



# **Testimony**

Before the Subcommittee on National Security, International Affairs, and Criminal Justice, Committee on Government Reform and Oversight, House of Representatives

For Release on Delivery Expected at 9:30 a.m., EST Thursday, March 20, 1997

# DEFENSE INVENTORY MANAGEMENT

# Problems, Progress, and Additional Actions Needed

Statement by Henry L. Hinton, Jr., Assistant Comptroller General, National Security and International Affairs Division



#### Mr. Chairman and Members of the Subcommittee:

We are pleased to be here today to discuss defense inventory management issues. We have identified defense inventory management as 1 of our 25 high-risk areas in the federal government because of vulnerabilities to waste, fraud, and abuse. As requested, our testimony will focus on (1) a historical overview of defense inventory management problems; (2) measures taken by the Department of Defense (DOD) to improve inventory management; and (3) the actions DOD needs to aggressively take, both near and long term, to solve long-standing inventory management problems.

## Background

DOD's secondary inventories include consumable supplies, such as medical, hardware, food, and clothing items, that are discarded after use rather than repaired. Secondary items also include reparable items that, if damaged or worn, can be fixed or overhauled for less than the cost of new items. Examples of these items are landing gear, hydraulic pumps, and avionics, which are essential to a weapon system's operation. In the past 5 years, we have issued a number of reports that address DOD inventory management problems related to these inventories.<sup>2</sup>

The private sector, driven by today's globally competitive business environment, is faced with the challenge of improving its service while lowering costs. As a result, many companies have adopted innovative business practices to meet customer needs and retain profitability. Since DOD is facing a similar challenge of providing better service at a lower cost, it has also begun to reexamine its business practices. With the end of the Cold War, the DOD logistics system must support a smaller, highly mobile, high technology force with fewer resources. Also, due to the pressures of budgetary limits and base closures, DOD must seek new and innovative ways to make logistics processes as efficient and effective as possible. To address fundamental management problems in the federal government,

Page 1 GAO/T-NSIAD-97-109

<sup>&</sup>lt;sup>1</sup>In 1990, we began a special effort to review and report on the federal program areas we identified as high risk because of vulnerabilities to waste, fraud, abuse, and mismanagement. This effort, which was supported by the Senate Committee on Government Affairs and the House Committee on Government Reform and Oversight, brought a much needed focus on problems that were costing the government billions of dollars. We identified DOD's secondary inventory management as a high-risk area at that time because levels of unneeded inventory were too high and systems for determining inventory requirements were inadequate.

<sup>&</sup>lt;sup>2</sup>See Related GAO Products.

the Congress enacted landmark legislation<sup>3</sup> in the 1990s to establish broad management reforms within the federal government. These reforms, if implemented successfully, will help resolve high-risk problems, such as inventory management, and provide greater accountability in many government programs and operations. Through these reforms, the Congress has laid the groundwork for the federal government to use proven best management practices that have been successfully applied in the private sector. The administration has embraced these management reforms and made their implementation a priority.

#### Results in Brief

Inventory management problems have plagued DOD for decades. Despite numerous efforts on DOD's part to correct these problems, we continue to consider inventory management a high-risk area because it is vulnerable to fraud, waste, and abuse. We recently reported that, as of September 30, 1995, about \$34 billion, or about half of DOD's \$69.6 billion secondary inventory, was not needed to support war reserve or current operating requirements. Most of the problems that contributed to the accumulation of this unneeded inventory still exist, such as outdated and inefficient inventory management practices that frequently do not meet customer demands, inadequate inventory oversight, weak financial accountability, and overstated requirements. Because of these problems, we believe DOD's annual expenditure of approximately \$15 billion for additional inventory is at risk.

DOD recognizes that it needs to make substantial improvements to its logistics system. While we continue to see pockets of improvement, as evidenced by each service's and the Defense Logistics Agency's (DLA) reengineering efforts, DOD has made little overall progress in correcting systemic problems that have traditionally resulted in large unneeded inventories. DOD top management needs to continue its commitment to changing its inventory management culture so that it provides its forces with necessary supplies in a timely manner while avoiding the accumulation of unnecessary materials.

To effectively address its inventory management problems, DOD must adopt a strategy that includes both short- and long-term actions.

Page 2 GAO/T-NSIAD-97-109

<sup>&</sup>lt;sup>3</sup>These laws include (1) the expanded Chief Financial Officers Act of 1990 to prepare financial statements that can pass the test of an independent audit and provide decisionmakers reliable information, (2) the 1993 Government Performance and Results Act to measure performance and focus on results, and (3) the 1995 Paperwork Reduction Act and the 1996 Clinger-Cohen Act to make wiser investments in information technology.

- In the short term, DOD must continue to emphasize the efficient operation of its existing logistics systems. This includes reducing and disposing of unneeded inventory, implementing efficient and effective inventory management practices, training personnel in these practices and rewarding the right behavior, improving requirements data accuracy, and enforcing existing policies and procedures to minimize the acquisition and accumulation of unnecessary inventory.
- In the long term, DOD must establish goals, objectives, and milestones for changing its culture and adopting new management tools and practices. A key part to changing DOD's management culture will be an aggressive approach to using best practices from the private sector. From our discussions with more than 50 private sector companies, we identified best practices which, if applied in an integrated manner, could help streamline DOD's logistics operations, potentially save billions of dollars, and improve support to the military customer. In our opinion, DOD has not been aggressive enough in pursing these practices. Recent DOD reengineering efforts have not incorporated some of the most advanced practices found in the private sector for reparable parts, and they have been slow to adopt best practices for hardware items.

## Overview of DOD's Inventory Management Problems

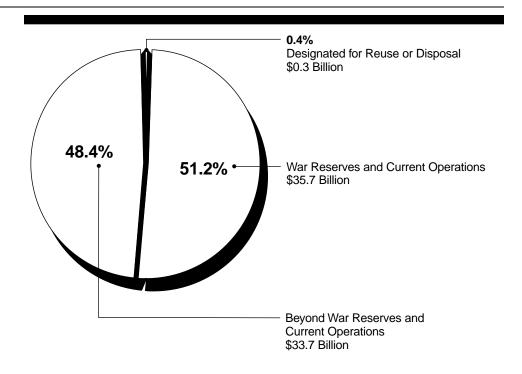
We have reported over the last 20 years on numerous problems dealing with DOD's secondary inventory management. We reported that much of DOD's unneeded inventory was acquired because of outdated and inefficient inventory management practices. For consumable items, DOD holds inventory in as many as four different layers to ensure items are available to end users when needed—a philosophy some private sector companies have moved away from in recent years. For reparable aviation parts, DOD's depot repair process is slow and inefficient. As a result, each of the services can spend several months or even years to repair the parts and then distribute them to the end user.

#### Much of DOD's Inventory Is Unneeded

As of September 30, 1995, DOD held inventories valued at a total of \$69.6 billion, of which about \$34 billion was not needed for war reserve or current operating requirements (see fig. 1). After a detailed analysis of DOD's inventory records, we reported in February 1997 that some of DOD's inventory could last for decades or may never be used. For example, we identified about \$14.6 billion of inventory that did not have projected demands and therefore is likely never to be used. We calculated that another \$11.8 billion of inventory could last 2 to 10 years and \$1.1 billion of inventory could last at least 100 years.

Page 3 GAO/T-NSIAD-97-109

**Figure 1: DOD Inventory** (Sept. 30, 1995)



For example, as of September 1995, the Air Force had invested about \$472,000 for 4,177 wiring harnesses used on the airborne radio communication system. Of these, 4,152 were not needed to satisfy war reserve and current operating requirements. On the basis of projected demand data, we determined that the unneeded harnesses represented 277 years of supply. According to the item manager, demand for the harnesses decreased as modifications to the radio system were made. However, some of the harnesses are being retained to support the military services, the Coast Guard, and foreign military sales and to reconfigure other radios. The item manager informed us that 3,822 harnesses have been recommended for disposal.

In another example, DLA had 127 motor blower brakes on hand as of August 1996. The brakes are used on the B-1B aircraft. Inventory records showed that 101 brakes, valued at \$4,110 each, were unneeded and represented 101 years of supply. According to the item manager, 100 brakes were expected to be needed for fiscal year 1996. However,

Page 4 GAO/T-NSIAD-97-109

September 1996 records showed that only one had been used in the past year. The item manager believed that the demands for the brakes are cyclic because the contractor repairing the B-1B periodically orders the parts in bulk.

To store and distribute this large inventory, DOD operates a worldwide logistics system. In the United States alone, DOD operates about 25 distribution depots and other storage locations. Much of this storage space is occupied with unneeded inventory. We reported in May 1995 that DOD uses about 130 million cubic feet of storage space to store inventory that is not needed to support current operations or war reserve requirements. DOD estimated it took approximately 205 warehouses, each the size of over 2 football fields, to provide this space, at an estimated cost of \$94 million per year.

Downsizing of the military forces has contributed to some of Dod's excess inventory. However, we have also reported that Dod has wasted billions of dollars on excess supplies. This problem resulted because inherent in Dod's culture was the belief that it was better to overbuy items than to manage with just the amount of stock needed. The problems that have contributed to billions of dollars of unneeded inventory still exist, such as inadequate inventory oversight, weak financial accountability, and overstated requirements. If Dod had used effective inventory management and control techniques and modern commercial inventory management practices, it would have lowered its inventory levels and it would have avoided the burden and expense of storing excess inventory. Because these problems still exist, we believe Dod's annual expenditure of approximately \$15 billion for additional inventory is at risk.

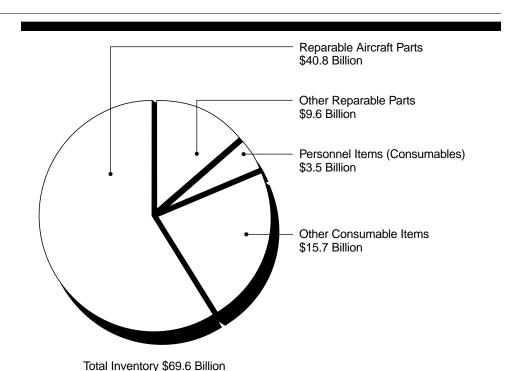
# Outdated Logistics System for Consumable Items

Of DOD's \$69.6 billion inventory, about \$19.2 billion is consumable inventory stored at wholesale and retail facilities (see fig. 2). DOD's large inventory of consumable items reflects its philosophy of relying on large stock levels to readily meet customer needs. As a result, DOD stores inventory in as many as four different layers to provide items to end users when needed. The first layer of inventory is the wholesale supply system. The \$14.5 billion inventory stored by DOD at this level can, in some cases, satisfy the needs of the services for years. For example, we estimated that DLA wholesale inventory for hardware items could last an average of about 2 years, based on fiscal year 1995 demands. At the retail level, the services hold additional inventory valued at about \$4.7 billion. This inventory is stored in three different layers close to where the items are used—base

Page 5 GAO/T-NSIAD-97-109

warehouses, central storerooms, and end-user locations. As reported in August 1995, service facilities we visited had retail stock on hand sufficient to last from 1 month to over 5 years.

**Figure 2: DOD Inventory Composition** (Sept. 30, 1995)



Despite this large investment in inventory, DOD's supply system frequently fails to meet the needs of its "customer." For example, at one Army repair depot we visited, the base warehouse failed to fully satisfy customer orders 75 percent of the time during the first 11 months of fiscal year 1996. Also, as of February 1996, the Navy had almost 12,000 broken aircraft parts, valued at \$486 million, that it stopped repairing because parts were not available to complete repairs. These items, which had been packaged and moved to a warehouse next to the repair facility, had been storage for an average of 9 months.

Inefficient Logistics System for Reparable Items

DOD's depot repair pipeline for reparable parts is slow and inefficient. Several factors contribute to these conditions. These factors are (1) broken reparable parts move slowly between field units and a repair

Page 6 GAO/T-NSIAD-97-109

depot, (2) reparable parts are stored in warehouses for several months before and after they are repaired, (3) work processes at repair depots are inefficiently organized, and (4) consumable parts are not frequently available to mechanics when needed. As a result, each of the services can spend several months or even years to repair and distribute a repaired part to the end user.

The amount of time required by the logistics system is important because DOD must invest in enough inventory to resupply units with serviceable parts during the time it takes to move and repair broken parts. As of September 30, 1995, DOD's reparable parts inventory was valued at about \$50 billion, of which about \$41 billion was for aircraft component parts. If DOD's repair time were reduced, inventory requirements could also be reduced. For example, an Army-sponsored RAND study noted that reducing the repair time for one helicopter component from 90 to 15 days would also reduce inventory requirements for that component from \$60 million to \$10 million.

#### Additional Problems Contributing to Unneeded Inventory

Along with the outdated and inefficient practices discussed above, we found instances where DOD still lacks adequate oversight of its inventory, financial accountability remains weak, and requirements continue to be overstated. These additional problems have contributed to DOD's unneeded inventory. For example:

- In August 1996, we reported that Navy managers did not have adequate visibility over \$5.7 billion in operating materials and supplies on board ships and at 17 redistribution sites. We estimated that, because of the lack of oversight, in the first half of 1995 item managers ordered or purchased items in excess of operating level needs. As a result, the Navy will incur unnecessary costs of about \$27 million.
- We reported in March 1996 that the Air Force and the Navy budgeted \$132 million more than was needed for aviation spare parts because of questionable policies concerning the determination of requirements and the accountability for depot maintenance assets. The Air Force did not consider \$72 million of on-hand assets, and the Navy counted \$60 million in depot maintenance requirements twice.
- Regarding DOD's financial accounting process and systems, the Secretary
  of Defense, in his February 1996 annual statement of assurance required
  by the Federal Managers' Financial Integrity Act, identified inadequate
  internal controls and other significant deficiencies, such as the use of a
  variety of nonintegrated systems; inability of current systems to respond

Page 7 GAO/T-NSIAD-97-109

rapidly to change; lack of automated indicators that measure, or link costs, performance measurements, or other output measurements; difficulties with consistently valuing and reconciling physical inventories to financial account balances; and inaccuracies in the valuation of property, plant, and equipment.

# DOD Has Made Some Progress in Reducing Inventory

DOD recognizes that it needs to make substantial improvements to its logistics system. In fact, DOD's goals, concepts, and top management commitment to reengineer its business practices closely parallel those we have seen in the private sector. Since fiscal year 1989, DOD has reduced secondary inventory levels by \$22.9 billion. While this is a significant reduction, we believe much of it was the result of reduced force levels, which reduced overall demands on the logistics system. DOD has made little progress in developing the management tools to help solve its long-term inventory management problems.

DOD recognizes that it can no longer continue its current logistics practices if it is to effectively carry out its mission in today's environment. For example, Air Force officials stated that budgetary constraints in recent years have led to substantial reductions in personnel, leaving the remaining work force to deal with a logistics operation that has traditionally relied on large numbers of personnel. DOD has also recognized that, with the end of the Cold War, dramatic changes need to be made and goals, objectives, and processes similar to those being used in the private sector need to be established. Aggressively pursuing these goals would fit into DOD's plans to reduce infrastructure and operations and support costs so that funds could be freed up to support its current weapons modernization efforts.

# Prime Vendor Programs for Personnel Supplies

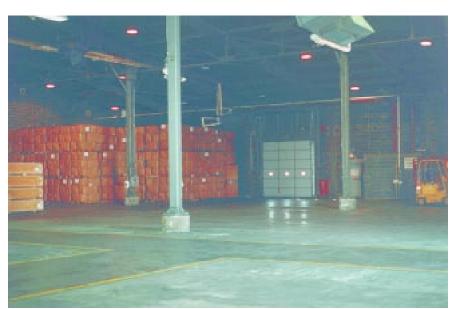
In response to our recommendations, DOD has adopted best practices to improve the management of personnel items, but these initiatives impact less than 3 percent of DOD's secondary items. Between 1991 and 1995, we issued a series of reports that identified and recommended ways DOD could apply best management practices to personnel items. These reports focused on improved partnerships between suppliers and DOD facilities, principally through the use of prime vendors. A prime vendor provides timely and direct delivery between customers and suppliers, and orders additional stock from manufacturers on short notice, with quick turnaround, to minimize inventory holding costs. This approach reduces the need for DOD to stock and distribute inventory from multiple locations.

Page 8 GAO/T-NSIAD-97-109

Since 1993, DLA has taken steps to use prime vendors for personnel items. One of DLA's most successful initiatives has been the implementation of a prime vendor program for medical supplies and pharmaceutical products. We reported in 1995 that approximately 150 DOD hospitals and medical treatment facilities were using prime vendors in 21 different geographic regions across the United States. The use of this program has allowed DOD to reduce stock levels at both wholesale and retail locations. Reducing inventory levels has also enabled DOD to reduce the warehouse space needed to store these items. At one storage depot alone, DLA reduced the storage space used for medical and pharmaceutical items by about 40 percent over a 3-year period (see fig. 3).

Figure 3: Vacated DLA Warehouse - 1991 vs 1994





We estimate that between September 1991 and September 1996, DOD reduced its pharmaceutical, medical, and surgical inventories and associated management costs by about \$714 million through the use of

Page 9 GAO/T-NSIAD-97-109

best practices, such as prime vendors. The majority of savings has resulted from the issuance of medical supplies to military customers without having to replace inventories through the purchase of additional stocks. Similar prime vendor programs are being implemented for food and clothing items.

The prime vendor program also enables DOD hospitals to reduce inventory costs. For example, we reported in August 1995 that the Walter Reed Army Medical Center, in addition to a \$3.8 million reduction in pharmaceutical inventories, saves over \$6 million a year in related inventory management expenses by using a prime vendor. In addition, as a result of the elimination of inventories after the prime vendor program was established, Walter Reed was able to convert a former warehouse holding medical supplies into a medical training facility. (see fig. 4).

Figure 4: A Converted Warehouse at the Walter Reed Army Medical Center





Services' Initiatives for Improving Reparable Parts Management Each service is developing initiatives to improve the management of its logistics pipeline for reparable aircraft parts to make their logistics processes faster, better, and cheaper. For example:

 As we reported in 1996, the Air Force has described its "Lean Logistics" initiative as the cornerstone of all future logistics system improvements. These efforts, spearheaded by the Air Force Materiel Command, are aimed at dramatically improving service to the end user while simultaneously

Page 10 GAO/T-NSIAD-97-109

reducing pipeline time, excess inventory, and other logistics costs. In June 1996, the Air Force began testing certain practices through demonstration projects at each of the five Air Logistics Centers. In fiscal year 1997, the Air Force also plans to examine the application of an integrated supplier program and other logistics practices we have recommended.

- Under its regional supply and maintenance initiatives, the Navy is identifying redundant capabilities and consolidating operations into regionally based activities. In one region, the Navy is consolidating 32 locations used to calibrate maintenance test equipment into 4 locations. The Navy believes that eliminating the fragmented management approach to supply management and maintenance will allow it to decrease infrastructure costs by reducing redundancies and eliminating excess capacity. The Navy also believes that moving away from highly decentralized operations will better position it to improve and streamline operations Navy-wide. The Navy has also established an initiative looking at ways to reduce the amount of time it takes a customer to receive a part after placing an order to the logistics system. We reported in July 1996 that these initiatives were in the early phases, so broad-based improvements had not yet occurred.
- The Army developed the "Velocity Management" program to speed up key aspects of the logistics system and reduce the Army's need for large inventory levels. The Army established the program with goals, concepts, and top management support that parallel the improvement efforts found in private sector companies. The overall goal of the program is to eliminate unnecessary steps in the logistics pipeline that delay the flow of parts through the system. Under this program, the Army has established Army-wide process improvement teams for the following four areas: ordering and shipping of parts, the repair cycle, inventory levels and locations, and financial management. Also, the Army is establishing local-level site improvement teams under this program to examine and improve the logistics operations of individual Army units.

Because these programs have only recently begun, they have had limited impact in improving DOD's overall logistics operations.

Page 11 GAO/T-NSIAD-97-109

## Aggressive Actions Are Needed to Resolve Long-Standing Problems

On the basis of the work we have done comparing DOD and private sector logistics practices, we believe substantial opportunities exist for DOD to build on its current improvement efforts. Overall, DOD has been slow in adopting new management practices for hardware items and has not incorporated some of the most advanced practices found in the private sector for reparable parts. From our discussions with more than 50 companies, we identified best practices that, if applied in an integrated manner, could help streamline DOD's logistics operations, save billions of dollars, and improve support to the military customer. In the short term, however, DOD must continue to emphasize the efficient operation of its existing logistics systems. In the long term, DOD must establish goals, objectives, and milestones for changing its culture.

#### **Short-Term Solutions**

In the short term, DOD needs to continue emphasizing the efficient operation of its existing inventory systems. As previously reported, this includes committing to improved inventory management by top management's emphasis on (1) inventory indicators that highlight reduction and disposal of unneeded inventory; (2) implementation of efficient and effective inventory management practices; and (3) training personnel in those practices and rewarding the right behavior, improving the accuracy of data such as requirements and the quantity, condition, and value of inventory items managed through current logistics and financial systems, and aggressively enforcing existing policies and procedures that will minimize the acquisition and accumulation of unnecessary inventory.

#### **Long-Term Solutions**

In the long term, overall solutions include mapping a strategy for completing its culture change initiatives; setting aggressive goals, objectives, and milestones for identifying and implementing viable and more cost-effective commercial practices for supplying its forces; establishing goals, objectives, and milestones for determining where outsourcing logistics functions represents a cost-effective and efficient alternative to traditional methods; and providing inventory managers with the automated, integrated accounting and management systems necessary to manage its inventory in a world-class manner. These long-term solutions will address systemic problems that have contributed to DOD's accumulation of unneeded inventory.

#### Organizational Culture Challenges Facing DOD

To address and resolve the issues we have discussed today, DOD faces major challenges as it pursues efforts to institutionalize a reengineered

Page 12 GAO/T-NSIAD-97-109

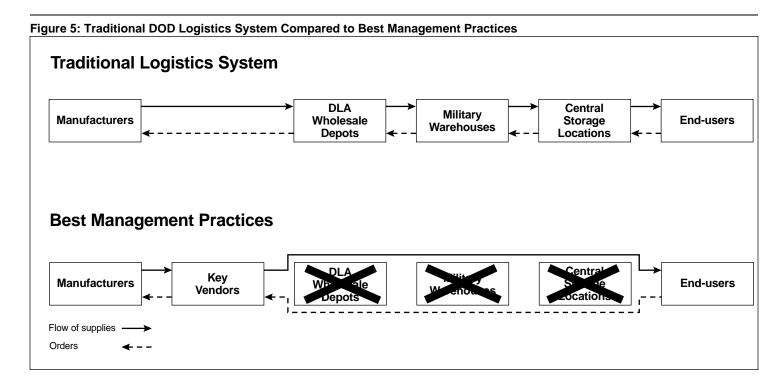
logistics system. The "corporate culture" within DOD has been traditionally resistant to change. Organizations often find changes in operations threatening and are unwilling to change current behavior until proposed ideas have been proven. This kind of resistance must be overcome if the services are to expand their concept of operations. DOD's top management needs to continue its commitment to changing its inventory management culture so that it provides its forces with necessary supplies in a timely manner while avoiding the accumulation of unneeded materials. We believe that the adoption of best practices is key to changing DOD's inventory management culture.

#### DOD Has Been Slow in Testing Best Practices for Hardware Items

While DLA has taken steps to improve its logistics practices and reduce inventories, such as through long-term contracting, direct vendor delivery, and electronic commerce, more aggressive steps could provide better customer service while reducing logistics costs. DLA has not made enough progress with its \$5.7 billion inventory of hardware items because it still has large amounts of items, such as bolts, valves, and fuses, that cost millions of dollars to manage and store. We estimate that this inventory could satisfy DOD's requirements for the next 2 years, assuming demands remain constant. In contrast, some private sector companies we visited maintain inventory levels that last only 90 days. These companies have achieved these lean inventory levels and saved millions in operating costs by developing innovative supplier partnerships that give established commercial distribution networks the responsibility to manage, store, and distribute inventory on a frequent, regular basis.

Although we recommended in 1993 that DOD pursue innovative partnerships with its suppliers to reduce logistics costs, DOD is only now in the initial stages of testing this type of partnership through its "Virtual Prime Vendor" program for hardware supplies. If successfully implemented, this concept could enable DOD to improve service to its customers and reduce overall logistics costs. In our opinion, this program is close to those efforts we have observed in the private sector and provides DOD with an excellent opportunity to achieve greater inventory reductions by minimizing the need to store inventory at wholesale and retail locations (see fig. 5). If DOD were able to achieve similar performance from this effort as those in the private sector, hardware inventories and related management costs could be reduced by billions of dollars and parts needed to complete repairs would be more readily available to the end user.

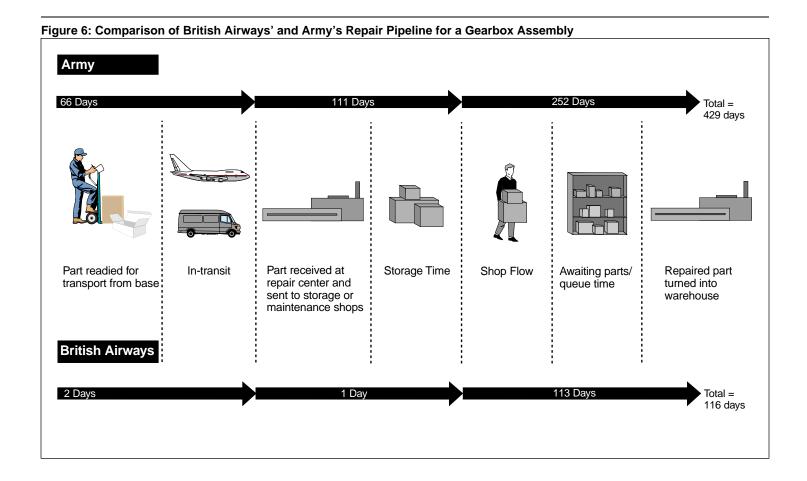
Page 13 GAO/T-NSIAD-97-109



DOD Has Not Tested Most Advanced Inventory Practices for Reparable Parts In addition to the opportunities to improve the management of hardware items, there are even greater opportunities to improve DOD's management of reparable parts. As of September 30, 1995, DOD held more than \$50 billion worth of these parts, but its efforts to streamline its logistics system for them have not included key best practices we have identified. Over the past 13 months, we have reported on the various problems with DOD's pipeline for reparable parts and on the substantial improvement opportunities available to DOD. For example:

• In 1996, we examined 24 different types of Army aviation parts, and calculated that the Army's logistics system took an average of 525 days to ship broken parts from field units to the depot, repair them, and ship the repaired parts to using units. We estimated that all but 18 days (97 percent) was the result of unplanned repair delays, depot storage, or transportation time. We also calculated the Army uses its inventory six times slower than a major airline, British Airways. That airline had developed a process to move parts through its repair pipeline much faster. For example, one part we examined had an Army repair pipeline time of 429 days; in contrast, British Airways was able to complete this process in 116 days. (see fig. 6).

Page 14 GAO/T-NSIAD-97-109



- In July 1996, we reported that the Navy's repair process can create as many as 16 time-consuming steps as parts move through the depot repair pipeline. Component parts can accumulate at each step in the process, which increases the total number of parts that are needed to meet customer demands and to ensure a continuous flow of parts. By tracking parts through each of the 16 steps and using the Navy's flow time data, we estimated that it could take, on average, about 4 months from the time a broken part is removed from an aircraft to the time it is ready for reissue. Our analysis did not include the amount of time parts were stored in warehouses awaiting repair or issue to the customer.
- In February 1996, we reported that using its current logistics pipeline
  process, the Air Force can spend several months to repair the parts and
  then distribute them to the end user. One part we examined had an
  estimated repair cycle time of 117 days; it took British Airways only

Page 15 GAO/T-NSIAD-97-109

12 days to repair a similar part. (see fig. 7). The complexity of the Air Force's repair and distribution process creates as many as 12 different stopping points and several layers of inventory as parts move through the process. Parts can accumulate at each step in the process, which increases the total number of parts in the pipeline.

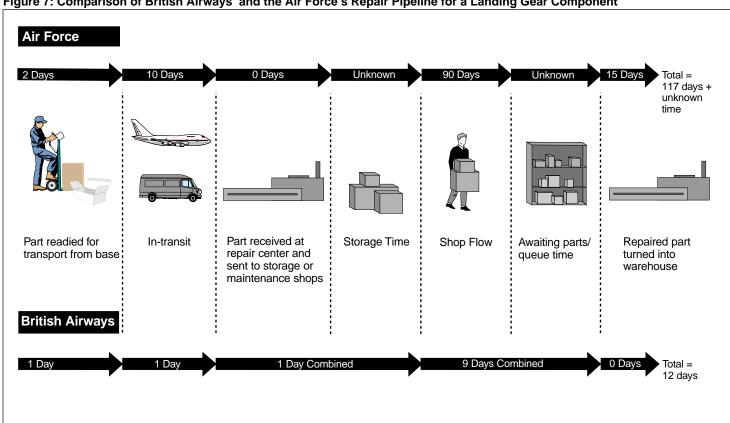


Figure 7: Comparison of British Airways' and the Air Force's Repair Pipeline for a Landing Gear Component

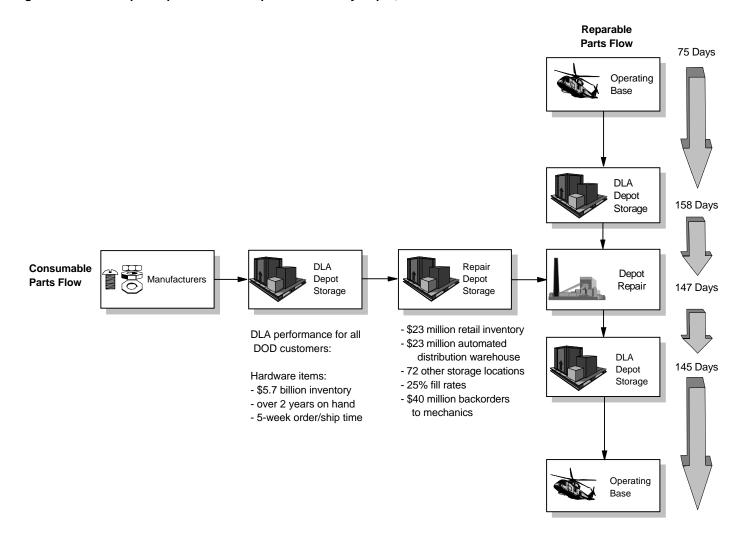
In our reports, we stated that DOD's improvement efforts were not as extensive as they could be because they have not incorporated the best practices we have seen in the private sector. These best practices have successfully reduced costs and improved logistics operations. We have recommended that DOD test these concepts and expand them to other locations, where feasible.

**GAO/T-NSIAD-97-109** Page 16

The four specific practices described below are key to the overall improvement of the reparable parts pipeline. For the companies we visited, they have resulted in substantial logistics system improvements and reduced costs. When used together in an integrated fashion, they can help maximize a company's inventory investment, decrease inventory levels, and provide a more flexible repair capability. (see figs. 8 and 9).

Page 17 GAO/T-NSIAD-97-109

Figure 8: Current Repair Pipeline at the Corpus Christi Army Depot, Texas



Page 18 GAO/T-NSIAD-97-109

Reparable **Parts Flow** 2 Days Operating Base Third-party provider Consumable Cellular Manufacturers Integrated 30 Days **Parts Flow** Depot Supplier Repair - 24 hour delivery - minimum DOD inventory - 95% or better fill rates - in-plant representative Third-party Storage + provider 2 day delivery Operating Base

Figure 9: Best Practices Applied to the Army Repair Pipeline

- Third-party logistics services can assume warehousing and distribution functions, provide rapid delivery of parts, and state-of-the-art information systems that would speed the shipment of parts between the depots and field locations.
- Eliminating excess inventory and quickly initiating repair actions can reduce the amount of time parts are stored, improve the visibility of production backlogs, and reduce the need for large inventory to cover operations while parts are out of service.

Page 19 GAO/T-NSIAD-97-109

- Cellular manufacturing techniques can improve repair shop efficiency by bringing all the resources (tooling, support equipment, etc.) needed to complete repairs to one location, thereby minimizing the current time-consuming exercise of routing parts to different workshops located hundreds of yards apart.
- Innovative supplier partnerships, as discussed earlier, can increase the
  availability of consumable parts, minimize the time it takes to deliver parts
  to mechanics, and delay the purchase of parts until they are needed to
  complete repairs.

### **Summary**

Substantial opportunities exist for DOD to improve the management of its \$69.6 billion inventory as well as its \$15 billion annual procurement of new parts. To do this, DOD needs to pursue both short- and long-term goals. In the short term, DOD needs to focus on improving the effectiveness of its current inventory management systems, such as those affecting requirements determination and inventory accountability. In the long term, DOD must focus on goals and objectives that will dramatically change its inventory management practices to provide a more cost-effective and efficient system while maintaining readiness and sustainability goals. The key to doing this is aggressively focusing on changing its culture and adopting new leading-edge business practices. Recently enacted legislation sets an overall framework within which DOD can establish objectives and measures for achieving these short- and long-term solutions. Close congressional oversight will continue to be a critical element as DOD establishes plans, goals, objectives, and milestones for addressing its inventory management processes.

Mr. Chairman, this concludes our statement. We would be happy to answer any questions you or the Subcommittee may have.

Page 20 GAO/T-NSIAD-97-109

Page 21 GAO/T-NSIAD-97-109

# **Related GAO Products**

Inventory Management: The Army Could Reduce Logistics Costs for Aviation Parts by Adopting Best Practices (GAO/NSIAD-97-82, Apr. 15, 1997).

High-Risk Series: Defense Inventory Management (GAO/HR-97-5, Feb. 1997).

Defense Logistics: Much of the Inventory Exceeds Current Needs (GAO/NSIAD-97-71, Feb. 28, 1997).

Defense Inventory: Spare and Repair Parts Inventory Costs Can Be Reduced (GAO/NSIAD-97-47, Jan. 17, 1997).

Logistics Planning: Opportunities for Enhancing DOD's Logistics Strategic Plan (GAO/NSIAD-97-28, Dec. 18, 1996).

1997 DOD Budget: Potential Reductions to Operation and Maintenance Program (GAO/NSIAD-96-220, Sept. 18, 1996).

Defense IRM: Critical Risks Facing New Materiel Management Strategy (GAO/AIMD-96-109, Sept. 6, 1996).

Navy Financial Management: Improved Management of Operating Materials and Supplies Could Yield Significant Savings (GAO/AIMD-96-94, Aug. 16, 1996).

Inventory Management: Adopting Best Practices Could Enhance Navy Efforts to Achieve Efficiencies and Savings (GAO/NSIAD-96-156, July 12, 1996).

Defense Logistics: Requirement Determinations for Aviation Spare Parts Need to Be Improved (GAO/NSIAD-96-70, Mar. 19, 1996).

Best Management Practices: Reengineering the Air Force's Logistics System Can Yield Substantial Savings (GAO/NSIAD-96-5, Feb. 21, 1996).

Inventory Management: DOD Can Build on Progress in Using Best Practices to Achieve Substantial Savings (GAO/NSIAD-95-142, Aug. 4, 1995).

Defense Inventory: Opportunities to Reduce Warehouse Space (GAO/NSIAD-95-64, May 24, 1995).

Best Practices Methodology: A New Approach for Improving Government Operations (GAO/NSIAD-95-154, May 1995).

Page 22 GAO/T-NSIAD-97-109

#### **Related GAO Products**

Defense Business Operations Fund: Management Issues Challenge Fund Implementation (GAO/NSIAD-95-79, Mar. 1, 1995).

Defense Supply: Inventories Contain Nonessential and Excessive Insurance Stocks (GAO/NSIAD-95-1, Jan. 20, 1995).

Defense Supply: Acquisition Leadtime Requirements Can Be Significantly Reduced (GAO/NSIAD-95-2, Dec. 20, 1994).

Reengineering Organizations: Results of a GAO Symposium (GAO/NSIAD-95-34, Dec. 13, 1994).

Commercial Practices: Opportunities Exist to Enhance DOD's Sales of Surplus Aircraft Parts (GAO/NSIAD-94-189, Sept. 23, 1994).

Organizational Culture: Use of Training to Help Change DOD Inventory Management Culture (GAO/NSIAD-94-193, Aug. 30, 1994).

Partnerships: Customer-Supplier Relationships Can Be Improved Through Partnering (GAO/NSIAD-94-173, July 19, 1994).

Commercial Practices: DOD Could Reduce Electronics Inventories by Using Private Sector Techniques (GAO/NSIAD-94-110, June 29, 1994).

Commercial Practices: Leading-Edge Practices Can Help DOD Better Manage Clothing and Textile Stocks (GAO/NSIAD-94-64, Apr. 13, 1994).

Defense Transportation: Commercial Practices Offer Improvement Opportunities (GAO/NSIAD-94-26, Nov. 26, 1993).

Defense Inventory: Applying Commercial Purchasing Practices Should Help Reduce Supply Costs (GAO/NSIAD-93-112, Aug. 6, 1993).

Commercial Practices: DOD Could Save Millions by Reducing Maintenance and Repair Inventories (GAO/NSIAD-93-155, June 7, 1993).

DOD Food Inventory: Using Private Sector Practices Can Reduce Costs and Eliminate Problems (GAO/NSIAD-93-110, June 4, 1993).

Organizational Culture: Techniques Companies Use to Perpetuate or Change Beliefs and Values (GAO/NSIAD-92-105, Feb. 27, 1992).

Page 23 GAO/T-NSIAD-97-109

#### **Related GAO Products**

DOD Medical Inventory: Reductions Can Be Made Through the Use of Commercial Practices (GAO/NSIAD-92-58, Dec. 5, 1991).

Commercial Practices: Opportunities Exist to Reduce Aircraft Engine Support Costs (GAO/NSIAD-91-240, June 28, 1991).

(709247) Page 24 GAO/T-NSIAD-97-109

#### **Ordering Information**

The first copy of each GAO report and testimony is free. Additional copies are \$2 each. Orders should be sent to the following address, accompanied by a check or money order made out to the Superintendent of Documents, when necessary. VISA and MasterCard credit cards are accepted, also. Orders for 100 or more copies to be mailed to a single address are discounted 25 percent.

#### Orders by mail:

U.S. General Accounting Office P.O. Box 6015 Gaithersburg, MD 20884-6015

or visit:

Room 1100 700 4th St. NW (corner of 4th and G Sts. NW) U.S. General Accounting Office Washington, DC

Orders may also be placed by calling (202) 512-6000 or by using fax number (301) 258-4066, or TDD (301) 413-0006.

Each day, GAO issues a list of newly available reports and testimony. To receive facsimile copies of the daily list or any list from the past 30 days, please call (202) 512-6000 using a touchtone phone. A recorded menu will provide information on how to obtain these lists.

For information on how to access GAO reports on the INTERNET, send an e-mail message with "info" in the body to:

info@www.gao.gov

or visit GAO's World Wide Web Home Page at:

http://www.gao.gov

United States General Accounting Office Washington, D.C. 20548-0001

Bulk Rate Postage & Fees Paid GAO Permit No. G100

Official Business Penalty for Private Use \$300

**Address Correction Requested**