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~~(S)~~ NATIONAL RECONNAISSANCE OFFICE
WASHINGTON, D.C.

THE NRO STAFF

October 17, 196

MEMORANDUM FOR DR. FLAX

SUBJECT: Response to Acting Secretary Baird's Letter to Mr. Nitze

Following my discussion with you on Tuesday, I prepared the attached draft response (Tab A) to Secretary Baird's letter (Tab B).

I have coordinated the response with Mr. Palley and have discussed its content with Colonel Morrison from Mr. Horwitz' office. Colonel Morrison is, as I mentioned, the OSD action officer on the Navy letter. Mr. Palley concurs in the response and Colonel Morrison is prepared to use the draft in the preparation of a response for Mr. Nitze's signature. Colonel Morrison will add to the draft any particular discussion related to the general Navy roles and missions questions posed in Secretary Baird's letter.

If you have no objection, I will release the draft to Colonel Morrison for his use.



RUSSELL A. BERG
Brigadier General, USAF

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THE DEPUTY SECRETARY OF DEFENSE
WASHINGTON, D. C. 20301

MEMORANDUM FOR THE SECRETARY OF THE NAVY

SUBJECT: Department of Defense Satellite-Borne Earth-Sensing
Activities

This responds to your memorandum, BYE 64674-68, dated
October 8, 1968.

My memorandum, "Department of Defense Satellite-Borne Earth-Sensing Activities," BYE 78268-68, dated August 23, 1968, is an update of an earlier memorandum issued on August 30, 1965. The primary reason for the up-date is to make sure that public meetings and symposia on earth-sensing from space, as well as papers on the subject prepared for public audiences, are screened and approved for conformity to national satellite reconnaissance security policy. Earth-sensing activities, in the context of this policy, comprise those which employ active or image-forming devices in a data-gathering role. Subsystem components and equipments such as gravity gradient stabilization hardware, data links, horizon seekers, communications payloads, and navigational devices are excluded from these restrictions. It is not the intent of my memorandum to inhibit the conduct of this type effort in support of our military objectives, in accordance with the present assignments of responsibility for such activity as defined by the DOD Directives and Instructions.

The National Reconnaissance Office, under the direct supervision of the Office of the Secretary of Defense, is the best qualified agency to make the required security analyses for me. The Top Secret version of my memorandum cannot, of course, refer to the NRO. If, as suggested in your memorandum, the text of the Top Secret version presents an intra-service problem, I suggest that you substitute your own "white" instructions, designating a Navy office as the focal point for collecting data on your earth-sensing activities. Appropriately cleared persons in

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that office could then deal directly with the NRO in obtaining the required coordination. If you decide to elect this option, advise me of the details of your arrangements at an early date.

In summary, the sole purpose of BYE 78268-68 is to reaffirm that the NRO is responsible to me for certain earth-sensing activity security reviews and approvals, as well as for OSD contacts on the subject with other government agencies. To preclude any misunderstanding of the intent of my earlier memorandum, I am providing similar clarification to the other Services.

I have asked Drs. Flax and Frosch to meet on the ocean surveillance matter and advise Dr. Foster of their findings.

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ENCLOSURE (1)

THE EVOLVEMENT AND EFFECT OF CURRENT DEPARTMENT OF
DEFENSE SPACE DEVELOPMENT DIRECTIVES1. Relating to the Authority and Purview of the National
Reconnaissance Office (NRO)

In the agreement between the Secretary of Defense and the Director, CIA, reference (c), the National Reconnaissance Program was defined to "consist of all overt and covert satellite and overflight projects for intelligence, geodesy and mapping photography and electronic signal collection." In this agreement, it was also established that the "NRO will be directly responsive to, and only to, the photographic and electronic signal (SIGINT) collection requirements and priorities established by the United States Intelligence Board and will develop the over-all reconnaissance program to satisfy these requirements."

In a memorandum of 14 June 1962, reference (d), the Deputy Secretary of Defense forwarded the above agreement to the Service Secretaries with the following limiting provision: "The (TS) National Reconnaissance Program does not include peripheral reconnaissance activities. These remain the responsibility of the Military Departments."

I strongly concur with these objectives and the initial intent as expressed in establishing the National Reconnaissance Office. The requirements for, and the sensitivity involved with, collecting intelligence information over the denied areas of the world dictate a separate, consolidated program with a closely held need-to-know, subject to a special system of security control. However, in the intervening years, the authority and purview of the National Reconnaissance Office has been increasingly expanded to a degree considered to be unjustified by requirement and unresponsive to the needs of the Services.

a. The DOD Directive, reference (e), which establishes the responsibility and authority of the NRO, accurately reflected the initial definition but contains no mention of the "to, and only to" condition in the initial agreement or the limiting provision excluding peripheral reconnaissance as established in the forwarding memorandum.

b. In a memorandum of 30 August 1965 to the Service Secretaries, reference (a), the Deputy Secretary of Defense

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directed that all DOD needs for study, development, test or use of satellite image forming earth sensors fall within the scope of the National Reconnaissance Program. As an example, the photography of ocean patterns for oceanography research was now included, even though such activity clearly exceeds the initial definition and objective of the NRO.

c. In September 1966, Navy experiments to test various satellite sensors for ocean surveillance were cancelled from the MOL program. Thereafter, in a memorandum to the Secretary of the Navy and Director, NRO, the DDR&E recommended "that the Air Force (NRO) provide the collection system management". The ASN(R&D) responded, establishing the requirement primarily for developments in detection-only radar "which would collect the location of rather discrete 'blob types' of information as opposed to the more sophisticated, more technically difficult, high resolution reconnaissance type radar system which would have an intelligence collection capability as well." The NRO was thus expanded to include a service project which was not for "intelligence, geodesy and mapping photography and electronic signal collection", was responsive to tasking other than "to, and only to" the USIB; was assigned an activity operational only over international waters, only in the remotest sense peripheral, and in the true sense not reconnaissance at all; and not an "image forming earth sensor". This sensor development lay outside the scope of NRO responsibility in each of the above categories until this assignment.

d. Reference (b) now deletes the term "image forming" and only the limitation "earth sensing" remains. Since all orbiting bodies sense the earth's gravitational field, even inert orbiting fragments now come (in the strict sense) under the purview of the NRO. Certainly, any Navy gravity gradient device, meteorological device, radiometer for measuring ocean surface temperature, scatterometer for measuring ocean waves, or ocean surveillance detection radar is included.

The potential benefits to be gained by NRO monitoring and review of space projects outside the purview of their mission is recognized and such should continue. However, the continuous direct liaison as currently directed will not only burden other programs with unnecessary security and administrative problems but it may endanger the security

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of the sensitive programs under NRO purview. The Office of the Director, Defense Research and Engineering, should be the direct point of contact, review and approval of military space programs, and NRO review should be conducted through this office.

Reference (b) is a case in point of the security problems resulting when the NRO becomes unnecessarily involved with other space efforts. For effective adherence, the directives contained in reference (b) require wide dissemination to all working levels in the Navy's space effort. Yet, the directive was promulgated under the "BYEMAN" security level, severely restricting its disclosure, and only a sanitized paraphrased version, downgraded to TOP SECRET, is available for limited distribution.

The case history of detection-radar development efforts, included later in this enclosure, illustrates the security problems and lack of response which may be expected when the NRO is assigned tasks not logically theirs to perform.

2. Relating to the Achievement and Maintenance of Strong All-Service Participation in Military Space Programs

Excluding the delivery of weapons and the missions assigned to the NRO, the primary functions of military space systems fall into the categories of navigation, communications, ocean surveillance, meteorology, oceanography and search and rescue. For each, the oceans provide natural barriers, and the broad expanse of the world's oceans give special emphasis to the utilization of satellites by the Navy for their accomplishment. Thus, the Navy has an inherent interest and requirement for the utilization of space systems that equals if not exceeds those of the other Services who are land rather than sea based. However, it is recognized that satellites can generally provide services for more than one military service and dictate joint planning and cooperation in the development and operation of the system. Thus there also exists a requirement for a focal point to exercise authority, over-all control, and coordination of space efforts.

This was the intent and objective of the Secretary of Defense when he wrote to the Chairman, JCS, in his memo of 18 September 1959:

"the advent of military satellite and space vehicle systems has national security implications which emphasize the need for over-all control and coordination of the military activity pertaining thereto.

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"The establishment of a joint military organization with control over operational space systems does not appear desirable at this time. The utilization of the present organization of the Military Departments appears preferable....."

"Satellite and space vehicle operations will be assigned to the appropriate military department after consideration of the primary interest or special competence of the respective service. Where no one military department has primary interest or special competence, consideration will be given to special competency in associated fields of development."

Subsequent directives and procedures have departed radically from the above objectives.

a. References (f), (g) and (h), promulgated in 1961, established DDR&E as the focal point of coordination and control over space efforts but assigned to the Air Force the responsibility for the research, development, test, engineering and operation of all Department of Defense space programs or projects. The other military services were specifically excluded from all such responsibility, with any exception to be made by the Secretary of Defense or Deputy Secretary of Defense only under unusual circumstances. This abruptly ended all-service participation, however, the other services were granted authorization to conduct preliminary research to develop new ways of using space technology, under the control of DDR&E.

b. The scope of Air Force monopoly was again increased by the attachment to the 30 August 1965 memo, reference (a), from the Deputy Secretary of Defense to the Service Secretaries (underlining provided):

"To insure that all Department of Defense needs for study, development, test, or use of satellite borne image forming earth sensors are handled in a coordinated manner, I am requiring that such needs be directed to the Office of the Secretary of the Air Force for review and processing."

This accomplished the initial step in removing DDR&E as the focal point for space matters.

c. The attachment to reference (b), which replaces the previously referenced attachment, changes the paragraph as follows (underlining provided):

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"To insure that all Department of Defense efforts involving the use of satellite-borne earth sensors are carried out in accordance with existing DOD policies, I am requiring all such activity to be directed to the Office of the Secretary of the Air Force for review and approval. "Activity" is defined to include feasibility studies, potential application studies, developments, tests, uses, plans for symposia and conferences, and papers and presentations on this subject area."

In effect, this now establishes the Office of the Secretary of the Air Force as the ultimate approval authority for every action and working-level effort associated with Navy project or research involving space, after such have been reviewed, approved and funded by the Secretary of Defense.

This TOP SECRET attachment, a document which stands on its own, is neither limited by, nor makes reference to, other directives. As such, it is subject to future strict interpretation far exceeding what I believe was intended by the Deputy Secretary of Defense when it was signed. However, with precedence so vividly established, I am certain that such strict interpretations will also, in a short time, evolve. Even assuming Air Force approval of all non-Air Force efforts, the time delays and energies expended in directing every piece of paper, conceptual study or plan, or preview of every meeting to the Office of the Secretary of the Air Force for approval in the course of conducting an approved project or research would be sufficient to kill or seriously retard any non-Air Force space program.

In the same manner, the Air Force has evolved and increased its purview so as to synonymously include the National Reconnaissance Program. Reference (e) established that the Director, NRO would be appointed by the Secretary of Defense, but made no commitment to a permanent association with any one military service. Reference (b), on the other hand, now implies this association with the Air Force to be complete and essentially permanent. The DDR&E, in official correspondence, even refers to the National Reconnaissance Office as the "Air Force (NRO)".

In such an environment, it has become increasingly difficult and frustrating for the Navy to develop or maintain a cadre of space-knowledgeable personnel, capable of effectively participating in Department of Defense space

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efforts. The Navy, with a requirement for space participation equal to or greater than those of the land-based services, finds itself strangely excluded from all but relatively peripheral activities. The lack of visible consideration to the primary interests or special competence of respective services has suppressed morale to the degree where effective military space capability is endangered.

3. A Case History of Development Efforts for a Satellite-Borne Ocean Surveillance Detection Radar

During the four years, 1962 through 1966, the Navy conducted extensive preliminary research and analytic efforts towards selecting the sensor and system best suited for, and with greatest expectation of, supporting requirements for world-wide ocean surveillance. A low-resolution, detection-only radar was selected to provide an active all-weather system and the wide swaths essential for frequent, repetitive coverage of the oceans with a minimum number of satellites. Additionally, this sensor did not present the power, data handling and other development problems of more sophisticated radars.

This effort came to an abrupt end in October 1966, as described in the first section of this enclosure, when DDR&E assigned the responsibility for the development of this sensor to the "Air Force (NRO)". The Navy, at this time, made available to the NRO all its past efforts concerning this development. In March 1967, the Assistant Secretary of the Navy (R&D) forwarded the Navy's requirements for the system and offered "that one or more naval officers should now be assigned to work with the responsible members of your staff in the preparation of the necessary detailed studies and documentation.....", and concluded with: "I would appreciate your comments concerning how we might best proceed to expedite this program".

In May 1967, Rear Admiral GROVERMAN, the Director, ASW and Ocean Surveillance Division, submitted a memorandum to the Assistant Secretary of the Navy (R&D), via the Vice Chief of Naval Operations, which criticized the lack of response by the NRO and the concealment prohibiting program monitoring. This memorandum was subsequently forwarded by ASN(R&D) to the Director, NRO. Applicable portions are quoted:

"I consider the lack of any tangible progress towards the development of an Ocean Surveillance satellite within the National Reconnaissance Office (NRO) a

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disappointment. In response to reference (a), you forwarded a memorandum to the NRO concurring in the DDR&E recommendations and briefly stated the Navy's primary Ocean Surveillance requirements, highlighting anticipated technical problems, and approving the assignment of appropriate naval officers to assist that office, both in Washington and in the field. By reference (c), the Navy's detailed collection requirements were forwarded to ASAF(R&D). This later memorandum was written following several months of discussions during which the Navy made available to the NRO all pertinent documents relative to the programs. A proposed development plan, and a funding schedule for FY 67 through FY 69 was even prepared informally for, and at the request of, the NRO, and although retyped in the proper format, it was apparently never seen by Dr. Flax.

"2. It has become apparent to me that as long as the development responsibility for a satellite radar system remains within the NRO there is little hope for the early implementation of a system capable of supporting Ocean Surveillance. Although there has been a continuous stream of "cooperative" words, there has been no discernable action, and no funds are apparently available to get started on the problem.

".....6.....Your letter pointed out that the Navy requirement was for a detection only system, and NRO staff personnel have concurred in this approach in subsequent informal discussions. It is obvious that developments of this nature can only be justified in response to Navy Ocean Surveillance requirements. The funding of NRO programs is so concealed that it is difficult to determine what is being expended where, and prohibits program monitoring, or individual service support.".....

"8. In conclusion, I recommend the following:

a. That the need for program responsibility within the NRO be reviewed at the DDR&E-ASN-ASAF level, and that every effort be made to bring the program back within the Navy at the earliest possible date. As presently assigned, the Ocean Surveillance program, a tactical system, is in competition with

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the National strategic programs which are the responsibility of the NRO, and cannot survive when money and people are in short supply....."

In the summer of 1967, DDR&E recognized the lack of NRO response and proposed that the Navy again begin work on a space radar sensor. The Navy was requested to conduct development and test of a detection radar system, and a comprehensive reliability program, with the final objective that only repackaging would be necessary for satellite flight. With strong support, this program received initial Advanced Development funding for FY 69, and the Navy has been engaged in reassembling competent and space-knowledgeable personnel.

The development program is achieving success and, in July 1968, a military space program designator was requested from the Air Force to identify the effort. Upon publication of this number and its descriptive title in an Air Force message of 7 August, considerable curiosity has been directed to the Director, Navy Space Programs Division concerning "what's the Navy doing in space". Reference (b), signed just two weeks later, now provides complete review and disapproval authority by the Office of the Secretary of the Air Force for this Secretary of Defense approved program.

In summary:

a. The Navy has been assigned the task of developing a detection radar applicable for satellite ocean surveillance. The program is uniquely responsive to, and only to, Navy requirements in that the sensor can respond to no known other requirements. Every aspect of this program dictates security requirements less than the extreme. The radar, when operational, would be only one of many sensors integrated into a many-source ocean surveillance system which the Navy is currently developing. Yet, the Navy is not responsible for the radar satellite program.

b. The Air Force has been assigned responsibility for all aspects of this space program by references (f) and (g), and have been granted approval authority over all aspects of the current Navy sensor development program by reference (b). Yet, the Air Force, in all these years, has conducted no known effort in response to these Navy requirements for ocean surveillance.

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c. The NRO, as previously documented, is also assigned the responsibility of developing this space system in response to Navy requirements. In the ensuing two years, they also have accomplished nothing.

Thus the threat of termination remains a constant threat to all Navy personnel who are participating in this program, and termination will be their reward for hard work and success rather than for failure. When the development effort becomes successful, the program will be transferred to the Air Force or to the NRO, not because they have any stake in its success, or because it supports their missions, or because they have participated in the development or have special competence; but the transfer will take place solely because it is in accordance with applicable current directives. This procedure, the direct result of current directives, seems far removed from the objective of a strong, effective, all-service participating military space effort.

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