United States General Accounting Office

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Report to Congressional Committees

May 1995

DEFENSE INVENTORY

Opportunities to Reduce Warehouse Space

GAO/NSIAD-95-64

GAO

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

National Security and
International Affairs Division

B-259493

May 24, 1995

The Honorable Herbert H. Bateman
Chairman
The Honorable Norman Sisisky
Ranking Minority Member
The Honorable John R. Kasich
Subcommittee on Military Readiness
Committee on National Security
House of Representatives

The Department of Defense (DOD) is the largest inventory manager in the world, maintaining about 600 million cubic feet of warehouse space. About two-thirds of the space is occupied by secondary inventory—spare and repair parts, clothing, medical supplies, and other items that DOD uses to support its operating forces.

Concerned that some secondary inventory was being stored longer than was reasonable,[1] the former Chairman and Ranking Minority Member requested that we review DOD's management of it. Our objectives were to determine (1) the size of DOD's secondary inventory, (2) the amount of space occupied by secondary inventory that DOD does not need to satisfy current war reserve and operating requirements, (3) the cost of storing this inventory, and (4) the time it will take to use it. In addition, we reviewed DOD's efforts to reduce secondary inventory.

Background

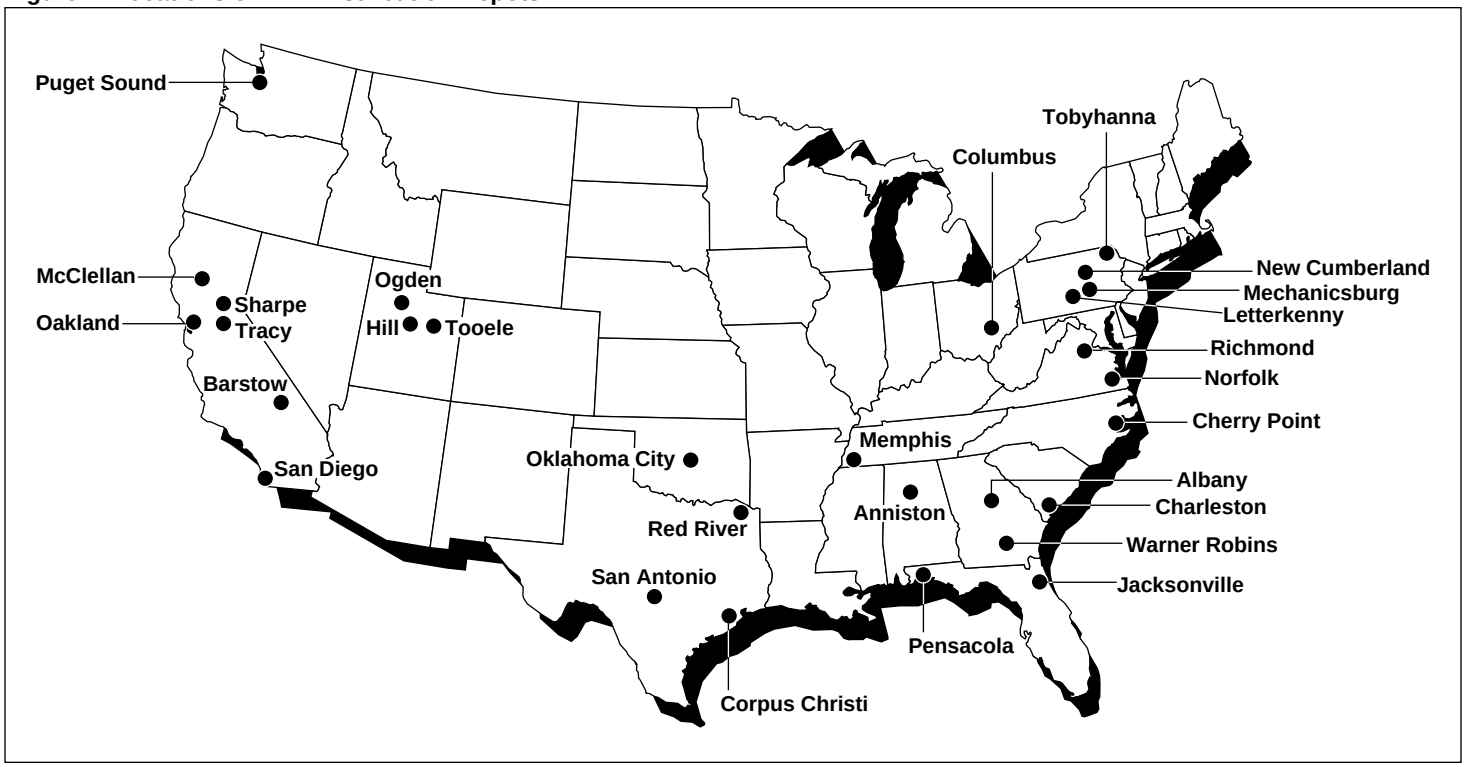
The Defense Logistics Agency (DLA), service headquarters, and inventory control points are responsible for managing secondary inventory. Through their respective item managers, DLA and service inventory control points ensure that needed items are available to the operating forces when and where needed. An item manager's tasks include determining when to repair or purchase items, positioning them at depots to meet demands, and disposing of unneeded items. The items managed by DLA and service item managers are stored at depots operated and managed by DLA. Depot managers have no authority over what items are stored or whether they should be disposed of. These decisions are made by the item managers.

The current DLA distribution depot system consists of two distribution region headquarters. They are located at New Cumberland, Pennsylvania,

[1]A list of related GAO products appears as the last page of this report.

and Stockton, California. Each of the 27[2] distribution depots report to one of these regions. For fiscal year 1994, total DOD distribution costs amounted to about $1.5 billion. Figure 1 shows the locations of these depots.

Figure 1: Locations of DLA Distribution Depots



When inventory is managed efficiently, enough is stored to meet wartime and peacetime requirements and unnecessary storage costs are avoided. When the total on-hand and due-in inventory falls to or below a certain level—called the reorder point—inventory control points place an order for additional inventory. The reorder point includes items needed to satisfy war reserve requirements and items to be issued during the lead time (the time between when an order is placed and when it is received).

[2]Four depots—Charleston, Pensacola, Oakland, and Tooele—have been designated for closure under the Base Closure and Realignment Act. An additional four depots have been recommended for closure by the Secretary of Defense. These include Letterkenny, Memphis, Ogden, and Red River. The 27 depot total counts Tracy and Sharpe as one depot (San Juaquin), and New Cumberland and Mechanicsburg as one depot (Susquehanna).

In addition, a safety level of inventory is kept on hand in case of minor interruptions in the resupply process or unpredictable fluctuations in demand. By placing orders when the reorder point is reached, item managers ensure that inventory arrives before stock runs out. Generally, the amount of inventory ordered is based on a formula that DOD calls an economic order quantity (also known as a replenishment formula).

Results in Brief

Over the past several years, DOD has made sizable reductions to the number of storage depots and to the amount of inventory stored in them. DOD has initiatives to make further reductions and we believe opportunities exist to build on these initiatives. There is substantial inventory that may never be used and a careful review of items most likely not to be used may reduce the number of items stored as well as storage space. Doing so is particularly important as DOD considers ways to make its infrastructure more efficient. Also, previous pricing policies did not create an incentive for inventory managers to dispose of unneeded items.

Specifically, we analyzed DOD secondary inventory that had an estimated volume of 218.8 million cubic feet. Secondary inventory items accounting for 130.4 million cubic feet, or 60 percent of the 218.8 million cubic feet, are not needed to satisfy current war reserve and operating requirements. However, many of these items may have potential future use and should be retained.

Further analysis shows the 130.4 million cubic feet of inventory consists of 2.2 million different types of items identified by individual stock numbers. About 84,000 of these items, occupying 41.7 million cubic feet, had more than a 20-year supply. Much of this inventory will likely never be used. Some items have become obsolete as technology has advanced and the weapon systems they support have been phased out; others have deteriorated to the point that they are no longer usable. DOD should focus on getting rid of unneeded items that occupy a great deal of space and have more than 20 years of supply on hand.

DOD has begun programs to reduce the secondary inventory level; however, its efforts have been partially offset by decreasing inventory demands and increasing returns of material by forces being deactivated. During the last 3 fiscal years, DOD disposed of secondary inventory costing about $43 billion. Further, DLA is implementing a pricing procedure that should provide increased incentives for disposing of items. Specifically, beginning in fiscal year 1996, DLA will charge inventory managers

responsible for making storage decisions $5.15 a square foot for the covered space their items occupy.

Opportunities Exist to Reduce Inventory and Storage Space

According to DLA, DOD's secondary inventory occupies about 360 million cubic feet of storage space and has an actual volume of about 300 million cubic feet.[3] We obtained computerized inventory data records from DLA and each of the military services and identified secondary inventory items with a volume of 218.8 million cubic feet.[4] Our figure differs from DLA's 300 million cubic feet because approximately 12 percent of the items on the DLA and service data tapes that we used did not have storage space data.

To determine whether there are opportunities for reductions, we analyzed DOD's secondary inventory as it relates to war reserve and current operational needs and in terms of the years of supply that is on hand on an item basis. Using this data, we visited selected storage activities to examine the condition and reasons for continuing to store items that appeared to be no longer needed. This work showed that DOD has a substantial number of items that (1) have over a 20-year supply beyond the levels needed to meet war reserve and operational needs, (2) are for weapon systems no longer in use, (3) are no longer usable, and (4) are not needed.

Total Inventory Being Stored

Our analysis of DOD's September 30, 1993, Supply System Inventory Report and inventory stratification reports indicates that $36.3 billion of the $77.5 billion secondary inventory that DOD reported exceeded current war reserve and operating requirements.[5]

On the basis of our analysis of computerized records, we determined that about 2.2 million different items had a volume of 130.4 million cubic feet. A typical DOD warehouse is approximately 595 feet long and 180 feet deep. DLA officials said that it would take approximately 205 warehouses to store

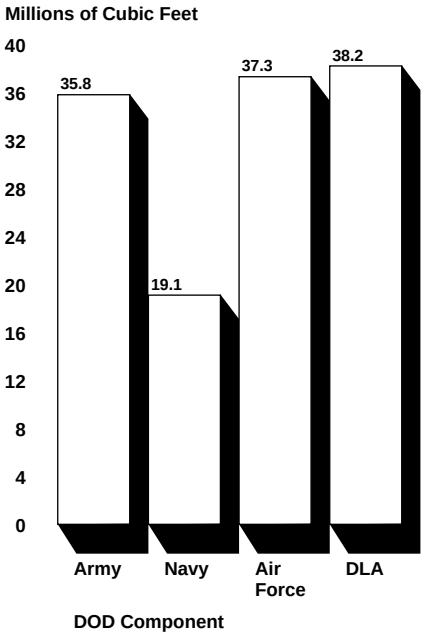
[3]The actual warehouse space is about 420 million cubic feet, which includes operating space not occupied.

[4]We obtained computerized records by components as they were available during the period March 31, 1993, through August 31, 1994.

[5]The $77.5 billion and the $36.3 billion includes inventory that has been revalued to reflect the value of items that need to be repaired and the scrap value of items to be disposed of. We estimate that if all the inventory were valued at its acquisition cost, the values would be $96.8 billion and $48.4 billion, respectively.

the 130.4 million cubic feet of inventory. Figure 2 shows that inventory by DOD component.

Figure 2: Cubic Feet of Inventory Not Needed to Satisfy Current War Reserve and Operating Requirements (by DOD component)



DLA estimates that the holding costs for the 130 million cubic feet are approximately $94 million per year, which is less than 1 percent of the inventory value. This is low when compared to industry experience, which according to one study, ranges from 5 to 15 percent. For purchase decisions, some inventory control points use a percentage of the item's value, which can be as high as 18 to 22 percent of the value. However, DOD believes that the holding costs for items already on hand is considerably less than the 18 to 22 percent. As discussed later, DOD has an effort underway to benchmark its holding costs with private industry (see p. 17).

The concern about unnecessary secondary inventory storage is not new. In 1992, we reported that storing unneeded secondary inventory would prevent DLA from realizing savings from depot consolidations.[6] We

[6]Defense Inventory: DOD Actions Needed to Ensure Benefits From Supply Depot Consolidation Efforts (GAO/NSIAD-92-136, May 29, 1992).

recommended that DLA reduce this inventory so that fewer depots would be required.

Substantial Amounts of Stored Inventory Exceed 20 Years of Supply

To estimate the years of supply for each of the types of items, we divided the on-hand inventory by past or projected demand data.[7] We had demand data for about 488,000 of the 2.2 million items that were not needed to satisfy current war reserves or operating requirements. Those items occupied about 73 percent (95.7 million cubic feet) of the 130.4 million cubic feet of space; 84,000 of the items (41.7 million cubic feet) had more than a 20-year supply. The 1.7 million items that did not have demand data[8] occupied 34.7 million cubic feet of space. In figure 3, we show the years of supply by service. Figure 4 shows the space occupied by these items.

[7]Since demand projections were not available for DLA items, we used demands during the past year.

[8]We are not certain why there was no demand for these items. However, DOD does stock certain items that do not have past or projected demands because of their essentiality to certain weapon systems. All 1.7 million items had stock on hand in excess of those requirements needed to meet current operating requirements and war reserves.

Figure 3: Years of Supply for Secondary Inventory Not Needed to Satisfy Current War Reserves and Operating Requirements

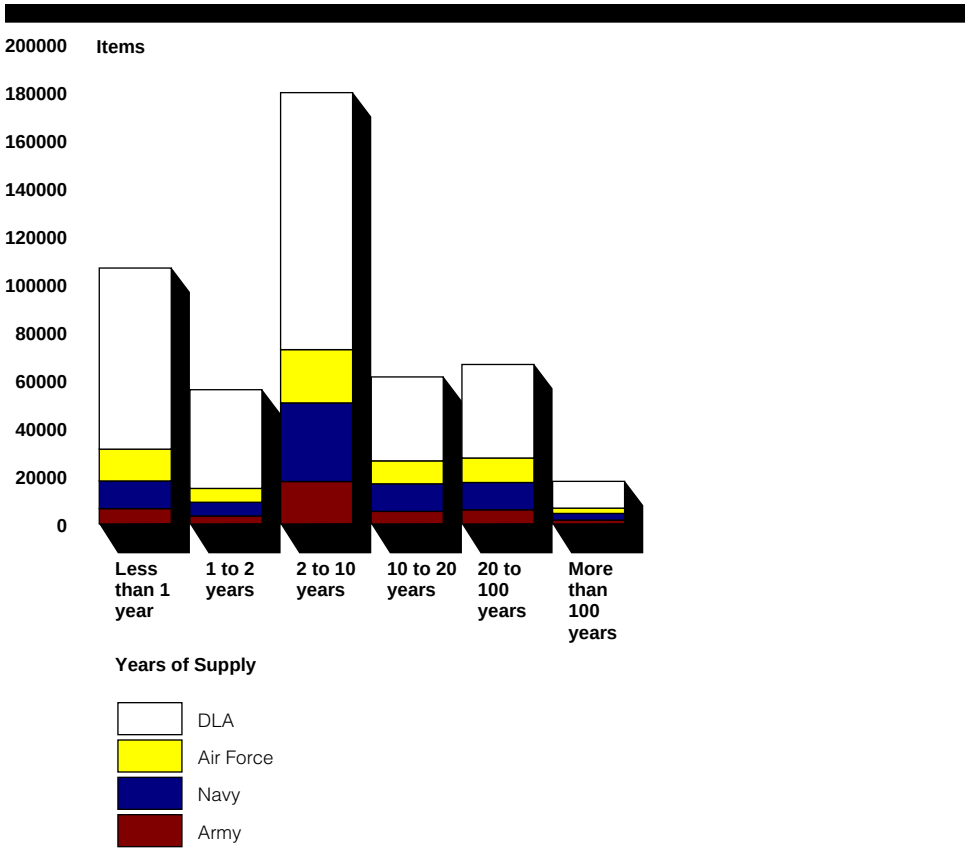
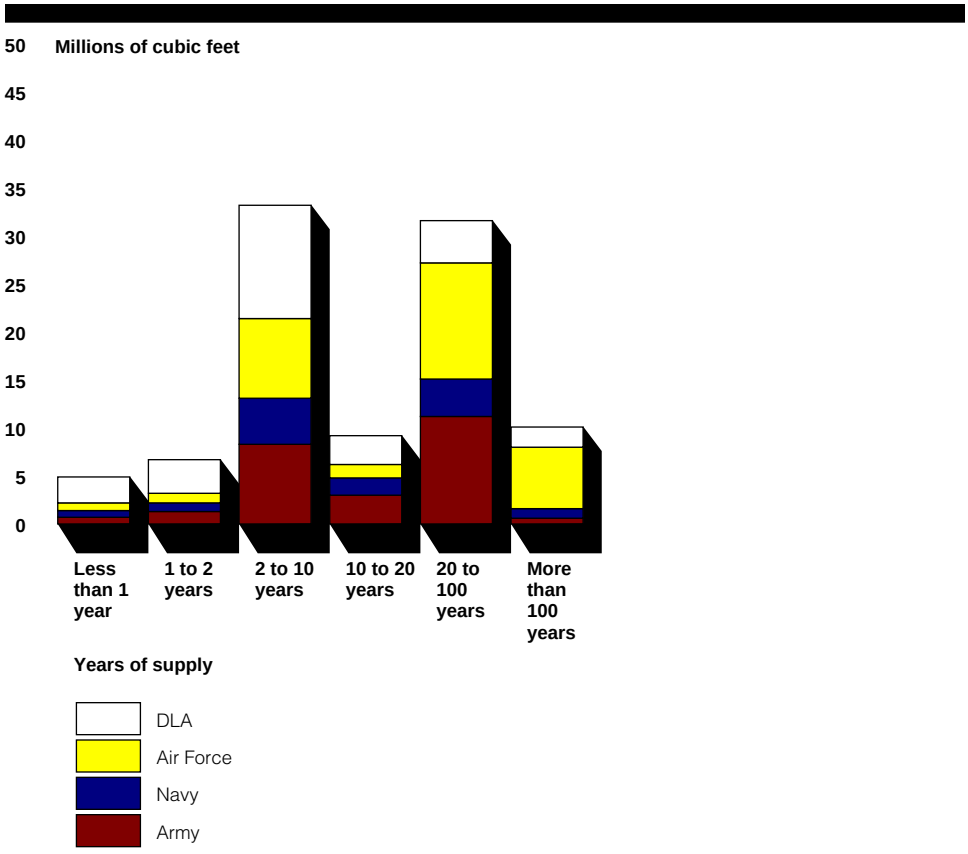


Figure 4: Years of Supply for Secondary Inventory Not Needed to Satisfy Current War Reserves and Operating Requirements (cubic feet)



To identify items that will likely never be used, we (1) used DLA and service databases to determine the amounts of stock on hand, (2) discussed with item managers the likelihood of these items being used and plans to dispose of them, and (3) visited supply depots to inspect items that had been in storage for an extensive period of time with little or no demand. Some examples of the items we identified follow.

Items That Have Been in Storage for Years

At the Fleet Industrial Supply Center, Norfolk, Virginia, three pump rotors (costing about $22,000 each) for a ship water pump have remained in storage since 1970. Recently, these items were transferred to DLA for management under the Consumable Item Transfer Program. Under this program, DLA assumes management responsibility for selected consumable items used by more than one service. Because DLA now manages these

items, they will not be considered for disposal for at least 2 years due to DLA's disposal policy.

At the same location, 10 bearings ($5,590 each) for a gear assembly on an aircraft carrier had been in storage since 1986. After our discussions with the item manager, the Navy disposed of all 10 of these bearings. Figure 5 shows the bearings in storage.

Figure 5: Bearings Stored at Fleet Industrial Supply Center, Norfolk, Virginia

At Warner Robins Air Logistics Center, Warner Robins, Georgia, 79 modular radio transmitters belonging to the Army and valued at approximately $16,000 were in storage. Although 69 of these items are excess, the Air Force had not taken any action to determine whether they were needed by the Army. Air Force officials told us that they planned to contact the Army for disposal authority. Figure 6 shows the modular radio transmitters in storage.

Figure 6: Modular Radio Transmitters Stored at Warner Robins Air Logistics Center, Warner Robins, Georgia

At the Defense Construction Supply Center, Columbus, Ohio, we were informed that 65 housings for air cylinders used on a electric generating unit have had no demand in years, and no demand is forecasted for the coming year. The item manager indicated that it is unlikely that all the housings will be used, but they cannot be disposed of until additional information is available concerning possible uses for them.

Items Retained for Weapon Systems No Longer in Use

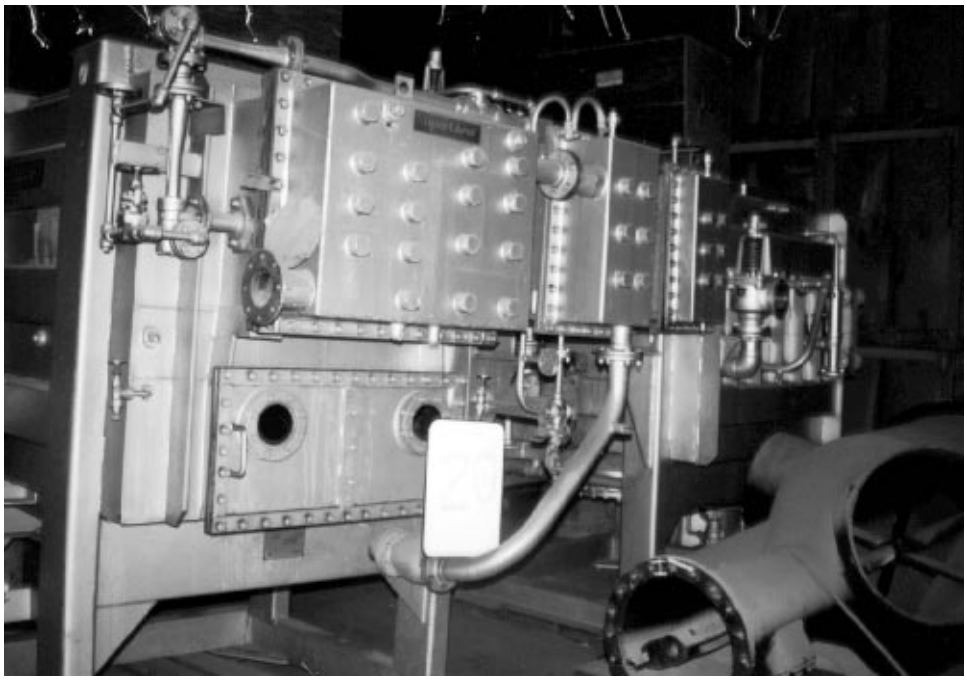
Some items have become obsolete as technology has advanced and weapon systems and equipment have been phased out of the inventory. At the Fleet Industrial Supply Center in Norfolk, Virginia, we located two electric pumps valued at approximately $90,700 (about $45,350 each). Though these pumps were for destroyer class ships no longer in the U.S. inventory, they remained in storage. When we questioned this retention decision, the Navy item manager informed us that the pumps were being retained for potential foreign military sales. Despite the absence of U.S.

military users, responsibility for their management was transferred to DLA under the Consumable Item Transfer Program. Thus, the electric pumps will be stored for at least 2 years. Figure 7 shows them in storage.

Figure 7: Electric Pumps Stored at Fleet Industrial Supply Center, Norfolk, Virginia

DLA also assumed management responsibility for four large distillation units for which there were no known users. The items (costing $72,140 each) have been in storage since 1968 and were used to distill water on Navy ships. According to the Navy, the decision to retain the items was predicated on their high cost. Because of this cost, the Navy chose to research the possible uses of these items before disposing of them. Like other items transferred to DLA, they will not be considered for disposal for at least 2 years. Figure 8 shows the distillation units stored at the Fleet Industrial Supply Center, Norfolk, Virginia.

Figure 8: Distillation Units Stored at Fleet Industrial Supply Center, Norfolk, Virginia



At Warner Robins Air Logistics Center, Warner Robins, Georgia, 4,044 missile control systems (a total cost of approximately $21 million) are being phased out of the inventory. These items have been in storage for many years with no demands. However, subsequent to our visit, the item manager received approval to dispose of them.

Also, at Warner Robins Air Logistics Center, three equalizer assemblies costing approximately $75,000 had been in storage for at least 3 years. The assemblies were part of the F-4 aircraft reconnaissance system. Though the items were obsolete to DOD, they were being retained for possible foreign military sales. Figure 9 shows the assemblies in storage.

Figure 9: Equalizer Assemblies Stored at Warner Robins Air Logistics Center, Warner Robins, Georgia

Items That Are No Longer Usable

Many items have deteriorated to the point that they are no longer usable. For example, at the Fleet Industrial Supply Center, in Norfolk, Virginia, a hoisting antenna (which cost about $48,500) had been stored outside so long that grass and rust covered it. The Navy item manager informed us that the item is no longer usable and will be disposed of. Figure 10 shows the antenna in outside storage.

Figure 10: Hoisting Antenna Stored at Fleet Industrial Supply Center, Norfolk, Virginia

Also, at the Fleet Industrial Supply Center in Norfolk, Virginia, 13 modernization kits for the P-3C aircraft have been in storage since 1978. These kits (which cost about $4,480 each, for a total cost of approximately $58,240) are obsolete. During subsequent discussions with Navy officials, they indicated that these items will be disposed of.

At the Defense Supply Depot, New Cumberland, Pennsylvania, seven obsolete Army clutch assemblies were in storage. They cost approximately $5,334 and were previously used on the M125 10-ton Prime Mover. As a result of our visit, the Army decided to dispose of all seven items. In addition, at the San Antonio Air Logistics Center in San Antonio, Texas, two maintenance antennae valued at approximately $230,000 each had been in storage for at least 5 years. Though these items were in need of repair, both were being retained, and the Air Force has no plans to dispose of them. The item manager informed us that the items would have to be researched to determine any possible users before any disposal action could be taken, but as of November 30, 1994, the item manager had not initiated this action. Figure 11 shows the maintenance antennae in storage.

Figure 11: Maintenance Antennae Stored at the San Antonio Air Logistics Center, San Antonio, Texas

Navy Items That Were Not Needed in 1990 but Are Still Being Stored

In 1990, we reported on 57 Navy items that we identified as candidates for disposal that had little or no potential for future use.[9] During that review, we sampled 100 items that had unneeded inventory and identified 57 items that had one or more of the following characteristics: (1) no active users, (2) no demands in the previous 2 years, and (3) no demands forecasted.

When we followed up on these items in 1994, we found that of the 57 items that were on hand in 1990, 32 were still in the inventory. The Navy still manages 26 of these items, which have approximately $2.7 million in stock exceeding the reorder point and replenishment formula. The other six had been transferred to DLA. Six of the items still under Navy management had demand forecasted for the following year. Four of these had excessive stock on hand, ranging from 6 to more than 20 years of supply.

[9]Growth in Ship and Submarine Parts (GAO/NSIAD-90-111, Mar.6, 1990).

DOD Has Made Progress Reducing Its Inventory

DOD has implemented several programs—some DOD-wide and others service specific—to reduce secondary inventory. Over the last 3 years, DOD disposals have amounted to about $43.4 billion.[10] (See table 1.)

Table 1: Value of Secondary Inventory Disposals, Fiscal Years 1992-94

Dollars in billions

	Value of disposals			
Organization	**1992**	**1993**	**1994[a]**	**Total**
Air Force	$4.3	$10.8	$5.0[b]	$20.1
Army	1.2[c]	3.8	2.4	7.4
DLA	0.5	1.9	1.0[d]	3.4
Navy	4.4	3.2	4.9	12.5
Total	**$10.4**	**$19.7**	**$13.3**	**$43.4**

[a]As of June 1994.

[b]Estimated by Air Force.

[c]Includes three of the Army's five inventory control points.

[d]Estimated by DLA.

Pricing Incentives Did Not Exist to Increase Disposals

One reason more progress has not been made is because incentive for the disposal of secondary items was lacking. In 1992, DOD consolidated its industrial and stock funds into the Defense Business Operations Fund. DOD was partly motivated to consolidate the funds in order to improve the visibility of storage costs. However, neither the inventory control points nor the weapon system program managers have an incentive to reduce storage costs. The service unit (customer) that requests and uses the inventory pays for the cost of storage because cost is included in the price charged the customer.

For fiscal year 1996, DLA plans to begin charging inventory control points for storing the material they manage. Although rates will vary by type of commodity and storage, the rate for covered storage (which applies to most secondary items) will be $5.15 a square foot. This charge should be an incentive for item managers to dispose of material that is not needed.

[10]The $43.4 billion represents acquisition cost. We estimate that based on DOD's method for determining the scrap value of material to be disposed of, this material would have been about $914 million, or about 2 percent of its acquisition value, at the time of disposal.

In addition, DOD has initiated a study to determine its inventory holding costs. As part of this study, DOD will compare its holding costs with those of private industry. In commenting on a draft of this report, DOD said that it had no preconceptions as to what impact, if any, the project would have on retention or disposal decisions. The project is scheduled for completion in the spring of 1995.

Furthermore, as manager of DOD's depot system, DOD and DLA have developed strategic plans for reducing DOD's storage capacity as secondary item inventories are reduced. DLA officials told us that a number of contributing factors, including Base Closure and Realignment Commission actions and its own efforts, have resulted in storage facilities being vacated and substantial reductions in storage requirements during the past 2 fiscal years. DLA projects that DOD's secondary inventory will be reduced to approximately $54 billion by 2001 and that its total requirement for covered space will be reduced to approximately 400 million cubic feet. According to DLA officials, these reductions take into account additional requirements generated as a result of units returning secondary items from Europe, as well as moving items currently stored outside into covered storage.

Recommendation

We believe that DOD's efforts are a good start and that continued emphasis should be placed on getting rid of inventory that is not needed. Therefore, we recommend that the Secretary of Defense develop a systematic approach for reviewing the secondary inventory currently on hand. The Secretary could begin by instructing inventory control points and program managers to focus their inventory reduction efforts on the material that occupies a great deal of storage space and has more than 20 years of supply on hand.

Agency Comments and Our Evaluation

In commenting on a draft of this report (see app. I), DOD said that it generally agrees that inventories should be reduced and excess storage capacity should be eliminated. DOD partially agreed with our findings and recommendations. While DOD agrees that it holds secondary inventory that will probably never be used and should be disposed of, it does not agree with the criteria we used for assessing the potential for reducing the amount of inventory it currently holds.

Our analysis focused on the stock that exceeded the war reserve and current operating requirements. We believe this is a logical starting point

and our report points out that we are not suggesting that DOD dispose of all stock that exceeds that level. Rather, we point out that DOD should focus its reduction efforts on stock that occupies a great deal of space and has more than 20 years of supply on hand. DOD expressed concern that the implication of using our criteria would be that this material should be disposed of and the related warehouse space eliminated. It also points out that our criteria are used for ordering stock, not for making decisions concerning whether to retain it. However, in its 1993 material management regulation, DOD used this same criteria as the maximum quantity of material to be maintained on hand or on order to sustain current operations and core war reserves. DOD stated that in hindsight it would not order much of the stock it has on hand, but wants to be careful not to dispose of any stock that might be needed in the future.

DOD stated that it might already have disposed of much of the material we discuss in our report. We acknowledge that some of this material might have been disposed of while our review was on going. However, we do not believe that DOD had the opportunity to dispose of most of this material. We obtained the computerized records on which we based our analysis from DLA and the services as they were available. The tapes for DLA, for example, were not obtained until August 1994, and therefore, DLA would have had limited opportunity to dispose of DLA material we identified.

DOD partially concurred with our recommendation that DOD develop a systematic approach for reducing inventories. DOD emphasized that it already has in place a systematic approach to reducing inventory and is tracking its progress toward meeting established goals. DOD agreed that the number of storage locations should be reduced, but stated that the depot system is already being downsized. DOD indicated that its requirement for covered storage space had been reduced more than 180 million cubic feet, or 28 percent, between September 1992 and September 1994.

In the draft of this report submitted to DOD for comment, we included a recommendation for the Secretary to consider the significant amount of inventory that exceeds current requirements when determining the number of depots to close or consolidate in the 1995 base closure and realignment process. Since the Secretary's recommendations to close and realign bases have been made, we deleted this recommendation from our final report. We conducted our work between January 1993 and September 1994 in accordance with generally accepted government auditing standards. (See description of our scope and methodology in app. II.)

Unless you publicly announce this report's contents earlier, we plan no further distribution of this report until 30 days after its issue date. At that time, we will send copies of this report to the Chairmen, Senate Committee on Armed Services, Senate and House Committees on Appropriations, and House Committee on National Security; the Secretaries of Defense, the Air Force, the Army, and the Navy; and the Directors of the Defense Logistics Agency and the Office of Management and Budget. We will also make copies available to others upon request.

If you have any questions, I may be reached at (202) 512-8412. Major contributors to this report are listed in appendix III.

David R. Warren, Director
Defense Management and NASA Issues

Comments From the Department of Defense

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

OFFICE OF THE UNDER SECRETARY OF DEFENSE

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WASHINGTON DC 20301-3000

ACQUISITION AND TECHNOLOGY
(L/MDM)

23 MAR 1995

Ms. Donna M. Heivilin
Director, Defense Management and
NASA Issues
U.S. General Accounting Office
Washington, D.C. 20548

Dear Ms. Heivilin:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report, "DEFENSE INVENTORY: Opportunities to Reduce Warehouse Space," dated March 9, 1995 (GAO Code 398142), OSD Case 9853. The DoD partially concurs with the report.

The DoD generally agrees that inventories should be reduced and excess storage capacity be eliminated. The Department, however, already has a very systematic and successful program for reducing inventory and storage space, and strategic goals for continuing reductions into the next century. Between September 1992 and September 1994, roughly the same period of the GAO review, the Department reduced the capacity for covered storage by 28 percent (170 million attainable cubic feet), and storage space requirements by 181 million occupied cubic feet. In all, the Department has downsized from 57 to 38 storage locations over the past two years. The DoD expects to continue this trend and further reduce the total number of storage sites to 24 by the end of FY 1997, with further reductions expected as a result of the DoD Base Closure and Realignment Commission 1995 recommendations.

The criteria that the GAO selected for assessing the amount of warehouse space is inappropriate. The central issue in the draft report is how much inventory should the Department retain, not how much should the Department order, which is the criteria that GAO employed for the analysis. The economics of stock retention decisions are entirely different from buy decisions. Even the draft report reflects that the GAO is not advocating that the DoD dispose of all the inventory above this level. Nevertheless, by utilizing the criteria described in the report, the GAO infers that stock quantities and associated storage space above the criteria are excess, when in fact a great portion of it is not.

The Department appreciates the opportunity to comment on the draft report and to resolve factual issues prior to formal issuance of the report. While complete agreement on every issue could not be attained, the differences were significantly narrowed, and the central issue in the report was put much more in focus.

The detailed DoD comments on the draft GAO report findings and recommendations are provided in the enclosure. The DoD appreciates the opportunity to comment on the draft report.

Sincerely,

Roy R. Willis
Principal Assistant Deputy Under
Secretary of Defense (Logistics)

Enclosure

**GAO DRAFT REPORT - DATED FEBRUARY 3, 1995
(GAO CODE 398142) OSD CASE 9853**

"DEFENSE INVENTORY: OPPORTUNITIES TO REDUCE WAREHOUSE SPACE"

DEPARTMENT OF DEFENSE COMMENTS

* * * * *

FINDINGS

- **FINDING A: Secondary Inventory.** The GAO reported that the DoD is the largest inventory manager in the world, maintaining more than 600 million cubic feet of warehouse space. The GAO noted that about two thirds of the space is occupied by secondary inventory--spare and repair parts, clothing, medical supplies, and other items that the DoD uses to support operating forces.

  The GAO reported that the Defense Logistics Agency (DLA), Service Headquarters, and Inventory Control Points are responsible for managing secondary inventory. The GAO determined that, through the respective item managers, the DLA and Service inventory control points ensure that needed items are available to the operating forces when and where needed. The GAO observed that item managers determine when to repair or purchase items, position them at depots to meet demands, and dispose of unneeded items. The GAO also observed that items which are managed by the DLA and Service item managers are stored at depots operated and managed by DLA. The GAO pointed out that depot managers have no authority over what items are stored or whether items should be disposed. The GAO also noted that the current DLA distribution depot system consists of 27 distribution depots, each reporting to one of two distribution regions located at New Cumberland, Pennsylvania, and Stockton, California.

  The GAO observed that when inventory is managed efficiently, enough is stored to meet wartime and peacetime requirements and unnecessary storage costs are avoided. The GAO noted that, generally, the amount of inventory ordered is based on a formula, the economic order quantity--replenishment formula. (pp. 1-4/GAO Draft Report)

  DoD Response: Concur.

Now on pp. 1 and 2.

Now on p. 4.

- **FINDING B: The Secondary Inventory Occupies About 360 Million Cubic Feet of Warehouse Space.** The GAO obtained computerized inventory data records from the DLA and each of the Services and identified secondary inventory items with a volume of 218.8 million cubic feet. The GAO reported that according to the DLA, the DoD secondary inventory occupies about 360 million cubic feet of storage space and has an actual volume of about 300 million cubic feet. The GAO noted that the GAO figure differs from the DLA 300 million cubic feet because approximately 12 percent of the items on the DLA and Service data tapes that the GAO used did not have storage space data. (p. 6/GAO Draft Report)

  DoD Response: Concur.

- **FINDING C: Significant Portion of Secondary Inventory Is Not Needed to Satisfy Current War Reserve and Operating Requirements.** The GAO reported that the analysis of the DoD Supply System Inventory Report, as of September 30, 1993, indicates that $36.3 billion of the $77.5 billion secondary inventory that the DoD reported exceeded current war reserve and operating requirements. On the basis of computerized records, the GAO determined that about 2.2 million different items had a volume of 130.4 million cubic feet. The GAO noted that a typical DoD warehouse is approximately 595 feet long and 180 feet deep. The GAO further noted that DLA officials said it would take approximately 205 warehouses to store the 130.4 million cubic feet of inventory. The GAO noted that, for purchase decisions, some inventory control points use a holding cost percentage based on the item's value, which can be as high as 18 to 22 percent of the value. The GAO pointed out that the DoD believes that the holding costs for items already on hand is considerably less than the 18 to 22 percent figures.

  The GAO noted the DLA estimates that the holding costs for the 130 million cubic feet are approximately $94 million per year, which is less than 1 percent of the inventory value. The GAO pointed out that amount is low when compared to industry experience. The GAO acknowledged that the DoD has an effort underway to benchmark its holding costs with private industry.

  The GAO reiterated that its concern about unnecessary secondary inventory storage is not new. The GAO explained that in 1992, it reported that storing unneeded secondary inventory would prevent the DLA from realizing savings

Now on pp. 4 and 5.

See comment 2.

from depot consolidations (OSD Case 8986). In that report, the GAO recommended that the DLA reduce secondary inventory so that fewer depots would be required. (pp. 6-9/GAO Draft Report)

DoD Response: Partially concur. The Department generally agrees with the finding; however, several points of clarification are warranted. The Department does not believe that the criteria that the GAO selected for assessing the warehouse space are appropriate. By selecting those criteria, the GAO implies that inventory that exceeds current operating and war reserve requirements is excess, which is incorrect and misleading. The criteria that GAO selected are appropriate for determining how much inventory the Department should buy, but not how much inventory should be retained once the DoD owns the stock. The economics of stock retention decisions are entirely different from buy decisions. While the Department would not immediately order inventory above the criteria selected by the GAO, much of the inventory will be needed and ordered in the future. The GAO would be the first to criticize the Department if these stocks were sent to disposal only to be repurchased, and rightfully so.

The second point of clarification deals with holding cost. There are valid reasons why the DoD inventory holding costs are less than in private industry. A principal reason is the marketability of DoD stocks is generally much less than in private industry stocks; and there are no post-investment tax consequences of holding inventory in the Government. The DoD inventory that the GAO analyzed is comprised mostly of spare parts for weapon systems that have little application or value in the private sector. In fact, overall, the DoD disposal costs historically have exceeded the revenue that disposal of the stocks generate, or in other words, it costs the Department to dispose of inventory. Private industry, on the other hand, usually can discount stocks it no longer wants and realize either a reduced profit or perhaps even a loss, but on average, a significant return when compared to the DoD which must pay to dispose of unwanted inventory. This essential difference is a primary reason why holding costs rates differ between the DoD and the private sector.

- **FINDING D: Much of The Inventory Will Likely Never Be Used.** The GAO estimated the number of years of supply for each of the types of items by dividing the on-hand inventory by past or projected demand data. The GAO obtained demand data for about 488,000 of the 2.2 million items that were not needed to satisfy current war reserves or operating requirements. The GAO determined that (1) 488,000 items occupied 73 percent (95.7 million cubic feet) of the 130.4 million cubic feet of space; (2) 84,000 of the items (41.7 million cubic feet) had more than a 20-year supply; and (3) the 1.7 million items that did not have demand data occupied 34.7 million cubic feet of space. The GAO presented the years of supply by Service and the space occupied by those items in Figures 3 and 4, respectively, in the draft report.

  To identify items that will likely never be used, the GAO (1) used the DLA and the Service databases to determine the amounts of stock on hand, (2) discussed with item managers the likelihood of those items being used and plans to dispose of them, and (3) visited supply depots to inspect items that had been in storage for an extensive period of time with little or no demand. Examples of the items the GAO identified include:

  - Fleet Industrial Supply Center, Norfolk, Virginia: 3 pump rotors (about $22,000 each) for a ship water pump; 10 bearings ($5,590 each) for a gear assembly on an aircraft carrier; 2 electric pumps (valued at about $45,350 each) for destroyer class ships; 4 large distillation units used to distill water on Navy ships; a hoisting antenna (about $48,500) stored outside so long that grass and rust covered it; and 13 retrofitting kits for the P-3C aircraft that are obsolete.

  - Warner Robins Air Logistics Center, Robins Georgia: 79 modular radio transmitters belonging to the Army and valued at $16,000; 4,044 missile control systems (a total cost of approximately $21 million) being phased out of inventory; and 3 equalizer assemblies costing approximately $75,000 that are obsolete.

  - Defense Construction Supply Center, Columbus, Ohio: 65 housings for air cylinders used on an electric generating unit.

- Defense Supply Depot, New Cumberland, Pennsylvania: 7 Army clutch assemblies (costing approximately $5,334) previously used on the M125 10-ton Prime Mover that are obsolete.

- San Antonio Air Logistics Center, San Antonio, Texas: 2 maintenance antennas, valued at approximately $230,000 each.

In 1990, the GAO reported on 57 Navy items identified as candidates for disposal that had little or ***no*** potential for future use (OSD Case 8216). During that review, the GAO sampled 100 items that had unneeded inventory and identified 57 items that had one or more of the following characteristics: (1) no active users, (2) no demands in the previous 2 years, and (3) no demands forecasted.

In a follow-up on those items in 1994, the GAO found that of the 57 items that were on hand in 1990, 32 were still in the inventory. The GAO noted that the Navy still manages 26 of those items, which have approximately $2.7 million of stock exceeding the reorder point and replenishment formula; the other six had been transferred to the DLA. (pp. 9-21/ GAO Draft Report)

Now on pp. 6-15.

DoD Response: Partially concur. The Department agrees that some of the inventory in DoD warehouses will likely never be used; however, the problem is predicting in advance which items and what quantities they will be. The GAO does not quantify how much of the inventory will not be used. DoD experience indicates that a large number of items not used one year will be used the next. For example, a third of all DLA items which had no demand last year will be ordered this year. Even after five years with no demand, one item in eight will still be ordered. Spares stockage is forecasted based on probabilities, not certainty. Unfortunately, the items and quantities which will be ordered can only be known with certainty in hindsight, a point the GAO analysis appears to miss.

See comment 3.

The primary evidence that GAO uses to support this finding is anecdotal, but even the GAO anecdotes do not fully support their case. While the Department was unable to research most of the examples cited by the GAO in the draft report for lack of resources, the DoD did check one example cited in the report as an air cylinder housing. The item was originally procured in 1986 and, at the time of the GAO review, last ordered in 1989. Because the item experienced no demands in five years, the item manager disposed of some

See comment 4.

See comment 5.

See comment 6.

of the stock in September 1994. In January 1995, the item received a demand.

Second, what appears to be over 100 years supply can very rapidly become exhausted, particularly for items which have little or no demand or small absolute numbers, during times of hostilities. This is especially true for insurance items, which are items for which no demands are projected but must be stocked in minimal quantities based on their mission essentiality. For any insurance item with a quantity of two or more in stock, the approach used in the GAO analysis resulted in categorizing the items as having more than 100 years of inventory. However, if the goal is to free up storage space, insurance items are among the poorest targets because the time required to perform an item review is approximately the same regardless of the quantity of an item in stock. Because insurance items are stocked in minimal quantities, the benefit of a successful review is among the least. The Department believes that it is much more productive to focus item reviews on items stocked in large quantities which require large amounts of space--the approach the Department has taken.

The implication in the report that the DLA managers must wait two years to dispose of excess stocks after items are transferred from the Services to the DLA is not necessarily true. The DLA agreement with the Services to wait two years applies only to unilateral disposal actions by the DLA, not all disposals. The DLA managers are authorized to process disposals sooner if they first certify with the losing inventory manager that all known requirements have been passed from the losing Service.

- **FINDING E: The DoD Has Made Progress Reducing Its Inventory**. The GAO reported that the DoD has implemented several programs--some DoD-wide and others Service specific--to reduce secondary inventory. The GAO explained that, over the last three years, the DoD disposals have amounted to about $43.5 billion. The GAO asserted that, though disposals have increased, their impact was not sufficient to offset the decrease in requests for inventory and the increase in returns of material by forces being deactivated.

  The GAO concluded that more progress has not been made because incentives for the disposal of secondary items are lacking. The GAO noted that, in 1992, the DoD consolidated its industrial and stock funds into the Defense Business Operations Fund. The GAO further reported that the DoD was partly motivated to consolidate the funds in order to

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improve the visibility of storage costs. The GAO pointed out, however, neither the inventory control points, nor the weapon system program managers, have an incentive to reduce storage costs because the Service unit which requests and uses the inventory is the one that pays for the cost of storage.

The GAO reported that, for FY 1996, the DLA plans to begin charging inventory control points for storing the material they manage. The GAO noted that, although the rates charged will vary by type of commodity and storage, the rate that will be charged for covered storage (which applies to most secondary items) will be $5.15 per square foot. The GAO concluded that this charge will be an incentive for item managers to dispose of material that is not needed. The GAO pointed out that, in addition, the DoD has initiated a project to benchmark its costs to hold inventory with private industry. The GAO also pointed out that the DoD anticipates that such information will lead to better inventory retention and disposal decisions.

The GAO also reported that the DoD and the DLA have developed a strategic plan for reducing the DoD storage capacity as secondary item inventories are reduced. The GAO indicated that DLA officials noted that a number of contributing factors, including Base Closure and Realignment Commission actions and its own efforts, have resulted in a number of storage facilities being vacated and substantial reductions in storage requirements during the past two fiscal years. The GAO added that the DLA projects will reduce the DoD secondary inventory to approximately $54 billion by 2001, and that its total requirement for covered space to store it will be reduced to approximately 400 million cubic feet. The GAO concluded that those reductions take into account additional requirements generated as a result of units returning secondary items from Europe, as well as moving items currently stored outside into covered storage. (pp. 21-24/GAO Draft Report)

Now on pp. 16 and 17.

DoD Response: Partially concur. The Department agrees that it has made progress in reducing its inventory, but takes exception to many of the details in the finding which the Department considers inaccurate or misleading.

See comment 7.

The report greatly understates the DoD commitment and the scope of its program for reducing inventory and storage space. The initiatives by the Services and the DLA to reduce inventory are not separate from the Department as the draft report suggests; rather they are all part of a coordinated DoD-wide inventory reduction effort.

See comment 8.

Contrary to the draft report, the Services and the DLA have had tremendous incentives to reduce their inventories, since the inception of the DoD Inventory Reduction Program. All of the Services and the DLA have incurred substantial budget reductions as well as considerable restrictions on the amount of inventory that they can repurchase as a direct penalty for holding what was perceived as too much inventory. As a result of the DoD Inventory Reduction Program, the Department also mandated that personnel involved in inventory management be evaluated for their efforts to eliminate wasteful practices and achieve inventory management savings. The GAO conclusion that more progress has not been made due to a lack of incentives is unjustified. Finally, the DoD is implementing a policy in which the Component responsible for causing inventory to be stored will be charged for the associated cost. When implemented in FY 1996, the DoD believes additional incentives to review inventory hold decisions will exist.

See comment 9.

The Department disagrees with the implication that inventory reduction progress has been less than satisfactory. The draft report is incorrect in asserting that disposals have been insufficient to offset increases in materiel returns resulting from force structure reductions and decreases in requests for inventory. In fact, the size of the inventory has decreased every year since the inception of the program, and the Department has continued to achieve its inventory reduction goals. The draft report advocates increasing the rate of disposals further, but does not present a convincing case. Even if the Department disposed of all of the $36.3 billion of the inventory that the GAO implies is excess (while stating disposal is not being recommended), the annual savings would only be $94 million annually, which is less than a 0.3 percent annual return. Considering that much of this inventory would then have to be repurchased in the future, it could hardly be viewed a good use of taxpayer dollars.

See comment 10.

The report is correct in stating that the Department is benchmarking holding costs with the private sector; however, contrary to the report, the Department has no preconceptions as to what impact that effort will have on retention or disposal decisions, if any.

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RECOMMENDATIONS

- **RECOMMENDATION 1:** The GAO recommended that the Secretary of Defense develop a systematic approach for reviewing the secondary inventory currently on hand. The GAO suggested that the Secretary could begin by instructing inventory control points and program managers to focus their inventory reduction efforts on the material that occupies a great deal of storage space and has more than 20 years of supply on hand. (p. 24/GAO Draft Report)

Now on p. 17.

DoD Comments: Partially concur. The Department already has a systematic approach for reducing inventory and storage space and has had such a program since 1990. The Department first established inventory reduction goals as part of the DoD Inventory Reduction Plan initiated in May 1990 and has succeeded in achieving its inventory reduction goals every year. The 1994 Edition of the DoD Logistics Strategic Plan updated the goals that established a target of $56 billion (in FY 1993 constant dollars) by October 2001 and 480 million cubic feet of storage space by December 2001. While implementation of this program has included initiatives to eliminate "space hogs," and items with excessive years of inventory, many of the items that the GAO determined had the most years of inventory were actually insurance items which are stocked in minimal quantities and are relatively poor targets of opportunity, for reasons discussed in the DoD response to Finding D.

See comment 5.

- **RECOMMENDATION 2:** The GAO recommended that the Secretary of Defense consider the significant amount of inventory that exceeds current requirements when determining the number of depots to close or consolidate in the 1995 base closure and realignment process. (p. 25/GAO Draft Report)

Now on p. 18.

DoD Response: Partially concur. For reasons explained in the response to the findings, the Department does not agree with the GAO analysis of the amount of inventory that it implies is required. However, the Department already has strategic goals for reducing its inventory and storage space, as discussed in the DoD response to the Recommendation 1. In fact, the distribution depot system is already being downsized. The requirement for covered storage decreased 28 percent (181 million occupied cubic

feet) between September 1992 and September 1994. Storage space capacity was reduced accordingly by 170 million attainable cubic feet during the same period, roughly the same period in which the GAO review was performed. In all, the Department has downsized from 57 to 38 storage locations over the past two years. The DoD expects to continue this trend and further reduce the total number of storage sites to 24 by the end of FY 97, with further reductions possible, pending the outcome of the Base Closure and Realignment Commission 1995 review.

The following are GAO's comments on the Department of Defense's (DOD) letter dated March 23, 1995.

GAO Comments

1. The points raised in DOD's transmittal letter are addressed in the section of this report entitled agency comments and our evaluation.

2. By using the criteria we selected for assessing DOD's use of warehouse space, we do not believe that all the material we identified as exceeding current war reserve and operating requirements needs to be disposed of. As we stated in our report, many of these items may have potential future use and should be retained.

3. We agree that a certain amount of uncertainty is associated with projecting spare parts usage. DOD has insurance items to account for the fact that accidents, abnormal equipment or system failures, or other unexpected demands occur. The requirements for these items are included in operating stocks that we excluded from our analyses.

4. We believe that DOD's comment supports our position. Even after disposing of excess stock, the supply system was able to satisfy customer demand.

5. DOD commented that during hostilities, items (particularly insurance items) with more than 100 years of supply can very quickly become exhausted. Our analysis considered only items with demand. Insurance items, because they had no demand, were excluded. With respect to the noninsurance items with more than 100 years of supply, it is unlikely that all the quantities will be used. We agree, however, that DOD should focus not only on the number of years of supply on hand, but also on the space that the items occupy.

6. DOD commented that the Defense Logistics Agency's (DLA) inventory managers are authorized to dispose of stocks transferred to DLA by other services sooner, with approval from the losing service. However, DLA's item managers informed us that they do not consider disposing of such material for 2 years.

7. We reported in August 1994[1] that DOD's reported inventory values decreased by $31.9 billion between fiscal years 1989 and 1993, from $109.4 billion to $77.5 billion. However, because of accounting changes,

[1]Defense Inventory: Changes in DOD's Inventory, 1989-93, (GAO/NSIAD-94-235, Aug. 17, 1994).

the values were not comparable. When the inventory was valued on a comparable basis, we estimated that the total reduction was $11.2 billion, not $31.9 billion. We believe that there are further opportunities for inventory reductions with appropriate incentives.

8. We agree with DOD that, to date, the major incentive to reduce inventory has been imposed externally by the Congress in the form of budget reductions. We believe that internal incentives, such as DOD's future plan to charge organizations that cause inventory to be stored for storage costs, should be effective in reducing unneeded inventory.

9. We believe that DOD is capable of further inventory reductions. The statement that inventory disposals have been insufficient to offset increases in material returns is from DOD officials. Since DOD took exception with the statement, we removed it from the report.

10. DOD stated that it holds inventory that will likely never be used. In view of the number of items with more than 20 years of supply, we believe that it is unlikely that much of this inventory would have to be repurchased if DOD systematically reviewed and disposed of material for which it forecasted no need.

Scope and Methodology

We visited the following sites to review policies,[1] procedures, and documents related to retaining and disposing of inventory:

- Headquarters installations:
  - the Office of the Deputy Under Secretary of Defense for Logistics;
  - the Army, the Navy, and the Air Force headquarters, Washington, D.C.; and
  - the Defense Logisics Agency, Alexandria, Virginia.

- Inventory commands:
  - the Army Material Command, Alexandria, Virginia;
  - the Naval Supply Systems Command, Washington, D.C.;
  - the Air Force Material Command, Wright-Patterson Air Force Base, Ohio; and
  - the Defense Logistics Services Center, Battle Creek, Michigan.

- Inventory control points:
  - Army—Tank-Automotive Command, Warren, Michigan;
  - Navy—Aviation Supply Office, Philadelphia, Pennsylvania and the Ships Parts Control Center, Mechanicsburg, Pennsylvania;
  - Air Force—Ogden Air Logistics Center, Ogden, Utah; Oklahoma City Air Logistics Center, Oklahoma City, Oklahoma; San Antonio Air Logistics Center, San Antonio, Texas; and Warner Robins Air Logistics Center, Warner Robins, Georgia; and
  - DLA—Defense Construction Supply Center, Columbus, Ohio.

- Supply depots:
  - Naval Fleet Industrial Supply Center, Norfolk, Virginia;
  - the Air Logistics Centers at Tinker Air Force Base, Oklahoma; Warner Robins Air Force Base, Georgia; Kelly Air Force Base, Texas; and Hill Air Force Base, Utah; and
  - DOD Supply Depot, Columbus, Ohio.

In conducting our work, we used the same computer files, records, and reports that DOD uses to make stocking decisions for secondary items. We did not independently determine the reliability of these sources.

- To determine the extent of inventory not needed to satisfy current war reserve and operating requirements, we analyzed computerized files of DLA and service inventories between March 31, 1993, and August 31, 1994.

[1]We excluded the Marine Corps from our review because of the small number of items it stores. On September 30, 1993, the Marine Corps inventory was valued at $693 million, or 0.9 percent of the total DOD inventory.

Specifically, we compared, on an item-by-item basis, on-hand inventory needed to satisfy war reserve and current operating requirements to the total inventory that was on hand.

- To determine why inventory was being retained and whether retention was justified, we selected a sample of approximately 150 line items from computerized inventory records for the inventory control points visited. At the inventory control points, we reviewed inventory records and interviewed officials to identify the reasons for retaining inventory.
- To determine the extent of space required to store items beyond the current war reserve and operating requirements, we matched DLA and service inventory files with the cube information DOD provided by national stock number. Approximately 12 percent of the items analyzed had no cube data in the DLA or service computer records and were assigned a cube size of zero. This reduced our calculation of the space occupied by secondary inventory. When we visited the depots, we observed selected items to determine the accuracy of the cube data in DOD's databases and found this data to be relatively accurate.
- To compute years of supply for the Army, the Navy, and the Air Force, we used DOD's computerized inventory records to determine, on an item-by-item basis, the amount of inventory that was not needed to satisfy war reserve and operating requirements. We divided that inventory by projected annual demands to determine how many years it would take to use the inventory. By excluding items that did not have projected demands from this analysis, we were able to avoid computing years of supply for insurance items that had no projected demand. Because projected demands were not available for DLA items, we used historical demands in lieu of projected demands to compute years of supply. We excluded items that had no historical demand data from this analysis.

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Related GAO Products

Organizational Culture: Use of Training to Help Change DOD Inventory Management Culture (GAO/NSIAD-94-207, Aug. 30, 1994).

Army Inventory: Unfilled War Reserve Requirements Could Be Met With Items From Other Inventory (GAO/NSIAD-94-207, Aug. 25, 1994).

Defense Inventory: Changes in DOD's Inventory, 1989-93 (GAO/NSIAD-94-235, Aug. 17, 1994).

Navy Supply: Improved Material Management Can Reduce Shipyard Costs (GAO/NSIAD-94-181, July 27, 1994).

Commercial Practices: DOD Could Reduce Electronics Inventories by Using Private Sector Techniques (GAO/NSIAD-94-129, June 29, 1994).

Army Inventory: Changes to Stock Funding Repairables Would Save Operations and Maintenance Funds (GAO/NSIAD-94-131, May 31, 1994).

Defense Management Initiatives: Limited Progress in Implementing Management Improvement Initiatives (GAO/AIMD-94-105, Apr. 14, 1994).

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

Defense Inventory: Changes in DOD's Inventory Reporting, 1989-92 (GAO/NSIAD-94-112, Feb. 10, 1994).

Defense Inventory: More Accurate Reporting Categories Are Needed (GAO/NSIAD-93-31, Aug. 12, 1993).

Commercial Practices: DOD Could Save Millions by Reducing Maintenance and Repair Inventories (GAO/NSIAD-93-110, June 4, 1993).

Army Inventory: Current Operating and War Reserve Requirements Can Be Reduced (GAO/NSIAD-93-119, Apr. 14, 1993).

Defense Logistics Agency: Why Retention of Unneeded Supplies Persists (GAO/NSIAD-93-29, Nov. 4, 1992).

Army Inventory: Divisions' Authorized Levels of Demand-Based Items Can Be Reduced (GAO/NSIAD-93-09, Oct. 20, 1992).

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