

GAO

Report to the Chairman, Subcommittee
on Defense, Committee on
Appropriations, House of
Representatives

June 2003

DEFENSE INVENTORY

Navy Logistics Strategy and Initiatives Need to Address Spare Parts Shortages





Highlights of [GAO-03-708](#), a report to the Subcommittee on Defense, Committee on Appropriations, House of Representatives.

Why GAO Did This Study

Since 1990, GAO has identified DOD inventory management as high risk because of long-standing management weaknesses. In fiscal years 2001 and 2002, Congress provided the Navy with more than \$8 billion in operations and maintenance funds to purchase spare parts in support of the service's operations. Nevertheless, spare parts availability has fallen short of the Navy's goals in recent years. GAO examined the extent to which Navy strategic plans address mitigation of critical spare parts shortages, the likelihood that key supply system improvement initiatives will help mitigate spare parts shortages and enhance readiness, and the Navy's ability to identify the impact on readiness of increased spare parts investments.

What GAO Recommends

GAO recommends that the Secretary of Defense

- develop a framework for mitigating critical spare parts shortages as part of either the Sea Enterprise Strategy or the Naval Supply Systems Command Strategic Plan, and
- implement, with a specific completion milestone, the Office of the Secretary of Defense's recommendation to report the impact of funding on weapon system readiness.

In written comments, DOD generally concurred with the intent of our recommendations, but not with the specific actions.

www.gao.gov/cgi-bin/getrpt?GAO-03-708.

To view the full report, including the scope and methodology, click on the link above. For more information, contact William M. Solis at (202) 512-8365 or solisw@gao.gov.

DEFENSE INVENTORY

Navy Logistics Strategy and Initiatives Need to Address Spare Parts Shortages

What GAO Found

The Navy's servicewide strategic plan does not specifically address means to mitigate critical spare parts shortages. Its 2001 plan contained strategic goals, objectives, and performance measures, but the service did not use it to systematically manage implementation of logistics reform initiatives. The Navy is developing a new logistics strategic plan, but this document has not yet been published. Consequently, the service presently lacks an effective top-level plan that integrates a specific focus on mitigating spare parts shortages into its logistics transformation initiatives. Without such a plan, the Navy lacks guidance necessary to ensure its logistics initiatives mitigate critical spare parts shortages.

GAO examined six of the key initiatives that the Navy has undertaken to improve the economy and efficiency of its supply system. While some of these initiatives have increased availability of select spare parts, GAO cannot determine their potential to mitigate critical spare parts shortages because they were not designed specifically to remedy this problem. For example, the Performance Based Logistics initiative aims to improve supply support at equal or lower cost by outsourcing a broad range of services. Though the initiative has increased availability of certain items, GAO could not measure the extent to which Performance Based Logistics contracts have mitigated critical spare parts shortages.

The Navy has determined that an additional investment of \$1.2 billion would be necessary to achieve supply availability levels that support the service's readiness objectives. However, the Navy did not ask for this funding in its fiscal year 2004 budget request, nor did it report linkages between resource levels and readiness rates for individual weapon systems, as recommended by the Office of the Secretary of Defense in 2002. The Navy did provide aggregate readiness data to the Office of the Secretary of Defense, but officials stated that they lacked information technology necessary to link readiness rates by weapon system to budget categories. DOD has an 85 percent supply availability goal, which means that 85 percent of the requisitions sent to wholesale supply system managers can be immediately filled from on-hand inventories. Navy supply system models are focused on achieving this goal in the aggregate. However, the Navy's overall wholesale supply system performance has fallen short of expectations in each of the last 3 fiscal years for both aviation- and ship-related repairable spare parts. Supply availability ranged between approximately 69 percent and 71 percent for aviation-related items, and between 79 percent and 84 percent for ship-related parts.

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G A O

Accountability * Integrity * Reliability

United States General Accounting Office
Washington, DC 20548

June 27, 2003

The Honorable Jerry Lewis
Chairman, Subcommittee on Defense
Committee on Appropriations
House of Representatives

Dear Mr. Chairman:

In fiscal years 2001 and 2002, the Navy spent \$8.1 billion from operations and maintenance appropriations for spare parts.¹ At the end of fiscal year 2002, the Navy maintained inventories of spare parts with an estimated value of \$30 billion.² However, the Navy continues to report that its parts availability level is below the 85 percent goal. While recognizing that spare parts shortages may never be eliminated, it is reasonable to expect the services to place a priority on efforts to mitigate (reduce) those shortages that adversely affect readiness. This priority should be inherent in the service's overall planning and stewardship of funds they request from Congress, and in their accountability for making spare parts investment decisions that provide a good readiness return. Since 1990, we have identified the Department of Defense's (DOD) inventory management as high risk because of long-standing management weaknesses. In our January 2003 High Risk Series Report, we wrote that DOD was experiencing equipment readiness problems because of a lack of key spare parts, and we recommended that DOD take actions to address those shortages.³ As recently as August 2002, DOD recognized the need to

¹ These figures are based on the Navy's OP-31 Budget exhibits, about which we recently reported concerns. See U.S. General Accounting Office, *Defense Inventory: Better Reporting on Spare Parts Spending Will Enhance Congressional Oversight*, [GAO-03-18](#) (Washington, D.C.: Oct. 24, 2002).

² This figure includes investments of about \$21 billion in wholesale-level inventories and about \$9 billion in retail-level inventories kept at Navy shore stations and aboard ship. The figure does not include the value of government-owned spare parts and equipment purchased by program sponsors and kept at end-use sites, such as naval warfare centers, maintenance depots, and naval contractors.

³ U.S. General Accounting Office, *Major Management Challenges and Program Risks: Department of Defense*, [GAO-03-98](#) (Washington, D.C.: Jan. 2003).

overcome critical spare parts shortages and recommended changes to improve weapon system readiness.⁴

This is one in a series of reports that respond to your request that we identify ways to improve the availability of spare parts for aircraft, ships, vehicles, and weapon systems.⁵ As agreed with your office, this report addresses the following questions:

- Does the Navy’s strategic plan for logistics address the mitigation of critical spare parts shortages—those that adversely affect readiness?⁶
- Will key Navy logistics initiatives likely mitigate spare parts shortages that affect readiness?
- Does the Navy have the ability to identify the impact on readiness of increased investments for spare parts?

To accomplish these objectives, we analyzed plans and initiatives applicable to the management of the Navy’s inventory management system. We interviewed officials and obtained information on inventory management practices at Navy headquarters, the Naval Supply Systems Command, the Naval Inventory Control Point, the Naval Sea Systems Command, and the Naval Air Systems Command. We reviewed project plans, implementation status, and performance measures for six supply system improvement initiatives that Navy headquarters and Supply Systems Command officials highlighted as key efforts for mitigating future spare parts shortages and enhancing equipment readiness. We used the

⁴ Office of the Secretary of Defense, *Inventory Management Study* (Washington, D.C.: Aug. 2002).

⁵ U.S. General Accounting Office, *Defense Inventory: The Department Needs a Focused Effort to Overcome Critical Spare Parts Shortages*, [GAO-03-707](#) (Washington, D.C.: June 27, 2003); *Defense Inventory: Air Force Plans and Initiatives to Mitigate Spare Parts Shortages Need Better Implementation*, [GAO-03-706](#) (Washington, D.C.: June 27, 2003); *Defense Inventory: The Army Needs a Plan to Overcome Critical Spare Parts Shortages*, [GAO-03-705](#) (Washington, D.C.: June 27, 2003); *Defense Inventory: Several Actions Are Needed to Further DLA’s Efforts to Mitigate Shortages of Critical Parts*, [GAO-03-709](#) (forthcoming); *Defense Inventory: Air Force Item Manager Views of Repair Parts Issues Consistent With Issues Reported in the Past*, [GAO-03-684R](#) (Washington, D.C.: May 21, 2003).

⁶ For this report, critical spare parts are defined as those parts that directly affect the readiness of weapon systems. For example, the Navy periodically identifies parts such as nose landing gear for the F-18 aircraft as “top degraders” of weapon system readiness.

Government Performance and Results Act of 1993, prior GAO reports, and other key DOD documents as criteria to evaluate the Navy's strategic plans and initiatives.⁷ More details on our scope and methodology may be found on page 25.

Results in Brief

The Navy's servicewide strategic plan does not specifically address means to mitigate critical spare parts shortages. As a result, the Navy lacks overarching guidance on how to systematically reduce these shortages and assess progress toward improving related readiness. In fiscal year 2001, the Navy published its High Yield Logistics Transformation Plan, which was aimed at improving Navy logistics overall. This plan contained attributes of an effective strategic plan, such as goals, objectives, and performance measures, but it did not specifically address the mitigation of spare parts shortages. Similarly, while a key subordinate plan—the Naval Supply Systems Command's strategic plan—has a strategy to ensure that the availability of spare parts meets required performance levels, its objectives do not specifically focus on mitigating critical spare parts shortages. This plan also did not incorporate strategic objectives identified in the Navy's High Yield Logistics Transformation Plan. Furthermore, after DOD published a new strategic plan, called the Future Logistics Enterprise, in June 2002, which outlined several new transformation strategies and goals, the Navy stopped tracking and reporting its progress in implementing the High Yield Logistics Transformation Plan initiatives. In October 2002, the Navy embarked on a new strategic planning effort, referred to as Sea Enterprise.⁸ The Navy expects the Sea Enterprise strategy to address how it will improve the efficiency and effectiveness of all aspects of its business operations, including organizational alignments, logistics requirements, and reinvestment of savings, to purchase new weapon systems and enhance combat capability. However, the Sea Enterprise strategy has not been published, and as a result, the service presently lacks an effective top-level plan that integrates a specific focus on mitigating spare parts shortages into its logistics transformation initiatives. Without such a plan, the Navy lacks guidance necessary to ensure its logistics initiatives mitigate critical spare parts shortages.

⁷ Pub. L. No. 103-62, Aug. 3, 1993.

⁸ The Sea Enterprise plan is part of the Navy's Sea Power 21 initiative that defines capabilities of naval forces in the 21st century. The vision for the 21st century will be achieved through a triad of new organizational processes called Sea Trial, Sea Warrior, and Sea Enterprise.

We reviewed six initiatives that Navy officials identified as key to improving the economy and efficiency of supply support. While some of these initiatives have improved the overall supply availability of some spare parts, we cannot determine their potential for mitigating critical parts shortages because they were not designed to specifically address this problem.⁹ For example, through the Performance Based Logistics initiative, the Navy aims to improve supply support at equal or reduced cost by outsourcing various logistics services, such as spare parts warehousing, repair, and inventory requirements analysis. The Total Asset Visibility initiative was undertaken to ensure full accountability of items in the Navy's spare parts inventories and to facilitate redistribution of parts between Navy customers. Lastly, the Logistics Engineering Change Proposals initiative provides funding to improve the reliability of spare parts. These initiatives have a potential for improving the efficiency of the Navy's supply system. However, in the absence of an overarching plan that specifically addresses critical spare parts shortages, we cannot measure the impact of each initiative on critical spare parts availability, nor can we assess any related effects on weapon system readiness.

The Navy has analyzed the impact of additional funding on the availability of spare parts and equipment readiness, but has not reported this information as part of its budget documentation. For example, it has determined that an additional \$1.2 billion would be necessary to support the Chief of Naval Operations' readiness objectives. The Navy's analysis shows that constraints in repair pipeline requirement models accounted for a 6 to 8 percent decline in supply availability, which equates to an estimated 5 to 6 percent decline in fully mission capable rates for naval aircraft.¹⁰ However, the service did not ask for this funding as part of its fiscal year 2004 budget request, but may do so for fiscal year 2005. Also, its fiscal year 2004 budget materials did not report the link between resource levels and readiness for individual weapons, as recommended by the Office of the Secretary of Defense in an August 2002 study. While the service provided aggregate readiness information to the Office of the Secretary of Defense, Navy officials said that the service cannot directly link funding to readiness data by weapon system and budget category until

⁹ Supply availability refers to the percentage of time that a fleet-requisitioned item is immediately available from the Navy's wholesale supply system. These data include both consumable and repairable items for maritime and aviation weapon systems.

¹⁰ Fully mission capable rates measure the ability of an aircraft to perform all of its assigned missions.

better information technology becomes available. Information linking parts availability and individual weapon system readiness would be valuable information to DOD in making inventory investment decisions and to Congress when deciding how best to allocate resources to reduce shortages and improve readiness.

To ensure that Navy customers have an adequate supply of critical spare parts when and where they are needed, we are recommending the Secretary of Defense direct the Secretary of the Navy to include as a part of ongoing and anticipated updates to the Navy strategic planning process, a framework for mitigating critical spare parts shortages that include long-term goals; measurable, outcome-related objectives; implementation goals; and performance measures. We also recommend the Navy provide decision makers with information that links investments in spare parts inventories to weapon system readiness targets. In written comments on a draft of this report, DOD generally concurred with the intent of our recommendations, but not all suggested actions. DOD said the Navy would address spare parts shortages by improving its overall supply support processes. However, they stated that the Navy would not be modifying the Naval Supply Systems Command Strategic Plan or the higher-level Sea Enterprise strategy to include a specific focus on the mitigation of spare parts shortages. They also cited several key process improvements that are designed to lessen the overall need for spare parts. We endorse the Navy's efforts to pursue the planned process improvements, but disagree that these process improvements alone are sufficient to satisfy our recommendation. We continue to believe that the effectiveness of the service's efforts would be enhanced if its strategic plans and initiatives included goals, objectives, and milestones for mitigating critical spare parts shortages. DOD also stated that the Navy would be linking spare parts investments to individual weapon system readiness in future budget submissions when the required data becomes available. However, we remain concerned that the Navy has not specified a time frame for developing information systems that link readiness and spare parts budget data, and have modified our second recommendation accordingly. The Department's comments and our evaluation are on pages 23-25 of this report.

Background

In prior reports, we have identified major risks associated with DOD's spare parts inventory management practices. In 1996, and then again in

1998, we reported that the Navy's logistics system often could not provide fleet customers with necessary parts in a timely manner, despite billions of dollars invested in inventory.¹¹ In 2001, we found that chronic spare parts shortages had degraded combat readiness for selected Navy weapon platforms and had also contributed to problems in retaining skilled maintenance personnel.¹² Navy item managers interviewed for the 2001 report indicated that spare parts shortages resulted from inaccurate spare parts requirements forecasts, as well as contracting problems with private companies and repair delays at military and privately owned facilities. Most recently, in our January 2003 report on major management challenges and program risks, we recommended that DOD take action to address key spare parts shortages as part of a long-range strategic vision and a department wide, coordinated approach for improving logistics management processes.¹³

In addition to the risk associated with ineffective spare parts management practices, DOD recently voiced concerns over the adverse impact spare parts shortages have on readiness of weapon systems. In its August 2002 report on its inventory management practices, DOD said that the models it uses to determine inventory purchases are generally biased towards the purchase of low-cost items with high demands, not necessarily the items that would improve readiness the most.¹⁴ The report recommended that the services improve their ability to make inventory purchase decisions based on weapon system readiness. Furthermore, the report recommended that the services' requests for funds to increase inventory investments be justified on the basis of the corresponding increase in weapon system readiness.

¹¹ U.S. General Accounting Office, *Inventory Management: Adopting Best Practices Could Enhance Navy Efforts to Achieve Efficiencies and Savings*, [GAO/NSIAD-96-156](#) (Washington, D.C.: July 12, 1996), and *Inventory Management: DOD Can Build on Progress by Using Best Practices for Repairable Parts*, [GAO/NSIAD-98-97](#) (Washington, D.C.: Feb. 27, 1998).

¹² U.S. General Accounting Office, *Navy Inventory: Parts Shortages Are Impacting Operations and Maintenance Effectiveness*, [GAO-01-771](#) (Washington, D.C.: July 31, 2001).

¹³ U.S. General Accounting Office, *Performance and Accountability Series: Major Management Challenges and Program Risks: Department of Defense*, [GAO-03-98](#) (Washington, D.C.: Jan. 2003).

¹⁴ Office of the Secretary of Defense, *Inventory Management Study* (Washington, D.C.: Aug. 2002).

The Navy provides the fleet with spare parts through a multitiered inventory system.

- *Retail inventory* refers to spare parts that are stored shipside or planeside in accordance with standardized spare parts allowance lists. Retail level spare parts are funded by the Navy's procurement and operations accounts. Funding for initial outfitting parts is provided by procurement appropriations, while funding for replenishment parts is provided by operations and maintenance appropriations.
- *Wholesale inventory* refers to spare parts the Navy buys to replenish retail inventory. Initially Navy program managers tasked with developing weapon systems purchase parts directly from vendors using money from the procurement accounts. However, once a weapon system is fully developed and integrated into the fleet, the Naval Supply Systems Command assumes full responsibility for supporting that system through funding provided by the Navy Working Capital Fund.¹⁵ At this point, fleet customers use funding from outfitting procurement and operations accounts to purchase parts from the Navy's wholesale inventory. The wholesale system functions as a middleman by purchasing spare parts from vendors with Navy Working Capital Fund dollars, and then reselling these parts to fleet customers. In order to avoid inventory shortages, the wholesale system must accurately forecast demand for spare parts and factor in lead times for procurement and repair actions to mitigate delays in delivery of parts to the fleet. Furthermore, the wholesale system must maintain a cash balance in the Navy Working Capital Fund that approximates 7 to 10 days and, consequently, cannot stock more parts than it expects to resell to the fleet.
- *Sponsor-owned inventory* refers to items that program managers purchase with appropriated funds to develop, test, and sustain weapon systems. Program managers store sponsor-owned materials to support work conducted at various locations, including air and sea warfare centers. DOD guidance provides, in part, that when items are no longer needed, they may be returned to the wholesale supply system or reissued to other fleet customers.¹⁶

¹⁵ The Navy refers to this weapons development milestone as the Material Support Date.

¹⁶ Department of Defense, Materiel Management Regulation, DOD 4140.1-R, May 1998.

The Deputy Chief of Naval Operations for Fleet Readiness and Logistics is responsible for strategic planning of logistics functions and ensures that the logistics system supports the Navy's readiness objectives. The Naval Supply Systems Command develops inventory management policies, determines spare parts requirements, and formulates the Navy Working Capital Fund budget. Within the Naval Supply Systems Command, the Naval Inventory Control Point is assigned primary responsibility for material management tasks, such as computing requirements and providing procurement, distribution, disposal, and rebuild direction. The Naval Air Systems Command, the Naval Sea Systems Command, and the Space and Naval Warfare Systems Command, collectively referred to as the hardware systems commands, interact with the wholesale supply system to ensure that it procures sufficient quantities of spare parts to satisfy the fleet's allowance requirements.

Navy Logistics Strategic Plans Do Not Specifically Focus on Mitigating Spare Parts Shortages

The Navy's servicewide strategic plans do not specifically address means to mitigate critical spare parts shortages. The Navy's fiscal year 2001 High Yield Logistics Transformation Plan focused on improving logistics overall, but did not state how the Navy expects to reduce spare parts shortages. Also, while a key subordinate plan developed by the Naval Supply Systems Command has a strategy to ensure the availability of spare parts meets required performance levels; its objectives do not specifically focus on mitigating critical spare parts shortages. This subordinate plan does focus on improving supply availability and reducing customer wait time, but does not specifically address mitigation of spare parts shortages. Although the Navy is developing a new strategy, the Sea Enterprise plan, it has not been published, and therefore we do not know whether it will address ways to mitigate critical spare parts shortages.

In fiscal year 2001, the Navy published a servicewide strategic plan—the High Yield Logistics Transformation Plan—that identified initiatives undertaken by its major support commands to improve the service's logistics overall and to address objectives listed in DOD's Fiscal Year 2000 Logistics Strategic Plan. While the High Yield Plan contained attributes of an effective strategic plan consistent with the Government Performance and Results Act of 1993 (GPRA), such as long-term goals, objectives, and performance measures, it did not specifically address key objectives for

mitigating critical spare parts shortages.¹⁷ The High Yield Plan identified nine major goals, six of which are linked to DOD's fiscal year 2000 Logistics Strategic Plan, and three that are unique to the Navy. The plan served as a compendium of initiatives undertaken by Navy commands and program offices to improve overall logistics support processes. In total, the plan identified 80 individual initiatives; however, the plan did not contain information that highlighted specific efforts to mitigate spare parts shortages. Navy headquarters officials told us they stopped efforts to report to DOD on the status of the 80 initiatives after DOD published a new logistics strategic plan in June 2002, entitled the Future Logistics Enterprise, that contained several new transformation strategies.

The Naval Supply Systems Command Strategic Plan has a strategy to ensure that the availability of spare parts meets required performance levels and includes numerous goals, objectives, and initiatives to improve supply availability. However, this strategy does not specifically focus on mitigating spare parts shortages, nor does it incorporate the objectives of the Navy's High Yield Transformation Plan. In November 2001, the Naval Supply Systems Command updated its 1999 strategic plan to deliver combat capability through delivery of quality supplies and services on a timely basis. The plan identified 5 major goals, 16 implementation strategies, and 63 individual initiatives. Implementation status of each initiative is recorded in an automated tracking system and briefed to command leadership several times each year. Under its third goal—to achieve and demand the highest quality of service—one of the Command's strategies is to ensure the availability of spare parts meets required performance levels, but its objectives do not specifically focus on mitigating critical spare parts shortages, nor does the strategy link directly to higher-level DOD and Navy strategic plans. Navy officials told us they expect to start updating the plan during the summer of 2003. Without a focus on mitigating spare parts shortages and linkage to the higher-level plans, the Navy may lack assurance that its overall strategic goals and objectives will be effectively addressed and that its key initiatives will systematically address spare parts shortages.

In October 2002, the Navy embarked on a new servicewide strategic planning effort, referred to as the Sea Enterprise, that seeks to improve the

¹⁷ GPRA requires establishment of a strategic plan for program activities by each agency that includes, among other things, a mission statement covering major functions and operations, outcome-related goals and objectives, and a description of how these goals and objectives are to be achieved.

efficiency and effectiveness of all aspects of the service's business operations, including organizational alignments, refining logistics requirements, and reinvesting savings to purchase new weapon systems and enhance combat capability.¹⁸ As of March 2003, the Sea Enterprise plan had not been published, and the extent to which the new plan will address the mitigation of critical spare parts shortages is unclear. Navy documents indicate that officials were reviewing hundreds of ongoing and planned initiatives for improving business operations, and that they planned to select projects with the highest potential savings. The Navy expects to have preliminary project plans and savings estimates available for consideration in the fiscal year 2005 budget deliberations. Once key initiatives are identified for the Sea Enterprise plan, a board of directors will oversee development of implementation plans and monitor progress toward achieving anticipated savings.

Several Key Initiatives Show Potential for Improved Spare Parts Support

We reviewed six initiatives that the Navy has undertaken to improve the economy and efficiency of supply support. While some of these initiatives have improved the overall supply availability and reliability of some spare parts, we cannot measure their potential for mitigating critical parts shortages and their impact on weapon system readiness because they were not designed to specifically address this problem. The initiatives included projects to (1) obtain more cost effective and timely support from contractors, (2) improve the efficiency of inventory management practices, and (3) increase the reliability of parts provided to military customers.

Performance Based Logistics Contracts Have Improved Availability of Spare Parts

Performance based logistics contracts have generally improved supply support to the fleet, but the Navy does not assess the extent to which better supply availability mitigates critical spare parts shortages or enhances the fleet's combat readiness. Through performance based logistics contracts, the Navy has outsourced a broad range of supply support activities that have traditionally been carried out by the Navy's organic supply system, such as warehousing, repairing and distributing parts, and determining spare parts requirements. According to Navy and interim DOD guidance, the primary objective of performance based logistics is to improve supply support while maintaining or reducing

¹⁸ The Sea Enterprise plan is part of the Navy's Sea Power 21 initiative, which defines capabilities of naval forces in the 21st century. The vision for the 21st century will be achieved through a triad of new organizational processes called Sea Trial, Sea Warrior, and Sea Enterprise.

costs.¹⁹ Under more extensive partnerships, contractors may redesign weapon system configurations to optimize system performance, and may also reengineer or replace spare parts to mitigate the effects of scarcity or obsolescence. In the most advanced partnerships, contractors provide technical and engineering support to fleet customers, perform weapon system overhauls, and guarantee timely delivery of quality spare parts to fleet customers.

Our review of Navy aggregate and individual program statistics indicated that performance based logistics arrangements have generally improved supply support to the fleet. From January 2001 to July 2002, the Navy's quarterly supply availability averaged 79.6 percent through a combination of organic and contractor supply support. Without performance based logistics contracts factored in to these data, quarterly supply availability averaged 71.5 percent. We judgmentally examined 10 of 118 active performance based logistics contracts, and found that one contract had no specific vendor performance standards.²⁰ In 7 of the 9 remaining contracts, we found that vendors either satisfied or exceeded supply support goals. Moreover, for select cases in which data were available for comparison with baseline data, we found that performance based logistics partnerships improved supply support. For instance, one vendor increased availability of parts for an aviation computer system²¹ from pre-contract levels of 61 percent to current levels of 100 percent, and filled all 489 outstanding backorders within 13 months after the contract was awarded. Similarly, another vendor increased overall supply availability for the ARC-210 radio assembly from pre-contract levels of 60 to 70 percent to a current average of 91 percent.

Despite positive supply availability effects attributed to performance based logistics contracting, we could not measure the initiative's overall impact on spare parts shortages. These contracts vary widely in scope and, according to Navy policy, are intended to improve logistics support while

¹⁹ Department of the Navy, Office of the Assistant Secretary, Research, Development and Acquisition: Performance Based Logistics Guidance Document, Jan. 27, 2003; Deputy Secretary of Defense: Interim Guidance Regarding Defense Acquisitions, Oct. 30, 2002.

²⁰ This contract, initiated in 1994, was for a commercial off-the-shelf item that the Naval Inventory Control Point had not managed organically. Consequently, the Naval Inventory Control Point lacked baseline inventory management data necessary to establish vendor performance standards.

²¹ The stores management system is a computer interface installed on aircraft that monitors, selects, launches, and jettisons weapons.

maintaining or reducing costs. Consequently, these contracts do not aim specifically to increase the availability of spare parts that experience chronic shortages, and are generally approved only if they can generate savings for the Navy's wholesale supply system. While Navy officials stated that improved supply support is linked to enhanced equipment readiness, we could not determine whether performance based logistics contracts have mitigated the readiness effects of spare parts shortages.

The Navy's inability to quantify cost savings—or losses—generated by individual contracts impedes the service's ability to prove the initiative is achieving its objective. Navy and interim DOD guidance specify that each performance based logistics contract is to improve supply support to the warfighter without increasing cost; however, the Navy does not track individual contract savings. Instead, Navy officials approximate aggregate savings attributable to performance based logistics contracting. Although the Navy reports that it has reduced estimated expenditures for spare parts and labor by approximately \$100 million for the fiscal year 2000-2005 period, it does not have the information that its leadership and other decision makers may likely need in order to determine whether individual contracts satisfy the initiative's cost saving objective.

The Potential for Total Asset Visibility Initiative to Improve Inventory Management Practices Hindered by Implementation Challenges

Under the Total Asset Visibility initiative, the Naval Supply Systems Command has established asset visibility over a large portion of the service's spare parts inventories. However, changing completion milestone dates, difficulties in linking data contained in numerous nonstandard automated data systems, and concerns over the lack of top-level management emphasis—including effective business rules and incentives that encourage customers to share parts—have hindered the initiative's timely and effective implementation. Because of these limitations, the extent to which this initiative will help mitigate critical spare parts shortages and improve weapon system readiness is uncertain. The Supply Systems Command has recognized these difficulties and prepared a long-term plan to centrally manage supply, but the Navy has not yet approved the plan for implementation.

The Total Asset Visibility initiative is intended to facilitate redistribution of materials between Navy customers by allowing Navy supply managers to fill critical orders from excess or unneeded stocks held by other Navy customers. DOD's Material Management Regulation, issued in May 1998, requires the services to provide timely and accurate information on the location, movement, and status of all material assets. The regulation stipulates that wholesale-level inventory managers should have visibility of

all in-storage materials, including assets held by military units, maintenance depots, and shipyards. Item managers may use this information to mitigate critical spare parts shortages by redistributing items from one customer's storage facility to another customer with more urgent needs. In our October 1999 report, we stated that the Navy characterized its Total Asset Visibility program as a "mature" initiative that would be fully implemented by September 2002.²² To improve the potential for timely and effective implementation, in our October 1999 report we recommended that the Navy establish clearly defined goals, quantifiable performance measures, and implementation milestones to better assess the initiative's impact on supply system effectiveness. However, the Navy has yet to establish such a plan.

At the end of fiscal year 2002, Navy data indicated that the Navy had established asset visibility over 96 percent of the \$42 billion inventory that the service had targeted for inclusion under the program. In May 2003, a Navy official stated that this data collection did not target the full range of government-owned materials kept at naval shipyards, aviation repair depots, and commercial contractor facilities. Our work shows that while the Navy supply managers currently have visibility over Navy-managed items held at naval retail storage facilities and most sponsor-owned inventories kept at naval warfare centers, access to unneeded materials held at these locations must be arranged on a case-by-case basis. For example, the Navy has implemented an inventory management visibility system for its retail-level spare parts inventories held aboard ship and at major shore stations. However, these assets are "owned" by the operating fleet commands, and in practice are not subject to redistribution outside the command. An official at the Naval Inventory Control Point—the activity responsible for management of wholesale level inventories and processing customer requisitions—stated that while they have visibility over retail level inventories held aboard ship and at shore stations controlled by the fleet operational commands, they rarely ask for a part, even though the retail-level inventories may have accumulated parts in excess of local needs. The use of the asset visibility system as a tool for mitigating spare parts shortages between Navy commands could benefit from the development of business rules and management incentives that

²² U.S. General Accounting Office, *Defense Inventory: Improved Management Framework Needed to Guide Navy Best Practice Initiatives*, [GAO/NSIAD-00-1](#) (Washington, D.C.: Oct. 21, 1999).

encourage Navy customers to relinquish control and ownership of unneeded supplies.

Progress toward achieving total asset visibility and accountability at some storage locations has been hampered by difficulties in linking data contained in numerous nonstandard information systems. For example, after a 5-year test, the Naval Sea Systems Command terminated efforts to establish centralized visibility and accountability over an estimated \$4.3 billion in government-furnished materials provided to commercial shipbuilders. The test was terminated for a variety of reasons, including the lack of common information systems that would allow the transfer of data between commands, the lack of coordinated management emphasis, and difficulties changing legacy contractual reporting requirements. Moreover, at the Naval Air Systems Command, officials stated that their subordinate activities currently record inventory data on four different management information systems.

Recognizing current Navy supply system inefficiencies, the Naval Supply Systems Command has proposed a single worldwide inventory management system whereby a national inventory manager would determine requirements for all wholesale inventories, retail ashore, and afloat allowances. The national inventory manager would direct the distribution of materials and maintain day-to-day visibility and control of spare parts inventories regardless of location or funding source. The national inventory manager would also retain ownership of the material until the items were consumed, at which time the stock fund would receive a reimbursement to finance the cost of stock replenishment. At the time of our review, the Navy had not approved the plan. Naval Supply Systems Command representatives believe this concept would eliminate many of the redundancies and inefficiencies in the current inventory management framework. In addition, they said effectiveness of the concept would be dependent upon the full and timely implementation of a common information system shared by all Navy customers regardless of location, or their place in the command hierarchy. Navy officials are planning to replace many of their nonstandard information systems within the next 5 to 10 years.

Logistics Engineering Change Proposals Provide More Reliable Spare Parts at Lower Cost, but Investment Criteria Limit the Initiative's Scope

The Navy's Logistics Engineering Change Proposal initiative has demonstrated potential to enhance equipment readiness by improving the quality of spare parts, and thus reducing the frequency of maintenance actions. However, our work shows that the initiative's impact may be limited by criteria that require rapid return on investment in spare parts engineering projects and discourage large investments in such projects. By reducing expenditures on low-quality items, this initiative has generated measurable savings for the Navy supply system, and could yield further savings if expanded to include more types of spare parts.

The Navy undertook the Logistics Engineering Change Proposal initiative to systematically provide Navy customers with more reliable and less costly spare parts. This initiative's primary objective is to make up-front investments in high-quality replacement parts as a means of avoiding higher long-term material and labor costs associated with frequent replacement of low-quality items. Through the engineering change proposal process, the Navy identifies items with high failure or turnover rates, and then conducts a logistics and engineering assessment to determine how the quality of these items could be improved. In some instances, parts are reengineered; in other cases, alternative parts are tested for reliability and system compatibility, and then installed to replace lower quality items. To ensure that engineering change proposals offer a cost-effective alternative to standard components, the Navy conducts a cost analysis for each project. To be approved, projects must be expected to realize a 2-to-1 return on investment over the first 5 years after the redesigned part is initially installed in the fleet.

We reviewed 21 projects in which reengineered parts had been fully installed in operational equipment. All 13 projects for which comparative performance data were available demonstrated gains in reliability.²³ These reliability improvements implicitly mitigate spare parts shortages and enhance fleet readiness by reducing the frequency of maintenance actions. The Replacement Inertial Navigation Unit—a navigation component installed on P-3 aircraft—illustrates this point.²⁴ According to Navy documents, the original item was no longer in production, and was costly to maintain due to high failure rates. The replacement model, however, boosted the part's mean time between failure from 56 to 5,375 hours, and

²³ Eight projects lacked data necessary to measure reliability improvements.

²⁴ The P-3 is a long-range maritime surveillance aircraft.

is expected to save the Navy approximately \$69.4 million in spare parts expenditures over the lifetime of the project.

While material quality improvements resulting from engineering change projects implicitly enhance fleet readiness, we believe that this initiative's scope and overall impact are limited because of restrictive return on investment criteria.²⁵ Navy officials told us several potential projects had been rejected in recent years due to insufficient projected return on investment. For example, officials said that a reengineered F-18 navigation component that offered superior reliability over the existing component was rejected because its predicted return on investment would fall substantially below the return on investment threshold. Moreover, they stated that the Navy considered the project's anticipated first year investment of approximately \$155 million unaffordable. Figure 1 illustrates the changes in investment criteria and funding since the inception of the engineering change initiative. As shown, the return on investment expectation ranged from break even in 5 years to the current criterion, which requires a 2-to-1 return on investment over the first 5 years after the redesigned part is initially installed. In addition, the amount of available investment funding declined from more than \$100 million in fiscal years 1997 and 1998 to a current total of about \$40 million.

²⁵ Navy officials told us that the Navy is reviewing plans to facilitate project approval by relaxing current return on investment criteria.

Figure 1: Investment Criteria and Funding Trends for Logistics Engineering Change Proposals

Return on Investment Criteria	Navy Working Capital Fund Investment
<ul style="list-style-type: none">● FY 1992: Break even in 3 years● FY 1993: Break even in 5 years● FY 1996: 2-to-1 return in 10 years● FY 1999: 2-to-1 return in 5 years (after first obligation)● FY 2000: 2-to-1 return in 5 years (after first installation)	<ul style="list-style-type: none">● From FY 1992 to FY 1996, annual funding ranged from under \$10 million to more than \$60 million.● In FY 1997 and FY 1998, Air Systems Command contribution raised annual investment beyond \$100 million.● Since FY 1999, investment has remained slightly above \$40 million annually.

Source: Naval Inventory Control Point.

Because of the long-term nature of these investments, they typically do not yield savings in the early years while initial costs are being incurred. According to the Navy's most recent assessment, 62 approved aviation projects yielded about \$2 million in net savings from fiscal year 1997 through fiscal year 2002. These projects, along with 11 forthcoming ones, are expected to generate additional savings of approximately \$785 million from fiscal year 2003 to fiscal year 2010.²⁶ In addition, Navy officials noted that unmeasured savings may accrue through cost avoidance resulting from reduced maintenance, processing, and transportation of broken or defective items. Navy officials told us that the service is reviewing plans to facilitate project approval by relaxing current return on investment criteria. Management attention to the investment criteria could expand the number of eligible parts, help mitigate spare parts shortages, and increase the readiness return on investment.

²⁶ Ten projects are scheduled to begin during fiscal year 2003, and one project is scheduled for fiscal year 2004.

The Serial Number Tracking Initiative Is Expected to Reduce Part Loss and Facilitate Maintenance

The Navy's Serial Number Tracking initiative shows potential to improve supply support, as well as increase fleet readiness, by strengthening controls over in-transit items and facilitating weapons system maintenance. Furthermore, according to preliminary Navy estimates, the Serial Number Tracking initiative will likely generate savings that exceed the costs of program implementation. However, we could not assess its impact on spare parts shortages because the initiative will not be fully implemented until May 2004, and because the initiative's performance metrics are not designed to measure its impact on spare parts shortages.

The Naval Supply Systems Command undertook this initiative in response to the Navy's Aviation Maintenance Supply Review, which recommended that specific actions be taken to reduce overall maintenance and supply costs, increase readiness, and make systemic improvements in support of naval aviation forces. Since 1990, we have regarded DOD inventory management as a high-risk area because of vulnerabilities to waste, fraud, abuse, and mismanagement. In 1999, we reported that the Navy was unable to account for over \$3 billion in inventory that was in-transit within and between storage facilities, repair facilities, and end-users.²⁷ A business case analysis commissioned by the Naval Supply Systems Command in support of the Serial Number Tracking initiative found that improper accounting of in-transit repair items generates considerable material losses, as well as additional labor costs associated with lost maintenance history data and reconciling records for lost or missing parts.

The Navy's Serial Number Tracking program has potential to enhance the efficiency of maintenance and repair processing in a number of ways. Once the program is fully implemented, parts transferred between Navy customers, storage facilities, and repair sites will be marked with bar codes, which maintenance and supply personnel will scan at every transfer point to record each item's transit history. Navy customers will then be able to access this information by logging in to a centralized database. The Navy expects this process to minimize the risk of in-transit part loss, as well as the chance of maintenance record errors resulting from manual data entry. In addition to bar coding, the Serial Number Tracking initiative provides for select aviation components to be outfitted with computer chips, called contact memory buttons, that store critical maintenance

²⁷ U.S. General Accounting Office, *Defense Inventory: Navy's Procedures for Controlling In-Transit Items Are Not Being Followed*, [GAO/NSIAD-99-61](#) (Washington, D.C.: Mar. 31, 1999).

history and warranty information. As parts circulate through the repair pipeline, maintenance personnel will be able to scan the memory buttons in order to identify what maintenance work has been previously executed, and then determine what additional maintenance actions should be taken.

According to the Navy's analysis, serial number tracking will streamline maintenance work by facilitating identification of maintenance problems and part defects, measurement of part reliability, and investigations of spare part engineering. Moreover, the initiative could reduce time required to complete certain maintenance actions.²⁸

The Navy has budgeted approximately \$58 million over 5 years to implement Serial Number Tracking. This amount includes engineering research to determine which components are compatible with contact memory button technology, installation of contact memory buttons and barcodes, and outfitting maintenance facilities with scanning equipment. Despite these start-up costs, the Navy anticipates that this initiative will yield net savings of more than \$193 million over 7 years, resulting primarily from reduced spare parts loss.

Initiative to Improve Procedures for Returning Unserviceable Items to Repair Sources Lacks Performance Measures

The Naval Supply Systems Command and its Inventory Control Point staff are implementing a project to redesign and shorten the time required for unserviceable items to be returned to repair facilities. Navy officials told us they anticipate that the reengineered process will reduce the number of unfilled customer requisitions and create efficiencies in the scheduling and repairing of broken parts. At the time of our review, responsibility for overall project management was transitioning from the Naval Supply Systems Command to the Naval Inventory Control Point. Because there is no documented performance plan, the extent to which data will be available to document the initiative's impact on equipment readiness and mitigation of critical spare parts shortages is unclear.

Currently, Navy officials said, the typical unserviceable item is handled and processed 3 to 5 times during an average period of 35.8 days from initial turn-in by the fleet customer to receipt of the broken part at the designated repair activity. The Navy envisions a computer Web-based

²⁸ A Navy official cited the example of a maintenance team that had reduced the time necessary to conduct an airframe maintenance inventory from 3 days to 4 hours by using contact memory button technology.

system whereby a sailor aboard ship can query a computer system and get immediate shipping and packaging instructions. This will reduce the number of shipping destinations and enable the Navy to reduce overall costs. However, without a management plan that specifies performance goals and implementation milestones, the Navy cannot be assured that the initiative will be fully implemented and achieve intended results.

Readiness-Based Sparing Initiative Could Help Mitigate Critical Spare Parts Shortages If Expanded

The Navy's use of the Readiness-Based Sparing initiative as a criterion for stocking parts aboard ships appears to have potential for improving critical spare parts availability and operational capability of selected weapon systems.²⁹ However, according to DOD, because this model is not fully supported by current data collection processes, much of the analysis must be developed off-line. Currently, Navy officials stated that they have used readiness based sparing techniques in determining spare parts allowances in support of some older weapon systems and all new systems being provided to the fleet.

The Naval Supply Systems Command is continuing to develop computer models that base allowances for weapon system component parts on readiness considerations. Under the traditional approach, allowances are largely based on historical failure rates of individual parts. The Navy's new readiness-based models are geared to the operational readiness requirements of selected critical subsystems, and consider how random part failures might adversely affect the ability of the installed component to perform the overall mission. Officials explained that the traditional demand-based sparing model works well for mechanical-type parts, which tend to break down at regular intervals as a result of usage. However, experience has shown that newer electronic components have much less predictable failure patterns. To compensate for this, weapon system designers sometimes build in redundancies that enable equipment to continue working even after random part failures occur. For example, by using the readiness based sparing process, Navy officials anticipate that the operational availability of the Close-In Weapons System will improve from 45 percent under the demand-based approach to 87 percent under

²⁹ We are reporting separately on the Navy's overall efforts to improve spare parts support to the operational fleet commanders.

the readiness-based allowance model, and the AEGIS system from 24 percent to 91 percent, respectively.³⁰

Impact of Additional Spare Parts Funding on Supply Availability and Readiness Estimated but Not Reported

The Navy has analyzed how additional wholesale supply funding would affect the availability of spare parts as well as equipment readiness rates, and has determined that an additional investment of \$1.2 billion would be necessary to support readiness objectives established by the Chief of Naval Operations. However, the Navy did not ask for this funding as part of its fiscal year 2004 budget request, nor did its budget estimates link planned spending to individual weapon system readiness, as recommended by the Office of the Secretary of Defense in an August 2002 study.

DOD has an 85 percent supply availability goal, which means that 85 percent of the requisitions sent to wholesale supply system managers can be immediately filled from on-hand inventories. Navy supply system models are focused on achieving this goal in the aggregate. However, the Navy's overall wholesale supply system performance has fallen short of expectations in each of the last 3 fiscal years for both aviation- and ship-related repairable spare parts. Supply availability ranged between approximately 69 percent and 71 percent for aviation-related items, and between 79 percent and 84 percent for ship-related parts. Navy officials commented that they have had difficulty achieving the desired 85-percent goal for aviation parts due to a number of reasons, including increased demand stemming from aging weapon systems and accelerated operational requirements.

The Navy has estimated that an extra investment in the working capital fund of approximately \$1.2 billion would increase aviation- and ship-related spare parts inventories to levels that support current readiness standards.³¹ According to a recent study conducted by the Naval Supply Systems Command, constraints in repair pipeline requirement models accounted for a 6 to 8 percent decrease in supply availability for aviation parts, which equated to an estimated 5 to 6 percent decline in fully mission

³⁰ The Close-In Weapons System is a radar controlled rapid-fire gun system that is installed on Navy ships to defend against anti-ship cruise missiles. The AEGIS system is a shipboard defensive system that is capable of automatically detecting, tracking, and destroying airborne, seaborne, and land-launched weapons.

³¹ We did not validate the accuracy of the Navy's additional investment, spare parts availability, or readiness estimates.

capable rates for naval aircraft.³² This study concluded that a working capital fund investment of \$225 million would remedy wholesale inventory deficiencies resulting from inaccurate requirements models, and that another \$688.5 million would prevent further decline in supply availability of aviation spare parts resulting from constraints that prevent the working capital fund from procuring new inventory requirements driven by increased demand. Furthermore, the study calculated that an additional \$300 million investment would be required to increase supply availability across all inventory segments to 85 percent.

In its budget estimate submitted to Congress in February 2003, however, the Navy did not ask for additional investment in the working capital fund to meet the supply availability and aviation readiness rates described above. At present, it is unclear whether the Navy will choose to request funding for these requirements in later years. In its fiscal year 2004 budget exhibits, the Navy linked its planned working capital fund expenditures to aggregate spare parts availability, but not to mission capable supply rates or other readiness rates for individual weapon systems. The benefit of such a link was cited in an August 2002 study by the Office of the Secretary of Defense, which recommended that service requests for funds for spare parts inventories be linked to specific weapon system readiness. The service did provide aggregate ship and aviation readiness information to the Office of the Secretary of Defense. However, Navy officials said that the service cannot directly link spare parts funding and readiness data by budget category until better information technology becomes available. Without information that links funding to readiness, the Navy's budget package does not provide Congress the return on readiness investment information it may need to make resource decisions.

Conclusions

Since 1990, we have repeatedly reported that DOD's inventory management practices are high risk. In our 2003 High Risk Series Report we recommended that DOD take action to address key spare parts shortages as part of a long-range strategic vision and a departmentwide, coordinated approach to logistics management. However, our work shows that the Navy currently lacks a servicewide strategic logistics plan and supporting plan that include a specific focus on mitigating critical spare parts shortages. In addition, the Navy's current key logistics initiatives to

³² Fully mission capable rates measure the ability of aircraft to perform all of their assigned missions.

improve the efficiency of supply and inventory management practices do not include a specific focus on mitigating these shortages. Instead, these initiatives address many underlying issues, such as reducing customer wait time, increasing asset visibility, improving the management of items turned in for repair, and increasing the reliability of repair parts. Without a focus on mitigating spare parts shortages, the Navy lacks a coordinated approach, with attributes of an effective plan, such as goals, objectives and performance measures, to systematically address the shortages and assess progress in mitigating them. The ongoing development of the Sea Enterprise plan and imminent update of the Naval Supply Systems Command Strategic Plan provide an opportunity to include this focus and provide the coordination needed to ensure that the Navy's key logistics initiatives we reviewed can achieve their maximum financial and readiness benefits. Lastly, without information that links spare parts funding to individual weapon system readiness and provides assurance that investments in spare parts are based on the greatest readiness returns, such as that recommended in the August 2002 Inventory Management Study, Congress and other decision makers cannot determine how best to prioritize and allocate future funding.

Recommendations

We recommend that the Secretary of Defense direct the Secretary of the Navy

- develop a framework for mitigating critical spare parts shortages that includes long-term goals; measurable, outcome-related objectives; implementation goals; and performance measures as a part of either the Navy Sea Enterprise strategy or the Naval Supply Systems Command Strategic Plan, which will provide a basis for management to assess the extent to which ongoing and planned initiatives will contribute to the mitigation of critical spare parts shortages, and
- implement the Office of the Secretary of Defense's recommendation to report, as part of budget requests, the impact of funding on individual weapon system readiness with a specific milestone for completion.

Agency Comments and Our Evaluation

In written comments on a draft of this report, DOD generally concurred with the intent of both recommendations, but not the specific actions. DOD's written comments are reprinted in their entirety in appendix I.

In concurring with the intent of our first recommendation, DOD expressed concern that because spare parts shortages are a symptom of higher-level

problems, including the need for more reliable spare parts and more effective life cycle support processes, its management improvement plans must focus on improving the processes, rather than on the symptoms. According to DOD, the Naval Supply Systems Command's current strategic plan and planned revisions are/will be focused on improving the Navy's overall supply support processes to ensure that its naval forces have sufficient support to achieve required readiness performance levels. Therefore, DOD does not agree that the Navy needs to modify the Naval Supply Systems Command Strategic Plan or include provisions in the evolving Sea Enterprise strategy that are specifically focused on spare parts shortages. DOD stated that the Navy's process improvement initiatives are intended to reduce the need for spare parts through the use of more effective inventory management practices aboard ship, standardizing the use of readiness based sparing concepts on board ship and at shore facilities, and developing an effective total asset visibility plan. DOD believes that these efforts will improve the efficiency and effectiveness of the Navy's supply system and inherently minimize any future shortages of critical spare parts.

We disagree that these process improvements alone are sufficient to meet our recommendation. Our report recognizes that the Navy's logistics plans focus on efforts to improve overall logistics support practices, and upon successful implementation will likely contribute to improved supply availability. Based on our report's findings, however, we believe that the goals, objectives and milestones of the Naval Supply Systems Command's strategic plans, or the higher-level Sea Enterprise plan, should include a focus on the mitigation of critical spare parts shortages. Without such a focus the Navy's efforts to address the problem of critical spare parts shortages are more likely to be duplicative or ineffective. Therefore, we believe implementation of our recommended actions is necessary to ensure improved equipment readiness for the Navy's legacy and future weapon systems.

In concurring with the intent of our second recommendation, DOD stated that the Navy is investing in information systems to help it link inventory investment decisions with weapon system readiness. DOD stated that the Navy will provide information to link weapon system readiness and inventory investments for its major weapon systems as information becomes available. Because the Financial Management Regulation already requires the Navy to submit this information as part of its annual budget submission, DOD stated that more specific direction from DOD is not necessary, and that current Navy actions satisfy the intent of our recommendation.

We support the Navy's actions, but remain concerned that the service has not specified milestones for developing information systems that link readiness and spare parts budget data. Providing this information in a timely manner will strengthen the Navy's stewardship and accountability of requested funds, and will assist the Congress in making spare parts investment decisions that provide a good readiness return. We have therefore modified our second recommendation to include a provision that the Navy establish completion milestones for implementing the reporting requirement, as discussed above.

Scope and Methodology

To determine if the Navy's strategic plans address spare parts shortages, we obtained and analyzed pertinent spare parts and logistics planning documents. We focused our analysis on whether these strategic plans addressed spare parts shortages and included the performance plan guidelines identified in the Government Performance and Results Act. We interviewed officials in the Office of the Deputy Chief of Naval Operations for Fleet Readiness and Logistics and in the Naval Supply Systems Command to clarify the content, status, and linkage of the various strategic plans.

To determine the likelihood that key supply system initiatives will mitigate critical spare parts shortages and improve weapon system readiness, we obtained and analyzed service documentation on six of the initiatives that Navy officials believe are key to the future economy and efficiency of the service's supply operations. We interviewed officials in the office of the Deputy Chief of Naval Operations, the Naval Supply Systems Command, the Naval Inventory Control Point, the Naval Air Systems Command, and the Naval Sea Systems Command. We obtained and analyzed Navy data pertaining to plans, objectives, performance goals, and implementation status and challenges for each of the six selected management initiatives.

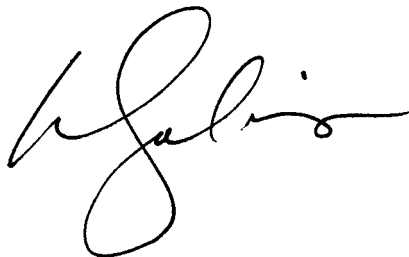
To determine the extent to which the Navy can identify the impact of additional investments in spare parts inventories, we interviewed officials and analyzed documents at the Naval Inventory Control Point. We also reviewed the Navy's fiscal years 2004 and 2005 budget estimates provided to the Congress in February 2003, and considered DOD's recommendations in its August 2002 Inventory Management Study. However, we did not independently validate or verify the accuracy of the Navy's supply availability performance data or the analysis that estimated the increased funding needed to achieve the targeted supply system performance.

We performed our review from August 2002 through March 2003 in accordance with generally accepted government auditing standards.

We are sending copies of this report to the Secretary of Defense; the Secretary of the Navy; the Director, Office of Management and Budget; and other interested congressional committees and parties. We will also make copies available to others upon request. In addition, the report will be available at no charge on the GAO Web site at <http://www.gao.gov>.

Please contact me on (202) 512-8365 or Richard Payne on (757) 552-8119 if you or your staff have any questions concerning this report. Key contributors to this report were Glenn Knoepfle, Paul Rades, Barry Shillito, George Surosky, and Susan Woodward.

Sincerely,

A handwritten signature in black ink, appearing to read "W. Solis". The signature is fluid and cursive, with a large loop at the end.

William M. Solis, Director
Defense Capabilities and Management

Appendix I: Comments from the Department of Defense



DEPUTY UNDER SECRETARY OF DEFENSE FOR
LOGISTICS AND MATERIEL READINESS
3500 DEFENSE PENTAGON
WASHINGTON, DC 20301-3500

JUN 23 2003

Mr. William Solis, Director
Defense Capabilities and Management
U.S. General Accounting Office
441 G Street, N.W.
Washington, DC 20548

Dear Mr. Solis:

This is the Department of Defense (DoD) response to the GAO draft GAO-03-708, "DEFENSE INVENTORY: Navy Logistics Strategy and Initiatives Need to Address Spare Parts Shortages," dated May 20, 2003 (GAO Code 350250). The DoD generally concurs with the intent of the recommendations in the draft report.

Detailed comments on the draft report recommendations are included in the enclosure. The DoD appreciates the opportunity to comment on the draft report.

Sincerely,

A handwritten signature in black ink, appearing to read "Allen W. Beckett".

Allen W. Beckett
Principal Assistant

Enclosure



GAO DRAFT REPORT – DATED MAY 20, 2003
GAO CODE 350250/GAO-03-708

“DEFENSE INVENTORY: Navy Logistics Strategy and Initiatives
Need to Address Spare Parts Shortages”

DEPARTMENT OF DEFENSE COMMENTS
TO THE RECOMMENDATIONS

RECOMMENDATION 1: The GAO recommended that the Secretary of Defense direct the Secretary of the Navy to develop a framework for mitigating critical spare parts shortages that includes long-term goals; measurable, outcome-related objectives; implementation goals; and performance measures as part of either the Navy Sea Enterprise strategy or the Naval Supply Systems Command Strategic Plan. This will provide a basis for management to assess the extent to which ongoing and planned initiatives will contribute to the mitigation of critical spare parts shortages. (p. 23/GAO Draft Report)

DOD RESPONSE: Concur with intent. Rather than focus solely on spare part shortages, the Navy's strategic initiatives are aimed at reducing the need for spare parts or, at a minimum, reducing the number of spare parts required to keep readiness at acceptable levels. Spare parts shortages are seen as a symptom of a much higher-level problem of reliability and weapon system life cycle support. Because of this issue, the Naval Supply Systems Command (NAVSUP) strategic plan was formulated to address all aspects of spares parts availability to ensure our Naval forces have the correct levels of support to meet required readiness performance levels. Specifically, NAVSUP is developing a maritime inventory strategy that meets Chief of Naval Operations (CNO) readiness goals and is consistent with Fleet requirements. The NAVSUP strategic plan focuses on the issue of spare parts shortages via initiatives in which NAVSUP strives to improve afloat inventory management, standardize readiness based allowance products afloat and ashore, consolidate inventory management functions, reduce Customer Wait Time (CWT) while optimizing investment, and develop a Total Asset Visibility (TAV) plan. All of these efforts will improve the efficiency and effectiveness of the Naval supply system and inherently minimize any shortages of critical parts. Therefore, no further direction is required and action consistent with this recommendation is complete.

RECOMMENDATION 2: The GAO recommended that the Secretary of Defense direct the Secretary of Navy to implement the August 2002 Office of Secretary of Defense recommendation to report, as part of budget requests, the impact of funding on individual weapon system readiness. (p. 23/GAO Draft Report)

DOD RESPONSE: Concur with intent. In June 2002, the OUSD(C) updated the SM-3B budget exhibit, which is a weapon system breakout showing readiness type data, requiring this information as part of the annual budget estimate submission. The OUSD(C) recognized the fact that the data provided may not be entirely complete until modernized systems are in place. As indicated in the August 2002 OSD study on "Inventory Management Practices," the Navy is

**Appendix I: Comments from the Department
of Defense**

investing in software technology systems to help link inventory investment decisions with weapon system readiness results. Because this effort will take some time to complete, the Under Secretary of Defense (Comptroller) (USD (C)) has modified the budget exhibit on inventory investment to include Not Mission Capable due to Supply (NMCS) for each major weapon system. Since the Financial Management Regulation (FMR) already requires the Navy to implement the recommendation from the August 2002 study as data becomes available, no further direction is required and action consistent with this recommendation is complete.

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