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UNCLASSIFIED

NORAD/CONAD

HISTORICAL SUMMARY

(Unclassified)

JULY – DECEMBER 1963

UNCLASSIFIED

[redacted]

[redacted]

SEA LAUNCHED BALLISTIC MISSILE DETECTION

BACKGROUND

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(S) In early 1962, NORAD stated a requirement for a warning system to detect sea-launched ballistic missiles (SLBM's). To satisfy the requirement, NORAD and USAF ADC examined several systems proposed by ESD.

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(S) In March 1963, NORAD recommended either the FPS-24/26 radar system or the FPS-35 with the back-to-back 60-foot tracker system. Modifications would be made to selected SAGE radars -- either the FPS-24/26's or the FPS-35's, but NORAD considered these modifications an interim capability.

STATUS

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(S) The Secretary of Defense, in April 1963, approved the reallocation of $25 million of FY 1964 funds, a part of which was for a program to provide an early SLBM detection and warning capability. The DDR&E prepared a PCP that included an item for a warning capability against SLBM's and the Secretary of Defense approved it on 11 September.

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(S) The approved program called for modifications to SAGE radars. It was estimated that USAF would release the requirements to industry for competitive bidding in April 1964 and a contract would be awarded in August. The SAGE radar modifications were to be operational by mid-1966.

SPACE DETECTION AND TRACKING SYSTEM

SPACETRACK SYSTEM

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(S) In January 1963, USAF set forth the responsibilities of the Department of the Air Force for space detection and tracking. Based on an ADC-prepared concept, USAF defined the USAF Spacetrack System, assigned it to ADC, and restated its mission. USAF distinguished Spacetrack from the

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operational system, SPADATS (Space Detection and Tracking System), which had been assigned to NORAD's operational control and was comprised of both the Spacetrack System and the U.S. Navy SPASUR (Space Surveillance) System.

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(S) NORAD was not satisfied with USAF's concept of operation for Spacetrack. NORAD wanted all elements of SPADATS integrated into the NORAD Combat Operations Center.

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(S) The USAF position, as stated in October by the USAF Vice Chief of Staff, was that the total Spacetrack System was to be manned and operated as a departmental responsibility, but that it would remain responsive to the SPADATS mission. The Spacetrack System, USAF felt, was also essential to the Air Force space mission in the support of research, development, test, and engineering of new DOD space programs and for projects for which the Air Force would be responsible.

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(S) CINCNORAD answered on 1 November that a memorandum from the DOD on command and control systems would have an impact on the subject. Explained CINCNORAD, when this was received, "The question of the SPADATS composition, design and operation must be re-examined in the light of present and future needs."*

BAKER-NUNN CAMERAS

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(S) Background. NORAD also wanted to improve SPADATS through the use of Baker-Nunn cameras. Of the 17 cameras in existence, USAF had four, Canada had one (obtained from USAF in mid-1962), and 12 were operated by the Smithsonian Astrophysical Observatory (SAO) in support of NASA.

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* (U) See Chapter Two

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(S) In September 1962, USAF ADC submitted a plan, with NORAD's concurrence, for the integration of Baker-Nunn cameras into SPADATS. The plan called for a basic seven-camera network, in addition to the RCAF-operated camera at Cold Lake, Alberta. The plan also called for taking over three SAO-operated cameras and for getting additional cameras, if needed, as SAO phased them out. NORAD added a request for two cameras to calibrate the Navy's SPASUR fence.

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(S) The Secretary of the Air Force and the JCS concurred in ADC's plan and it was sent to the Secretary of Defense in November 1962. In January 1963, the latter said that an analysis of the capability and accuracy required by SPADATS and offered by the camera had been left out. An analysis, he said, would be a prerequisite to approval. Also, he indicated that NASA would not be phasing out its SAO-operated cameras as planned.

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(S) NORAD then reaffirmed its need for the accuracy of the camera, again supported the ADC plan, and submitted an analysis of the capability and accuracy of the Baker-Nunn. NORAD said it wanted a basic military network of cameras under its operational control rather than having to rely on data supplied from sensors operated by scientific agencies.

(U) In the meantime, at the end of 1962, RCAF ADC put the camera at Cold Lake under the operational control of CINCNORAD.

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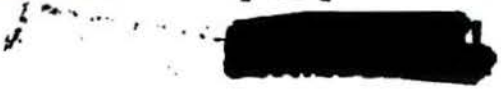
(S) Status. The JCS replied to CINCNORAD on 17 July that the three SAO-operated cameras would not be available as proposed in ADC's plan. The JCS asked for a revised four-camera network plan that would include only those cameras currently owned by USAF. The camera at Cold Lake was to be included in the plan (for a total of five cameras) and every effort made to get NASA to provide Baker-Nunn data to SPADATS. The JCS endorsed NORAD's request for a Baker-Nunn camera network to the Secretary of Defense to include only the cameras currently assigned to USAF.



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(S) NORAD told the JCS in September that it was completely revising its plans for the operation of the Baker-Nunn camera network. The revised plan, NORAD said, would provide for the integration of the RCAF camera and the USAF cameras into a mutually supporting sub-system of SPADATS. However, the contribution that SAO-operated cameras could make had to be determined before recommendations could be made for locating the USAF-owned cameras. The plan was to be submitted before mid-1964. NORAD also asked the JCS to recover the camera on loan to Chile.

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(S) Because the U.S. Navy developed other methods for calibrating SPASUR, Baker-Nunn cameras were no longer needed for that purpose. NORAD learned in October that the Navy had asked the JCS to take no further action to provide cameras for SPASUR for that purpose, a request which the JCS approved.

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(S) Cold Lake. As noted previously, the Canadian Baker-Nunn camera at Cold Lake had been placed under NORAD's operational control at the end of 1962. RCAF ADC, which operated the camera, hoped to improve Cold Lake's contribution to SPADATS. Computer facilities that were expected to reduce the SPADATS Center's processing load at the NORAD COC were being checked out in December. RCAF ADC also asked NORAD for help in determining future manning and capability requirements for the satellite tracking unit. NORAD answered that Cold Lake's workload could be expected to go up but was subject to unknown variables, such as the level of foreign space activity, angles of launch inclination, and altitudes. NORAD expected, however, that Cold Lake would have the capacity to operate during viewable periods of darkness and to track all satellites within view.

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(S) Two problems, however, clouded Cold Lake's future status. Secure communications circuits, that were to have been available on 15 November, had not been installed by year's end because of funding difficulties. Also, consideration was being given to moving the Baker-Nunn camera.

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PARL SITE

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(S) Background. NORAD had tried to change the arrangements whereby Canada's Prince Albert Radar Laboratory (PARL) supplied information to SPADATS on a part-time basis. NORAD wanted PARL to be fully responsive to SPADATS; however, the Defence Research Board (DRB), which controlled the site, was reluctant to set up a capability for handling classified data.

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(S) Consequently, NORAD wanted executive control of PARL transferred from the DRB to the RCAF. To do this, NORAD suggested to USAF in December 1962 that U.S. equipment at PARL be transferred to the RCAF when the loan of equipment was renegotiated. NORAD further recommended to USAF in May 1963 that if the loan had to be renewed with DRB, then it should provide for 24-hour availability of the radar for space observations. NORAD also asked that an RCAF unit be set up at PARL for SPADATS operations.

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(S) In June 1963, NORAD told the JCS that it wanted PARL as a full-time SPADATS sensor and asked for JCS approval in principle.

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(S) Status. The JCS replied in August, stating that they had learned during negotiations with the DRB that USAF's investment in equipment had been greatly reduced by a fire at the site. What USAF had left, the JCS continued, would not permit it to seek a change in PARL's executive control because of political factors. NORAD also learned later that USAF was going to find out if its interests in PARL could be ended and the whole facility turned over to Canada.

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(S) By letter in September, NORAD tried to learn from the Chief of the Air Staff, RCAF, which Canadian agency (DRB or RCAF) would make arrangements for the continued use of PARL in SPADATS. No reply had been received by January 1964; however, PARL was still providing information to SPADATS.

TURKEY SITE

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(S) As had been planned in 1962, NORAD assumed operational control of the radar site at Dyarbakir, Turkey, on 1 August 1963. USAF ADC had taken over manning and operation of the site on 1 July when it became a part of the Spacetrack System to gather both SPADATS and intelligence data.

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(S) Communication difficulties were met, however, when the site became operational. An investigation showed that the Adana-Dyarbakir tropo-link caused excessive distortion which prevented the use of all circuits. An interim routing system was set up that provided secure teletype and an unclassified voice circuit from Ent AFB to Dyarbakir. The final routing for improved communications was to be completed in February 1964 for secure teletype and March 1964 for a voice circuit.

TRINIDAD SITE

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(S) The Trinidad FPS-44 tracking radar supplied information to SPADATS on a part-time basis, but in December 1962 NORAD asked the JCS for full-time operational control of the facility because its near-equatorial location enabled it to observe all earth satellites. In February 1963, the JCS told NORAD that it would have operational control when the facility was transferred from AFSC's Air Force Missile Test Center to USAF ADC. In March, USAF authorized ADC to prepare a transfer agreement with AFSC.

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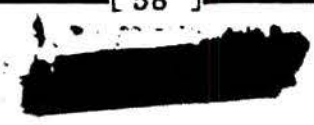
(S) Transfer was held up, however, when OSD became concerned over ADC's capability to meet the requirements of other users of the Trinidad facility. No action had been taken by January 1964. NORAD learned later that USAF had asked ADC to provide justification for getting the site. ADC gave its justification and expected action by 1 May 1964.



DEEP SPACE SURVEILLANCE
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(S) In July 1963, NORAD was surprised to learn from the JCS that it did not have either the requirement or the responsibility for obtaining data on deep space probes and deep space vehicles. Then, in October 1963, NORAD learned through a staff visit to the Pentagon that a 20,000-mile "ceiling" had been set as NORAD's limit. This "ceiling" resulted from a requirements letter of April 1961 to the JCS on the basic SPADATS sensor coverage, but the letter was not intended to indicate the limit of NORAD's interest. However, NORAD did not send a reclama. It was felt that such action might cause more positive restraints and also adversely affect other pending JCS actions that were then favorable to NORAD.
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(S) NORAD also learned that the JCS did not intend to limit NORAD's activities in deep space. They did intend, however, to prevent requests for procurement or funding of a system of deep space sensors. Thus, the main constraint on NORAD was financial. NORAD's intention was not to ask for a special sensor network, but to get data from agencies with deep space surveillance facilities and to modify some large radar-tracking antennas. The staff visit showed that such modifications might be accomplished by projects not requiring JCS funding approval.

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PROPOSED CHANGE IN TERMS OF REFERENCE

(U) (S) In July 1963, NORAD asked the JCS and COSC to amend the NORAD Terms of Reference to add in specific terms the responsibility for space defense.* NORAD believed that this change was necessary to insure development of appropriate plans for aerospace defense of the North American continent.

(U) (S) Canada's Air Chief Marshal told the Chairman, JCS, that the COSC agreed that NORAD's request was appropriate from their point of view, but felt that such an amendment might exceed the scope of the NORAD agreement. To amend the Terms of Reference, the COSC believed that the subject would have to enter diplomatic channels.

(U) (S) The JCS replied to the COSC in December that the basic NORAD agreement might need amending to change the Terms. The JCS felt, however, that it would be premature for either government to introduce the matter into diplomatic channels.

(U) * (S) NORAD had once before, in May 1961, asked for a change in its Terms of Reference. At that time, the JCS had replied that they believed the existing Terms were broad enough.