date, so that the personnel at these stations can be used to fill urgent requirements elsewhere. To keep shore stations in an active status for so few ships is uneconomical, and extremely difficult to justify when the ships can communicate equally well, or better, directly with the Air Force activities with which they operate. The Navy is vitally interested in reliable direct communications between picket ships

[redacted]

[illegible], subject: Continuous Radar Coverage - Ship/Shore [illegible]cations, continued

g. Present planning, and for the foreseeable future, envisions teletype telling as the primary data gathering means from Picket Ships. For SAGE integration, teletype "tape to card" is being planned for insertion of Picket Ship information into the computer.

h. An early reply is necessary in order that fire guidance can be provided to CINCONAD and his component commanders.

FOR THE CHIEF OF STAFF:

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[illegible]tion Centers and will take all practicable measures [illegible] improve the ship end of the circuits. Improvements at the shore end are considered a proper Air Force responsibility.

4. If the present voice reliability for reporting circuits is not considered satisfactory, the application of the single sideband technique may provide better communications. If the Air Force concurs with this suggestion the Navy is prepared to provide picket ships with the necessary single sideband equipment.

5. The Navy will cooperate to the maximum practicable extent in establishing satisfactory ship/shore communications, however, the Director, Naval Communications is of the opinion that reversal of his position, as stated in reference (b), would be neither militarily nor economically sound. If the Air Force is unable to agree to the Navy position on this matter, it is suggested that a conference be held for oral discussion rather than a further exchange of papers.

H. C. BRUTON

[redacted]

[redacted]

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HEADQUARTERS
CONTINENTAL AIR DEFENSE COMMAND
Ent AF Base
Colorado Springs, Colorado

OFFICE OF THE ADJUTANT

NOTICE OF IMPORTANT INCOMING CORRESPONDENCE

8 October 1957
(Date)

TO: COMMANDER-IN-CHIEF
CHIEF OF STAFF
SECRETARY OF THE JOINT STAFF

For your information, the following correspondence has been received:

From: USAF Dated: 3 Oct 57

Classification: [redacted] Fanfold# N7-11882 Suspense: 14 October 1957

Action Office: NOELC

SUMMARY: This is an Executive Agency letter on the subject of Contiguous Picket Ship Communications in which they reference a letter from us, dated 21 Feb 57 and an exchange of letters between CNO and USAF on the same subject. They enclose a copy of each of these communications. In our letter we requested guidance on an appropriate program to provide adequate ship/shore contiguous picket ship communications. On 18 Mar 57, Navy withdrew their previous concurrence to provide both ship and shore radio stations. On 18 March 57, Air Force asked Navy to reconsider their withdrawal of concurrence. On 15 Aug 57 Navy came back and said they were unable to support the shore station requirement. In view of this, AF will provide the shore terminals for Direction Center - Picket Vessel communications and Navy will provide required shipborne terminals. Because of present and anticipated money troubles they want us to carefully scrutinize the operational requirement for Direction Center-Picket Vessel voice communications and if we can't fully justify it, we should modify our Operations Plan. Programming action by component commanders will be effected accordingly. We should effect necessary coordination as to operating date, equipment nomenclature and equipment compatibility. The Navy's present ship/shore radio circuit is highly satisfactory, therefore it is felt that a preprogramming test of Direction Center-Picket Ship SSB communications is not necessary and would only cause further delay.

CONAD SECYT FORM 4 AUG 5 [redacted]

J. W. LEDOUX
LCDR, USN
Asst Adjutant

[redacted] 98

(UNCLAS)SUMMARY C-E CONFERENCE 14 - 16 OCT 57

CONFEREES

Gen F. F. Uhrhane	Hq NORAD	Lt Col S. T. Jacks	USARADCOM
Mr. Lee L. Glezen	" "	Maj F. L. Thomsen	"
Col Paul H. Long	" "	CDR R. C. Tripp	NAVFORCONAD
Col O. W. Miller	" "	LCDR J. E. Renn	"
Lt Col J. A. Gahr	" "	Col N. J. Brooks	Hq CRECR
Lt Col D. C. Roath	" "	Maj B. W. Lutz	" "
Lt Col M. E. Wardell	" "	Col S. K. Briggs	Hq CFCCR
Lt Col F. K. Nichols	" "	Col J. A. Bennett	Hq CFWCR
Lt Col K. N. Keyte	" "	Col D. S. Woods	Hq Alaska
LCDR F. DeVane	" "	Lt Col S. J. Maffei	Hq 64thCADD
Maj W. R. Goodrich	" "	G/C D. M. Gwinn	Hq RCAF
CWO R. L. Westfall	" "	W/C E. J. I. Gauthier	" "
CWO F. A. Benham	" "	S/L D. B. Biggs	" "
Lt Col J. Horvath	ADC		
Lt Col D. W. Camp	"		

Colonel Long welcomed all the conferees, stating he was pleased at the fine representation and was sure all present would benefit from the Conference. He informed them General Uhrhane, DCS/C&E, due to an unexpected call, would not be able to make the welcome and introduction address; however, would join them as soon as possible and spend as much time with them as he could.

As an introduction, Colonel Long said he would like to present the following information for the conferees' consideration:

a. CONAD, a joint headquarters, was organized a year ago the

[redacted] UNCLASSIFIED

first of October. Almost a year to the day later, it was changed into a combined headquarters known as NORAD. Since the initial activation of CONAD, many organizational problems and methods of settling the operations of a large headquarters had come up which had not permitted personnel from the C-E office to visit the various headquarters to the extent desired. He believed that this Conference -- either through formal or informal contact -- would be productive from the standpoint that all would be able to become better acquainted.

b. NORAD, a combined headquarters presently staffed by the U. S. Army, U. S. Navy, U.S. Air Force and Royal Canadian Air Force, has two basic air defense missions -- that of operational control and broad planning. For the purpose of this Conference, it is desired that the conferees think of the problems which would be discussed from a combined operational control and broad planning aspect. In short, he said, "If you are wearing a service hat, please hang it on the outside and look at the problems with a question: 'What is best for air defense'?"

c. He further stated that in daily staff work and activities, everyone do all he possibly could to work closer and to be more responsive to the needs of operations. He believed that occasionally there had been the tendency of C-E shops to revert into a purely requirements shop and, for example, lease or buy circuits and put their feet on the desk. In short, the sole buying of circuits does not do the job. A specific feel for the operations at various headquarters must be developed, and everyone do all he can to work on a "hand-in-glove" basis with the operator. The job is to support the operator, and this must never be forgotten. Furthermore, staffs should

[redacted]

constantly be thinking in terms of the operator's requirements, and should be vitally interested and completely familiar with the various C-E support which the operator requires to do his job. Furthermore, it should be seen that those C-E officers in lower echelons likewise work with the operator in accomplishing the overall air defense mission.

d. He further stated the main purpose of calling the Conference was to discuss in detail the proposed NORAD C-E Plan which the NORAD C-E staff had developed. Organizationally speaking, there had been no precedent as far as the Plan was concerned. Recognizing that it is the first effort and that it may have many holes, it was believed that through the active discussion which would be conducted, and the exchange of the many ideas which would be reflected (plus taking advantage of all the experience present), a C-E Plan for NORAD could be put into the field which all could be proud. During that portion of the Conference which dealt specifically with the Plan, all were encouraged to come forward with any ideas which they may have; therefore when completed, it would not be the C-E Plan for this Headquarters, but would be the C-E Plan for NORAD by the senior communicators in NORAD.

Colonel Long then stated that other important items were on the agenda in addition to the C-E Plan, and also a limited amount of free time had been allotted that could be spent on any items the conferees desired to discuss. In view of this, he suggested the meeting get underway and introduced the following items and speakers in turn:

[redacted]

[redacted]

(UNCLAS) ITEM #1 OPEN DISCUSSION REFERENCE PROPOSED NORAD C-E PLAN

Presented by Lt Colonel D. G. Roath, DCS/C-E NORAD

Colonel Roath opened his presentation with a brief resume of why the Plan was necessary, the fact it was meant to be broad in scope, and would eventually be considered as a general support document to CADOP 56-66. The subject was then opened for discussion by the group. The salient points discussed during this period were noted and will be incorporated into a new draft. This Plan will again be forwarded to all conferees for consideration and comments.

(UNCLAS) ITEM #2 VULNERABILITY OF LEASED-CIRCUIT COMMUNICATIONS SYSTEMS

Mr. C. G. Duncan, AT&T Representative

This presentation was made to the CINCNORAD and staff members, in addition to the conferees. Mr. Duncan discussed what AT&T was doing to make long-line circuitry more reliable, particularly with reference to sabotage, and destruction by bombing. He indicated the following actions were being taken.

a. Multiple routes are being set up for all long-line circuits with an express routing system available.

b. Long-line circuits are by-passing, where possible, areas of congestion and assumed target areas.

c. Ring-city routing will be employed around target areas and areas of congestion.

d. Long-line communications for military systems will be provided over two or more routes, thus preventing a complete black-out of communications in case of failure to one route.

[redacted]

He further stated diversification is the keynote of the AT&T system. Mobile equipment is now available that can span breaks in open wire or cable and supply emergency additional communications when required. Reference the effects of strikes on the system, AT&T is handicapped during these periods, but attempts to maintain military communication at the same level of efficiency.

(UNCLAS) ITEM #3 REVIEW OF ENGINEERED MILITARY CIRCUITS

Presented by Lt Col Roath, DCS/C-E NORAD

Lt Col Roath presented for conference review a proposed NORAD regulation on the call-up and employment of Engineered Military Circuits. He prompted discussion on the use of EMC's in general, asking that each conferee review each EMC under his control for adequacy of terminal arrangements, speed of service, and basic need. The suggestion was made that, in certain cases, other facilities may prove more satisfactory and economical. In conclusion, while cost was not the primary consideration, certainly our operational requirements must be met by facilities which are timely and economically within reasonable limits.

(UNCLAS) ITEM #4 COMMUNICATION SYSTEMS OF NORAD

Presented by Lt Col F. K. Nichols, DCS/C-E NORAD

Lt Col Nichols summarized functions of NORAD personnel as applicable to C-E systems. These include advice and assistance in development of plans and requirements; monitoring C-E systems performance; and the cognizance and monitoring of designated specific projects. Examples in illustration include the Missile Master program, communications with overseas COC's, and use of TV between air defense headquarters.

Particular emphasis was made that NORAD C-E personnel must be familiar with all Army, Navy, and Air Force C-E systems employed in air defense that are utilized in their particular division or region. The NORAD C-E officer's job is associated with the task of insuring that maximum operational effectiveness is being achieved, whereas the component C-E officer's task is to insure that the facilities are made available.

Lt Col Kenneth N. Keyte addressed the group on a specific communications project, "Improving Communications of the NORAD COC," which has been undertaken at NORAD Headquarters. It was emphasized that the C-E officer at all NORAD echelons should maintain full cognizance of the status of COC and/or CC facilities to insure effective operation. It was pointed out that communications systems concepts and plans must be applied to all COC's if effective air defense is to result.

(CONFIDENTIAL) ITEM #5 REPORT ON AIR DEFENSE INCIDENT 20 SEP 57

Presented by Maj W. R. Goodrich, DCS/C&E, NORAD

Major Goodrich outlined an air defense incident which occurred 20 September, involving stations within the Eastern CONAD Region, relative to pickup of targets traveling at several thousand knots velocity. The incident was investigated by a team from NORAD Hq by visiting the sites concerned and the 26th Air Division Hq. A report of the incident was prepared in which it was concluded that the incident probably resulted from interference between radars. If similar situations arise in the future, direct and on-the-spot investigation by region and division NORAD personnel is to be accomplished.

[redacted]

(SECRET) ITEM #6 BRIEF ON MISSILE MASTER

Presented by Maj F. L. Thomsen, Deputy Signal Off, Hq USARADCOM

Major Thomsen stated the overall contract with the Glenn L. Martin Company calls for the installation and manufacture of ten Missile Master systems. The Pilot Model had been installed at Fort Meade, Maryland, and is presently undergoing a performance acceptance test. It is expected to be operational by 1 Dec 57.

Systems #2 through 10 were originally scheduled to be delivered and installed one each per month starting in March 1958; however, there has been some slippage in the program. System #2 has been completed and is presently in storage. System #3 will be completed in March or April 1958. In view of the above, it is expected that delivery of Systems #4 through 10 will commence in October or November 1960 and will be installed one each per month thereafter. It appears likely that it will be April or May 1961 before the entire program will be completed.

The first priority for installation is at site P-9, Highland, N.J.; P-9A, Gibbsboro, N.J.; and P-20, Selfridge AFB, Michigan. Plans for the remaining six sites have been completed and are currently being staffed in ADC and NORAD.

(CONFIDENTIAL) ITEM #7 BRIEF ON STATUS OF SAGE

Presented by Lt Col Ogan, DCS/ADC

The current status of SAGE technical facilities shows that only San Francisco, Reno and Los Angeles DC's are approved in the 58 MCP, with reclama action for the next five facilities awaiting Congressional

[redacted]

approval in January of 1959 for inclusion in the 58 MCP. It is assumed that facilities will be funded at the rate of one every two months starting with July 1958 through the end of the schedule. This will result in a stretch-out of the entire SAGE program.

It is anticipated a new SAGE Schedule #7 will be forthcoming by mid-November of this year, due to the stretch-out indicated above. Minor changes through facilities #18 will result in the schedule due to radio sites and radio sites becoming operational after the scheduled operational date of their parent DC. This will result in a slippage of the DC operational date of one to four months.

USAF has currently approved the new SAGE sector and division boundaries as outlined in the 3 Aug 1957 SAGE Development Review. Firm planning action and coordination with the RCAF, with new boundaries, are progressing. It is anticipated the results of this planning action will be forwarded to USAF by 15 December, this year.

(UNCLAS) ITEM #8 LEASED COMMUNICATIONS FACILITIES

Presented by Capt B. L. Shelton, DC&E/ADC

He stated the FY'57 P42.6 program requirement was 28.8 million dollars. The hard-core figure for FY'57, 17.8; this represents those items of a recurring nature that had to be carried into FY'58. He pointed out that our dollar available figures for current FY come from the ADC/DCS Comptroller and the Comptroller, 4600th AB Group.

He further stated that for FY'58 there was a program requirement dollar of 28.5 million, and that USAF had said that they would meet that program dollar. The estimated hard-core for FY'58 was 26.4 million dollars, and this [illegible] represents that figure which must

[redacted]

be carried over to FY'59. For FY'59 in Project 482 there is programmed 48.9 million dollars. Captain Shelton further explained that for FY'58, Headquarters USAF was doling the Project 482 money out by quarters, and that we are extremely close to the statutory obligation figure limitations. In conclusion he stated that in view of the increased austerity, it certainly behooves all of us to evaluate carefully any new or increase in requirements we might have.

(SECRET) ITEM #9 PHASE I TESTING OF DEW LINE

Presented by Mr. J. F. Morrison, Bell Laboratories

By specific request of NORAD Headquarters, a representative of Bell Laboratories, Mr. J. F. Morrison, presented a summary of the results of the Phase One testing of the DEW Line which was accomplished during June and July 1957. These tests indicated highly satisfactory performance of the radar equipment installed on the line. The tests also indicated satisfactory performance of the communications facilities provided for lateral communications. Both the test and the current operations reveal serious problems relative to the rearward communications fron the DEW Line into the existing NORAD communications facilities. In addition, it is evident that corrective steps are required to clarify the responsibilities of the various agencies associated with DEW Line operations. In essence, facilities provided on the DEW Line itself are satisfactory; however, the organizational and rearward communications problems are of such magnitude that it cannot be concluded that the DEW Line project can be considered completed.

[redacted]

(UNCLAS) ITEM #10 WAR GAMES

Presented by Col E. H. Callahan, DCS/P&O, NORAD

Col Callahan's presentation depicted an attack by an aggressor nation on the North American Continent. It pointed out the requirement for an active, complete air-surveillance system as part of air defense, and gave a good insight on the C&E problems involved.

(SECRET) ITEM #11 NORAD ECCM - ECM CONCEPTS

Presented by Lt Col Michael E. Wardell, DCS/C&E, NORAD

Colonel Wardell stated that proposed NORAD ECM policy, based on Hq USAF policy, will be published as Annex 4 to the NORAD C-E Plan. The electronic warfare threat facing us from behind the Iron Curtain has the potential to interfere seriously with the air and ground weapons of the North American defense system. It could be crippling if maximum effort in the area of operator training and in the retrofitting program of our present radars is not effectively carried out. It is apparent that we will have to fight the next war with the men then in uniform and with the weapons in the field. Electronic warfare is an across-the-board problem and must influence our every action. The potential enemy has the capability to use "brute force" electronic jamming as well as the capability to use sophisticated types of deceptive jamming, decoys and chaff. Recent JCS directives will result in ECM-controlled and instrumented air defense exercises, starting in the spring of 1958, to test the vulnerability of all air and ground weapons of the components of NORAD. CINCNORAD will use the above to formulate a priority list of all air and ground weapons and radars of

the four services. They will recommend a priority of effort and funds for the above weapons and radars that are in the category of air defense. GCI radars in air defense will be primarily in the "L" band, with the 400-mcs radar to be the first frequency diversity radar added to the surveillance system.

NORAD ECM exercises of the past nine months strongly point up the fact that personnel at AC&W sites and NIKE installations do not realize the extent which ECM can degrade their effectiveness. "Burst" and random chaff tactics were very effective in "breaking lock," capturing "Gates," and accounting for many false targets. "S" band electronic jamming against GCI radars has frequently been very effective.

The future of the B-29 radar evaluation flights of ADC is in jeopardy. Hq USAF has proposed to direct SAC to supply all ECM training for ADC, ARADCOM and RCAF. Radar evaluation would be performed by Air National Guard B-47 and B-57 Squadrons, using technical personnel of the radar evaluation flights. These technical people would be transferred to the C-E staff of the air defense forces headquarters. Another solution proposed by Hq USAF is to substitute T-29 or B-47 aircraft in the radar evaluation flights for the B-29's. It appears that the B-57's previously scheduled as replacement aircraft are definitely out of the picture. Both Air Defense Command and USARADCOM have plans to improve their ECM training. Air Defense Command is planning to improve the ECM portion of the STP. USARADCOM is issuing out new ECM jamming equipment at battalion and battery level to cover S, L, and X bands. The new Missile Master systems installation is programmed to have a complete system for ground-based ECM training.

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He further stated that we, in C-E business, must take an active interest in electronic warfare; to push operator training in countermeasures to the maximum; to encourage the organization of an integral air defense system using Canadian, Air Force, Army, and Navy weapons; and to do whatever is possible to reduce procurement time on new hardware.

The Conference ended at noon on the 16th of October. General Uhrhane thanked all present for their fine cooperation. It was his opinion, and also the opinion of his staff, that many important matters had been discussed during the Conference. He hoped, that for some of our problems, we were on the way to a solution.

As a precaution, he had informed his staff to stay out of the nuts and bolts business as much as possible. If anyone believed we were unnecessarily in their business, he desired they so inform him. However, at the same time, he would take such action whenever he believed it necessary for NORAD to do so.

In his opinion, it appeared our overall schedule for the conference was a bit tight, and suggested in future sessions that more time be allotted. He again thanked the conferees and suggested another C-E meeting such as this be held within six months. This, in general, appeared to be in agreement with all present.