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REPORT BY THE
COMPTROLLER GENERAL
OF THE UNITED STATES

ACQUISITION OF THE OVER-THE-HORIZON
BACKSCATTER RADAR SYSTEM SHOULD BE
REEVALUATED

D I G E S T

The Over-the-Horizon Backscatter (OTH-B) radar system is to provide a long-range tactical warning capability to help counter a threat of a Soviet precursor bomber attack on the continental United States. Acquisition costs are estimated to be almost \$1 billion for east and west coast OTH-B facilities, each including three radar sectors, and about \$1.3 billion if a third facility is added. These figures include a provision for inflation to the end of the acquisition. (See pp. 1 and 5 .)

PROGRAM DEVELOPMENT

The OTH-B program was started in 1970. In 1975 a contract for a prototype system was awarded, but this system experienced cost, schedule, and technical problems. In 1977 the program was restructured and an experimental radar system was built to demonstrate technical feasibility rather than function as an operational prototype system. Initial testing of the experimental system, however, showed that the radar would not meet performance requirements for an operational system. These requirements were later revised and the Air Force has continued into full-scale development. (See pp. 2 and 6 through 9.)

The Air Force plans to begin production of the OTH-B radar system before development is completed. Initial development testing is not planned to begin until production is far advanced. Cost, schedule, and technical risks associated with the current program are assessed by the Air Force as low to moderate. Schedule slippages, as well as cost increases, may occur because operational testing of the system will not begin until all of the east coast facility and much of the west coast



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facility is completed. The severity of problems identified in testing, and how quickly they can be resolved, will dictate the magnitude of any cost or schedule increases. It is too early to predict, however, whether serious problems will in fact occur. (See ch. 2.)

ACQUISITION MAY NOT
BE JUSTIFIED

Near-term solutions, as well as long-term alternatives, are being pursued to strengthen U.S. tactical warning capabilities. Both the Air Force and the Navy plan to develop tactical warning systems for use during the 1990s that will withstand a greater threat environment than the OTH-B. In the near term, the Air Force plans to randomly patrol with some existing airborne warning and control system aircraft to strengthen tactical warning capabilities until the OTH-B radar system is operational.

The threat of a precursor Soviet bomber attack against the United States is the scenario used to justify the need for the OTH-B radar system. Considering the threat described in intelligence reports, along with the alternatives to OTH-B, GAO questions the need to acquire the OTH-B radar system as now planned. (See ch. 3.)

RECOMMENDATION TO THE
SECRETARY OF DEFENSE

GAO recommends that the Secretary of Defense direct the Air Force to fully reassess the need and justify the decision to acquire the OTH-B radar system. Specifically, factors to be considered are the threat, the status of efforts to develop more endurable tactical warning systems, and the potential and cost effectiveness of using existing airborne warning assets to strengthen surveillance coverage against a surprise bomber attack until a more endurable system than OTH-B can be deployed. (See p. 16.)

AGENCY COMMENTS AND
GAO VIEWS

The Department of Defense orally commented that the OTH-B hardware was successfully tested during the initial test and evaluation of the experimental radar system and that only refinements to design are needed. In GAO's opinion, this is somewhat misleading since the experimental system was not intended to be an operationally representative prototype system. Instead, it was to demonstrate the feasibility of OTH-B technology, and as such, had no stated operational requirements. Also, a substantial redesign effort for both hardware and software is involved in moving from the experimental radar to an operational OTH-B radar system. (See p. 10.)

The Department of Defense officials said GAO took comments from an intelligence analysis out of context. For example, Defense officials said the draft report failed to consider the future threat of a new Soviet long-range bomber and an air-launched cruise missile. (See p. 16.)

GAO does not feel that its draft report used comments from the intelligence analysis out of context. However, GAO revised the report to reflect virtually all of the applicable sections of the intelligence analysis to alleviate any such concerns. GAO also included more information on the future threat of a new Soviet long-range bomber and air-launched cruise missile. (See p. 17.)

GAO did this review to provide the Congress with an independent evaluation of the status of the OTH-B program, including its cost, schedule, and performance status, and an evaluation of the factors justifying deployment. (See p. 3.)