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CHAPTER V

ABM SYSTEM AND SPACE DEFENSE WEAPONS

SECTION I - ABM SYSTEM

SAFEGUARD DEPLOYMENT

(U) Background. On 18 September 1967, the Secretary of Defense stated his decision for production and "thin" deployment of the Army-developed Nike-X ballistic missile defense system. The Secretary of Defense had asked the Army early in December 1966 for a plan for a thin Nike-X deployment. He directed that the plan should provide for defense against an early Chinese Communist threat, defend existing Minuteman to some degree, and provide for safeguard against accidental launch. The Army's plan provided for an austere defense of CONUS and also Alaska and Hawaii. The system was to consist of Perimeter Acquisition Radars (PARs), Missile Site Radars (MSRs), and Spartan and Sprint missiles. The system was officially named the Sentinel System on 3 November 1967, at which time the organization for establishing the system was announced. Lieutenant General Alfred D. Starbird was named the Army's Sentinel System Manager. The Sentinel System Command was established at Redstone Arsenal, Huntsville, Alabama, under Brigadier General I. O. Drewry.

(U) The Sentinel Deployment System Description, 1 June 1968, stated that the major objective of the deployment was a defense against a deliberate Chinese Communist attack against our industrial and urban

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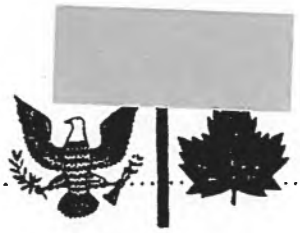
centers (a countervalue attack). This included protection of Hawaii and Alaska as well as the entire CONUS. In 1968, a total of 17 sites was planned in the Sentinel System deployment, 15 in the CONUS and one in Alaska and one in Hawaii. In all, in the 1968 program, there were planned to be six PARs, 17 MSRs, 480 Spartan Missiles and 192 Sprint Missiles. The 1 October 1968 Sentinel System Description listed 1 October 1972 as the first site (Boston) Spartan/Radar equipment readiness date (ERD). The first site Sprint ERD (also Boston) was 1 July 1973. The last site final equipment readiness date (FERD) was 1 January 1975.

(U) 1969 Program Revisions. At the end of 1968 and early in 1969, the new Secretary of Defense made a complete review of the Sentinel Program. Out of this came a decision announced by the President on 14 March 1969 to drastically alter the deployment. Even the name was changed. On 25 March, the system was officially changed to the Safeguard Ballistic Missile Defense System.[1]

(U) Only a two-site system defending Minuteman sites was approved at this time. This deployment was termed Phase I of the Safeguard system and was approved by PCD Z-9-704, 1 May 1969.[2] This PCD explained that the increasing Soviet threat to the U.S. retaliatory capability had led to the decision to modify the version of the Sentinel system previously approved to a revised system known as Safeguard.[3] Safeguard, the PCD went on, when fully implemented would provide some defense of Minuteman sites against a USSR attack, an option to provide additional protection to Minuteman sites if required, extra warning and protection for SAC bomber forces, and protection of the National Command Authority. The fully deployed Safeguard would also give coverage



of the more heavily populated areas against an emerging ICBM threat of the Chinese and protection against launch by any power of a small number of ballistic missiles.

(U) Phase I, the PCD stated, was designed to provide an initial deployment that would give experience in installation, and test of the system and also thin protection to most of the Minuteman force. Phase I was to be deployed as rapidly as possible and would consist of sites in the Minuteman fields at Grand Forks AFB, North Dakota, and Malmstrom AFB, Montana. In each site, there were to be a PAR, a four-face MSR, 30 Spartan missiles and 28 Sprint missiles. Equipment readiness dates (ERDs) were set for January 1974 for Grand Forks and July 1974 for Malmstrom.

(U) The PCD noted that subsequent decisions as to expansion of the system would be made on an annual basis by the President and the Secretary of Defense. It also stated that while a decision had not been made to proceed with full deployment, the necessary procurement and construction would proceed as required to maintain lead times (modified later, see below).

(U) It was expected in 1969 that a decision would be made early in 1970 whether to go ahead with a Phase II Safeguard. The full Phase II deployment would add ten sites to bring the total to 12. But there were Phase II options, the smallest of which (Phase IIA) would add only two more sites.[4] On 25 August 1969, DOD approved the configuration and deployment schedule contained in the Army's design review and approved essential site selection and engineering to meet the Phase II deployment schedule. However, the decision provided that funds would not be committed for Phase II site construction or hardware pending the results of the President's annual review.[5]

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NORAD OBJECTIVES

(U) [redacted] NADOP 72-79. In the Commander's Foreword to NADOP 72-79, 15 August 1969, General Seth J. McKee included the following statement on ballistic missile offense and defense:

> My review of the threat basis used in developing the North American Aerospace Defense Objectives Plan (NADOP) coupled with the gaming and analysis used to derive and test various force structures against that threat has led me to certain inescapable conclusions. For example, it becomes obvious that we cannot safely rely solely on our projected strategic offensive forces for deterrence in the 1976 time period. The projected arsenal of highly accurate, multiple independently targetable reentry vehicles (MIRVs) and the growing menace of the Yankee class ballistic missile submarines could make a Soviet first strike option a militarily feasible course of action. The stability of United States military dominance of the past and mutual deterrence of the present will have eroded. A Soviet first strike in the 1976 time period with the projected inventory of accurate weapons would be able to destroy a significant part of the U.S. retaliatory force which, coupled with improved Soviet defensive systems, could preclude surviving U.S. forces from inflicting greater retaliation than Soviet authorities might be willing to accept.
>
> Given such a situation, North American defensive forces, or lack thereof, will play an ever increasing role in the deterrence equation. Certainly the absence of

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an effective ABM defense and an improved bomber defense would place us in extreme jeopardy in the event of Soviet exercise of a first strike option. Should an arms limitation agreement with the Soviets limit the numbers and types of nuclear ballistic missile weapons that could be contained in Soviet and United States inventories, we would still require a level of ABM defense commensurate with Soviet ABM defenses in order to deny the Soviets the option of conducting a countervalue strike against the North American continent with her limited inventory of weapons while protecting her targets of value from our reduced offensive forces. Under either of these circumstances, improvements in our defenses, with increasing emphasis on development and deployment of effective ABM defenses are necessary for the time period addressed in this plan.

(U) General McKee noted that the force tables in the NADOP did not include participation by the Canadians in ballistic missile defense. However, he stated that he was firmly convinced that the most effective ABM system had to include Canadian participation. He said he urged negotiations to rectify this shortcoming. "Just as air defense is a binational problem, so is ballistic missile and space defense, and all should be vested in a single commander, CINCNORAD," he concluded.

(U) NORAD stated in NADOP 72-79 that its objective was to provide a ballistic missile defense for the North American continent that would limit damage to an acceptable level. The recommendation to deploy two Safeguard sites, NORAD continued, would provide

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a thin defense for a portion of the U.S. strategic offensive missile force. However, CINCNORAD would continue to be unable to defend against a full-scale ballistic missile attack from all directions. This deficiency, it was stated, would require increased deployment of the Safeguard system, as well as continued research and development of complementing systems.

(U) It was NORAD's recommendation that in light of the Soviet ICBM and SLBM force postulated in the FY 1976 time period:

1. the proposed 12-site Safeguard system be deployed in its entirety, and

2. research and development be continued on Nike-X and other promising missile and space defense concepts, such as ABMIS-ASW-PHOEBUS, Dual Capability Feature Minuteman, and SABMIS/THERMIS, for a defense in depth capability at the earliest practical date.

(U) The 12-site Safeguard configuration was used as a minimum ABM force structure in the NORAD 76 Study. To limit damage to 30-40 per cent, additional Safeguard deployment was required, NORAD said. This requirement, it was stated, was based on an analysis which distributed Safeguard components among 19 areas within CONUS. Under this force level, NORAD listed 1760 Spartan missile equivalents and 1837 Sprint missile equivalents by end FY 1976. NORAD added that a better defense in depth capability could be achieved by employing a mix of ABM systems capable of attacking enemy missiles during the boost, midcourse, and terminal phases of its trajectory.

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(U) NQR 4-69. In support of NADOP 72-79, NORAD issued a NORAD Qualitative Requirement (NQR) for a boost/mid-course ballistic missile defense system that would provide a defense in depth. This was NQR 4-69, dated 1 October 1969.[6] NORAD noted that an NQR for a terminal ballistic missile defense system had been issued in 1965. A boost/mid-course system was required to provide the capability to engage threatening ballistic objects throughout their trajectory. It could be made up of one or more individual weapon systems and was needed as soon as possible. The boost/mid-course system or systems would be used in conjunction with the terminal system and other future systems.

(U) The JCS responded to NQR 4-69 by agreeing with the general statement of qualitative requirement and stated that it would be considered in preparation of JSOP 72-79 and JRDOD 72-89.[7] However, the JCS noted that NQR 4-69 could not be recognized by the JCS as a valid NORAD requirement within the current NORAD mission which did not include a ballistic missile defense.

ABM COMMAND AND CONTROL

(U) Background. In November 1967, the Army submitted to the JCS a plan for ABM command and control. The Army plan defined three echelons: a Ballistic Missile Defense Center (BMDC) at the CONAD COC to provide centralized control, Area Coordination Centers (ACCs) at the intermediate (region) level, and Missile Direction Centers (MDCs) at the lowest level. The Army plan provided for integration with the CONAD system only at the highest level, the BMDC-COC level. It did not provide for CONAD operational command through the CONAD region commanders. It used ARADCOM for operational command below the BMDC level.

(U) CONAD objected to this scheme in a message on 18 December 1967, stating that it wanted operational command through its own subordinate regional commands rather than directly from the COC. CONAD recommended in a study group report on 2 January 1968 (Proposed CONAD Command and Control Structure) a partially-integrated structure. CONAD stated in this study that region level and above integration was the most efficient for the probable range of force postures of the 1970s. Component operation below region, the study said, was considered most efficient.

(U) The JCS agreed in principle to establishment of a partially integrated structure. CONAD was advised by the JCS that on 19 April 1968 they had concluded that three echelons of command and control would be required -- the BMDC, ACC and MDC. CINCONAD would designate at the region/ACC level the commander of either the air defenses or ballistic missile defenses to be, in addition, the commander of a subordinate unified command. The JCS asked for a study on the details of carrying this out.

(U) In a report dated 30 August 1968, CONAD stated that three region headquarters would be required in the CONUS. CONAD recommended using existing facilities for the CONAD region combat center. Option 1, of four provided, called for using the region combat center (CC) in an existing SAGE CC or DC facility or in the case of Selfridge AFB only in a messile master facility; the ACC would be in its designed location in the MSR building. This option was recommended by CONAD. The specific locations recommended by CONAD were as follows: for the Western Region, the CC was to be located in the current facility at Hamilton AFB and the ACC in the MSR building at Fort Baker; for

the Central Region, the CC at Richards-Gebaur AFB and the ACC at Whiteman AFB; for the Eastern Region, the CC at Stewart AFB and the ACC in the New York (Tenafly) MSR building. It was added that if it was not feasible to relocate the ACC from Detroit to New York, the CC should be in the missile master facility at Selfridge AFB, Michigan, and the ACC in the Detroit MSR building. On 2 December 1968, the JCS approved Option 1 as a point of departure, but withheld approval of specific locations for the RCCs and ACCs pending further justification by CINCONAD.

(U) CONAD Sentinel RCC/ACC Proposals. On 18 January 1969, CONAD provided the Army and Air Force with a tentative reply for the JCS, requesting the services' comments. In this message, which detailed CONAD's rationale for selecting the above locations, CONAD stated that it reaffirmed its choice of the San Francisco area for the Western Region and Richards-Gebaur and Whiteman for the Central Region.[8] For the Eastern Region, however, CONAD said it was modifying its recommendation to locate the RCC at Stewart and the ACC at the New York (Tenafly) site. CONAD said it would be acceptable if the ACC were placed at Detroit, as recommended by the Army, and ABM data remoted to the RCC at Stewart.

(U) DA replied on 23 January 1969 that it agreed with the location of the ACCs at San Francisco, Whiteman, and Detroit, provided DOD approved Option 1 and the requirement for RCCs.[9] The Air Force did not agree, however, and raised a number of questions concerning locating the eastern ACC at Detroit and the region CC at Stewart. The Air Force did not agree that this would be less costly, for example, and pointed out that according to the JCS directive and the CONAD report, one of the commanders at that

level would be region commander and the other would be region deputy commander. The Air Force did not feel that having the two separated by 400 miles was realistic.[10]

(U) CONAD submitted its letter to the JCS on 28 January 1969.[11] In this, CONAD reaffirmed that the Western RCC and ACC should be in the San Francisco area and the Central RCC and ACC at Richards-Gebaur and Whiteman. In regard to the eastern region, CONAD said that while a number of alternatives were acceptable to it, it recommended locating the RCC at Stewart and the ACC at the Detroit MSR site. CONAD noted that the Army and Air Force had both accepted the Western and Central locations, but that there was not a mutually acceptable location for the eastern facilities.

(U) On 26 February 1969, the Deputy Secretary of Defense sent a memorandum to the JCS approving the JCS recommendation for CINCONAD to assume operational command of the ABM system. Included in the decision was that the Region CC would be collocated in the Missile Site Radar (MSR) building with the ACC.

(U) Initial Thinking on Safeguard. Shortly after this, on 14 March 1969, the President announced the considerably changed deployment to the ABM system discussed earlier. These changes required considerable rethinking of the whole matter of command and control for the ABM system. On 3 April 1969, CONAD told ARADCOM that for Safeguard Phase I only, it did not intend to implement operational command through the subordinate unified commander but would exercise operational command directly from the COC.

(U) CONAD said this in reporting on its review of an Army draft study on Safeguard command and control. CONAD pointed out that the discussion of the

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ACC did not include the requirement to interface with CONAD subordinate unified commands. This requirement still existed, CONAD stated, and would be implemented unless its studies resulting from the above mentioned DOD decision on command and control of 26 February indicated otherwise. CONAD then said that it would not implement operational command for Phase I as stated above, but that there had to be provision for interface between Phase I and the alternate COC in case the COC went out. Also, CONAD said that there had to be an option to incorporate Phase I into the system that interfaced with the CONAD command should Phase II be implemented. CONAD added that it supported establishment of a BMDC in the NCMC for Phase I.

(U) [redacted] CONAD changed its view on operational command during Phase I, however. In another letter on 29 April to ARADCOM, General Reeves stated that:[13]

> After a thorough review and considerable study of the facts involved in the Department of Defense policy regarding implementation of the Subordinate Unified Command structure, I have concluded that CONAD operational command must be exercised through the Subordinate Unified Commander during all phases of Safeguard deployment, including Phase I.

(U) [redacted] CINCONAD explained that so doing would provide experience which would result in a smooth transition into Phase II deployment. It would also enable the subordinate unified commander to develop plans and procedures for operational command and coordination between the air defense and the ballistic missile defense. Finally, CINCONAD pointed out that this interface between the CONAD and Safeguard systems would facilitate continuity of operations

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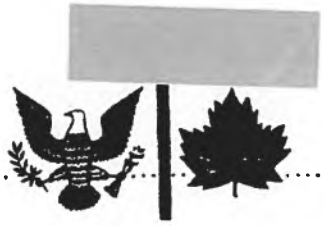


and succession of command with more assurance of the preservation of nuclear employment authorities.

(U) On 6 May 1969, CONAD told the JCS that it had concluded that operational command had to be exercised through the CONAD subordinate unified commander during all phases of Safeguard deployment, including Phase I, and cited the above reasons.[14]

(U) CONAD wrote to ARADCOM on 6 May that it would like Annex H, Safeguard System Design Review, Package Number 8, Command and Control, 16/17 April 1969, revised to indicate that operational command would be exercised through the CONAD subordinate unified command in all phases.[15] On 20 May 1969, ARADCOM said that this document had been revised to indicate this policy.[16]

(U) NORAD 76 Study Proposals. In the meantime, on 8 April 1969, the JCS directed an extensive study be made by CONAD that would provide the JCS the overall concept of operations envisioned for the NORAD/CONAD environment in the mid-70s time frame and an implementation plan (see NORAD 76 Study, Chapter Seven).[17] The completed study, titled NORAD Concept of Operations 1976 Study (NORAD 76 Study) was sent to the JCS on 15 July 1969.

(U) In the study, NORAD examined a number of force mixes, concepts and configurations and found one alternative to the programmed force that would give a significant improvement in operational effectiveness over the programmed force and was cost competitive. The programmed force was termed the Baseline and the other force the Alternative.

(U) Two configurations for interface at the Region combat center (RCC) and Safeguard Fire Coordination Center (FCC -- formerly Area Coordination

Center) level were outlined in this study in accordance with the Baseline and Alternative configurations. In the Baseline, the RCC would be located in the missile site control building. In the Alternative configuration, the three CONUS RCCs would be placed aboard AWACS aircraft and connected to the Safeguard FCC by data link. NORAD's recommendation in NADOP 72-79 in regard to combat centers was that the NORAD 76 Study Alternative Force be adopted.

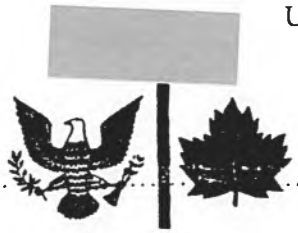
(U) On 7 August 1969, CONAD explained to ARADCOM that its 76 Study superseded its previous plans for CONAD/Safeguard interface.[18] CONAD explained that its 76 Study described the Alternative interface as being that required for the exchange of austere message traffic uniquely designed for low volume. CONAD said it believed that the 76 Study represented a consolidated statement of interface requirements for the RCC/FCC except for definition of the message interface. Therefore, CONAD was providing as attachments to this letter a draft of messages in support of the Alternative configuration.

(U) As discussed elsewhere in this history, a reorganization of the command and control structure resulted from Project 703 after the 76 Study was completed and submitted. On 14 November 1969, a new six-region structure was set up in the CONUS (see Chapter One). In October, the JCS told CONAD that changes in forces and organization had raised questions as to whether the 76 Study continued to represent the NORAD concept of operations in the mid-1970s. CONAD answered on 4 November that its 76 Study continued to be the approved NORAD concept of operations, contingent upon phase-in and achievement of full operational readiness of modern forces

such as AWACS, OTHB, and improved weapons systems. The NORAD 76 Alternative configuration and the 703 configuration were compatible, CONAD continued, and either would provide a logical and operationally effective position for transition into the Safeguard program. If the proposed systems were changed significantly, such as by elimination of AWACS, CONAD said, the ground-based RCCs should be continued as provided in the 703 configuration. A delay in AWACS would also require continued operation of the ground-based RCCs.

(U) New RCC/FCC Study Group. Following submission of the above, on 26 November 1969, CONAD told ADC and ARADCOM it was forming a new study group to study RCC/FCC interface.[19] CONAD said that the phase-out of the region combat centers and the designation of six division direction centers as region control centers and the new Safeguard deployment had invalidated to a degree previous FCC/RCC interface studies. Previous recommendations, CONAD continued, on siting, costing, and technical configurations, had to be examined in relation to new RCC locations, tentative FCC locations, and equipment interfaces. ARADCOM and ADC participation was requested.

(U) Location of the Ballistic Missile Defense Center in the NCMC. A Ballistic Missile Defense Center (BMDC) would interface with the NORAD/CONAD COC for centralized control of the ABM system. Expansion of the NCMC to provide space for the BMDC had been approved at a cost of $18.3 million. Space was also required for the ADC Space Computational Center to provide operational control interface between the Space Detection and Tracking System and the Satellite Intercept System and the NORAD COC. The Air Force had asked for $3.1 million for this expansion. To provide space for the BMDC and SCC,



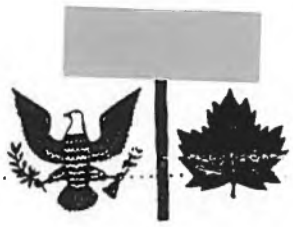
it was planned to construct three new buildings in the Cheyenne Mountain Complex (see NCOC Master Plan, Chapter Seven). The total cost was estimated to be $20.8 million, of which, as noted above, $18.3 million had been approved. PBD 79, approved 23 November 1968, approved the required additional $2.5 million.[20]*

(U) In response to a letter from ARADCOM, on 11 February 1969, CONAD advised that a preliminary conclusion was that Building Number 1 in the NCMC was the more suitable building for the BMDC.[21] A main reason was availability by the equipment readiness date of the BMDC. The new buildings would not be available as early as was desirable. However, following the change from Sentinel to Safeguard, CONAD again wrote to ARADCOM noting a possible change in the BMDC IOC date and stating that possibly Building 9 (the first new building) could be considered for the BMDC.[22]

(U) On 19 September 1969, ARADCOM asked that a firm CONAD proposal be made for location of the BMDC so that initial design criteria for the BMDC could be finalized. ARADCOM pointed out that informally CONAD had offered Building 11, one of the new buildings. ARADCOM said it had informally accepted and had since found that this building would accommodate the BMDC. Also, scheduled completion date of the building was October 1972 which was within the timeframe required.

(U) CINCONAD answered on 25 September that it was planned that the BMDC be located in Building 11.[24] General McKee said he had directed a thorough review

* (U) Congressional approval was still required.



of the use of space in the NCMC to be sure it was being used only for wartime essential functions (see Chapter Seven). Also, he wanted to be sure that minimum but adequate space for these functions was available. Accordingly, General McKee said that while he would approve space in Building 11, he could not at this time allocate the entire building. He asked that ARADCOM provide complete explanation of space requirements and justification based on the criteria of placing only essential wartime functions in the NCMC.

(U) ARADCOM's response was provided on 26 November 1969. After review, on 23 December 1969, CONAD told ARADCOM that all of Building 11 had been allocated for the Safeguard BMDC, providing no unforeseen requirements caused a reevaluation of floor space and the BMDC used the space as currently planned.[25]

SAFEGUARD-MINUTEMAN COORDINATION STUDIES

(U) Background. The Nike-X Operational Impact Study, completed in early 1967, showed a number of problems requiring follow-on study. Of some 30 identified problems, numbers 21 through 30 were given to CONAD for further study. Problem 28 concerned the coordination required between CONAD and SAC for the management of offensive and defensive forces to reduce any interference problems to a minimum. An analysis made late in 1967 by SAC and ARADCOM showed that there could be interference to the extent that there was the possibility of missile "fratricide." A proposed concept for integration of offensive and defensive weapons to minimize the fratricide problem was developed by a joint ad hoc study group in December 1967 and sent to the JCS. In March 1968, the JCS said the concept would be used as a basis

for further analysis of the interference problem and that CINCONAD was to convene Problem 28 working group conferences. These meetings were to develop requirements and cost estimates for weapons coordination by 1 August 1968.

(U) However, in May 1968, at the request of DDR&E, the JCS expanded the study and report to a plan that would provide for the coordinated employment of Sentinel and Minuteman. The plan was to include requirements, cost, development schedules, etc. For this study, the JCS directed CONAD to set up a full-time task force headed by a general officer. From May through August, extensive study was made of all aspects of the interference problem and a four-volume study report (dated 15 August 1968) was submitted to the JCS. In an SM on 13 September 1968, the JCS directed follow-on studies by the concerned agencies. CINCONAD was given a number of tasks including making a study of the effectiveness of the employment coordination concept (Concept X), developing operating procedures and detailed operational plans for concept implementation, and studying communications survivability requirements. A new ad hoc study group, established by the CONAD Chief of Staff, held its first meeting on 30 October 1968. A study report was due 1 August 1969.

(U) 1969 Coordination Studies. On 13 March 1969, CONAD submitted to the JCS an interim report on its tasks assigned by the September 1968 SM. CONAD outlined the status of its studies and the results of its work to date. After submission of this interim report, work was held in abeyance until October because of the decision to shift to the Safeguard system with emphasis on defense of offensive forces. In August 1969, the JCS told all concerned that it was important that planning and programming actions continue so there would be a plan

and equipment by the IOC date of Safeguard, Phase I. However, the JCS continued, several suspense dates established before Safeguard were no longer valid. The dates for reports due in August and September were suspended.[26]

(U) A new study effort to develop a Safeguard-Minuteman coordination plan was directed by the JCS on 21 October 1969.[27] CONAD was directed to appoint a general officer to organize and chair two full-time joint working groups. Brigadier General Spencer S. Hunn, NORAD's Assistant Deputy Chief of Staff, Programs (J-5), was given the job.[28] The report of Joint Working Group I was due 1 February 1970, that of Joint Working Group II, 1 July 1970.

(U) In addition to participation on these working groups with the other agencies concerned, CONAD was given a number of other tasks. Among these was the preparation, in collaboration with the CSA, of a concept of operation for Safeguard to defend those elements of the strategic strike force specified by SAC. At the end of the year, CONAD was preparing an operational employment concept (COEC) for Safeguard. CONAD also had tasks remaining from the September 1968 JCS SM, such as studying communication survivability requirements. Monitoring Army and Air Force efforts on this and working on the subject was CONAD's DCS/Communications (J-6).

CONAD NUCLEAR EMPLOYMENT CONCEPT

(U) On 2 April 1969, CONAD submitted to the JCS its Nuclear Employment Concept (NEC) for the Safeguard System.[29] This concept had been developed by a study group which completed its study on 3 February 1969. The purpose of the study was to provide the basis for establishing CONAD Rules of Engagement and Nuclear Employment procedures for the

ABM system. In sending its concept to the JCS, CONAD noted that it was submitting the concept in fulfillment of those parts of Problems 21, 23, and 27 that pertained to the ABM system. This referred to problems identified for further study by the Nike-X Operational Impact Study in 1967, as noted above.

(U) The JCS approved the CONAD NEC on 9 September 1969. The NEC and the Army's plan of implementation were presented to the Deputy Secretary of Defense on 15 September 1969. OSD approved the NEC and sent it to the President for final approval. This had not been received by the end of CY 1969.

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SECTION II - SPACE DEFENSE WEAPONS

CURRENT SYSTEM

(U) Background. Since May 1964, there had been in operation a satellite intercept system (SIS) termed Program 437. The 437 SIS consisted of command and computational facilities in the CONAD COC and Space Defense Center and the weapon system at Johnston Island. The latter consisted of a ground-based interceptor missile complex, manned and operated by USAF ADC units. The missile inventory consisted of four Thor missiles, two operationally ready on two pads (launch emplacements - LE-1 and LE-2) at Johnston Island and two at Vandenberg for backup and training.

(U) Current Operations. Operations were conducted in accordance with CONAD Operation Order 301C-68, 1 November 1968, until superseded by 301C-69, 16 May 1969. The latter was essentially the same as its predecessors. The concept of operations stated in 301C-69 in the basic order was the same as in the previous order; one sentence was added, however, by Change 2, 14 November 1969 (indicated below by underlining):

> The alert readiness posture for the system will be in accordance with the Satellite Alert Conditions (SATCONs) which will be declared by CINCONAD or higher authority. On the basis of the positive assessment of the threat, CINCONAD will make specific recommendations to the JCS for the commitment of weapons against the satellite(s). On receipt of an engagement order from the President, issued by the JCS, the system will engage and destroy the

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designated satellite(s). Targeting for the launch complex on Johnston Island will be performed by the Space Defense Center. If the CONAD ALCOP assumes command, NAVSPASUR will compute the target data and the Direction Center on Johnston Island, based on this data, will perform necessary targeting computations.

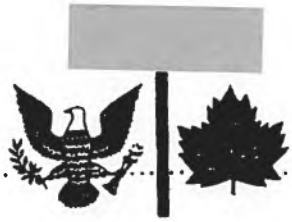
(U) As in previous plans, three satellite alert conditions (SATCONs) were specified in the 1969 plan:

SATCON 3 - A normal readiness condition which can be sustained indefinitely and represents the capability to react to an engagement order in not more than 24 hours with two missiles.

SATCON 2 - An advanced alert condition in which reaction time for both missiles is reduced to five hours.

SATCON 1 - An advanced alert condition in which missiles are prepared for terminal countdown and terminal count is initiated.

There was a change in SATCON declaration authority in the 1969 order. The 1968 order stated that CINCONAD, the JCS, or higher authority could declare SATCON 2 or 3, but SATCON 1 could be declared only by the JCS or higher authority. The 1969 order stated that CINCONAD, the JCS or higher authority could declare SATCON 1, 2, or 3. It was also added that declaration of SATCON 1 required designation of a target if one had not already been designated. As in the previous order, it was stated that the order to engage a satellite was directed by the President and issued by the JCS.



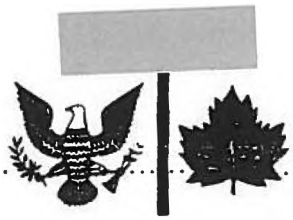
(U) Five types of exercises were prescribed for the 437 SIS. Type V, however, was a special exercise requested by a component command to meet its requirements. The other four were 437 SIS readiness exercises. A great number of Types II, III, and IV (simulated launch or exercise) were held during the year. Type I was a live launch exercise, not often held. In addition to the exercises, CONAD prescribed in a regulation (55-7) on 31 October for operational evaluations of Program 437 to be performed on a complete system basis. The objective of each evaluation would be to ascertain the system capability to perform the assigned mission (as realistically as exercise restrictions permitted) in accordance with operational directives. Operational evaluations were to be conducted periodically with a maximum time between evaluations of 18 months.

(U) During the year, at one time or another, one of the launch emplacements had to be down for some reason. During the period 27 August through 5 September, LE-2 was down for modifications.[30] The other emplacement, LE-1, was on normal alert and LE-2 was on 48-hour recall during this time. LE-2 was again authorized downtime after Christmas for booster change.[31]

(U) As a part of the Project 703 reductions, program costs were directed to be reduced but capability retained at Johnston Island. This was directed by PCD F-9-307, 24 October 1969. It also directed that Program 437 be retained on a 24-hour reaction time.

NORAD OBJECTIVES

(U) NORAD's recommendations in NADOP 72-79 were to:



1. Include intercept of satellites in the mission of all appropriate ABM systems.

2. Develop a neutralization capability for a co-orbital satellite inspection system (recommended for space surveillance).

3. Develop a high altitude neutralization option which would provide for rapid deployment when appropriate threats were recognized.

[redacted]

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2. DF, CPAP to Staff, "Program Change Decision Safeguard (U)," 9 June 1969 (232.1).

3. Msg, SENSCOM to CONAD, 312114Z December 1969 (232.1).

4. CPRS, Project Book, Tab R, 1 June 1969.

5. DF, CPAP to C/S, CINC, "DOD Decisions on Safeguard Design Review (U)," 25 September 1969 (232.1).

6. NORAD Qualitative Requirement for Boost/Mid-Course Ballistic Missile Defense System (B/MCBMDS) (U)," NQR 4-69, 1 October 1969 (232.1).

7. NPAP, Weekly Activity Report, 5-11 January 1970.

8. Msg, CONAD to CSA, CSAF, CPSD, 180015Z January 1969 (232.1).

9. Msg, DA to CONAD, 230021Z January 1969 (232.1).

10. Msg, CSAF to CINCONAD, 232230Z January 1969 (232.1X4).

11. Ltr, CONAD to JCS, "Nike-X (Sentinel) Command and Control Plan (U)," 28 January 1969 (232.1).

12. Ltr, CONAD to ARADCOM, "Safeguard Command and Control (U)," 3 April 1969 (232.1).

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13. Ltr, CONAD to ARADCOM, "Safeguard Command and Control (U)," 29 April 1969 (232.1).

14. Msg, CONAD to JCS, CPRS, 061434Z May 1969 (232.1).

15. Ltr, CONAD to ARADCOM, "Package Number 8 Command and Control (U)," 6 May 1969 (232.1).

16. Ltr, ARADCOM to CONAD, "Safeguard Command and Control (U)," 20 May 1969 (232.1).

17. Msg, JCS to CONAD, 06453, 081957Z April 1969 (232.1).

18. Ltr, CONAD to ARADCOM, "CONAD Region Safeguard Interface (U)," 7 August 1969 (232.1).

19. Ltr, CONAD to ADC, "RCC/FCC Interface Study and Task Force (U)," 26 November 1969 (same ltr to ARADCOM), (52X232.1).

20. DF, CPAP to Staff, "Program Budget Decision - NORAD Facilities (U)," 9 January 1969 (232.1X51).

21. Ltr, CONAD to ARADCOM, "Deployment of the BMDC (U)," 11 February 1969 (51X232.1).

22. Ltr, NORAD to ARADCOM, "BMDC Space Allocation in the NCMC (U)," 11 April 1969 (232.1X51).

23. Ltr, ARADCOM to CONAD, "Location of BMDC (U)," 19 September 1969 (232.1X51).

24. Ltr, CONAD to ARADCOM, "Location of BMDC in CONAD Cheyenne Mountain Complex (U)," 25 September 1969 (232.1).

25. Ltr, CONAD to ARADCOM, "Allocation of Building 11 for BMDC (U)," 23 December 1969 (51X232.1).

26. Msg, JCS to CONAD, 06196, 071229Z August 1969 (232.1).

27. NPAP Weekly Activity Report, 20-26 October 1969.

28. DF, CHCS to Staff, "CONAD Action SM 704-69, Safeguard-Minuteman Coordination (U)," 14 November 1969 (232.1).

29. Ltr, CONAD to JCS, "CONAD Nuclear Employment Concept (NEC) (U)," 2 April 1969 (232.1).

30. Msg, CONAD to JCS, ADC, COOP-S, 042110Z August 1969 (229.1); Msg, CONAD to JCS, ADC, COOP-S, 261955Z August 1969 (229.1).

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[redacted]

CHAPTER VI

BALLISTIC MISSILE AND SPACE WEAPONS DETECTION SYSTEMS

SECTION I - MISSILE WARNING SYSTEMS

NORAD OBJECTIVES

(U) NORAD stated in NADOP 72-79 that the approved program authorized two missile warning systems in FY 1976. These were the Over-The-Horizon Forward Scatter Missile Detection System (440L) and a CONAD Launch Detection System. A drawback to the 440L System was that its high frequency transmissions for detecting missile launches were susceptible to disturbances caused by events other than missile launches, such as jamming, natural phenomena, and nuclear effects. Because of this, 440L could be considered only as a moderate confidence warning system. The NADOP stated that another system was needed along with 440L but using a totally different means of detection and giving missile attack information of high confidence. This high confidence capability could be provided by the CONAD system, if it was properly deployed. A drawback to this system was that the approved program was not considered extensive enough to give this confidence.[2]

(U) The NADOP concluded that these programmed systems did not fully meet NORAD's tactical warning requirements. In addition, the NADOP said, "In order for timely decisions to be made, near

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accurate ballistic missile impact predictions must be made. Neither system programmed can provide the degree of accuracy CINCNORAD believes is required."[3]

(U) Also, the phase-out of the SLBM Detection and Warning System and BMEWS was analyzed. These systems were to be deleted when the CONAD system demonstrated an operational capability. The analysis showed that the phase-out should be extended to allow time for the CONAD system to show its effectiveness before the current systems were closed. "As with any new system," the NADOP stated, "potential schedule slippages must be considered, and an operational demonstration of capabilities and reliability must be evaluated prior to dependence on that system as the primary means of surveillance."[4]

(U) The NADOP gave the following recommendations for Line Item 1, Missile Warning Systems:[5]

1. Deploy a more extensive CONAD system with 440L as a backup.*

2. Extend BMEWS and the SLBM Detection and Warning System to FY 1974 and continue development and deployment of new sensor systems to provide accurate impact point prediction.

(U) * The NADOP carried the CONAD Launch Detection System as an approved program from end FY 1970 through end FY 1974.

[redacted]

OTH MISSILE DETECTION SYSTEM (440L)

(U) Background. The Over-The-Horizon Forward Scatter Missile Detection System (440L) began interim capability operations on 1 March 1968. At that time, the system had three transmitter sites in operation in the Far East and five receiver sites and a data correlation center in Europe. A fourth transmitter site became operational in December 1968. Missile launches were detected by observing disturbances on high frequency transmissions between these sites located on opposite sides of Soviet launch complexes.

(U) When the 440L System was put into operation, it was still in a research and development stage with initial operational capability (IOC) set for June 1969.* The system was put into operation earlier than had been planned because of its ability to detect launches of a new weapons system the Soviets were thought to be developing -- the Fractional Orbit Bombardment System (FOBS). The JCS recommended acceleration of the 440L System by improving its coverage and reporting time to provide a near-term solution to this new Soviet threat.

(U) In addition to the Correlation Center at Aviano, Italy, the 440L System had transmitter (T) and receiver (R) sites at the following locations:

T-1 Wallace AS, Philippines
T-2 Awase, Okinawa
T-3 Tokorozawa, Japan

* (U) In October 1969, the IOC date was set for 31 December 1970.[6]

[redacted]

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T-4 Chitose, Japan

R-1 Ayios Nikolaos, Cyprus (RAF operated)
R-2 San Vito, Italy
R-3 Aviano, Italy
R-4 Rothwesten, Germany
R-5 Feltwell, United Kingdom (RAF operated)

(U) Computerized output of 440L data from the NORAD COC to users started on 1 July 1968. By mid-July, this automated system had given two false reports of multiple launches which generated an Alarm Level 1 (the highest level). NORAD told the JCS on 19 July that the false report rate for multiple launches was significantly higher than had been anticipated and the problem was under study by ADC and ESD. NORAD recommended that it stop sending computer-generated messages containing 440L threat value and alarms until the system could satisfactorily discriminate between actual multiple launches and other disturbances.

(U) Revised Procedures - 1968. The JCS asked the users for their comments on NORAD's recommendation. CINCSAC, CINCLANT, and DIA wanted the messages continued, so the JCS directed NORAD on 13 August 1968 to continue sending them. SAC told the JCS that it had a critical requirement for the data 440L was designed to provide. However, SAC said it could not make automatic force responses based on a computer program which allowed an unacceptably high false alarm rate. SAC said the computer-generated message should be sent so that all concerned could help solve the problems and urged all the responsible agencies to get the system into operational capability as soon as possible.

[redacted]

(U) Procedures for improving system performance were agreed upon at a meeting of ADC, SAC and NORAD representatives. On 18 September 1968, NORAD informed the JCS and other users that these changes would provide for manual release of 440L alarm levels, elimination of "confidence" reporting in the alerting messages, and use of a revised method for assigning weights to event messages to give more realistic threat values. Manual control of alarm levels from the NORAD COC was put in operation on 1 October 1968 with a switch so the Command Director could prevent the automatic transmission of an alarm level until the threat was evaluated against other intelligence and warning systems. Starting on 20 November 1968, confidence reporting was eliminated from alerting messages. SAC had previously disagreed with this latter procedure but changed its position when it was agreed that the Correlation Center would provide "confidence" within ten minutes after launch time. However, because NORAD and ADC had conflicting views, no changes were made at that time to give more realistic threat values.[7]

(U) Procedural Changes - 1969. On 31 December 1968, NORAD asked the JCS for their position on a proposal to prevent the generation of alarm levels by the 440L System during its interim capability period until the launch count reached or exceeded five missiles. NORAD said SAC had informally agreed that a launch count of less than five missiles should not generate an automatic alarm level. When the launch count reached that point, NORAD would generate an alarm level (3 the lowest, 1 the highest) based mainly on the best estimate of the number of missiles launched and on the confidence that the event was caused by missiles. NORAD said that a review of the system's performance showed that changes in procedures and message formats were needed because the system was incapable of providing the data for precise and reliable threat value and alarm level generation.[8]

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(U) The JCS replied on 10 January 1969 that they had no objection to NORAD's proposal to revise procedures and message formats.[9] But on 16 January, SAC asked that these changes be delayed until NORAD had coordinated with all users of 440L data. SAC said it had not formally agreed to these changes, had seen no rationale for doing so, and wanted any new procedures thoroughly explained enough in advance to allow full understanding and proper use.[10]

(U) NORAD informed all concerned on 21 January that it had no intention of making substantive changes on a unilateral basis.[11] Meetings were held in January and February 1969 to discuss the proposed procedures and message formats (called Phase III improvements). Agreement was reached and the changes were made at the Correlation Center and in the computer program in the NORAD COC. Acceptance tests were conducted during May and the new procedures went into use on 2 June 1969.[12]

(U) SEAM Reporting Procedures. On 21 October 1969, NORAD asked ADC to set up additional reporting procedures for the 440L System.[13] NORAD said the new reporting procedures, as noted above, had prevented the reporting of data on several single launches that could have been useful to NORAD Intelligence and the Space Defense Center. For those launches that would not be reported under the current procedures, NORAD outlined a method of voice reporting which became known as SEAM (Suspected Event Alerting Message). The messages were not to be entered into the data processing systems in the NORAD COC or used in "box scoring" the 440L System.[14]

(U) Satellite Communications Requirement. In a letter to the JCS on 12 February 1969, NORAD asked that they approve an urgently needed satellite communications ground terminal (AN/MSC-46) for the 440L

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System. NORAD wanted this terminal installed near the Correlation Center at Aviano, Italy. The terminal was required, NORAD said, for increased survivability of teletype and voice communications between the Correlation Center and the NORAD COC. NORAD pointed out that current communications did not meet its reliability standards.[15]

(U) The specific requirement was for three circuits: one full-period, dedicated, secure voice circuit; one full-period, dedicated, secure 100-WPM teletype circuit (with growth potential to 2400 bps data); and one full-period, dedicated teletype parity circuit. When these circuits were established through satellite communications, the current leased circuits could be terminated at an approximate savings of $188,000 per year.[16]

(U) ADC advised USAF on 20 February on possible ways to meet NORAD's requirement. ADC recommended that a low priority terminal in the Defense Satellite Communications System (DSCS) be diverted to Aviano. Or, if none could be found that way, then ADC said the terminal scheduled for installation at the Spacetrack radar site, Diyarbakir, Turkey, could be installed at Aviano. The latter recommendation was made on the condition that a terminal would be provided for Diyarbakir later.[17]

(U) In a message to ADC and NORAD on 26 February, USAF informed them that final action on locating the terminal at Diyarbakir was expected shortly. The personnel were trained and ready to leave and the Government of Turkey had given its approval. Also, USAF said the AN/MSC-46 terminal had low reliability. For these reasons, USAF recommended that "the Aviano terminal be addressed on its merits rather than as an exchange."[18]

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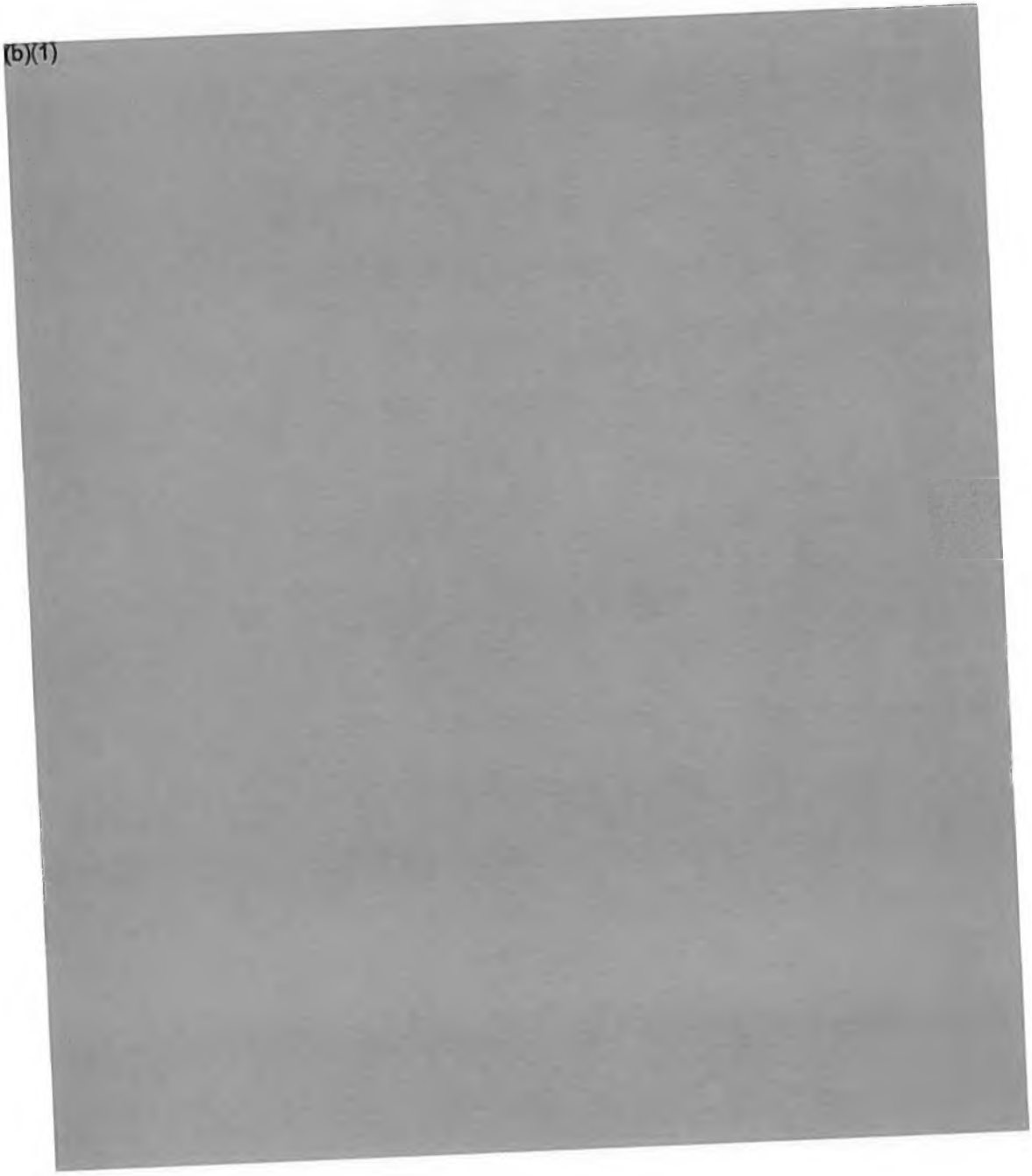

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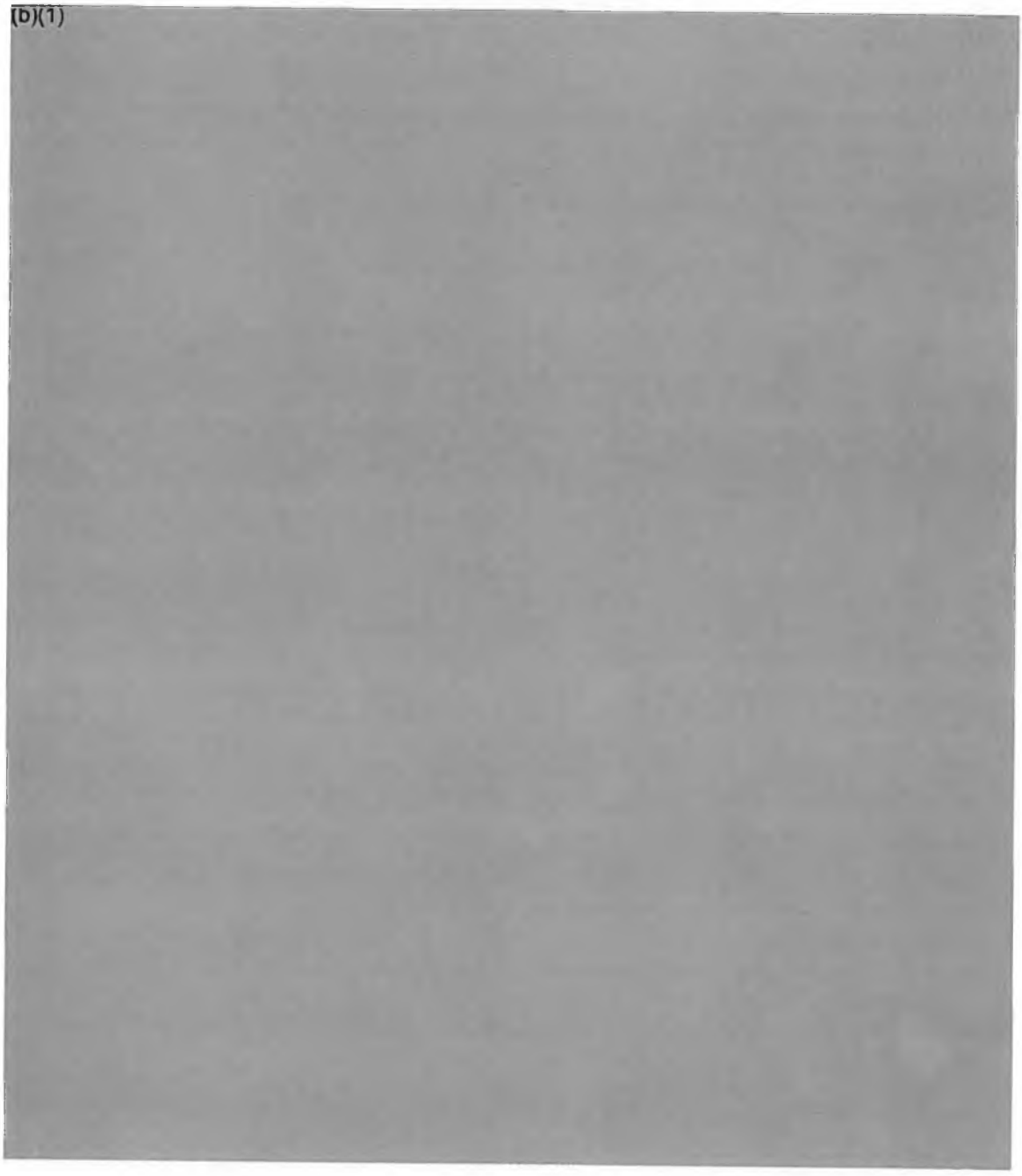

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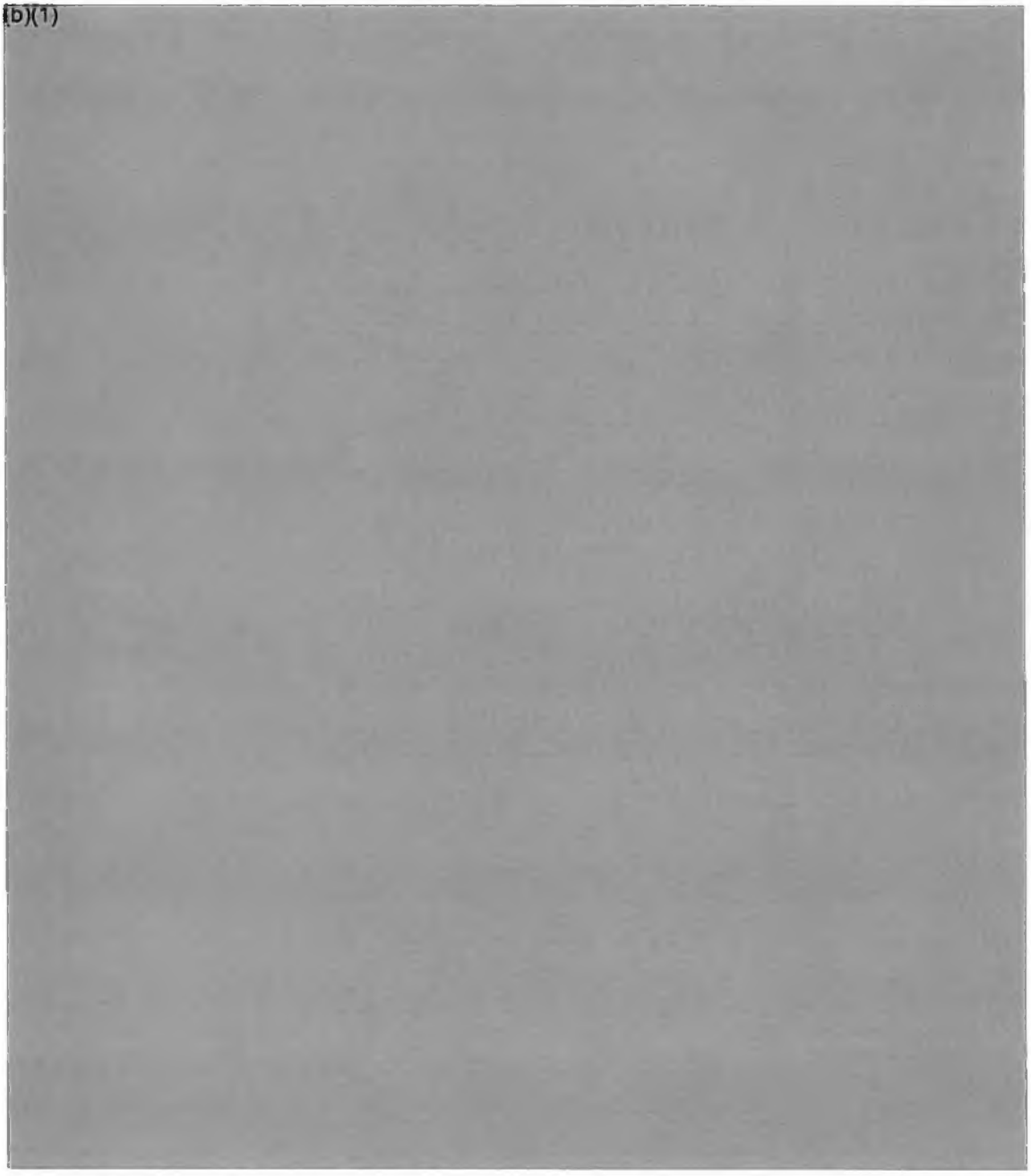

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as the Missile Warning Display Subsystem. Operation of the system was set for 31 December 1968. However, because of technical interface problems, NORAD notified all concerned on 23 December that operations would be delayed.[30]

(U) NEMWDS Operational. The system was capable of going into operation on 15 January 1969, but on that date NORAD notified the JCS and all others concerned that ADC would not accept the system because of incomplete technical data and inadequate spare parts support.[31] ADC based its position on statements made by representatives of AFSC and AFLC that the modified DIP should be put in a custodial status because of logistics deficiencies. Also, ADC said a lack of technical data prevented verification of the system.[32]

(U) On 24 January, USAF told ADC, AFSC, and AFLC that there were reasonable alternatives open that would allow an immediate operational capability. Failure to do this, USAF said, was not in the best interests of the government and could lead to criticism of the responsible Air Force commands. USAF asked that every effort be made to get the system in operation no later than 1 February 1969.[33]

(U) At a meeting of representatives of ADC, AFSC, and AFLC in late January, it was agreed that the deficiencies could be corrected by 1 April 1969 and operation was set for that date. But to drive the missile warning displays at user locations in the meantime, an interim method of operation was agreed upon and was to begin on 15 February. Interim operation would be done by using the backup computer (NORAD Combat Operations System) to drive displays.[34]

(U) [redacted] Interim operation started on 15 February and was to last until 1 April 1969. By that time it was thought the discrepancies noted above would have been corrected and regular operation could begin.

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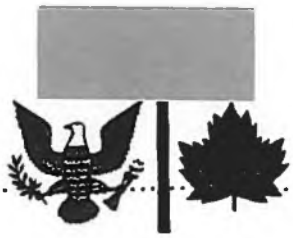

However, on 29 March, ADC notified all concerned that interim operation had to be extended because the spares on hand still would not support the modified DIP. ADC asked the Electronic Systems Division (ESD) when the spares would be available.[35] ESD replied on 4 April that the deficiencies had been corrected and asked ADC to accept the modified DIP immediately.[36]

(U) ADC did so on 17 April. NORAD notified the users that as of 17 April 1969, the NORAD Expanded Missile Warning Display System was completed and operational.[37]

SECTION II - SPACE WEAPONS DETECTION SYSTEMS

NORAD OBJECTIVES

(U) As stated in NADOP 72-79, the basic NORAD space defense objective was to give warning of attack by space vehicles. Neutralization, or destruction, of these vehicles was a CONAD responsibility (see Chapter Five for coverage of the Satellite Intercept System). In addition to this function of neutralization, two other broad functions for carrying out the basic objective were mission/threat assessment and surveillance.[38]

(U) Responsibility for surveillance was carried out through the NORAD Space Detection and Tracking System (SPADATS). This system was made up of the Space Defense Center, the USAF Spacetrack System, the Naval Space Surveillance System (NAVSPASUR), the Canadian Forces Baker-Nunn Camera, and various other cooperating sensors. From the data collected by these sources and information from other intelligence sources, the NORAD intelligence staff accomplished mission/threat assessment for the purpose of giving timely warning.[39]

(U) NADOP 72-79 gave the NORAD objectives for the space surveillance and warning forces as these:[40]

> 1. To maintain a catalog of orbital elements for all manmade objects in space. This catalog has many uses throughout the military establishment and scientific community. Primary among them will be support of SAFEGUARD which will use the elements for purging the SAFEGUARD tracking system of known satellites.

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2. To provide earliest possible data concerning hostile space activities as a contribution to overall warning for North America.

3. To provide data which contributes to mission/threat assessment for warning and monitoring foreign technology.

4. To provide support for active defense weapons systems (CONAD).

5. To provide NORAD, the scientific community, and other agencies and commands with data derived from space surveillance, in accordance with current directives.

(U) The NADOP provided an analysis of the capability of the space surveillance and warning forces programmed for FY 1976 against the threat contained in the Canada-United States Agreed Intelligence Estimate 1969 (CANUS-69). The NADOP stated the programmed forces were considered as the minimum acceptable against the threat providing the space object population did not saturate the cataloging process. "If saturation occurs," the NADOP said, "a rapid deterioration of SAFEGUARD support will result along with deterioration of other support that depends upon the catalog." However, if the threat from space was underestimated by CANUS-69, the NADOP said "the programmed forces cannot be considered adequate for even a minimal space defense."41

(U) In an examination of alternative forces for space surveillance, the NADOP noted that the traditional concept had centered around ground-based sensors. But a new concept had now appeared that called

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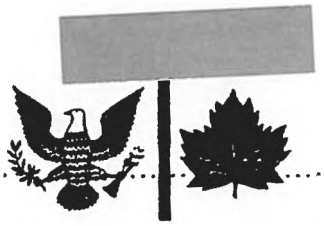

for space-based sensors. In describing this concept, the NADOP said:[42]

> This concept places primary emphasis on satellites equipped with Long Wavelength Infrared (LWIR) sensors for almost continuous coverage of orbiting and ballistic objects and would represent a significant increase in space surveillance capability. An agressive development and demonstration program is required to prove its feasibility. The cost of such a system is significantly greater than the limited systems currently programmed and can not be justified by the CANUS-69 threat. Although the alternatives . . . involve ground-based sensors, this new concept will continue to be monitored with a view toward a fundamental change if its feasibility is demonstrated and its cost can be justified, not only for space surveillance but for its complementary capabilities for mid-course ballistic missile surveillance.

(U) The NADOP gave the following recommendations for Line Item 3, Space Surveillance and Warning:[43]

> 1. Provide a significantly improved SPADAT System utilizing additional weapons support radars (one by end FY 74, two more by end FY 75) and an Indian Ocean NAVSPASUR type fence (by end FY 74) and the fundamental approach.

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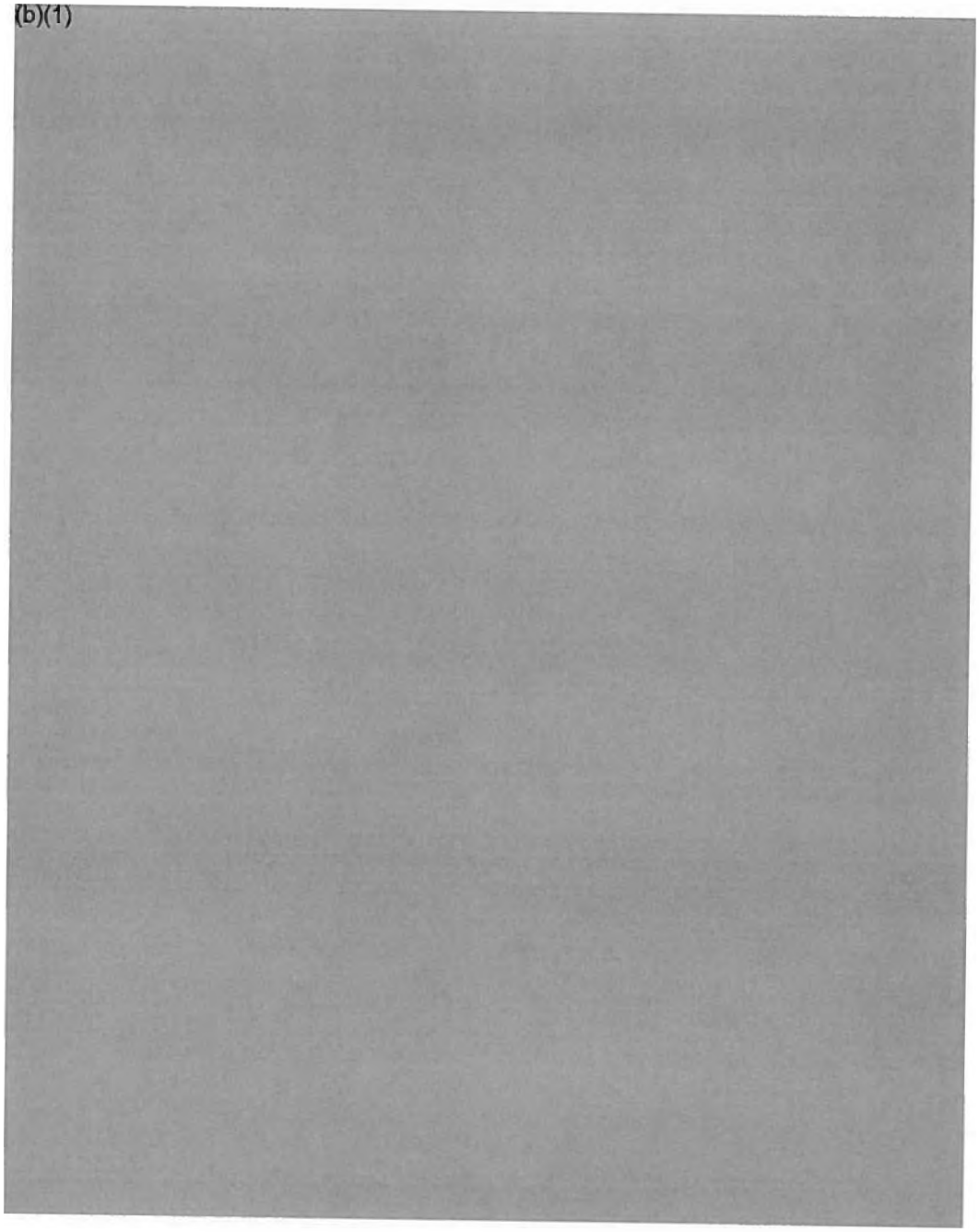

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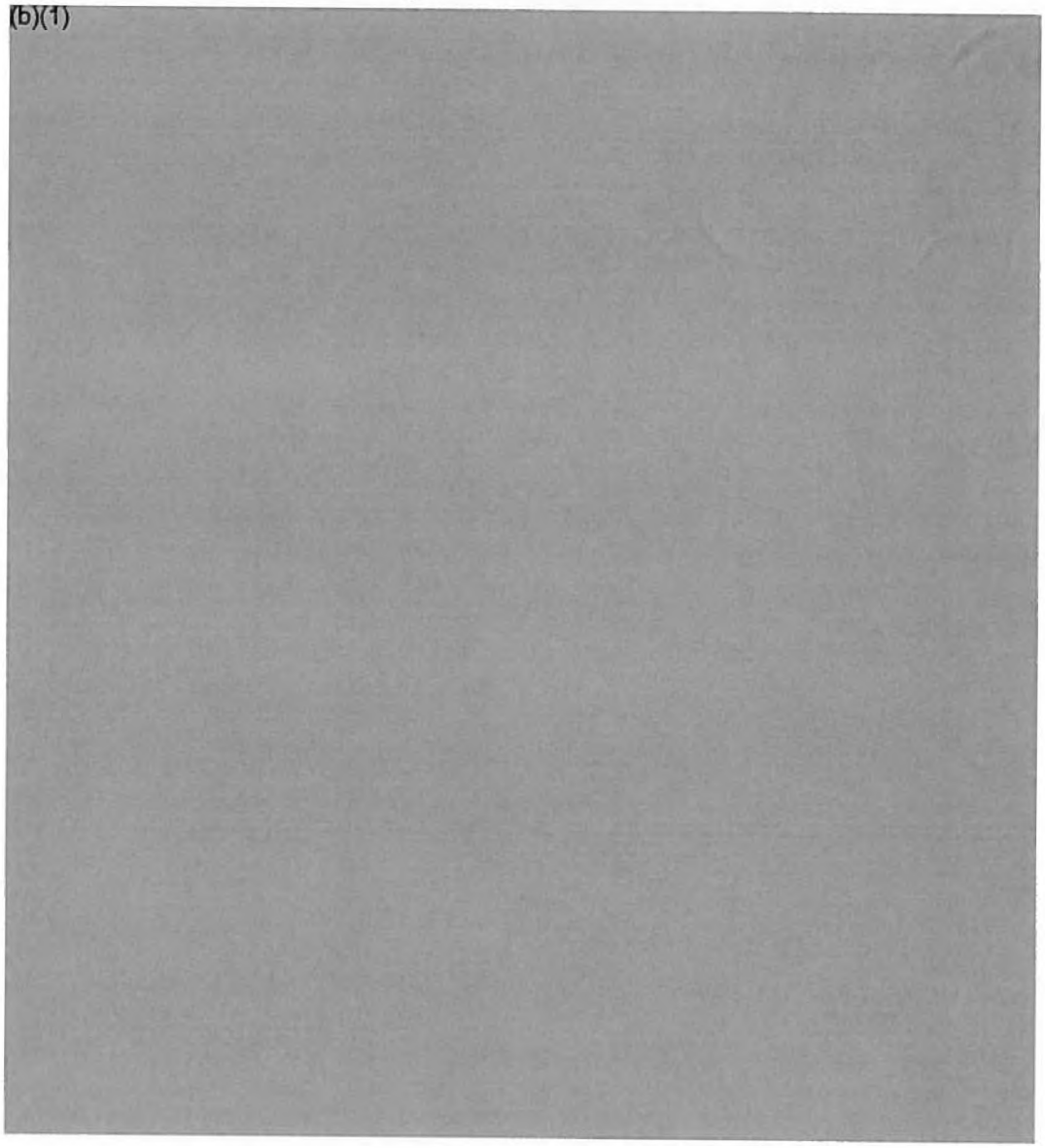

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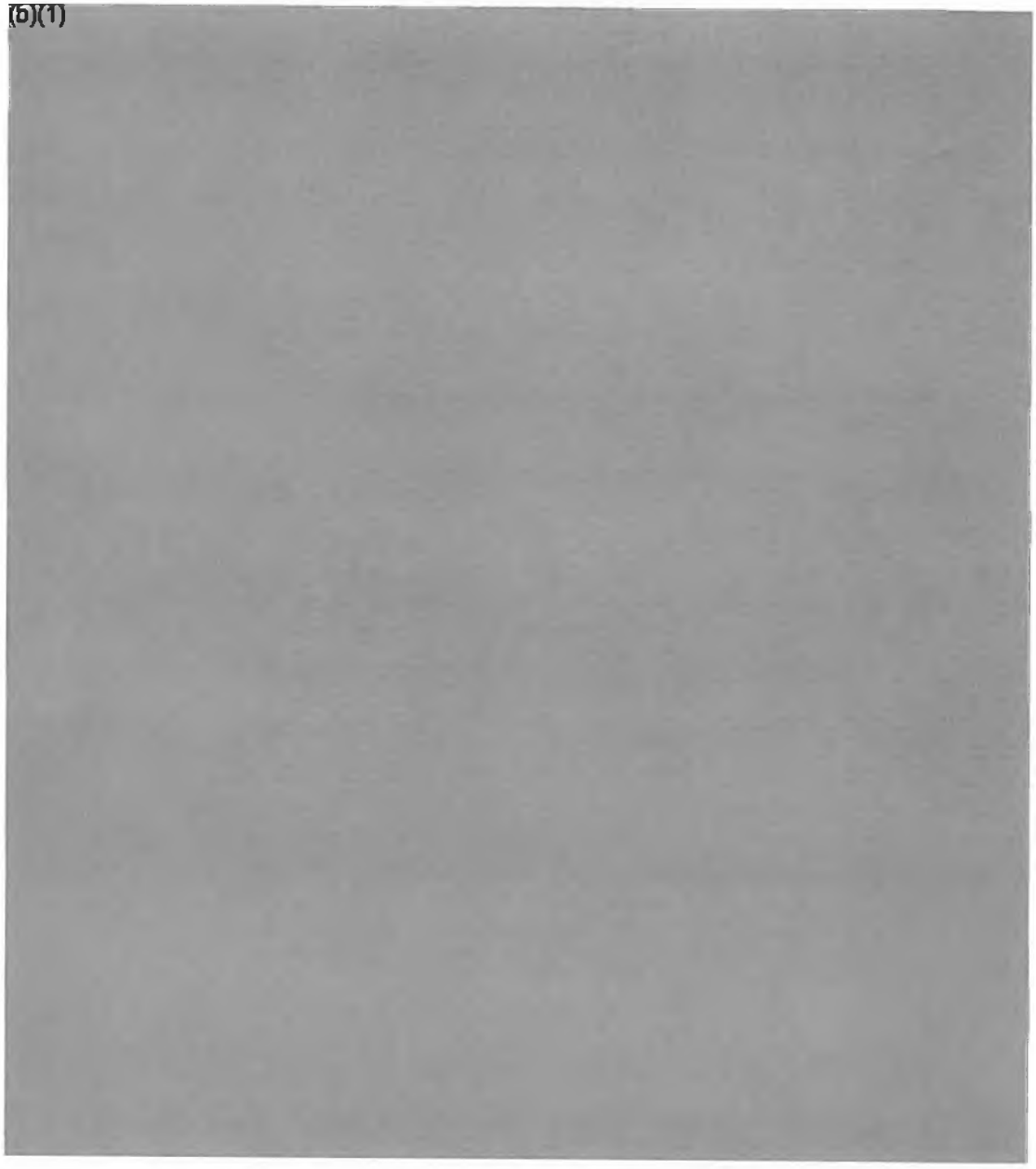

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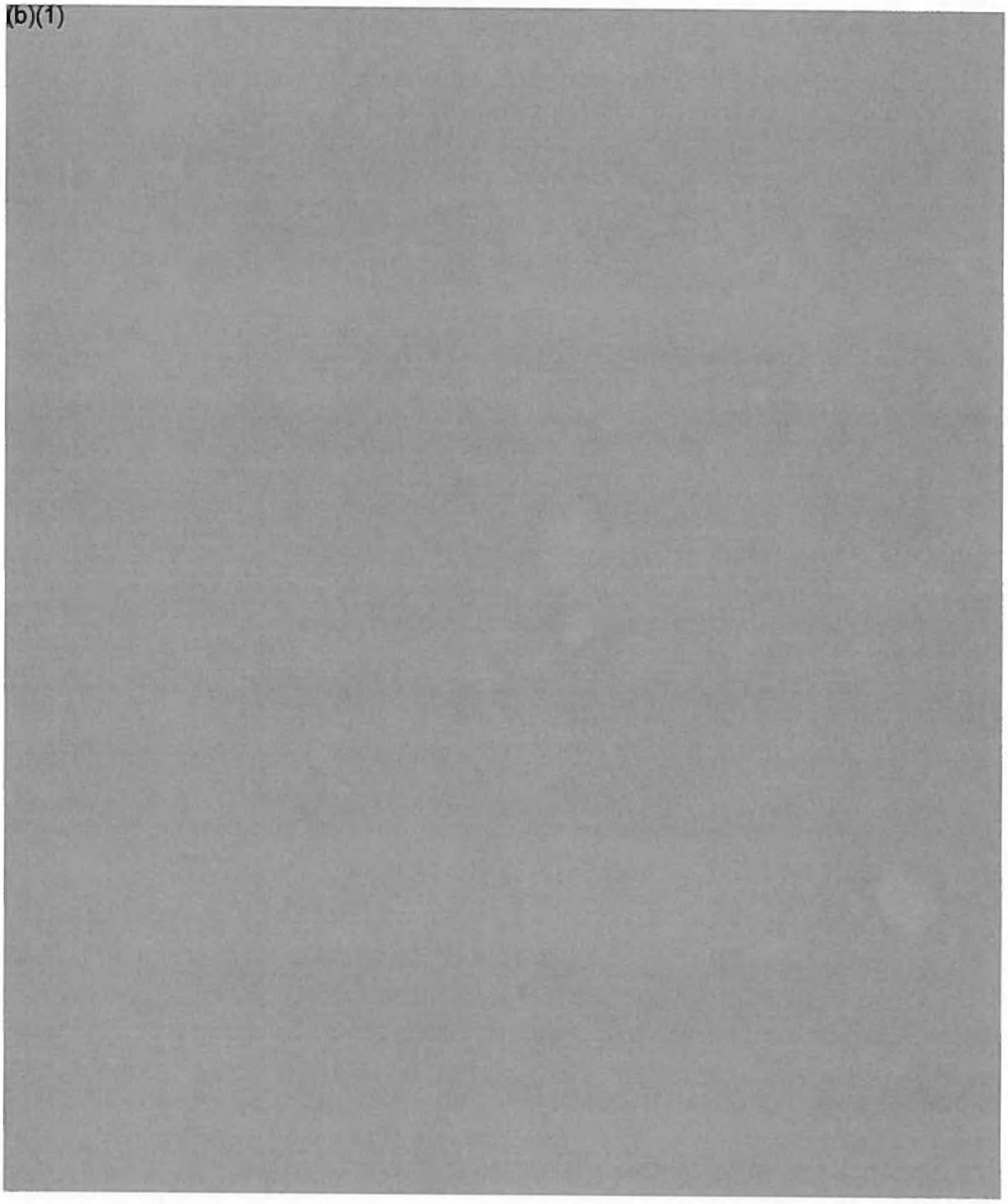

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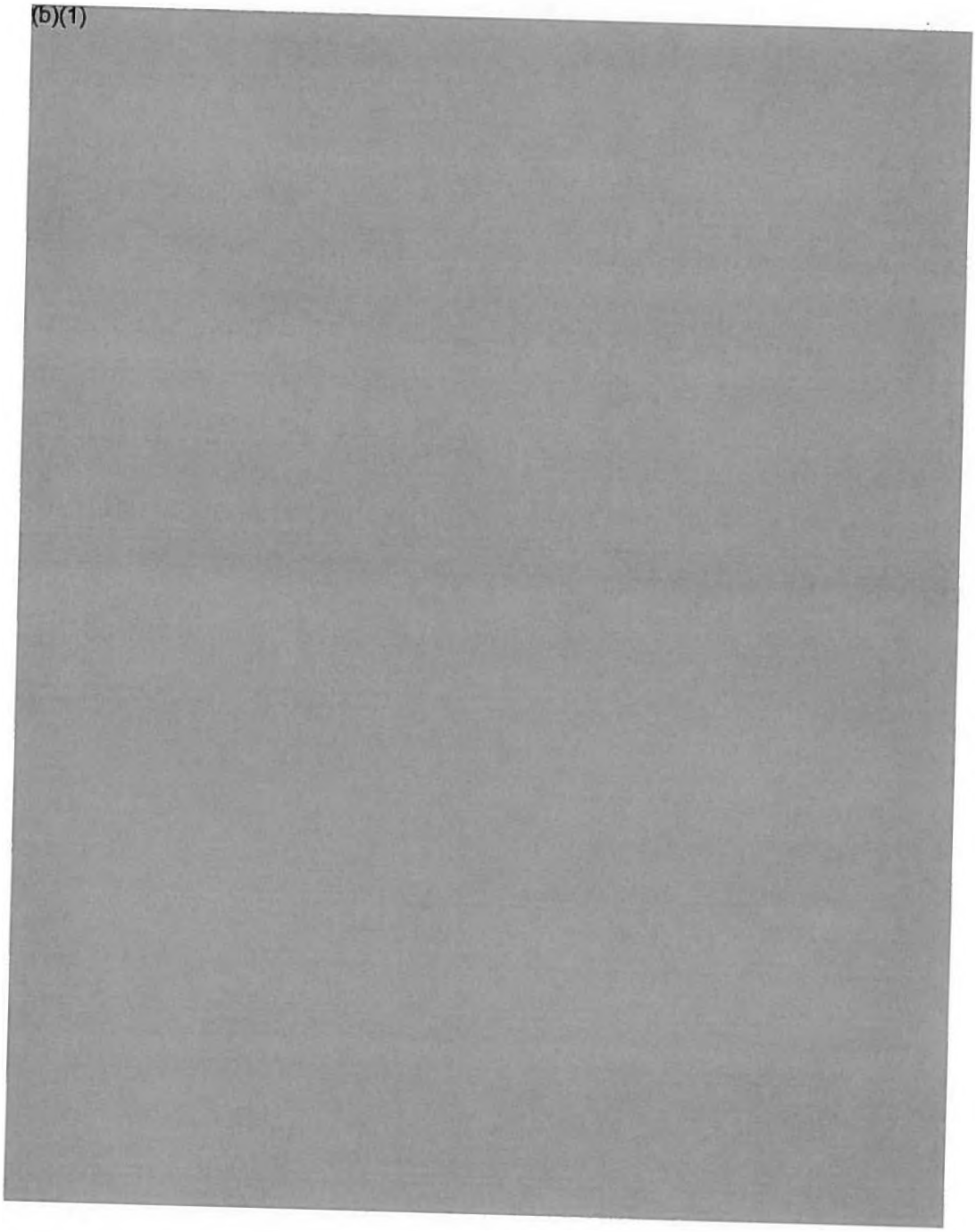

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(U) Closing of Moorestown Spacetrack Sensor. In March 1969, NORAD learned that USAF was thinking about moving the AN/FPS-49 Spacetrack radar at Moorestown, N.J., to a location in the Pacific. The purpose of this move was to monitor and collect technical intelligence information on Communist China's missile development testing. This information was confirmed in a letter of 16 April from ADC to NORAD. ADC said the USAF Vice Chief of Staff had reviewed and approved a plan as outlined above. The plan called for the FPS-49 to be relocated in FY 1971 and for it to remain part of the Spacetrack System. It would be located in the Southern FOBS corridor for tracking objects prior to overflying the CONUS during increased DEFCON or attack conditions. Its main mission during normal times would be intelligence collection. ADC asked for NORAD's concurrence in principle on this plan.[55]

(U) NORAD replied to ADC on 28 April, saying it concurred with the plan to phase out the Moorestown radar after the AN/FPS-85 phased-array radar successfully completed its Category III, or final operational testing. NORAD said it supported the decision and the reasons for moving the radar to the Far East.[56]

(U) The Moorestown site was included in those closings associated with USAF's cost reduction program under Project 703. On 29 October, the Secretary of Defense announced that the site would be put in caretaker status and the operating unit, the 17th Surveillance Squadron, would be inactivated on 31 December 1969.[57] On 7 November, NORAD relieved the radar from NORAD Space Defense Center tasking. At that same time, NORAD assigned the FPS-85 to do those tasks, which were within its capabilities, previously performed by the Moorestown radar.[58]

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1. NADOP 72-79, 15 August 1969, page 20 (657).

2. Ibid., page 31.

3. Ibid.

4. Ibid., page 32.

5. Ibid., page 33.

6. Msg, ESD to ADC, et al., ESSLG, 292105Z October 1969 (226.1).

7. CONAD Command History (U) 1968, 1 May 1969, pages 123-129.

8. Msg, CINCNORAD to JCS, NOOP-S, 311800Z December 1969 (226.1).

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11. Msg, CINCNORAD to SAC, NOOP-S, 211758Z January 1969 (226.1).

12. Msg, SAC to JCS, NORAD, DOCOCP, 252144Z February 1969 (226.1); NOPS (NOOP-S) Historical Report, January-February 1969; Msg, CINCNORAD to SAC, et al., NOOP-S, 291748Z April 1969 (226.1); NOPS (NOOP-S) Historical Report, May-June 1969.

13. Ltr, NORAD to ADC, "Additional Reporting Procedures for System 440L (U)," 21 October 1969 (226.1).

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14. NOPS (NOOP-S) Historical Report, September-October 1969.

15. Ltr, NORAD to JCS, "Satellite Communications Ground Terminal to Support 440L Requirements (U)," 12 February 1969 (226.1).

16. Ibid.

17. Msg, ADC to CSAF, ADLMD-E, 202329Z February 1969 (226.1).

18. Msg, CSAF to ADC, AFOCCPA, 262242Z February 1969 (226.1).

19. Msg, CINCNORAD to JCS, NEPP-P, 032238Z March 1969 (226.1).

20. Msg, JCS to CINCNORAD, 06921 J-6, 241731Z December 1969 (226.1).

21. CONAD Command History (U) 1968, 1 May 1969, pages 129-132.

22. Msg, CINCNORAD to JCS, et al., NOOP-S, 252217Z April 1969 (226).

23. Msg, DCA to CINCNORAD, 922/3104, 302055Z April 1969 (226); Msg, SAC to NORAD, DOCOS, 021524Z May 1969 (226); Msg, JCS to CINCNORAD, 08787 J-3, 082158Z May 1969 (226).

24. Msg, CINCNORAD to JCS, CSAF, NOOP-S, 112145Z July 1969 (226).

25. Msg, 1AEROSPCONSQ to ADC, et al., 1CDF, 242015Z July 1969 (226); Msg, ADC to CSAF, ADOSD-W, 032014Z September 1969 (226); NOPS (NOOP-S) Historical Report, September-October 1969.

26. Msg, ADC to CSAF, ADCCR, 141700Z September 1969 (233).

27. Ibid.

28. CPAP Fact Book, Tab W, "SLBM (474)," revised 1 February 1970 (722).

29. Ltr, CONAD to ADC, "474N SLBM D&W System (U)," 15 December 1969 (233).

30. CONAD Command History (U) 1968, 1 May 1969, pages 140-141.

31. NOPS, Weekly Summary of Staff Activity, 13-19 January 1969 (743); Msg, CINCNORAD to JCS, et al., NOOP-S, 152355Z January 1969 (226X226.1).

32. Msg, ADC to ESD, ADCCS, 161718Z January 1969 (226X226.1).

33. Msg, CSAF to ADC, et al., AFSPDE, 241705Z January 1969 (226X226.1).

34. Msg, ADC to CSAF, ADLDC, 310007Z January 1969 (226X226.1).

35. Msg, ADC to ESD, ADCCS, 290059Z March 1969 (226X226.1).

36. Msg, ESD to ADC, ESG, 042039Z April 1969 (226).

37. Msg, CINCNORAD to JCS, et al., NOOP-S, 241635Z April 1969 (226X226.1).

38. NADOP 72-79, 15 August 1969, page 43 (657).

39. Ibid.

40. Ibid., page 45.

41. Ibid., pages 45-47.

42. Ibid., pages 47-48.

43. Ibid., pages 49-51.

44. NQR 2-66, 22 April 1966 (228); NQR 3-69, 29 August 1969 (228).

45. Ibid.

46. Msg, ADC to CSAF, et al., ADOSD, 251745Z February 1969 (228).

47. Msg, ADC to CSAF, et al., ADOSD, 191839Z March 1969 (228).

48. CONAD Command History (U) 1968, 1 May 1969, pages 135-136.

49. NOEC 1-69, 9 April 1969 (228).

50. SM-404-69 (not in Command History files).

51. NPAP Fact Book, Tab L, "FPS-85/SLBM Detection and Warning (U)," revised 1 January 1970 (722).

52. CONAD Command History (U), 1968, 1 May 1969, pages 136-137.

53. Ibid.; Minutes of Baker-Nunn Working Group Meeting 28 July 1969, 8 August 1969 (228).

54. Ibid,; NOPS (NOOP-S) Historical Report, September-October 1969.

55. Memo, Assistant DCS/Operations to Chief of Staff, "Use of Moorestown Sensor as an SLBM Detection and Warning Facility (U)," 28 March 1969 (228); Ltr, ADC to NORAD, "Moorestown FPS-49 (U)," 16 April 1969 (228).

56. Ltr, NORAD to ADC, "Moorestown FPS-49 (U)," 28 April 1969 (228).

57. Msg, OSAF to ALMAJCOM, SAFOIPIA ALMAJCOM 1531, 290012Z October 1969 (657).

58. NOPS (NOOP-S) Historical Report, November-December 1969; Msg, CINCNORAD to ADC, NOOP-S, 071600Z November 1969 (228).

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CHAPTER VII

COMMAND, CONTROL AND COMMUNICATIONS

SECTION I - STUDY EFFORTS

NCOC MASTER PLAN

(U) Background. In November 1965, the JCS requested a master command and control plan from each unified command. NORAD described its plan, which it termed the NCOC Master Plan, as one that would define and describe the NORAD/CONAD combat operations center configuration and organization for the 1968-1978 time period. NORAD's DCS/Plans and Programs (J-5) was given overall responsibility for the master plan. NORAD and component staffs were represented on an Executive Council and a number of working groups. Work officially began on 20 December 1966. To begin with, publication of the master plan was set for November 1967. As work progressed, however, problems and delays arose causing several readjustments.

(U) The first thing done was development of a concept summary which was submitted to the JCS on 17 May 1968. The latter gave tentative approval to the concept summary as the 1978 configuration for planning purposes subject to certain revisions. Initial estimates of costs, manpower requirements, and phasing and scheduling, as requested by the JCS, were provided to the JCS on 28 August 1968. The major costs were in connection with the construction

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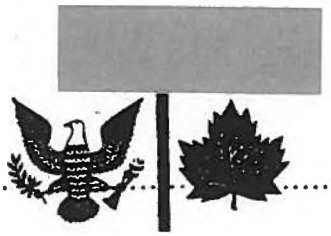


of three new buildings in the NCMC and in increasing the output of cooling and power to correct current deficiencies and accommodate new functions.

(U) The JCS had requested the master plan by 1 March 1969, but NORAD speeded up work to finish it in time to support FY 70 funding. Copies of the completed plan were delivered to the JCS on 6 December 1968.

(U) The plan consisted of five volumes. Volume V, Resources, provided the following table of major systems/functions in the NCMC:

Present Systems/Functions	Future Systems/Functions
NCOC	NCOC/NCS (NORAD Computer System)
SDC and Central Computer & Display Facility	SCC (Space Computational Center)
Intelligence	Intelligence
Weather	Weather
ADR/CRYPTO	ADR/CRYPTO
	BMDC
	ADC-CC (ADC Computer Center)
DCA	DCA

(U) To accommodate the future NCMC, as planned by NORAD, 30,000 square feet of additional space would be required. NORAD planned to acquire this through construction of three additional buildings, two of which would be three-storied and one four-storied. Among other requirements would be expansion of power and cooling capacity. The FY 1970-72 investments requirements totalled $81.4 million.

(U) JCS Validation and OSD Approval. The operational concept and the operational requirements in the NCOC Master Plan were validated by the JCS on 17 March 1969. The JCS stated that the Secretary of Defense had been asked to approve the operational requirements proposed for the NCOC. The JCS explained that details of the plan on functions, phasing and scheduling, manpower, communications, automatic data processing equipment, software, and supporting resources were not approved but would be addressed using normal procedures. The JCS asked that all references in the plan be changed from 1968-1978 to FY 1969-1978.

(U) On 30 July 1969, the Secretary of Defense approved the operational concept for the NCOC as a point of departure for planning.[1] The Secretary included a line item MCP fund request in the DOD submission to the Bureau of the Budget for FY 70 of $20.8 million (see Safeguard BMDC section).[2]

(U) Release of Master Plan to NORAD. CONAD asked the JCS on 17 July 1969 for permission to release the NCOC Master Plan, a CONAD document, to NORAD.[3] CONAD proposed to add certain addendum to the plan. The JCS approved the request on 6 August 1969 and directed that the releasing document state that the Secretary of Defense had not approved CINCONAD's operational requirement for expansion of the NCMC, but had approved the concept for planning purposes only.[4]

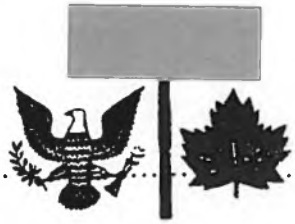
(U) Program 427M. The magnitude and complexity of implementing the NCOC Master Plan was such as to require the application of appropriate system management procedures and facilities. USAF accepted the Master Plan as a NORAD Required Operational Concept and issued System Management Directive 9-312-427M(1) on 20 June 1969 establishing Program 427M. 427M was to provide the engineering and procurement support to meet the operational requirements in the NCOC Master Plan. The 427M mission was to procure and implement the equipment, software, communications and personnel required to support the operational requirements. AFSC Headquarters issued program directives on 29 July 1969 outlining the regulations and orders under which the program would be established; directed action to establish a SPO and its associated management teams; and outlined the scope and responsibilities of the AFSC, CONAD, ADC and AFLC procurement and acquisition actions. In August 1969, AFSC (ESD) established a Program 427M System Management Office at L. G. Hanscom Field, Mass., to integrate the implementation efforts.[5] For purposes of identification, sub-designators were given to the overall program as follows:

a. 427M (A) - NORAD Computer System (NCS)

b. 427M (B) - ADC Space Computational Center (SCC)

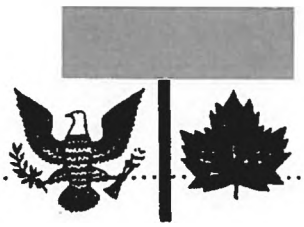
c. 427M (C) - NCMC Communications Improvements

(U) The initial action on the part of NORAD was to offer to the ESD SPO the help of the NORAD computer programs office. The SPO accepted the offer, established a steering committee, and defined the tasks for completion of the specification action.[6] On 23 October 1969, CINCNORAD wrote to AFSC urging the establishment of a field system management office



in Colorado Springs in time to supervise the publication of system and equipment specifications.[7] CINCNORAD cited the fact that there were numerous local agencies to be consulted and the need for day-to-day exchange and added that some form of management office for the Safeguard BMDC installation would be established in Colorado Springs and it needed to work closely with the SPO. AFSC replied on 18 November 1969 assuring NORAD that the 427M program would be properly supported, but rejecting for the present the request to establish a local SPO office.

(U) Review of Space Needs by ARADCOM and ADC. Because of the requirements for and criticality of space in the NCMC, CINCNORAD required a thorough study of the use of space to be sure it was being used for wartime essential functions. Guidelines for allocation of space were furnished ARADCOM and ADC in letters signed by General McKee which requested each component to fully justify their use of space in the NCMC. The first letter was to ARADCOM on 25 September 1969 in answer to the latter's request for allocation of space for the BMDC. Building 11 had been informally proposed and accepted earlier. General McKee answered that it was planned that the BMDC be located in Building 11. However, he said that he had directed a thorough review of the use of space in the NCMC and that NORAD was looking at both NORAD and component functions to assure that functions accommodated in the NCMC were truly essential in a wartime environment and that minimum but adequate space for these functions was available. He asked that ARADCOM provide a complete explanation of the space requirements and justification based on these criteria. ARADCOM's response was provided on 26 November 1969. CONAD answered on 23 December, allocating all of Building 11 (see Safeguard Command and Control, Chapter Five).



(U) ADC was asked for explanation and justification of its space on 2 December 1969. Prior to this letter, agreements between NORAD and ADC had resulted in discussions to eliminate from the NCMC the previously planned ADC Command Post, the ADC-CC dedicated computer, and separate offices for the ADC Commander.[8] NORAD's letter pointed out that recent reviews of plans for use of space within the NCMC, particularly of the ADC-CC, had resulted in certain guidelines for occupancy in the NCMC. The guidelines listed by NORAD were the following:[9]*

* (U) These same guidelines were provided to USAF by ADC on 21 October 1969. In this letter, ADC stated that program 703 budgetary considerations, in conjunction with OSD and Congressional inquiries directed to CINCNORAD, resulted in NORAD/ADC command analysis of all existing and programmed NCMC installations. Discussions in August and September by NORAD and ADC were held to develop a concept in consonance with CINCNORAD's stated policy reflecting existence of a single NORAD command post in the NCMC. On 10 September, the ADC Commander was briefed on the selected option and concurred. NORAD's J-5 staff was briefed on 12 September and also expressed general agreement. AFSC and ESD were briefed on 25 September and ESD representatives indicated that the proposed concept was acceptable and that the likelihood of incompatibility with the overall Air Force Integrated Command and Control System was remote. The ADC-CC would be replaced by an ADC Resource Management Center charged with execution of all wartime functions as directed by the ADC Commander. Management functions would be accomplished through use of a dedicated segment of the NORAD Computer System or the Space Computational Center EDP equipment. (ADC to CSAF, "ADC Integrated Command and Control System (ADCICCS) (U)," 21 October 1969 (51)).

[redacted]

1. There will be one and only one Command Post within the NCMC to serve CINCNORAD.

2. Component commanders will be members of CINCNORAD's Battle Staff. As such, they or their deputies must be present in the NCMC at all times during DEFCON 3 or higher.

3. Space will be allocated primarily on the basis of wartime essentiality of the activity or function for which space is requested.

4. There will be no provision for installation of a separate computer for the ADCICCS (ADC-CC) in the NCMC.

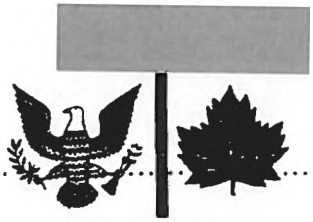
5. Sufficient computer capacity will exist within the NCMC to meet component requirements.

6. Component resource data and logistic data, as well as component resource management facilities, must be accommodated in the NCMC.

7. Resource management functions are the responsibility of components.

The above appeared to change requirements for space in Buildings 9 and 10, two of the planned new buildings. NORAD asked ADC to provide the detail necessary to determine if there was proper planning for use of the space in Buildings 9 and 10. ADC's response was provided on 30 December 1969.

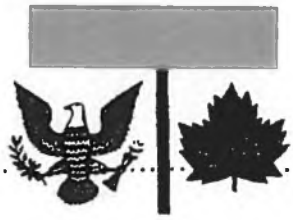
(U) NORAD Staff Master Plan Responsibility. On 19 November 1969, a NORAD Staff Memorandum (20-2) was published outlining the responsibilities of the NORAD/CONAD staff for implementation of the NCOC Master Plan and establishing policies and procedures governing implementation of the plan. DCS/Plans and Programs was designated as responsible for overall



coordination of the plan and its implementation until release by AFSC and the other development agencies to the operating agency. The Command and Control Division of the Directorate of Systems, DCS/Plans and Programs, was designated as the NORAD/CONAD office of primary responsibility. This office was to serve as the central coordinating agency for Headquarters NORAD/CONAD on all matters of implementing the plan including Program 427M.

(U) Defense Support Program Facilities. The Deputy Secretary of Defense issued a memorandum directing the JCS and the Secretary of the Air Force to examine the possible location of the Program 647 Defense Support System within the NCMC.[10] The Air Force directed ADC and the Space and Missile Systems Office (SAMSO) to survey the NCMC for feasibility and costs. On the basis of their survey report, ADC/SAMSO and CINCONAD recommended to USAF on 3 December 1969 that the initial 647 ground station be located at Waverly, Iowa, and concurrent efforts be started to provide for a survivable 647 ground station within the NCMC during Phase 3. At a meeting in the Pentagon on 16 December 1969, it was decided that further study had to be made to include refinement of NCMC data from the first survey; and other hardened facilities, such as Titan sites and Fort Ritchie, be surveyed.

(U) Location of Program 647 within the NCMC would affect the Master Plan by dislocating some of the existing tenants, by placing greater loads on the planned facilities which might require redesign, and by changes to existing and planned new buildings which would require new design modification.



(U) New Communications Requirements. DOD Directive 4630.1 telecommunication programming actions were submitted by CONAD to the JCS on 9 April 1969 in support of the NCOC Master Plan to provide for three new facilities in the NCMC -- a new Channel and Technical Control Facility, a new Communication Processor facility, and a new cryptographic facility (referred to as Project Foxhall).[11] The JCS had requested preparation of these actions in a message on 20 December 1968 and CONAD had advised the JCS that ADC was tasked to prepare the initial programming action. These were prepared by ADC in March and then submitted to the JCS by CONAD.

(U) According to the telecommunication programming actions for these facilities, the new Channel and Technical Control Facility was required to be operational in FY 1/73 (July 72), the new Communications Processor by FY 2/73 (October 72), and the new Foxhall Facility by FY 2/73 (December 72).

(U) The JCS approved the requirement for these facilities on 2 May 1969.[12] The JCS directed the Chief of Staff, USAF, in coordination with CINCONAD and the Director DCA, to prepare subsystem/project plans and program change requests. The requirement for the new Foxhall cryptographic facility was approved by DOD on 19 September 1969 (PCD Z-9-113).[13] Authority for procurement beginning in FY 1972 would permit acquisition of Foxhall encryption devices of the KG-50 series to secure over 150 circuits associated with NCMC operations. The other two facilities had not received OSD approval by the end of 1969.

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NORAD 76 STUDY

(U) On 8 April 1969, the JCS directed CINCONAD to provide by 15 July 1969 the broad overall concept of operations envisioned for the NORAD/CONAD environment in the mid-70s and an implementation plan. The JCS directive specified use of currently programmed force levels in approved DOD documents, including PCD Z-9-002. The Safeguard deployment announced on 14 March 1969 and the Deputy Secretary of Defense Memorandum of 26 February 1969 for the Region Combat Center configuration were to be used. The JCS also directed the submission of alternative force levels and configurations considered feasible and cost competitive. Particular emphasis was to be placed on command relationships, organizational structure, functions, and resource requirements at each level of NORAD/CONAD command and control.

(U) Organization of an Ad Hoc Study Group was directed by a memo issued by the NORAD Chief of Staff on 30 April 1969.[14] This memo stressed the importance of the study, pointing out that guidance from JCS and DOD indicated that results of the study would have significant impact on the command in the mid-1970s. Completion of the study was therefore a priority effort. The memo stated that personnel assigned would serve on a full time basis. The study group was organized and on 6 May the organization and personnel were announced.[15] The director was Brigadier General J. R. Kullman, NORAD's Assistant DCS/Plans. The Assistant Director was Colonel R. L. Harriger, also from NORAD's J-5. The components including CF ADC were represented. Five committees were established.

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(U) The NORAD 76 Study (NORAD Concept of Operations 1976 Study (U)) was sent to the JCS on 15 July 1969. It consisted of seven volumes; however, Volume I was a summary and Volume VII was on study group organization and administration. The other volumes were: Volume II - Broad Overall Concept of Operations for NORAD/CONAD in 1976 (U); Volume III, Implementation of the NORAD/CONAD Region Structure and Alternatives Considered (U); Volume IV, Command and Control Structure and Forces Below Region Level (U); Volume V, Warning and Ballistic Missile/Space Defense (U); and Volume VI, Communications (U).

(U) [redacted] In the accompanying letter, signed by General Reeves, it was stated that various configurations of the programmed force were examined but none was considered adequate. So other concepts and configurations, including a variety of force mixes, were evaluated. One alternative, NORAD stated, was found that would give a significant improvement in operational effectiveness over the programmed force and was also cost competitive (2 per cent over the cost of the programmed force). However, NORAD went on, neither the programmed nor the alternative force provided the level of defense required in the 1976 period if war occurred. "Therefore, neither solution can be endorsed as adequate to meet NORAD's requirements for air, missile or space defense in the 1976 time period."[16]

(U) [redacted] This same thing was stated in the foreword to Volume I. In the study the currently approved force was termed the Baseline and the other force the Alternative. NORAD said that an evaluation of the Baseline forces pointed up numerous deficiencies in the areas of command and control, defense in depth, survivability, and surveillance and weapons.

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The Alternative, being constrained by the requirement to be cost competitive, would also not fully accomplish the mission with which NORAD had been charged, it was stated. However, it was recommended that the Alternative configuration of the study be adopted in lieu of the Baseline in view of the major deficiencies of the latter and the growth potential inherent in the Alternative configuration. A summary of the Baseline and the changes proposed and the Alternative structure is shown on the following pages.

(U) As discussed (Chapter One) a reorganization of the command and control structure resulted from Project 703 after the NORAD 76 Study was completed and submitted. In October 1969, the JCS said that changes in forces and organization had raised questions as to whether the 76 study continued to represent the NORAD concept of operations in the mid-1970s.[17] The JCS asked for CONAD's comments on the impact, if any, of the changes on the 76 study, and to include a description of the phasing from the six current CONUS regions to three regions and subordinate structure as proposed by NORAD 76.* A number of other questions were also asked on the 76 study proposals and recommendations.

(U) CONAD answered on 4 November that its 76 study continued to be the approved NORAD concept of operations contingent upon phase-in and achievement of full operational readiness of modernized forces

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* (U) In CONAD's Alternative configuration, each of the three CONUS RCCs would be located in an AWACS aircraft. Under the Baseline configuration, each CONUS RCC would be located in a Missile Site Control Building.

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	BASELINE	DELETE	ADD	ALTERNATIVE
NORAD COC	1			1
Region Control Centers	5			5*
Air Def Control Centers	10	10		0
KC-135 Aircraft	10	10		0
AWACS	42 UE		20	62 UE
Joint Control Centers	11	1		10
BUIC Canada	2		2 Alaska	4
MNGCI Alaska	2	2		0
FAA Radars	49	4		45
LRRs	27 Canada 6 Alaska	13 Canada		14 Canada 6 Alaska
OTH Backscatter	2			2
F-106X	198 UE	198 UE		0
F-4E	24 UE			24 UE
CF-101	48 UE			48 UE
C-130s	66	10		56

* Three CONUS RCCs on board AWACS aircraft.

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	BASELINE	DELETE	ADD	ALTERNATIVE
Surface-to-Air Missile Units	99 (15 AADCP)			99 (15 AADCP)
Bomarc Canada	2 Sqdns			2 Sqdns
Safeguard BMD System	12 sites			12 sites
SPADATS	1			1
OTH Forward Scatter (440L)	4 xmtr 5 rcvr			4 xmtr 5 rcvr
Program 949	1			1
Program 437	1			1
Air Defense Direction Center			1 Canada	1
Improved Manned Interceptor			24 UE	24 UE
F-106A			108 UE	108 UE

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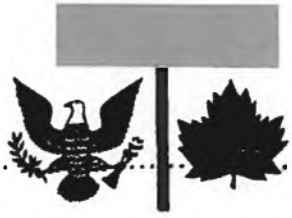


such as AWACS, OTHB, and improved weapons systems.[18] The Project 703 configuration would continue to be valid until the AWACS force proved that it could fully supplant the existing ground environment. The NORAD 76 Alternative configuration and the 703 reconfiguration were compatible, CONAD continued, and either would provide a logical and operationally effective position for transition into the Safeguard program. Whether three, six, or some other number was the correct combination of regions should not be determined at this time, CONAD said. If the programmed systems were changed significantly, such as by elimination of AWACS, the ground-based RCCs should be continued as provided in the 703 configuration. A delay in AWACS would also require continued operation of the ground-based RCCs.

ABM COMMAND AND CONTROL

(U) See Chapter Five, ABM System and Space Defense Weapons, for detailed coverage of this subject.

CANUSAD - CANADIAN-U.S. COOPERATIVE STUDIES ON AEROSPACE DEFENSE

(U) Background. On 19 December 1968, CINCNORAD was advised by the Chairman of the JCS and the Chief of the Defence Staff that at a meeting of U.S. and Canadian officials on 5 December it was agreed that joint working groups would be formed at NORAD Headquarters to make studies on aerospace defense under the overall chairmanship of CINCNORAD. The working groups were to examine air defense matters initially and were to be prepared to examine, if Presidential approval of a statutory determination on release of atomic information pertinent to Safeguard was obtained, the optimum ABM system for North America, ignoring the national boundary.

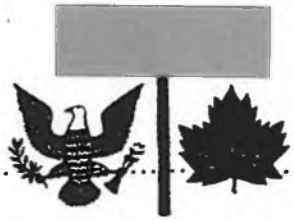
The aim of the studies was "the expeditious preparation of a series of costed options for future aerospace defense of North America to Fiscal Year 1978 which will meet national objectives within national guidelines."

(U) National objectives and proposed guidelines were provided. The general approach to the project was to be in the first instance to consider North America as one entity to be defended and in the second instance to identify national contributions required that would be in accord with the national objectives and guidelines. CINCNORAD was to develop terms of reference, project structure and stages, and target dates for accomplishing the project, including the means of ensuring Canadian-U.S. participation in the studies.

(U) Terms of Reference. The JCS and CDS both approved terms of reference for the joint study group on 10 April 1969.[19]

(U) According to the jointly approved terms, the study group known as CANUSAD was a binational ad hoc military study group responsible to the JCS and CDS. CANUSAD was charged with conducting studies of aerospace defense matters of mutual interest which would include developing recommended Canada-U.S. military options on air defense matters and when appropriate, ballistic missile defense matters, for submission to the JCS and CDS. When CANUSAD had submitted the requirements outlined in the terms, it would terminate unless otherwise directed by the JCS and CDS.

(U) Phase I CANUSAD Study. The Phase I CANUSAD study developed out of a determination by NORAD that the subjects for CANUSAD relating to 1975 and beyond were largely the same as those being studied by another group at NORAD. This group was working



on a study titled NORAD Concept of Operations 1976 (NORAD 76). NORAD decided that the CANUSAD studies for that period could best be done as NORAD 76 neared completion. NORAD informed the JCS and CDS of this on 2 May, stating that it was desirable for CANUSAD participants to become aware of the NORAD 76 work.[20] NORAD felt also that since NORAD was analyzing and gaming approved U.S. air defense programs which included assumptions about Canadian programs, it was appropriate to examine Canadian air defense options for the period prior to AWACS. For these purposes, NORAD said it was calling a meeting for Phase I Air Defense Study (Pre-AWACS) to begin on 12 May.

(U) The CANUSAD Phase I study was dated 12 May 1969.[21] It stated that Phase I dealt with the time period up to the end of FY 1974 and was concerned primarily with possible adjustments to Canadian forces. Phase II would be carried out as NORAD 76 neared completion (scheduled for completion in mid-July). The aim of Phase I was to familiarize Canadian CANUSAD members with current U.S. programs and with NORAD 76 and to determine appropriate Canadian air defense force adjustments and options for the period 1970 to 1974.

(U) The Phase I study contained a number of recommendations for Canadian actions to meet objectives and guidelines. The recommendations were as follows:

A. Approve dispersed operating base proposal (Canadian approval of the U.S. proposal to provide facilities for DOBs at Namao, Cold Lake, Gimli and Val d'Or).

B. Replace the AN/FSQ-7 computer at North Bay.

C. Upgrade and/or augment the Canadian CF-101B interceptor force.

D. Automate four Newfoundland radars (automation of the radars at Stephenville, Melville, Gander, and Saglek, Newfoundland, into the SAGE/ BUIC System).

E. Canada take over three U.S. operated radars in Newfoundland (Stephenville, Melville, and Saglek).

F. Canada take over and operate DEW Line radars, communications and airfields.

G. Approve NORAD ALCOP proposal (Canadian approval of Basic Plan, 26 January 1966).

H. Canada participate in the modernization of the defense force (participate in programs for OTH-B radar, AWACS, tactical satellite communications, and advanced or modified weapons).

(U) CANUSAD Phase II. It was decided that Phase II CANUSAD would be delayed until guidance was received on the NORAD 76 study recommendations and a modernized air defense and for long term guidelines flowing from Canadian defense review. On 29 October 1969, Canadian Forces Headquarters suggested resumption of CANUSAD discussions on an exploratory basis to identify problems for later resolution even though the above guidance had not yet been given.[22] In response, NORAD proposed to the JCS and CDS an agenda and that CANUSAD discussions be held on 13-14 January 1970.

(U) The JCS answered that it would participate but that the status of the NORAD 76 recommendations and the modernized air defense force might not be known by 13 January. However, the JCS continued, the recommendation to move ahead in January was a reasonable action.[23] Canadian Forces Headquarters recommended a delay, however, because the next PJBD meeting was scheduled for 23-27 February 1970 and that more guidance would be available to Canadian representatives by the time of the PJBD meeting.[24] Because of the latter recommendation, the CANUSAD meeting was postponed to 17 March 1970.

STUDY OF NCMC WARTIME ESSENTIAL FUNCTIONS

(U) At the direction of CINCNORAD, a study group was formed on 25 August 1969 to study NCMC functions to identify any non-essential functions and elements and to recommend operational improvement, organizational changes, and manning reductions. The NORAD Director of Operations, Air Force Brigadier General J. H. Belser, was chairman of the study. Working groups examined seven problem areas, completing their work on 24 October. The final report of the study group was dated 17 November.[25] In a memorandum to the staff on 18 November 1969, CINCNORAD stated that he approved the study report with two reservations. One required safeguards for testing of the DIP/1218 computers (the test was later cancelled) and the other deferred movement of J-3 to the NCMC as proposed in the study report.

(U) One of the problem areas worked on was duplication and layering between J-3 and NCOC. As covered in the report, since October 1965, there had been a Separate Battle Organization headed by the Director of the COC who reported

directly to CINCNORAD on operational matters. The study group found overlap in the functional responsibilities of the Director COC and DCS/Operations. There was homogeneity in their functions and the D/COC's responsibilities were embodied in J-3's broader responsibilities of directing and supervising operations of all forces. To have these two separate, the study report stated, was the same as having two J-3s -- one for peacetime and one for wartime. The study group therefore recommended:

1. Combine NCOC with J-3 and relocate J-3 to the NCMC.

2. Redesignate the present position of Director COC as Assistant Deputy Chief of Staff for Combat Operations.

3. As an alternative to the above, revalidate the 1964 study to give the Director COC deputy status and full authority in the NCMC.*

(U) On 18 November 1969, the COC was placed under DCS/Operations. The position of Assistant Deputy for Combat Operations, DCS/Operations, was established. This position was over the COC with the Director COC under it.

* (U) The separate battle staff organization had been recommended by the NCMC Task Force Study Report, 18 March 1964.

SECTION II - FACILITIES

NORAD/CONAD ALCOPs

(U) As a result of Project 703, on 14 November 1969, all regions except the Alaskan were discontinued. In their place, seven numerically-designated regions were established at direction center locations (see Chapter One for a full discussion of this reconfiguration). In the place of the Northern NORAD Region was established the 22nd NORAD Region.

(U) NORAD and CONAD had to determine a location for their ALCOPs. On 30 October 1969, NORAD advised that with the inactivation of the NORAD ALCOP at Richards-Gebaur AFB, it was necessary to revise the NORAD succession to command.[26] As an interim measure, until all newly designated regions had adequate communications, the succession to command was to be, in order, 22nd NR, 21st NR, and 26th NR. A complete listing, NORAD said, would be included in the ADNAC. Then, by message, NORAD designated the 22nd NR as the first alternate to the NCOC effective 1700Z, 14 November 1969.[27] NORAD said that additional alternates in order of precedence would be designated at a later date. The 24th CONAD Region, Malmstrom AFB, Montana, was designated the CONAD ALCOP effective 11 March 1970.

BUIC III

(U) Implementation Completed. As of 5 January 1970, all 13 BUIC III facilities in the CONUS and two in Canada had become operational, completing the BUIC III program. The last two BUIC III facilities to become operational were at Charleston AFS, Maine (Z-65), which became operational on 22 December 1969,

and Fortuna AFS, North Dakota (Z-27), which became operational on 5 January 1970. Very shortly one BUIC III was inactivated, however. On 15 January 1970, Port Austin, Ill., Z-61, was closed in accordance with Project 703.

(U) NORAD Objectives. In NADOP 72-79, under the NORAD 76 Alternative Force, NORAD recommended retention of 15 BUIC centers through end FY 1974, phasing down to four by end FY 1975, two of which would be relocated to Alaska and the other two would remain in Canada. Under the air defense control systems section of the NADOP, the NORAD 76 Alternative was the force structure recommended to be adopted. Under the force required to limit damage to 30-40 per cent, NORAD phased down from 15 to 14 centers by end FY 1975 and stated that phase out was contingent upon phase in of AWACS.

NORAD/CONAD AIRBORNE COMMAND POST AND DATA PROCESSING CENTER

(U) On 2 January 1969, CINCONAD submitted to the JCS a requirement for a CONAD airborne command post and data processing center. In justification of this requirement, CINCONAD said that the airborne command post would provide greater command and control system survivability through mobility and redundancy; the minimum essential functions of warning, attack assessment, damage assessment, force reconstitution and those alternate JCS tasks that had to be assured continuity of operations; and CINCONAD had a responsibility to other SIOP commanders to assure the availability of Program 949 surveillance data throughout all phases of a battle.[29]

[redacted]

(U) In support of this letter to the JCS, a NORAD Qualitative Requirement (NQR 2-69) for NORAD/CONAD Airborne Command Post and Data Processing Center (NACP) dated 15 March 1969, was submitted to the JCS on 12 March 1969 for review and validation.[30] The NQR was also provided to the Canadian Chief of Defence Staff on 12 March for information and planning purposes. NORAD noted in its letter to the CDS that provision of this NQR should in no way be interpreted or implied to be an agreement on the part of Canada to participate in the funding of the NACP.[31]

(U) ADC issued a Required Operational Capability (ROC 1-69) for an airborne command post and data processing center on 2 April 1969 in support of the NQR. In this ROC, ADC supported the NORAD/CONAD requirement that the NACP be on sustained ground alert with airborne alert status ordered upon appropriate warning of imminent attack.[32]

(U) The JCS responded on 11 June 1969 with a request for resubmission of the NQR along with a concept of employment. The JCS said that they wanted a more detailed description of the NACP and its role in the 1976 command and control environment. The JCS also noted that the specification of a ground alert posture and the omission of an alternate BMDC in the NACP might be inconsistent with previously approved continuity of operations principles.

(U) On 30 September 1969, NORAD submitted to the JCS a NORAD Operational Employment Concept (NOEC) instead of a revised NQR. NORAD answered in its letter the above JCS query. NORAD said that the ground alert posture was predicated on a scramble time that was consistent with expected warning time and that the alert aircraft would be tied into the Safeguard alternate BMDC when operating as the NORAD airborne command post. Thus, continuity of operations was preserved.[33]

[redacted]

[redacted]

(U) [redacted] A JCS SM dated 23 December 1969 validated for planning purposes the general concept for this facility for CINCNORAD/CINCONAD.[34] Validation of specific requirements was deferred pending further review. The JCS asked the Air Force to comment by 1 February 1970 on the feasibility of using a single airborne command post that could fulfill jointly the requirements of both CINCNORAD and CINCSAC.

[redacted]

SECTION III - COMMUNICATIONS

AUTOMATIC SWITCHED VOICE NETWORK (AUTOVON)

(U) Background. In 1960, NORAD, ADC and commercial communications companies developed a concept for an automatic dial telephone switching network. The first phase, nine switching centers to serve NORAD regions, was approved in July 1961. On 4 May 1963, DOD approved the combining of the four Army SCAN Centers with five of the NORAD first phase centers to form the initial CONUS AUTOVON system being developed by the Defense Communications Agency. A world-wide AUTOVON system was being planned by the latter agency as the single long-haul system for all elements of the DOD. Combining of the SCAN-NORAD/ADC networks was completed on 2 April 1964, forming the initial CONUS AUTOVON. One additional center was added at Faulkner, Maryland, for a total of ten by the end of 1964.

(U) As originally planned, the AUTOVON network was to consist of 65 CONUS, nine Canadian, and 24 overseas switching centers. The CONUS program was scheduled to be completed in 1972. By the end of 1968, 46 switches in the CONUS were in operation.

(U) The first three of the nine Canadian automatic switching centers were activated on 4 August 1968. One additional Canadian switch was activated in November. This made a combined total of 51 switches in operation at the end of 1968.

(U) New DCA Implementation Schedule. In April 1969, DCA advised NORAD that all four-wire #5 AUTOVON switches would be phased out or replaced by ESS

switches by 1972.* Six switches were listed to be replaced by ESS switches. These were: Brewton, Alabama - by May 1970; Tully, New York - by May 1970; Billings/Glendive, Montana - by November 1970; Roscommon, Michigan - by December 1970; Fargo/Wheatland, North Dakota - by April 1971; and Monrovia, Maryland - by 1972.

(U) Ten switches were due to be phased out altogether. The switches at Faulkner, Maryland, and Rosendale, New York, were to be phased out by April 1970. The Cheyenne Mountain AUTOVON switch was redesignated a NORAD PBX in 1968 and began to function as such in 1969. Eight other switches were tentatively scheduled to be phased out at a future date. These were: Arlington, Virginia; Ennis, Texas; Hillsboro, Missouri; Colorado Springs, Colorado; Norway, Illinois; Rockdale, Georgia; Santa Rosa, California; and Yakima, Washington.

(U) On 30 March, the U.S. added five switches: Boone, Iowa; Picken, Mississippi; Ellisville, Florida; Memphis Junction, Arkansas; and Turquoise Junction, California; to the AUTOVON network.[35]

(U) Canadian Switches in Service. By November 1969, the Canadian portion of the AUTOVON network was complete with nine switches. On 30 March, the Haney, British Colombia, switch was cut over to service, bringing the Canadian total to five. On 11 May 1969, the Sudbury, Ontario, switch was added to the system. On 6 November Canada brought into service the switches at Lethbridge, Alberta; Portage, Manitoba; and Regina, Saskatchewan. These last

* (U) For full details, see CONAD Command History 1968 (U), pages 176-178.

three switches would have limited capability until 5 April 1970 when full Polygrid program and connectivity was to be installed coincident with the CONUS cutover scheduled on that date.

(U) AUTOVON Switches -- Current and Projected Figures. By December 1969, there were 59 switches in CONUS and Canada: nine Canadian and 50 U.S. switches. Certain variations in the numbers of CONUS switches were expected in the 1970-1972 time period. According to the new DCA Implementation Schedule, ten new U.S. switches were to be added in 1970 and two existing switches were to be cut. 1971 would see the addition of two more new switches. A tentative schedule for 1972 showed the addition of three new AUTOVON switches and the deletion of eight existing switches. A very tentative total for 1972 saw the CONUS AUTOVON network as consisting of 55 switches -- or 63, if the tentative deletions had not been made effective by that time.[36]

(U) Proposed Reductions in AUTOVON Backbone Cost. On 18 December, NORAD (J-6) advised ADC that the Office of the Secretary of Defense had directed DCA to study and implement actions to reduce the cost of AUTOVON services. ADC was tasked to study the feasibility of using voice grade trunks for SAGE/BUIC data in a degraded condition. If feasible, this would permit the discontinuance of approximately 370 special grade trunks which were provided for SAGE/BUIC backup only, and represented an annual charge of $1.8 million.[37]

TELEVISION LINK BETWEEN NORAD CMC AND ENT AFB

(U) Background. In February 1965, NORAD submitted a requirement to the JCS for a secure intersite television link for the exchange of intelligence and other information. The Secretary of

Defense deferred a decision until NSA gave technical approval for the use of microwave links for the transmission of intelligence and SSO traffic and NORAD revalidated its requirement. The revalidation was submitted to the JCS on 8 February 1967. In June 1967, the OSD again deferred its decision until an engineering plan and cost effectiveness analysis could be made and considered. The plan and cost effectiveness analysis was submitted to DOD in October 1967.

(U) In a memorandum dated 22 January 1968 to the Secretary of the Air Force, the Secretary of Defense approved the NCMC-Ent AFB TV Link on a field test basis. The Air Force was tasked to implement the system with funding to be accomplished within resources currently available to the Air Force. In a message to ADC on 20 February 1968, USAF stated that because of a shortage of FY 1968 RDT&E funds, this program could be supported only if ADC could identify a source of funding from within ADC. USAF recommended that if funds could not be found, that FY 1970 funding be programmed and start of the project be deferred until approval of the FY 1970 program.

(U) Current Status. A JCS memorandum, dated 15 August 1969, asked CINCONAD to reevaluate, in light of current funding constraints, the urgency and priority of the TV link to help the JCS prepare a response to the Sectary of Defense. CINCONAD revalidated the requirement in a letter to the JCS on 25 August. Whereas the link was originally justified to meet intelligence requirements, this letter expanded the requirement to include a command and control function.[38] CINCONAD stated that it was planned that this system redefinition would be completed in time to evaluate the requirement under the FY 1971 funding cycle. General McKee added that

this "requirement has equivalent urgency and priority to that given the NCOC modernization program."[39]

(U) The JCS sent a memorandum to the Secretary of Defense supporting the continued validation of the TV link; however, USAF indicated an inability to program funds prior to FY 1972 despite the priority established by CINCONAD.[40] In view of this, CINCONAD sent a letter to the JCS on 27 October 1969 postponing the requirement until FY 1972.[41] General McKee stated that he had reconsidered the timing of satisfying the requirement for the CCTV link since there appeared to be little hope of fulfilling the requirement with current or near term funds.[42] However, he said that the requirement for the CCTV link continued to be valid and would be included with appropriate additional justification in the NORAD C^3P submission for FY 1972.

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