

February 1997

DEFENSE LOGISTICS

Much of the Inventory Exceeds Current Needs



**National Security and
International Affairs Division**

B-272664

February 28, 1997

The Honorable Richard Durbin
The Honorable Tom Harkin
United States SenateThe Honorable Peter DeFazio
The Honorable Carolyn Maloney
House of Representatives

The Department of Defense (DOD) uses its secondary inventory—spare and repair parts, clothing, medical supplies, and other support items—to support its operating forces. As requested, we analyzed DOD’s secondary inventory. Our specific objectives were to provide information on the (1) number of inventory items with inventory that was not needed to satisfy war reserve and current operating requirements and their dollar value (hereafter referred to as unneeded inventory), (2) reasons why DOD held 100 years or more of unneeded inventory for some items, and (3) reasons why DOD had 20 years or more of unneeded inventory on hand and had additional inventory on order.

Overall data on the number and value of DOD’s unneeded inventory were based on analyses of computerized inventory files. To determine the reasons for having 100 years or more of unneeded inventory on hand and for having additional inventory on order for items with 20 years or more of unneeded inventory on hand, we gathered and analyzed information from responsible inventory managers on judgmentally selected items.

Background

Inventory management represents a significant responsibility within DOD involving annual purchases of \$14.5 billion and the storage and distribution of inventory valued at \$69.6 billion. In 1990, we identified DOD’s secondary inventory management as a high-risk area because of the high levels of unneeded inventory and inadequate systems for determining inventory requirements. This report is one in a series of reports that address management issues in this area. A list of related products can be found at the end of this report.

DOD annually summarizes its secondary inventory in its Supply System Inventory Report. The report is based on financial inventory and other inventory reports prepared by the military services and the Defense

Logistics Agency (DLA). DOD uses the report as a management tool to monitor changes in the level of inventory.

DOD holds inventory to meet the operational requirements of the military services. When the total of on-hand and due-in inventory falls to or below a certain level—called the reorder point—inventory managers place orders for additional inventory. Depending on the item, the reorder point may include requirements for one or more of the following:

- war reserves that are authorized to be purchased,
- customer-requisitioned material that has not been shipped,
- a safety level to be on hand in case of minor interruptions in the resupply process or unpredictable fluctuations in demand,
- stock to satisfy demands during the period between when a need to buy an item is identified and when it is received,
- minimum quantities for designated items (insurance items), and
- stock to satisfy demands during the repair period for repairable items.

Because the reorder point provides for inventory to be used during the time needed to order and receive inventory and for a safety level, inventory managers can place orders so that the orders arrive before out-of-stock situations occur. Generally, inventory managers order an amount of inventory called an economic order quantity, which is the quantity of inventory that will result in the lowest total costs for ordering and holding inventory. Inventory needed to satisfy reorder point and economic order quantity requirements is the maximum quantity of material to be maintained on hand or on order to sustain current operations and war reserves. Inventory used to satisfy these requirements is referred to as needed inventory in this report. Most of the inventory that exceeds reorder point and economic order quantity requirements is held for economic or contingency purposes or for potential reutilization/disposal.

In commenting on our past reports,¹ DOD disagreed with our definition of needed inventory because it differs from the definition that DOD uses for budgeting purposes. As we previously reported, the DOD definition covers a longer period of time and includes inventory in excess of reorder point and economic order quantity requirements. This overstates by billions of dollars the amount of inventory needed to be on hand.

¹Defense Inventory: More Accurate Reporting Categories Are Needed (GAO/NSIAD-93-31, Aug. 12, 1993) and Defense Inventory: Shortages Are Recurring, but Not a Problem (GAO/NSIAD-95-137, Aug. 7, 1995).

Results in Brief

Although DOD has made progress in reducing the value of its secondary inventory, our analysis of inventory valued at \$67 billion showed that \$41.2 billion of the inventory was not needed. The unneeded inventory represents many years of supply. About \$14.6 billion of the unneeded inventory did not have projected demands and will likely never be used. Of the \$26.6 billion with projected demands, unneeded inventory valued at \$1.1 billion represented 100 years or more of supply.

DOD representatives and supporting documents gave many reasons for having 100 years or more of unneeded inventory on hand. Officials cited changed requirements as a contributing factor for most items. The requirement changes involved recurring or nonrecurring demands that decreased, fluctuated, or did not materialize; parts or the systems on which the parts were used were obsolete; and weapon system programs were being reduced. Other reasons included purchases to cover the expected life of weapon systems and adherence to minimum buy policies. DOD representatives could not give reasons for 24 percent of the 328 items reviewed because necessary supporting records were not available or the representatives had recently assumed responsibility for the items and were not sufficiently familiar with their histories.

Army, Navy, and Air Force records indicated that unneeded inventory items valued at \$28.4 million had 20 years or more of inventory on hand and another \$11.3 million of inventory on order. However, because the records for almost 40 percent of the reviewed items were in error (generally on-order quantities had been delivered but not recorded), these items, in fact, did not have additional stock on order. In cases where inventory was actually on order, the reasons included requirement changes, buys to cover the life of weapon systems, and adherence to minimum buy policies.

Much of DOD's Inventory Is Unneeded

Our analysis of DOD's September 30, 1995, Supply System Inventory Report and inventory stratification reports indicated that \$34 billion of the \$69.6 billion secondary inventory that DOD reported exceeded war reserve and current operating requirements. Although DOD had reduced its inventory from \$77.5 billion since September 30, 1993, about half of the inventory continued to be unneeded.

On the basis of our analysis of computer data tapes for 3.3 million items, representing inventory valued at \$67 billion, we identified 1.9 million items

that had \$41.2 billion of unneeded inventory on hand.² Table 1 summarizes the data by DOD component.

Table 1: Summary of Items and Value of Unneeded Secondary Inventory by DOD Component

Dollars in billions				
Component	Inventory analyzed		Unneeded inventory ^a	
	Items	Value	Items	Value
Army	117,610	\$9.0	63,362	\$4.8
Navy	334,337	17.6	172,325	11.2
Air Force	289,438	31.1	140,220	19.1
DLA	2,515,231	9.3	1,548,545	6.1
Total	3,256,616	\$67.0	1,924,452	\$41.2

^aMost items with unneeded inventory also have needed inventory on hand.

Some Items Have No Projected Demands

No projected demands existed for 1.5 million of the 1.9 million items with unneeded inventory. The 1.5 million items had unneeded inventory valued at \$14.6 billion. Without demands, it is unlikely that this inventory will ever be used. Table 2 shows the number of items with unneeded inventory that had no projected demands and the value of the unneeded inventory by DOD component.

Table 2: Items Without Projected Demands and the Value of the Unneeded Secondary Inventory

Dollars in billions		
Component	Items	Value
Army	29,005	\$0.7
Navy	124,632	4.0
Air Force	111,982	6.5
DLA	1,281,052	3.4
Total	1,546,671	\$14.6

Examples of items with no projected demands can be found in appendix I.

Other Items Have Projected Demands

Of the 1.9 million items with unneeded inventory, 378,000 items with unneeded inventory valued at \$26.6 billion had projected demands. Using the projected demand data, we computed the years of unneeded supply for those items and found that some items had many years of supply. Figure 1

²The \$67 billion inventory that we analyzed differed from the \$69.6 billion reported in DOD's Supply System Inventory Report because of differences in time frames, valuation methods used, and specific items included. See the scope and methodology section for more details on our analysis.

shows the 378,000 items with unneeded secondary inventory stratified by years of supply, and figure 2 shows the corresponding values. See appendix II for a breakdown of the data by DOD component.

Figure 1: Items With Unneeded Secondary Inventory Stratified by Years of Supply

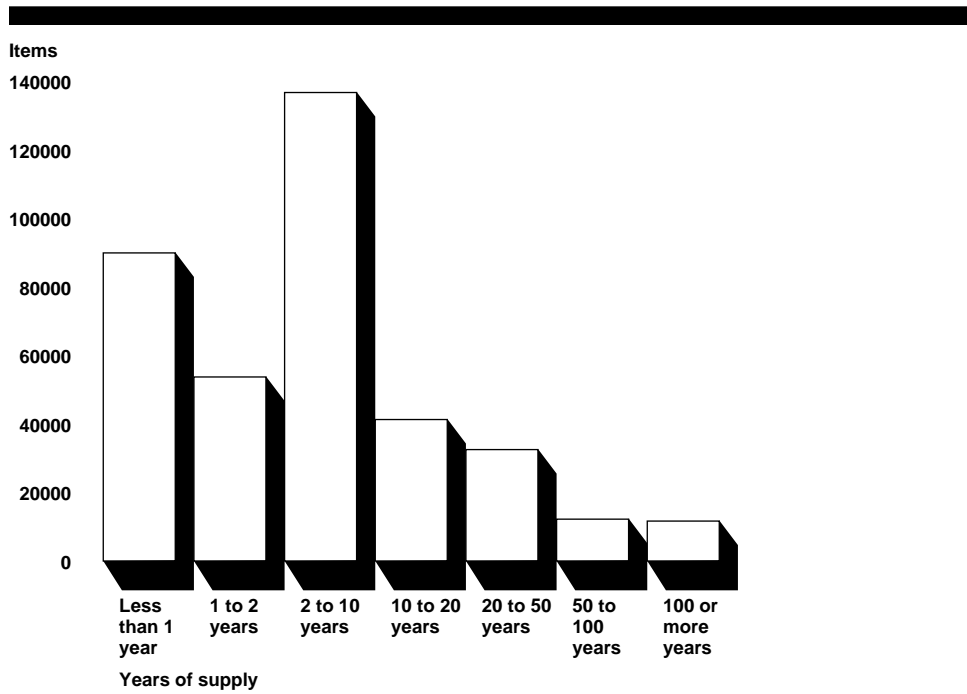
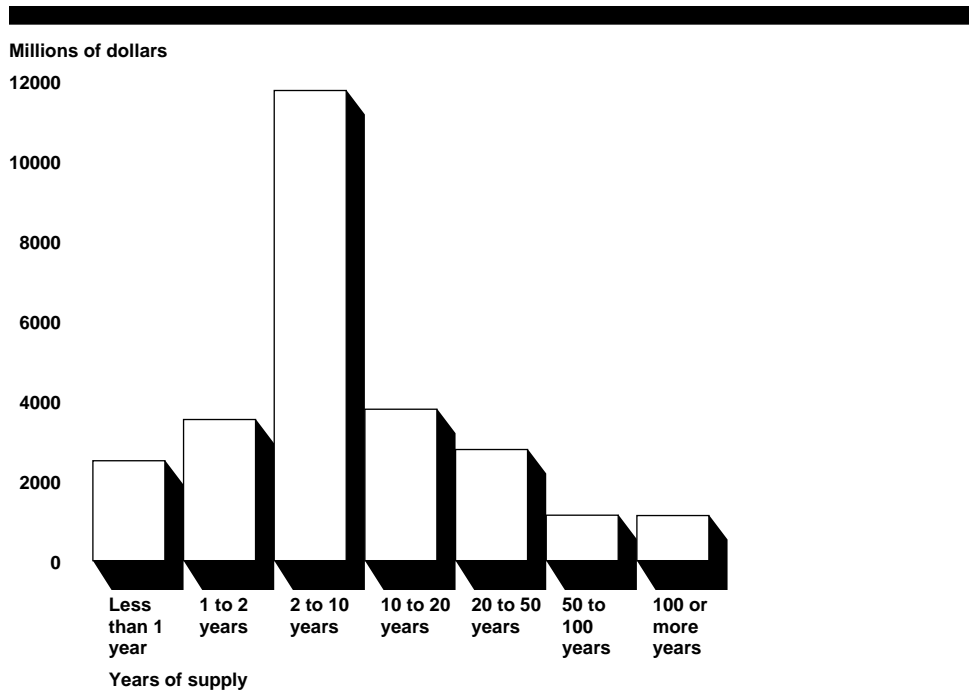


Figure 2: Unneeded Secondary Inventory Values Stratified by Years of Supply



Unneeded Inventory Represents Many Years of Supply

Further analysis of the 3.3 million items identified 11,646 items that had 100 or more years of unneeded inventory valued at \$1.1 billion. We judgmentally selected 328 of these items with unneeded inventory valued at \$354 million for review to determine why the unneeded inventory was on hand.

Through discussions with item managers and review of supporting documents, we identified a variety of reasons for having 100 or more years of unneeded inventory on hand. Most reasons related to changed requirements. For 81 items with unneeded inventory valued at \$279 million, requirements had changed because parts were obsolete or were for use on weapon systems that were no longer in service or were being phased out of service. Additional requirement-related changes involved items for which recurring or nonrecurring demands decreased, fluctuated, or did not materialize and items were purchased before the weapon systems to be supported were activated.

Other reasons included purchases to cover the life of a weapon system, minimum purchases required by procurement policy, and parts added through disassembly of modification kits. We were not able to determine

the reasons for 78 items (24 percent) with \$28.9 million of unneeded inventory because records were not available and the item managers did not have detailed knowledge of the items. In most cases, responsibility for the items had transferred to or from another DOD activity. Responsibility for a large number of these items was transferred from the military services to DLA under the consumable item transfer program.

We found that the records for 5 of the 328 items reviewed were in error and incorrectly showed \$364,000 of unneeded inventory. Table 3 summarizes the reasons for the remaining 323 items having 100 years or more of unneeded inventory on hand.

Table 3: Reasons for Items Having 100 Years or More of Unneeded Secondary Inventory on Hand

Dollars in millions		
Reason	Items	Unneeded value
Demands decreased, fluctuated, or did not materialize	126	\$37.2
Item or system on which the item was used was, or would be, obsolete	64	261.8
Weapon system program was reduced or weapon was retired from service	17	16.7
Buy was considered economical (minimum buy)	15	0.3
Life of system buy	5	2.8
Item was purchased before the system it supported was activated	4	0.3
Modification kits were disassembled	2	1.2
Other (decreased failure rates, etc.)	12	4.7
Unable to determine reason	78	28.9
Total	323	\$353.9

Examples of items with 100 years or more of unneeded inventory on hand can be found in appendix I.

Additional Unneeded Inventory Is on Order

We identified 145 Army, Navy, and Air Force items with unneeded inventory valued at \$28.4 million that represented 20 or more years of supply on hand and that had an additional \$11.3 million on order. We did not make a similar analysis for DLA items because data provided by DLA did not include the amount of inventory on order.

We judgmentally selected 57 items for review to determine why additional inventory was being ordered. These items had \$24.9 million of unneeded inventory on hand that represented 20 or more years of supply and that had an additional \$2 million on order. We found that the records for 23 items were in error and incorrectly showed \$553,000 of unneeded inventory was on order. Generally, the on-order inventory already had been delivered. Of the 34 remaining items, 11 had 100 or more years of unneeded inventory on hand and \$796,000 of additional inventory on order. Reasons we identified for having unneeded inventory on order included demands decreased or did not materialize, purchases were for weapon systems that had not been activated, and purchases were to cover the expected life of weapon systems. Table 4 summarizes the reasons for having additional inventory on order for the 34 items.

Table 4: Reasons for Having Additional Secondary Inventory on Order

Dollars in thousands		
Reason	Items	On order
Demand decreased or did not materialize after the buy	15	\$356.5
Item was purchased before the weapon system it supported was activated	6	282.1
Life of system or long-term buys	4	235.9
Buy was considered economical (minimum buy)	1	10.2
DLA purchased the item to satisfy mission critical requirements of the services	1	547.4
The Air Force transferred assets to the Navy after the Navy placed the order	1	6.2
All assets were not considered when the buy was made	1	0.6
Unable to determine reason	5	51.0
Total	34	\$1,489.9

Examples of items with 20 or more years of unneeded inventory on hand and additional inventory on order can be found in appendix I.

Agency Comments and Our Evaluation

DOD generally agreed with the factual data in this report but did not agree with our definitions of needed and unneeded inventory. (See app. III for DOD’s complete comments.) According to DOD, the terms do not reflect accurately how the Department determines inventory requirements or decides how much inventory to hold once it has been stocked. DOD stated that it has consistently defined required inventory as inventory that is

projected to be used through the end of the budget year and noted that our definition implies that all unneeded inventory should be disposed of. DOD also stated that dealing with the requirements determination system and on-hand inventory in the same report is confusing.

DOD has consistently disagreed with our definition of needed inventory because it differs from the definition that DOD uses for budgeting purposes. We continue to believe that our characterization of DOD's inventory is reasonable. Our definition of needed inventory represents inventory that is required to prevent out-of-stock situations. DOD's definition includes requirements that are projected to be used through the end of the budget year and can represent as much as 2 years of potential requirements. As a result, the DOD definition includes inventory in excess of current operating and war reserve requirements. In fact, our review showed that much of the inventory even exceeds DOD's definition of required inventory. No demands were projected for unneeded inventory valued at \$14.6 billion and an additional \$20.6 billion of unneeded inventory was not expected to be needed in the next 2 years. Lastly, notwithstanding DOD's comments, it is important to note that DOD stated that it has reduced and plans to continue reducing the inventory.

With regard to DOD's comment on inventory retention, we are not suggesting that all unneeded inventory should be disposed of. We recognize that some of this inventory should be retained for economic or contingency reasons. Nevertheless, DOD has a tremendous potential for further inventory reductions because much of the inventory has no projected demands and it is unlikely that this inventory will ever be used. Other inventories may not be needed because many years of supply are on hand.

We do not agree with DOD's comment that dealing with the requirements determination system and on-hand inventory in the same report is confusing. Discussing the inventory that is required and the inventory that is on hand is entirely appropriate and must be discussed together to determine whether there is unneeded inventory.

Scope and Methodology

For overall inventory data, we analyzed March 31, 1996, computerized inventory stratification reports for items managed by the military services and August 1996 inventory data for those managed by DLA. Stratification reports match on-hand and due-in inventory to requirements and are used for budgeting and reporting purposes. Because our fieldwork at the Navy

and the Air Force inventory control points was completed before March 31, 1996, data were available, we used their September 30, 1995, inventory stratification reports as the basis for selecting our sample items at those locations.

We used the data to identify items with unneeded inventory, compute years of supply, and identify items with unneeded inventory on hand and additional inventory on order. We used projected demand data to compute years of supply. Because demand data were not projected for 1.5 million items with unneeded inventory, we could not estimate years of supply for those items. Also, because DLA did not provide contract data, we were not able to determine the number and value of DLA items with additional inventory on order.

We judgmentally selected and reviewed 328 items with 100 or more years of supply and 57 items with 20 or more years of unneeded inventory on hand and additional inventory on order. For items with 100 or more years of unneeded inventory, we selected items to review that had the highest value and quantity of unneeded inventory and a cross section of the remaining items. For items with 20 or more years of unneeded inventory and additional inventory on order, we used a similar methodology to select items for review. Because we did not look at items with 20 or more years of unneeded inventory and additional inventory on order in prior reviews, we did not make any comparisons with past performance.

To learn why unneeded inventory was accumulated or was on order, we held discussions and collected information from item managers and analyzed inventory records at the Army's Aviation and Troop Support Command, St. Louis, Missouri; the Naval Inventory Control Point, Philadelphia, Pennsylvania; the Air Force's Warner Robins Air Logistics Center, Georgia; and the DLA's Defense Supply Center, Richmond, Virginia. We also obtained inventory records and photographed items at Defense Distribution Depots in Warner Robins, Georgia; Norfolk and Richmond, Virginia; and New Cumberland (Susquehanna), Pennsylvania. At the Army and DLA inventory control points, we reviewed a limited number of items that had no projected demands on which we could compute years of supply to identify the nature of those items.

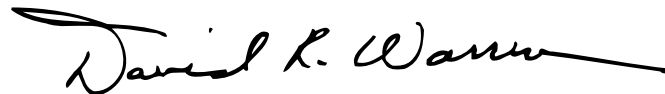
We did not include such items as petroleum, oil, and lubricants or those in Marine Corps and retail level inventories in our analysis because they represented a small part of DOD's overall inventory or reorder point and economic order quantity requirements were not available for these items.

By removing surcharges covering the costs to operate the supply system, we revalued the inventory at the latest acquisition cost. We did not revalue items needing repair to reflect their repair costs nor did we revalue potential reutilization/disposal stocks to their scrap value. We did not validate DOD's inventory requirements.

We performed our review between April 1996 and January 1997 in accordance with generally accepted government auditing standards.

We are sending copies of this report to the appropriate congressional committees; the Secretaries of Defense, the Army, the Navy, and the Air Force; the Director, DLA; and the Director, Office of Management and Budget.

Please contact me at (202) 512-8412 if you have any questions. The major contributors to this report are listed in appendix IV.

A handwritten signature in black ink that reads "David R. Warren". The signature is written in a cursive style with a long horizontal flourish at the end.

David R. Warren
Director, Defense Management Issues

Contents

Letter		1
Appendix I		14
Examples of Specific Inventory Items	Items With No Projected Demands	14
	Items With 100 or More Years of Inventory	15
	Items With 20 Years or More of Unneeded Inventory on Hand and Additional Inventory on Order	22
Appendix II		26
Unneeded Inventory Stratified by Years of Supply and DOD Component		
Appendix III		27
Comments From the Department of Defense		
Appendix IV		30
Major Contributors to This Report		
Related GAO Products		32
Tables	Table 1: Summary of Items and Value of Unneeded Secondary Inventory by DOD Component	4
	Table 2: Items Without Projected Demands and the Value of the Unneeded Secondary Inventory	4
	Table 3: Reasons For Items Having 100 Years or More of Unneeded Secondary Inventory On Hand	7
	Table 4: Reasons for Having Additional Secondary Inventory On Order	8
	Table II.1: Number of Items With Unneeded Inventory Stratified by Years of Supply and DOD Component	26

Table II.2: Value of Unneeded Inventory Stratified by Years of Supply and DOD Component	26
---	----

Figures

Figure 1: Items With Unneeded Secondary Inventory Stratified by Years of Supply	5
Figure 2: Unneeded Secondary Inventory Values Stratified by Years of Supply	6
Figure I.1: Comparator Stored in Airtight Container at the Susquehanna Depot	14
Figure I.2: Insulator Insert Stored at the Richmond Depot	15
Figure I.3: Camouflage Screen System Stored at the Susquehanna Depot	16
Figure I.4: Constant Speed Drive Stored at the Norfolk Depot	17
Figure I.5: Frequency Indicator Stored at the Norfolk Depot	18
Figure I.6: Wiring Harness Stored at the Warner Robins Depot	19
Figure I.7: AP1 Central Computer Stored at the Warner Robins Depot	20
Figure I.8: Contact Thermocouple Stored at the Norfolk Depot	21
Figure I.9: Circuit Card Assembly Stored at the Norfolk Depot	22
Figure I.10: Direct Linear Valve Stored at the Norfolk Depot	23
Figure I.11: Combining Glass Stored at the Warner Robins Depot	24
Figure I.12: Identification Marker Stored at the Norfolk Depot	25

Abbreviations

DLA	Defense Logistics Agency
DOD	Department of Defense

Examples of Specific Inventory Items

Items With No Projected Demands

The Army had 14 electronic signal comparators (see fig. I.1) on hand as of March 1996, of which 2 were needed for war reserve and current operating requirements. The comparators, valued at \$90,000 each, are used on a test set. Inventory records show that the Army has issued one comparator since January 1994. According to the item manager, the test set overhaul program was canceled in fiscal year 1996, but the comparators will be retained in the inventory until the test set is phased out in 2005.

Figure I.1: Comparator Stored in Airtight Container at the Susquehanna Depot



Appendix I
Examples of Specific Inventory Items

The Defense Logistics Agency (DLA) had 2,576 insulator inserts (see fig. I.2) on hand as of August 1996, of which 5 were needed for war reserve and current operating requirements. The inserts, valued at \$11 each, are used on a submarine. Inventory records showed that the item was last purchased in 1987 and that the last demand was in October 1994. The item manager was not able to provide information on why so many of the inserts were on hand, and in October 1996, initiated action to dispose of 1,551 of the inserts.

Figure I.2: Insulator Insert Stored at the Richmond Depot



Items With 100 or More Years of Inventory

As of March 1996, the Army had 424 spacer sleeves on hand for use on engines such as the T-53-L-701A. Only 3 of the 424 sleeves were needed to satisfy war reserve and current operating requirements. According to the item manager at the Aviation and Troop Support Command, the sleeves, valued at \$2 each, were last purchased in November 1994 under a minimum buy policy. Army Materiel Command procurement policy does not permit item managers to place orders valued at less than \$2,350. The manager stated that if unneeded sleeves were disposed of, a future demand could result in another purchase of the minimum dollar amount.

Appendix I
Examples of Specific Inventory Items

The Army had 6,599 camouflage screen systems (see fig. I.3) on hand as of March 1996. Inventory records showed that only 712 of the screen systems, valued at \$379 each, were needed. The unneeded screens represented a 159-year supply. According to the item manager, the screen system was purchased in 1990 and developed for use during Operation Desert Storm. The manager said that demands for the screens have decreased since then and that the screen will remain in the Army supply system until 2003 when it is expected to be replaced.

**Figure I.3: Camouflage Screen System
Stored at the Susquehanna Depot**



Appendix I
Examples of Specific Inventory Items

As of September 1995, the Navy had 361 constant speed drives (see fig. I.4), valued at \$32,880 each, on hand. Only one of the drives, used on the TA-4J aircraft, was categorized as needed. According to the item manager, the drives were accumulated as they were replaced by a newer part. Because of the high failure rate of the replacement part, the original drives are being retained in case they need to be reinstalled on the aircraft through the year 2000. In that year, the TA-4J will be out of the inventory.

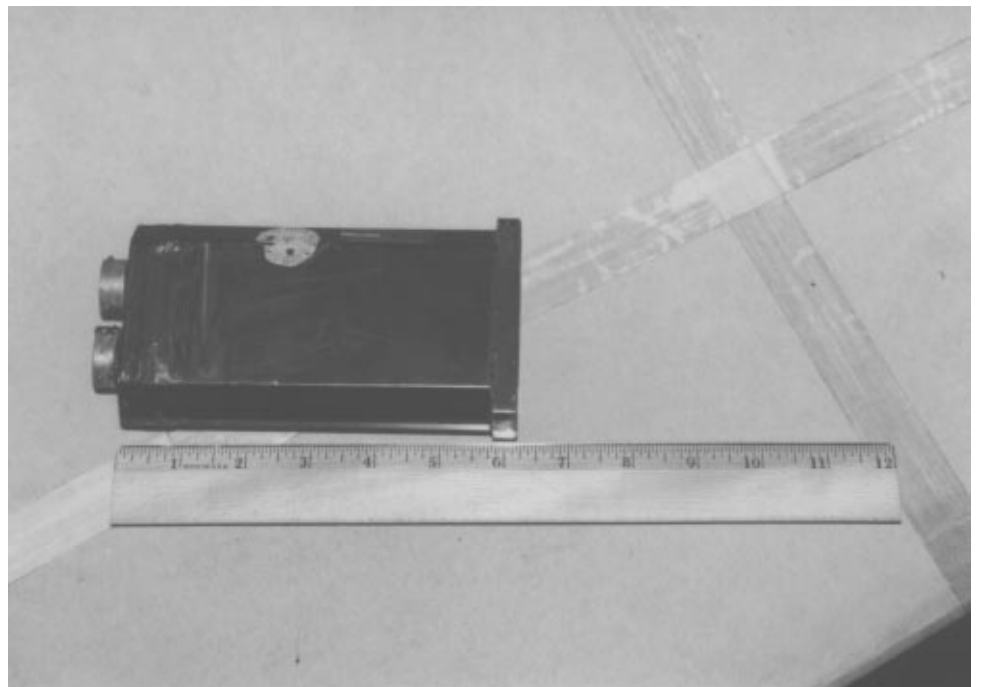
**Figure I.4: Constant Speed Drive
Stored at the Norfolk Depot**



Appendix I
Examples of Specific Inventory Items

Navy records showed that only 2 of the 364 frequency indicators (see fig. I.5) on hand were needed as of September 1995. According to the item manager, requirements for the indicators, valued at \$2,542 each, decreased when aircraft such as the A-6 and the F-4 were being taken out of service. The manager stated that 357 of the indicators were disposed of in February 1996.

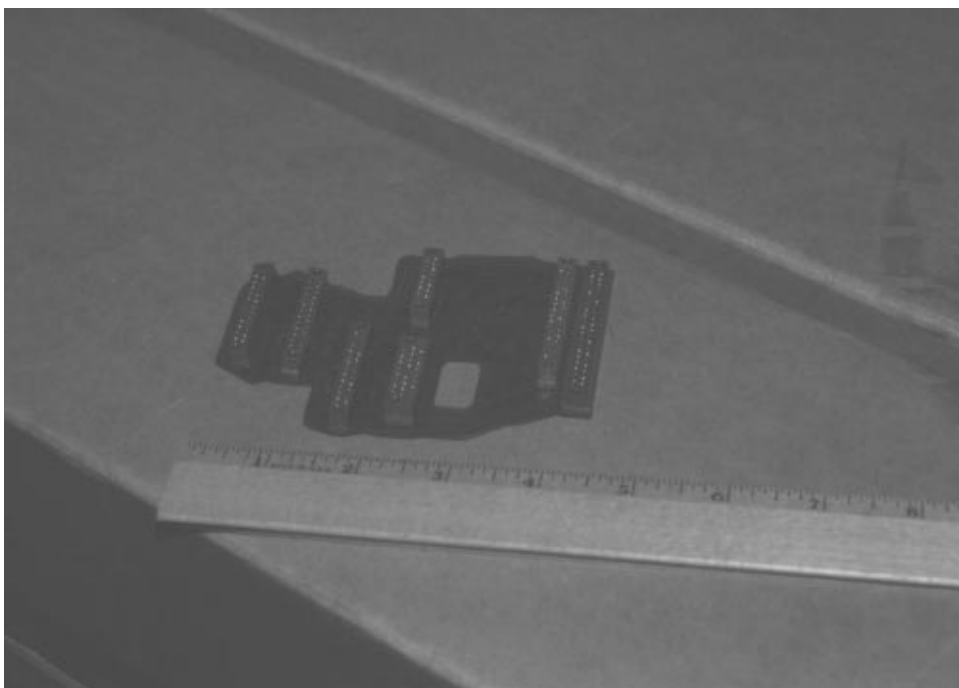
Figure I.5: Frequency Indicator Stored at the Norfolk Depot



Appendix I
Examples of Specific Inventory Items

As of September 1995, the Air Force had 4,177 wiring harnesses, valued at \$113 each (see fig. I.6), for 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.

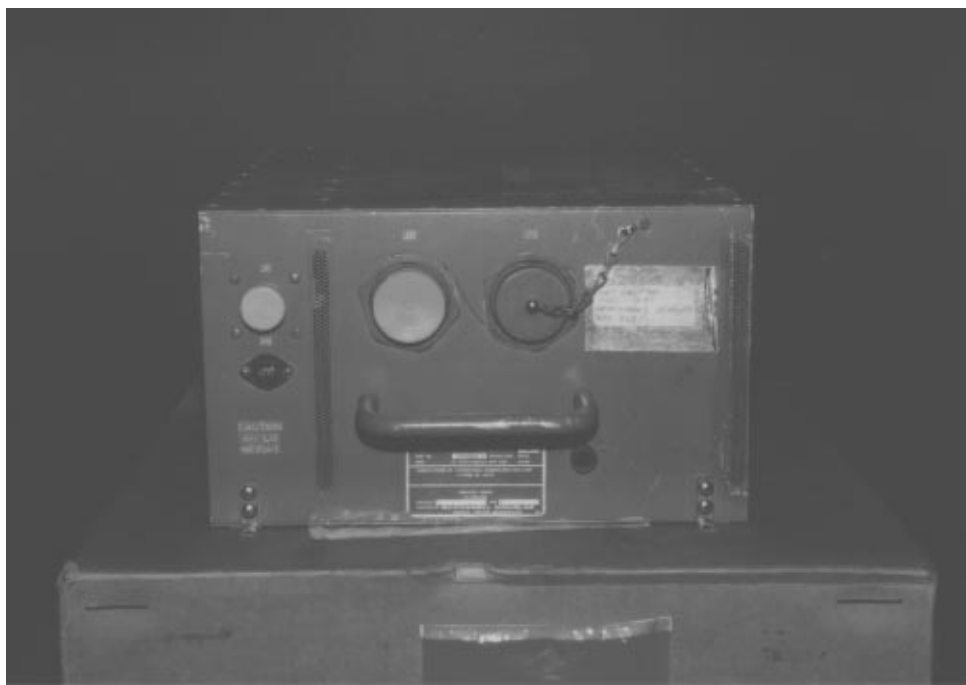
Figure I.6: Wiring Harness Stored at the Warner Robins Depot



Appendix I
Examples of Specific Inventory Items

The Air Force had 335 AP1 central computers (see fig. I.7) for the F-15 aircraft on hand as of September 1995. Of these, 326 computers, valued at \$71,673 each, were obsolete and not needed. The unneeded computers represented 109 years of supply. According to the item manager at the Warner Robins Air Logistics Center, the obsolete computers are turned in to the supply system as modifications to the F-15 aircraft are accomplished. The item manager stated that the computers are eligible for disposal, but funds are not available to demilitarize them.

**Figure I.7: AP1 Central Computer
Stored at the Warner Robins Depot**

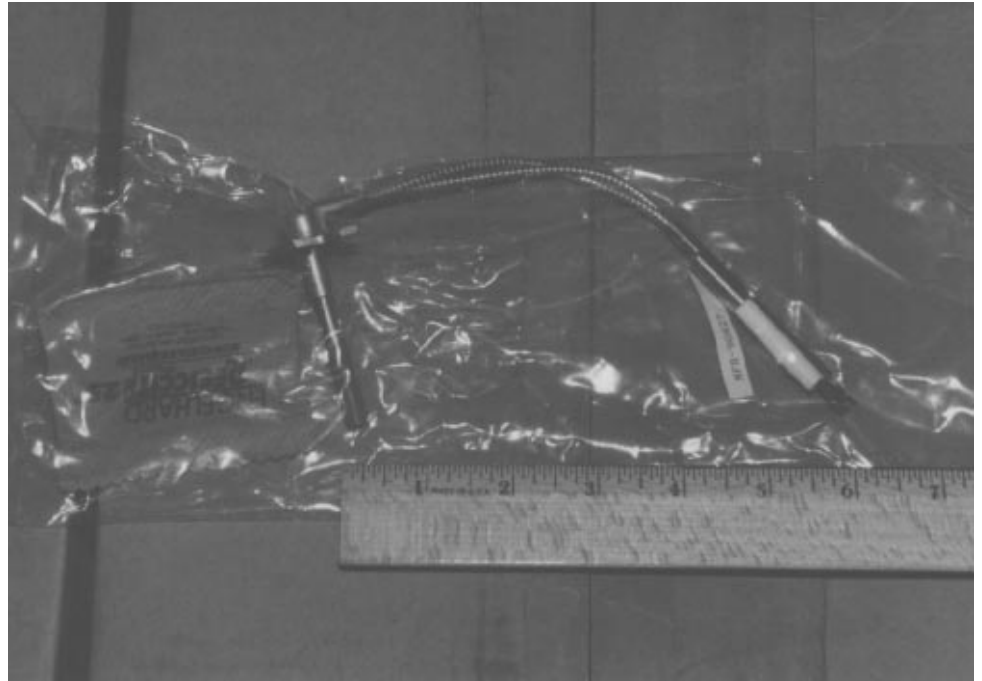


As of August 1996, DLA had 127 motor blower brakes on hand. The brakes are used on the B-1B aircraft. Inventory records showed that 101 brakes, valued at \$4,110 each, were unneeded and represented 101 years of supply. According to the item manager, 100 brakes were expected to be needed for fiscal year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

Appendix I
Examples of Specific Inventory Items

DLA also had 2,152 contact thermocouples (see fig. I.8) for the T-56 aircraft engine on hand as of August 1996. Of these, 2,113 thermocouples, valued at \$227 each, were unneeded and represented 141 years of supply. According to the item manager, in March 1996 responsibility for the thermocouple was transferred from the Navy to DLA. The item manager stated that no disposal actions were taken because demand was unknown for this newly transferred item.

**Figure I.8: Contact Thermocouple
Stored at the Norfolk Depot**



Items With 20 Years or More of Unneeded Inventory on Hand and Additional Inventory on Order

As of September 1995, the Navy had 27 circuit card assemblies on hand (see fig. I.9). They are used on the P-3C and S-3B aircraft and the SH-60B helicopter. Although 25 of the assemblies (valued at \$1,156 each) were not needed to satisfy war reserve and current operating requirements, another 10 were on order. According to the item manager, demands for the assemblies decreased after the item was ordered in December 1994. The manager stated that the Navy supply system automatically ordered the item (automatic ordering is limited to purchases under \$25,000) when the reorder point was reached and the purchase was not reviewed by an item manager. The 10 assemblies were delivered in May 1996, and the manager said that all unneeded assemblies, including the 10 delivered, have been recommended for disposal.

Figure I.9: Circuit Card Assembly Stored at the Norfolk Depot



Appendix I
Examples of Specific Inventory Items

As of September 1995, the Navy had 67 direct linear valves (see fig. I.10) on hand. They are used on a hydraulic pump for an aircraft catapult system. Fifty-nine of the valves, valued at \$69 each, were unneeded and an additional 66 valves were on order. The item manager said that demands for the valves decreased after the last order was placed in May 1994. The item manager stated that the order was not canceled because termination was not cost-effective for any purchase costing less than \$10,000.

Figure I.10: Direct Linear Valve Stored at the Norfolk Depot



Appendix I
Examples of Specific Inventory Items

The Air Force had 32 combining glasses (see fig. I.11), valued at \$17,057 each, on hand as of September 1995. Only one of the glasses was needed to satisfy war reserve and current operating requirements; however, four additional glasses were on order. According to the item manager, the glasses were ordered in July 1993 to support the F-15E aircraft because the contractor was discontinuing production of the glass.

Figure I.11: Combining Glass Stored at the Warner Robins Depot



As of September 1995, the Air Force also had 710 band-II backward-wave oscillators on hand. Although 682 of the oscillators, valued at \$8,261 each, were unneeded, another 20 oscillators were on order. According to the item manager, the oscillators were ordered in September 1993 because the manufacturer was shutting down production and the purchase would cover all Air Force requirements through 2040.

Appendix I
Examples of Specific Inventory Items

In reviewing the supporting documents for DLA items with 100 or more years of inventory on hand, we noted that DLA also had additional stock on order for some items. For example, DLA had 618 identification markers, valued at \$0.65 each, on hand as of August 1996. The markers (see fig. I.12) are used on aircraft such as the C-130F and the P-3. Although only 103 of the markers on hand were needed to satisfy war reserve and current operating requirements, an additional 100 markers were on order. According to the item manager, the markers were ordered in November 1995 and demands have been fluctuating. The manager said that the order should be canceled and that excess markers would be processed for disposal.

**Figure I.12: Identification Marker
Stored at the Norfolk Depot**



Unneeded Inventory Stratified by Years of Supply and DOD Component

Table II.1: Number of Items With Unneeded Inventory Stratified by Years of Supply and DOD Component

Years of supply	Army	Navy	Air Force	DLA	Total
Less than 1	4,273	5,005	4,332	76,250	89,860
1 to 2	4,557	5,505	3,410	40,205	53,677
2 to 10	15,170	20,275	10,242	90,952	136,639
10 to 20	4,552	6,963	4,534	25,213	41,262
20 to 50	3,426	5,669	3,582	19,815	32,492
50 to 100	1,229	2,256	1,255	7,465	12,205
100 or more	1,150	2,020	883	7,593	11,646
Total	34,357	47,693	28,238	267,493	377,781

Table II.2: Value of Unneeded Inventory Stratified by Years of Supply and DOD Component

Dollars in millions					
Years of supply	Army	Navy	Air Force	DLA	Total
Less than 1	\$275	\$844	\$1,133	\$246	\$2,498
1 to 2	585	1,141	1,531	272	3,529
2 to 10	2,310	3,375	5,009	1,060	11,754
10 to 20	430	884	2,045	427	3,786
20 to 50	212	608	1,633	326	2,779
50 to 100	137	238	619	144	1,138
100 or more	80	172	665	211	1,128
Total	\$4,029	\$7,262	\$12,635	\$2,686	\$26,612

Comments From the Department of Defense

Note: GAO comment supplementing those in the report text appears at the end of this appendix.



OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON
WASHINGTON DC 20301-3000

0 4 FEB 1997

(L/MDM)

Mr. David R. Warren
Director, Defense Management Issues
National Security and International Affairs Division
U. S. General Accounting Office
Washington, DC 20548

Dear Mr. Warren:

This is the Department of Defense response to the General Accounting Office (GAO) draft report, "DEFENSE LOGISTICS: Much of the Inventory Exceeds Current Needs," dated January 24, 1997 (GAO Code 709190), OSD Case 1284. The Department partially concurs with the report.

The Department generally agrees with the factual data in this report. We do not, however, agree with the GAO's definition of "needed" and "unneeded" inventory, which forms the basis for all of the analysis. These are terms that the GAO has invented to make its case. They do not reflect accurately how the Department determines its requirements for inventory, nor how it decides what inventory to hold once it has been stocked. For that matter, dealing with our system for requirements determination and our on-hand inventory in the same report confuses, rather than clarifies, this issue. It is not possible to address both of those subjects logically at the same time.

The Department has consistently defined required inventory as inventory which is projected to be used through the end of the budget year, and it applies the same definition for both the budgeting and the reporting of inventories. When the GAO defines "needed inventory" as "inventory used to satisfy reorder point and economic order quantity requirements," which is appropriate for determining how much inventory the Department should buy, it misses the point about how much should be retained once the Department owns the stock. While the Department does not intentionally order "unneeded" inventory (as defined by the GAO), much of the inventory, once bought, will be needed in the future beyond the budget year. The Department strives to avoid sending inventory on-hand to disposal only to be repurchased. This is the implication of GAO's narrow requirements definition applied to inventory on-hand. One must be careful not to assume from this that all of the "unneeded" inventory under GAO's definition should be disposed of.



Appendix III
Comments From the Department of Defense

2

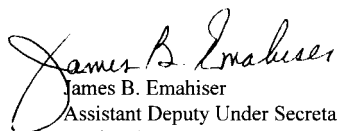
See comment 1.

We do not agree that "stock to satisfy demands during the period between when a need to buy an item is identified and when it is received", i.e., lead-time, contributes to the amount of stock purchased, which is implied on page 2 of the draft report. We do agree that it is one of the determinants of when the reorder point is reached.

The Department is successfully reducing its inventories as part of its overall Logistics Strategic Plan. In constant 1995 dollars, the Department's inventory has been reduced from a high point in 1989 of \$107 billion to \$69.6 billion, a reduction of 35 percent. We further project that this inventory level will be around \$48 billion by the year 2003, in constant 1995 dollars. The results of the Quadrennial Defense Review will greatly determine our future force structure and infrastructure, both of which influence our requirements process and what actual levels of inventories will be reached by 2003.

The Department appreciates the opportunity to comment on the draft report and is pleased with the generally positive response provided by the GAO during discussions of these issues.

Sincerely,



James B. Emahiser

James B. Emahiser
Assistant Deputy Under Secretary
of Defense (Materiel and Distribution Management)

The following is GAO's comment on the Department of Defense's (DOD) letter dated February 4, 1997.

GAO Comment

1. DOD did not agree that acquisition lead time contributes to the amount of stock purchased, but did agree that it is one of the determinants of when the reorder point is reached.

Lead time is an important element in the requirements determination process. In addition, lead time is a major factor in deciding the quantity of inventory to purchase when an item is initially introduced into the supply system. Further, as DOD states, lead time also is a consideration as item managers decide how far in advance of actual needs a resupply order should be placed.

Major Contributors to This Report

**National Security and
International Affairs
Division, Washington,
D.C.**

Charles Patton
James Murphy
Louis Modliszewski
David Keefer

Norfolk Field Office

Sandra Bell
Dawn Godfrey

**Kansas City Field
Office**

Robert Sommer

Related GAO Products

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

Army Inventory: Budget Requests for Spare and Repair Parts Are Not Reliable (GAO/NSIAD-96-3, Dec. 29, 1995).

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

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

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

Army Inventory: Opportunities Exist for Additional Reductions to Retail Level Inventories (GAO/NSIAD-94-129, June 6, 1994).

Army Inventory: More Effective Review of Proposed Inventory Buys Could Reduce Unneeded Procurement (GAO/NSIAD-94-130, June 2, 1994).

Air Force Logistics: Improved Backorder Validation Procedures Will Save Millions (GAO/NSIAD-94-103, Apr. 20, 1994).

Defense Inventory: Changes in DOD's Inventory Reporting, 1989-1992 (GAO/NSIAD-94-112, Feb. 10, 1994).

Air Force Logistics: Some Progress, but Further Efforts Needed to Terminate Excess Orders (GAO/NSIAD-94-3, Oct. 13, 1993).

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

