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General Accounting Office
Washington, D.C. 20548

National Security and
International Affairs Division

B-274609

August 15, 1997

The Honorable William S. Cohen
The Secretary of Defense

Subject: Ship Self Defense: Program Priorities Are Questionable

Dear Mr. Secretary:

As part of our review of the Navy's Ship Self-Defense Program, we (1) reviewed annual Ship Self-Defense and Antiair Warfare Defense Program progress reports to Congress, (2) analyzed the Navy's plans for improving ship self-defense capabilities, (3) determined the extent to which scheduled improvements on various ship classes are meeting indicated priorities, and (4) sought information on the Navy's costs for implementing the program.

Our preliminary findings indicate that Congress may be relying upon inaccurate information when evaluating the Ship Self-Defense Program's progress and when it formulates future financial investments in shipboard antiair warfare defense capabilities. We found that the status of the Ship Self-Defense Program is difficult to determine from the various plans, reports, and financial documents we examined. Additionally, scheduled improvements do not appear to follow program priorities. Because Navy officials were unable to provide complete information on the program's implementation costs, we were unable to analyze the costs and benefits of this program. The Program Executive Office for Theater Air Defense, by reporting inaccurate information and providing inadequate financial data, may not be exercising the oversight necessary to accomplish established program objectives and priorities.

The purpose of this letter is to elicit your views on the questions raised in this letter and the actions you have taken, or plan to take to resolve them. To that end, we ask that you or your designee respond to the questions at the end of this letter within 30 days of its date.

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BACKGROUND

On May 17, 1987, the U.S.S. Stark, a guided missile frigate operating independently in the Persian Gulf, was hit by two French Exocet missiles fired by a "friendly" Iraqi aircraft. The explosion and resulting fires from these unexpected shots claimed the lives of 37 crew members. The Navy spent millions of dollars on repairs that took months to complete before the Stark was again operational. Today, nearly 70 nations deploy sea- and land-based antiship cruise missiles, and more than 20 different countries possess air-launched missiles equal to or more capable than those used against the Stark.

After the Stark incident, the Congress directed the Department of Defense to improve Navy ships' self-defense against extremely fast, highly maneuverable, sea-skimming, low-observable, and proliferating antiship cruise missiles. The Congress also directed the Secretary of the Navy to report the status of ship self-defense efforts annually, through fiscal year 1999, to congressional defense committees.

In response to Congress' direction, the Navy's Program Executive Office for Theater Air Defense initiated several efforts to counter existing and emerging antiship cruise missile threats. Among the many efforts are three major initiatives to improve ship survivability against existing and emerging antiship cruise missile threats. First, the Navy installed a radar absorbent material on guided missile frigates, destroyers, and Aegis cruisers to increase their survivability by making them less detectable by airborne radar. Second, the Navy installed the Rapid Anti-Ship Missile Integrated Defense System, a tactical decision aid, on 24 destroyers and plans to install it on 12 guided missile frigates. It provides continuous tactical information; can prioritize up to six defensive measures, including weapon engagements; and makes steering and maneuvering recommendations, all of which must be manually activated. However, it does not fully integrate or automate sensors and weapon systems. Third, the Navy installed the Ship Self-Defense System Mark I/Quick Reaction Combat Capability, a system that fully integrates sensors with weapons through a fiber-optic local area network, on a single amphibious cargo ship. It also plans to install the system on additional amphibious ships and aircraft carriers. This system automatically coordinates sensor information; identifies and evaluates potential threats; assesses the readiness of shipboard defenses; and executes specific tactical procedures, including weapon assignment and engagement commands. Unlike the Rapid Anti-Ship Missile Integrated Defense System, the Ship Self-Defense System Mark I/Quick Reaction Combat Capability can detect, identify, track, engage, and defeat antiship cruise missile threats with virtually no human intervention if the system is operating in the full automatic mode.

REPORTS TO CONGRESS ON SHIP
SELF-DEFENSE CONTAIN INCONSISTENCIES

The Navy provided three annual reports on its ship self-defense efforts to congressional defense committees, as required by the fiscal year 1995 House Armed Services Committee Report 103-499¹. However, these reports do not provide complete and accurate program information needed to fully inform Congress about the program's progress and cost. Consequently, it is difficult to know (1) how many ships received passive countermeasure improvements to reduce detectability by airborne radar, (2) how many will receive the Rapid Anti-Ship Missile Integrated Defense System, or (3) which ship classes will receive the Ship Self-Defense System Mark I/Quick Reaction Combat Capability. Further, the reports do not contain performance and cost data needed to determine whether ships' survivability against antiship cruise missiles has actually improved.

For example, the 1996 and 1997 reports do not clearly identify which ships have the radar absorbent material installed and which ships are scheduled to receive it in future years. Specifically, the 1996 and 1997 reports show that the Navy has made this improvement to four more ships than reported to us in April 1997. Moreover, the Navy reported to Congress that four guided missile destroyers will receive the radar absorbent material by fiscal year 2001. However, the Navy's plans provided to us do not indicate that the four guided missile destroyers were scheduled to receive this improvement. The reports to Congress do not discuss how effective the application was by quantifying actual radar cross-section reductions or provide total material and installation costs by ship class.

Further, the 1997 report indicates that the Navy would complete Rapid Anti-Ship Missile Integrated Defense System installations on 25 destroyers by the end of fiscal year 1997. However, data provided by the Naval Surface Warfare Center responsible for system installations indicates that only 24 destroyers, those with Vertical Launch Systems used to fire Tomahawk missiles, would receive the improvement. None of the reports discuss system effectiveness or provide evidence indicating that ships' survivability against existing missile threats has improved. The reports do not address what the Navy intends to do, if anything, to correct recurring system failures based upon commercial-off-the-shelf software and shipboard hardware incompatibility. Equipment and installation costs were not included in any of the three reports.

¹The House Armed Services Committee is now the House National Security Committee.

Furthermore, the 1995, 1996, and 1997 reports to Congress indicate that the Navy planned to install the Ship Self-Defense System Mark I/Quick Reaction Combat Capability on two amphibious assault ship classes. The January 1997 ship self-defense procurement schedule also indicates that the Navy planned to procure and install this system on both amphibious assault ship classes. However, a Navy official told us that only one amphibious assault ship class is currently scheduled to receive the system. Planning documents also indicate that the Navy planned to install the Ship Self-Defense System Mark I/Quick Reaction Combat Capability on eight fast combat support ships typically assigned to carrier battle groups to support the Navy's expeditionary capability. The 1996 report to Congress stresses that these replenishment ships are key elements of U.S. joint expeditionary forces, which must be able to go in "harm's way" to achieve mission success. However, these reports do not provide information indicating if or when these support ships will receive the self-defense capability. In essence, the reports lack critical data needed to guide future operational and budgetary considerations and frequently conflict with Navy planning documents.

**INTERNAL PLANNING DOCUMENTS DO NOT
CONSISTENTLY SHOW PROGRAM PLANS AND STATUS**

The Surface Ship Combat System Master Plan, the Integrated Ship Defense Information Book, and Ship Self-Defense Program internal planning documents contain matrices that list which ship self-defense elements the Navy installed or plans to install on every surface ship and aircraft carrier. However, we found that these documents were inconsistent, inaccurate, and lacked information needed to determine whether ship self-defense elements have been installed or were scheduled to be installed on specific ship classes. For example, after reconciling the February 1996 Surface Ship Combat System Master Plan with the April 1996 Integrated Ship Defense Information Book, we provided Navy officials with a list of inconsistencies, indicating errors in either or both documents. A Navy official, in turn, gave us a list of corrections to be incorporated in future Master Plans and Information Books. However, the more recent October 1996 Integrated Ship Defense Information Book contains very few of the listed corrections and, in fact, includes additional errors. For example, ship self-defense elements reported as installed in the April 1996 book were reported as planned in the October 1996 book. Only 38 percent of the ship self-defense information on planned improvements, presented in tabular format, is consistent in both the October 1996 Integrated Ship Defense Information Book matrix and the February 1997 Surface Ship Combat System Master Plan matrix. For example, the master plan matrix correctly indicates that the NATO Sea Sparrow Missile System was on destroyers, while the information book matrix does not show this system as fielded on the same destroyers.

Further, in trying to reconcile the October 1996 Integrated Ship Defense Information Book with the February 1997 Surface Ship Combat System Master Plan, we found that both the April and October 1996 Integrated Ship Defense Information Books erroneously indicate that the Navy installed the Evolved Sea Sparrow Missile on five fast combat support ships, even though the missile system has not entered production. The Evolved Sea Sparrow Missile Milestone III production decision is not expected until fiscal year 1999, and the Initial Operational Capability milestone is not scheduled until fiscal year 2000. Also, the April and October 1996 Integrated Ship Defense Information Books contain no information about radar absorbent material installations, although Navy officials provided data indicating that 47 ships have the improvement and 13 additional ships are scheduled for future installations. In our opinion, the Program Executive Office for Theater Air Defense cannot effectively monitor and guide the Ship Self-Defense Program without complete and accurate information.

BASIS FOR INSTALLATION
PRIORITIES IS NOT CLEAR

Although the Chief of Naval Operations, after approving the Ship Self Defense Capstone Warfighting Requirements, directed that defense capabilities of amphibious ships be strengthened, the Navy may not install the Ship Self-Defense System Mark I/Quick Reaction Combat Capability on five Tarawa class amphibious assault ships. The Navy made this decision, even though these ships typically carry over 2,600 sailors and Marines. They also provide significant military lift and Marine air capability during operations in littoral regions well within range of land-launched antiship cruise missile threats. Instead, the Navy plans to spend \$6.8 million to install this improvement on the U.S.S. John F. Kennedy and the U.S.S. Kitty Hawk, two aging fossil-fueled carriers with significantly less service life left. The carriers will be 34 and 42 years old, respectively, when the installations occur in fiscal years 2002 and 2003. The Kitty Hawk is scheduled to be replaced by a newly commissioned carrier within 5 years of the installation. The Kennedy is currently slated to serve as a training carrier operating off the coast of Florida.

Further, only one amphibious cargo ship, the U.S.S. Ashland, has the system. According to Navy plans, the system will not be completely fielded on all applicable amphibious ship classes and Nimitz-class aircraft carriers until fiscal year 2007 or later. Additionally, destroyers and guided missile frigates, which routinely operate in "harm's way," will not have this fully integrated and automated self-defense capability. Instead, these surface combatants will rely upon the Rapid Anti-Ship Missile Integrated Defense System to provide maneuvering and weapon-cuing recommendations to counter antiship cruise missile threats. This system does not provide an automatic weapons

engagement capability. Thus, the commanding officer must still give the order to fire if individual weapon systems are not in automatic mode, significantly affecting the time needed to react to extremely fast antiship cruise missiles.

COST INFORMATION HAS BEEN INCONSISTENTLY REPORTED

During our review, we requested historical, current, and projected program cost data from the Program Executive Office for Theater Air Defense. We compared the cost data provided with the Department of Defense Future Years Defense Program cost data and determined that the financial information do not agree. This conflicting data raises questions about the reliability and accuracy of financial and budgetary information reported in various program status reports. This data is intended to support the Congress in overseeing the Ship Self-Defense Program.

We also obtained historical as well as estimated future cost data from the Department of Defense Future Years Defense Program. We found that, during fiscal years 1987 through 1996, the Navy spent over \$8 billion on efforts to improve ship self-defense capabilities on surface combatants, amphibious ships, and aircraft carriers. The Program Executive Office for Theater Air Defense could not provide program costs prior to fiscal year 1990. However, it reported program costs of nearly \$4.4 billion during fiscal years 1990-96. In contrast, Future Years Defense Program costs totaled about \$7.3 billion, or almost \$2.9 billion more, for the same period. Further, the 1997 Report on Ship Anti-Air Warfare Defense indicates the Navy plans to spend approximately \$4.3 billion on ship self-defense improvements in fiscal years 1997 through 2003. This projected expenditure is about \$900 million more than the \$3.4 billion estimate provided by the Program Executive Office for Theater Air Defense for the same period.

QUESTIONS

Agency officials explained that the inconsistencies we identified in program information and financial data were the direct result of budget instability. They said that fiscal cuts, modifications, and changes in priorities created difficulties and led to inconsistent program documentation because original plans and milestones were changed. According to these officials, it has been difficult to execute and correctly document this program because its budget has been constantly changing. Although we agree that frequent changes in program funding can create instability in program plans, this condition does not justify presenting inaccurate and inconsistent program and financial data to Congress.

Therefore, we are asking you to respond to the following questions:

1. A comprehensive ship self-defense plan could be used to guide, monitor, and report progress in relation to specific program objectives and priorities. Why hasn't the Program Executive Office for Theater Air Defense developed such a plan?
2. The Program Executive Office for Theater Air Defense plans to install the Ship Self-Defense Mark I/Quick Reaction Combat Capability on two aircraft carriers rather than the Tarawa class amphibious assault ships. Why was this decision made when the carriers are scheduled to be retired soon after the installation and/or will not be used in combatant roles?
3. How do current naval threat priorities relate to decisions on which ships will receive the Ship Self-Defense System Mark I/Quick Reaction Combat Capability?
4. What actions have you taken or do you plan to take to respond to these concerns?

SCOPE AND METHODOLOGY

For our review, we interviewed officials from the Navy's Program Executive Office/Theater Air Defense for Ship Self Defense; Naval Surface Warfare Center/Port Hueneme Division; Land-Based Facility at Wallops Island; Naval Warfare Assessment Division; Applied Physics Lab/Johns Hopkins University; Command for Operational Testing and Evaluation Force; and the Center for Naval Analysis. We also received threat briefings from the Office of Naval Intelligence, the Defense Intelligence Agency, and the Central Intelligence Agency.

We also examined internal procurement and installation schedules, verified the existence of sensors and weapon systems on Navy surface ships and an aircraft carrier, toured the Self Defense Test Ship, observed a Ship Self-Defense System Mark I/Quick Reaction Combat Capability demonstration, and compared Ship Self Defense Program cost information contained in the Future-Year Defense Plan and Presidential Budget Submit for Fiscal Year 1998 with cost data provided by the Program Executive Office for Theater Air Defense. Our review was conducted from July 1996 through June 1997 in accordance with generally accepted government auditing standards.

We are providing copies of this letter to congressional committees of jurisdiction, the Secretary of the Navy, and the Director of the Office of

Management and Budget. This letter and your response will be provided to others upon request.

If you have any questions, please contact me or William C. Meredith, Assistant Director, at (202) 512-5140.

Sincerely yours,



Mark E. Gebicke
Director, Military Operations
and Capabilities Issues

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