

~~TOP SECRET~~ADVANCED RESEARCH PROJECTS AGENCY  
WASHINGTON 25, D. C.

COVERING BRIEF

JUL 10 1959

TO: The Secretary of Defense

FROM: The Director, Advanced Research Projects Agency

Problem: To request approval of an electronic reconnaissance satellite project (CANES). ~~(TOP SECRET)~~

Background: In a memorandum to the Director, Advanced Research Projects Agency, dated March 9, 1959, the Assistant Secretary of the Navy (Material) forwarded a proposal to ARPA for a relatively inexpensive electronic reconnaissance satellite system, designated as Project TATTLETALE. The proposed Navy ferret system is designed to collect electronic intelligence (ELINT) in the 2600-3250 megacycle "S" band of frequencies from the interior and infrequently covered maritime regions of the Soviet Union. The acquisition of such information will furnish both the level of Soviet electronic activity in the "S" band and the general location of certain priority electronic equipments. Such data will fulfill a long standing national intelligence requirement.



Discussion: As presently proposed, the system consists of a 25-pound payload which may be incorporated as an integral unit in ARPA's navigation satellite program (Project TRANSIT), which already is being developed under a contract with the Navy's Bureau of Ordnance. The CANES package, to be carried "pickaback" in two navigation research satellites, will collect and relay data to portable receiving equipment at existing overseas ground intercept stations. Data processing will be accomplished locally at the National Technical Processing Center of the National Security Agency.

On the basis of a number of months of technical evaluation, the Countermeasures Branch of the Naval Research Laboratory, which will have responsibility for detailed CANES development, has indicated that "on shelf" equipments may be utilized and that no significant engineering problems are anticipated. The design criteria include solar batteries which, on the basis of the VANGUARD program, will provide a predicted life in excess of one year. This factor of utilizing demonstrated components and existing hardware

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is attractive in that the SENTRY (now designated as Project SAMOS) reconnaissance system has certain features which have yet to be proven.

*orbit*  
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NRL believes it can develop the CANES unit in time for the first polar orbit launching of TRANSIT II A from Vandenberg Air Force Base in March, 1960, provided that early approval to proceed is obtained. A polar launching is required to obtain the desired 70-degree orbit coverage of the USSR. A second package will be available for TRANSIT II B, tentatively scheduled for launching in May, 1960.



Only two CANES units are planned, so that the project will be interim in nature and will terminate with the second flight. The tentative firing dates of March and May 1960 may be subject to change because of possible conflicts in the availability of launching pads at Vandenberg.

Once the navigation satellite is launched, the CANES package will not become operable until it is triggered. The system will operate on a real time basis and will not incorporate any storage components. It will transmit for approximately 40 minutes when triggered, and then shut off automatically until triggered again.

If the 400-mile TRANSIT orbit stabilizes as planned, it will not be necessary to trigger the CANES portion of the satellite for several weeks, or even months unless earlier collection of ELINT data is desired. Such a feature provides considerable tactical flexibility as to when and how often the package is used to acquire ELINT, and also enables selective or delayed use of the system in conjunction with other satellite reconnaissance systems such as SAMOS. In addition, the device could be triggered over the United States for R & D, or checkout purposes.

Under current planning concepts, the satellite will be triggered on a secret frequency from the [redacted]

[redacted] It then will pass over the Soviet Union where it will be illuminated by high powered Soviet search radars such as the GAGE and TOKEN. One or more of the overseas ELINT ground facilities,

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The possibility exists that the transmissions of the ELINT intercept may be monitored by the USSR. But while the Soviets may have knowledge that the satellite is obtaining information, it is NRL's opinion that it will be extremely difficult, if not almost impossible, to jam the package. Further, the signal transmitted from the vehicle will involve pulse modulation, and thus will have some "coding" features. Also, it is possible to make changes in the frequency for triggering and interception up to shortly before launch. In this connection, it is the view of the intelligence community that even passive collection devices may be detected. Nevertheless, intelligence feels that a reasonable risk of exposure is warranted in view of the urgently needed information which the system is intended to collect.

The estimated cost of the CANES package is \$700,000, of which the Navy already has allocated \$375,000. ARPA will furnish the remaining \$325,000. The cost of processing intercepted ELINT data will be borne by the intelligence community.

ARPA will be responsible for over-all management of the project as an integral part of TRANSIT, with the Navy and the intelligence community in charge of development and such operations as are peculiar to the CANES package. The Air Force Ballistic Missile Division will be responsible for launching the parent navigation satellite and other development aspects inherent to the booster components.

The receipt of this proposal in ARPA raised a number of questions, some of which already have been answered. Primary among these problems was the possible compromise of the U. S. ability to fly the more sophisticated SAMOS reconnaissance satellites, presently slated for first launching in April, 1960; the value of the potential intelligence, and the technical feasibility of the proposal. In regard to the last question, it is ARPA's judgment that the CANES system has no unsurmountable development problems and that it will not interfere with present planning for the navigation satellite program.

With respect to problems in the intelligence area, the Assistant to the Secretary of Defense (Special Operations) has urged, on the basis of various intelligence recommendations such as one by the ELINT Committee of the USIB, that ARPA proceed with this proposal because it significantly could increase critical intelligence on Soviet defenses and technological development. The Director of Central Intelligence also has been advised of the project in a detailed memorandum, and has given his approval to proceeding with it.

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In addition, the intelligence community feels that this proposal is a complement to, and not a substitute for SAMOS because of this system's simpler mechanism and different orbit. Also, intelligence believes that the information obtained from the interior and isolated areas of the USSR by the two CANES flights will be of considerable utility in appraising the electronic results of SAMOS. For example, the data obtained by CANES is estimated to cover a very broad area of several thousand square miles. This coverage will form a needed matrix for determining the general location and certain overall signal characteristics of the specific electronics equipments and sites which SAMOS is being programmed to collect. Furthermore, the proposed project offers a partial back-up for the SAMOS electronics payload in event that the latter system is delayed or restricted for technical or other reasons.



A completely covert program is planned for CANES in order to avoid political repercussions and undue publicity. Because of the fact that CANES will be developed and integrated into the navigation satellite entirely within Navy-controlled laboratories, it is believed that persons having access to this program during the planning phase can be restricted to a very limited number without difficulty.

Agreement has been reached with the Navy to use a galactic radiation experiment as an unclassified scientific cover. The experimental galactic package, which will be incorporated, in turn, as a pickaback unit within CANES, will itself collect scientific data for NRL. The tentative short title of the scientific unit will be GREB (Galactic Radiation Experiment Background).

Implementation: To date, preliminary planning for CANES has been coordinated by ARPA with the Under Secretary of the Navy, the Assistant to the Secretary of Defense (Special Operations), the Director of Central Intelligence, and the Director, National Security Agency, and selected members of their respective staffs.

In addition, ARPA has transmitted a memorandum which disapproved the Project TATTLETALE proposal to the Under Secretary of the Navy. The purpose of this action was to remove the name, TATTLETALE, which was suggestive of the real intent of the system and which had received wider discussion as a proposal than was believed justified for a sensitive intelligence project.

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If the President approves of proceeding with the development and planning phases, ARPA will go ahead with the following actions on a strictly need-to-know basis:

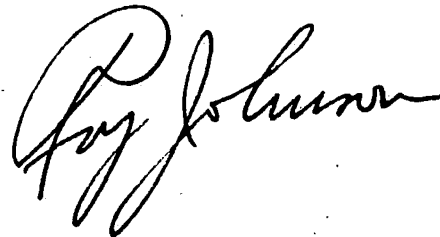
1. Implement, with the Department of the Navy, arrangements for technical development and an appropriate cover plan for including CANES in the parent navigation satellite. Collaboration with NSA and other intelligence agencies will be effected as required.

2. Implement funding and related procedures with the Navy Department and the intelligence community.

3. Prior to launch, prepare correspondence for the Secretary of Defense in order to obtain White House approval to include the CANES unit in the navigation satellite.

The Department of the Navy and OSO/OSD will maintain lists of individuals within the Navy and intelligence community, respectively, having access to the real objective and planning for this project. A coordinated master list of cleared individuals will be maintained by ARPA.

Recommendation: That you sign the attached letter to the President (Tab A).

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