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REPORT BY THE
COMPTROLLER GENERAL
OF THE UNITED STATES

THE NAVY'S RAPIDLY DEPLOYABLE
SURVEILLANCE SYSTEM NEEDS TO
BE REASSESSED

D I G E S T

The U.S. Navy has directed significant resources toward attaining an antisubmarine warfare (ASW) capability consisting of platforms, weapons, and sensors to counter the Soviet submarine threat. The forces' effectiveness depends on two broad types of sensors: (1) surveillance, which systematically observes large ocean areas to detect, classify, and locate submarine targets and (2) tactical, for detecting and targeting necessary to destroy a submarine.

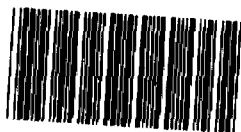
The Rapidly Deployable Surveillance System (RDSS) is being developed as a surveillance sensor which also has tactical applications for observing a smaller ocean area. RDSS will consist of a field of moored, long-life acoustic buoys which normally will be aircraft deployed. The system will be used in areas where other undersea surveillance systems have no coverage, are not available, or their deployment is not practicable. (See p. 2.)

The concept of an expendable moored surveillance sensor was first proposed about 20 years ago. Various programs have been started but, because of development problems, size, weight constraints, and costs, they were stopped or restructured. RDSS evolved from these earlier efforts. It started in 1976 and has since been separated into two versions--a near-term version (Mod 0) and a far-term version (Mod 1). (See p. 3.)

The Navy expects the RDSS concept to greatly reduce the number of aircraft and/or flying hours needed to perform ASW missions. GAO believes Mod 0 is not likely to do this, but Mod 1 should if its design proves feasible. (See pp. 6 and 7.)

The Mod 0 version transmits its data to P-3 or S-3 aircraft where it will be partially

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processed, analyzed, and displayed onboard the aircraft. The data also is recorded for further processing and analysis at ASW processing centers. (See pp. 2 and 3.)

Mod 1 sends its data directly to an ASW processing center which fully develops the information without delay. This buoy will have all the Mod 0 features as well as additional features and capabilities. Thus, much of the Mod 0 development effort and technology is directly applicable to Mod 1. However, the program as currently structured will lead to production of the Mod 0 version which has tactical applications as its principal purpose. (See pp. 3 and 7.)

As a deployed system, Mod 0's contribution to future strategic surveillance of enemy submarines or cost effectiveness in tactical applications remains questionable. It offers little assurance that its performance will result in increased effectiveness or that its costs can be justified. Other lower cost alternatives, such as a long-life sonobuoy now under development, merit closer Navy scrutiny before making a production decision on Mod 0--rescheduled for the mid-1980s. (See p. 6.)

Mod 1 shows promise to significantly reduce the number of aircraft and flying hours needed to take advantage of the savings Navy projected for the RDSS concept. However, GAO found that Mod 1 is in exploratory research with little funding and no apparent urgency. The Navy does not plan a formal review of Mod 1 until the mid-1980s. (See p. 7.)

In a 1981 study justifying the RDSS program, the Navy compared it to existing tactical sonobuoy capabilities. The study virtually ignored the advantages of Mod 1, concentrating on the benefits of Mod 0. Thus, certain costs associated with Mod 1 were not considered. (See p. 7.)

The study concluded that Mod 0 would initially cost more than existing sonobuoys but would be cost effective after 2 to 4 days of deployment in the ocean, depending on the mission.

GAO believes that, in addition to not considering the Mod 1 version, the study had limitations since it did not consider certain alternatives and other relevant issues identified below. Based on discussions with program officials, GAO also believes that Mod 0 would not become cost effective until about 10 to 15 days if the study had

- included, as an alternative to Mod 0, consideration of an improved long-life sonobuoy now under development;
- used realistic reliability and cost figures for Mod 0;
- considered signal processing improvements planned for the 1984 time frame which would allow more effective monitoring of larger numbers of sonobuoys; and
- used sonobuoys in their most efficient pattern design. (See pp. 7 to 9.)

GAO believes the Navy needs to reassess the benefits of Mod 0 in relation to alternatives not previously considered, especially a long-life sonobuoy now under development and determine Mod 1 cost effectiveness. (See p. 10.)

GAO further believes a question exists as to whether the Navy should work toward starting production of Mod 0 for use in a surveillance role. It may be more desirable to work toward developing and producing the complete surveillance system. (See p. 11.)

RECOMMENDATION TO THE
SECRETARY OF DEFENSE

GAO recommends that the Secretary of Defense direct the Navy to reassess RDSS. Such an assessment should review the cost effectiveness of Mod 0, including

- consideration of the long-life sonobuoy,
- realistic reliability and cost figures,
- consideration of signal processing improvements, and

--the most efficient sonobuoy placement.

The assessment also should include the benefits and full costs associated with Mod 1. Future funding for producing either Mod 0 or Mod 1 would depend on this assessment.

AGENCY COMMENTS

The Department of Defense provided GAO with oral comments which have been incorporated in this report as appropriate. Defense disagrees with GAO's recommendation and believes that to reconsider or reverse the decision (to develop and deploy Mod 0) would delay or cause the RDSS program to be terminated. However, there is disagreement between Defense and Navy regarding whether RDSS is to be used primarily for surveillance or in tactical applications.

GAO believes this disagreement and the potential low-cost sonobuoy alternative reaffirm the need to reassess RDSS before future production funds are committed.

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GAO did this review to evaluate the Navy's efforts to develop RDSS and improve the Navy's ability to detect, classify, localize, and prepare to attack enemy submarines; however, GAO did not evaluate the Navy's ability to attack and destroy such submarines. GAO concentrated its efforts on the Navy's management of the RDSS program.