

**GAO**

Report to the Chairman, Subcommittee  
on Readiness, Committee on Armed  
Services, House of Representatives

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December 1993

**AIR FORCE  
LOGISTICS**

**Base Maintenance  
Inventories Can Be  
Reduced**



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

**National Security and  
International Affairs Division**

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The Honorable Earl Hutto  
Chairman, Subcommittee on Readiness  
Committee on Armed Services  
House of Representatives

Dear Mr. Chairman:

In addition to supply support received from wholesale and retail inventories, Air Force maintenance activities maintain separate inventories, called bench stocks, in their work areas. Because of the continuing concern about the Department of Defense's (DOD) inventory management practices and the fact that the Air Force has invested more than \$140 million in bench stocks, we reviewed how well the Air Force was managing these stocks and whether alternative stockage policies would provide similar support at lower costs and greater asset visibility.

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## Background

Wholesale inventories of consumable items—items that are not economically repairable at depot maintenance activities—are managed by inventory control points operated by the military services and the Defense Logistics Agency. Wholesale inventories are stored at supply distribution centers and are available to retail supply activities and other customers.

Air Force retail inventories, called base supply inventories, support the operating needs of maintenance and other activities on a base. Base supply organizations monitor the status of the inventories and periodically report excess items to wholesale material managers for redistribution and adjustment of wholesale buy requirements. As of September 30, 1992, base supply inventories were valued at about \$1.8 billion.

Bench stocks are inventories that activities on a base, such as an engine repair shop, have purchased from base supply for their own use. Purposes of bench stocks include decreasing maintenance time by reducing the time repair shop personnel spend waiting for spare parts and reducing base supply work load by consolidating frequent small issues to a repair shop into less frequent bulk issues. These stocks range from nuts and bolts costing a few cents to repair parts costing several thousand dollars. As of June 1993, Air Force activities were authorized bench stocks for about 1.9 million line items valued at over \$140 million.

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## Results in Brief

The Air Force has not effectively managed bench stocks. Despite the concept that bench stocks should contain frequent use, low-cost items, about 26 percent of the items in bench stocks at the five bases we reviewed were infrequently used in the last year and about 30 percent of the remaining bench stocks were high-cost items. Inventory managers do not know how many of these items are in bench stocks at any one time, and as a result, the Air Force may be buying new items when excesses of the same items are sitting in bench stocks.

Base supply inventories can be an economical alternative to bench stocks for providing low-usage and high-cost items to maintenance activities. Using base supply inventories instead of bench stocks for these items would reduce overall inventory levels and improve asset visibility without sacrificing the timeliness of the maintenance activities.

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## Bench Stock Policies Vary Within DOD

DOD's January 1993 material management regulation (DOD 4140.1-R) requires that operational and logistics managers have timely and accurate information on the location, quantity, and status of supplies. The regulation requires all military services to have visibility over base supply inventories. The regulation does not call for visibility over bench stocks.

The regulation does not set a stockage policy for bench stocks, and the military services' policies for these stocks differ. Air Force policies contain few restrictions on adding or deleting bench stock items. They permit, for example, adding items to bench stocks regardless of usage patterns or unit price. The Air Force policies recommend, but do not require, deletion of bench stock items that have had no demands during the last 9 months. The primary restriction on purchasing additional bench stock inventory is the availability of operations and maintenance funds.

In contrast, the Navy places usage and unit price restrictions on bench stocks. The Navy requires that any item that has experienced no demands within the last year be removed from the bench stock inventory and returned to the supporting supply department. Also, the addition of items costing more than \$150 to bench stocks must be justified in writing and approved by the unit commander.

Navy officials said the policy was established to ensure that bench stocks are limited to frequently used, low-cost items. They stated there was no analytical basis for the \$150 limitation, but said it was reasonable to have

additional controls and better visibility over high-cost items, and that \$150 seemed to be a reasonable ceiling.

A comparison of bench stocks at Langley Air Force Base and Oceana Naval Air Station indicates that usage and price policies can effectively limit bench stocks. For example, bench stocks maintained by repair shops at Langley Air Force Base had about 11,800 different line items to support 96 aircraft, including 72 F-15s, and related equipment. Oceana Naval Air Station, on the other hand, had about 3,500 different line items in bench stocks to support over 200 aircraft, including 185 F-14s, and related equipment.

## Air Force Bench Stocks Include Many Unused and High-Cost Items

Although the concept of bench stocks is to have frequently used items quickly available, our analysis at five Air Force bases showed that about 26 percent of the items in bench stocks were infrequently used in the last year. In addition, good inventory management requires that bases minimize their investment in spare parts; one way is to ensure that the bases do not keep more high-cost items than they will reasonably need. However, at the five bases, many of the items in bench stocks cost over \$150 and duplicated items kept in base supply to meet the same needs. Table 1 presents the results of our analysis of bench stock usage.

**Table 1: Bench Stock Items at Five Air Force Bases Classified by Usage and Unit Price**

Dollars in millions

	Value	Percent	Line Items	Percent
One or more demands in last year and unit price \$150 or less	\$6.3	51.9	91,497	73.9
No demands in last year	3.1	25.9	29,981	24.2
One or more demands in last year and unit price over \$150	2.7	22.2	2,308	1.9
<b>Total</b>	<b>\$12.1</b>	<b>100.0</b>	<b>123,786</b>	<b>100.0</b>

The following are examples of bench stocks for each of the categories in table 1. Oxygen mask assemblies (NSN 1660-00-382-9434) for C-5 aircraft illustrate the high-use, low-cost items. An operational support maintenance activity at Travis Air Force Base had 46 of the assemblies costing \$32.46 each in bench stocks. Base supply records show that the activity used an average of four assemblies a day, and maintenance and supply personnel said that obtaining them from bench stock instead of base supply substantially reduced maintenance time and supply work

load. For example, base supply could issue the assemblies to bench stock in bulk, 100 assemblies at a time, instead of in smaller quantities.

A parts kit (NSN 2815-01-303-7849) for generators manufactured in the 1940s and 1950s illustrates unused items included in bench stocks. A maintenance activity at Travis had six of the kits costing \$2,900 each in bench stocks. Records show that the item had no bench stock demands since 1988. Maintenance personnel said the parts kit is only used for major overhauls of the older generators.

A \$2,527-altitude measurement tube (NSN 6610-01-090-2687) for the C-141 aircraft illustrates high-cost items included in bench stocks. An aircraft maintenance activity at Travis had 10 tubes in bench stocks. Records show that the activity had requested only two tubes in the last 18 months. Maintenance personnel said that the tubes are readily accessible on the aircraft fuselage and can be replaced in 12 hours.

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## Unused Items Should Be Removed From Bench Stocks

At the five bases analyzed, 26 percent of the items in bench stocks had no demands during the last year. Air staff, major command, and base supply and maintenance officials identified several concerns that caused activities to add or retain these items in bench stocks. Generally, the concerns relate to stock criticality; however, the Air Force has programs that address each of these concerns without placing the items in bench stocks. Officials also stated that bench stocks may contain unneeded supplies because activities have not implemented an Air Force program to identify unneeded items and Air Force credit policies discourage activities from returning unneeded items to base supply.

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## Critical Items Can Be Retained in Base Supply

The officials said that, if needed, many of the unused items would be critical to maintenance or unit operations and that activities ensure the availability of the items by placing them in bench stocks. At Travis Air Force Base, for example, a radar maintenance activity had crystals in bench stocks that are critical repair parts for the base's instrument landing system. However, the items had not been used since they were added to bench stocks over 5 years ago. Maintenance personnel said that having the items in base supply would be satisfactory. The Air Force has an adjusted levels program to ensure that base supply retains a supply of critical items. Base supply sets adjusted or special levels for critical items if demand based levels are inadequate.

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The officials said some unused items in bench stocks are for equipment that is being phased out of the Air Force, and activities are concerned that base supply might dispose of the items before the equipment is removed from the field. A generator maintenance activity, for example, had numerous repair parts in its bench stocks that had not been used for almost 10 years. In the 1960s the Air Force began phasing out the generators that use these parts. Maintenance personnel said they were concerned that base supply would dispose of the items before the generators were completely eliminated. To mitigate this problem, the Air Force has a "life of system stock" program to make sure that base supply does not prematurely dispose of infrequently used parts.

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### Some Unused Items May Never Be Needed

Many unused items may not be needed, but they are retained in bench stocks because (1) bases and activities have not implemented Air Force policies to identify and eliminate unneeded bench stock items and (2) Air Force policies discourage the turn-in of unneeded items.

Air Force policies permit activities to add or retain infrequently used items, called minimum reserve authorization items, in bench stocks but require activities to (1) provide written justification for the items and (2) review and validate the need for the items annually. At the five bases we reviewed, activities identified about 52 percent (\$1.6 million of \$3.1 million) of unused bench stock items as minimum reserve authorization items.

We examined justification and review procedures at three of the bases and found that none had written justifications for minimum reserve authorization items. The bases routinely identified unused items as minimum reserve authorization items to prevent them from showing up on monthly reports recommending deletion of unused items. In addition, two of the three bases had not performed the required annual reviews. The third base had reviewed only those items that had no demands in the last year.

Officials also stated that even when unneeded items are identified, Air Force credit policy discourages activities from returning the items to base supply. Air Force policy permits bases to refuse to give activities credit for the turn-in of material to base supply unless certain conditions are met. For example, a base is not required to give credit for some items unless the base has a current shortage of the items. Our analysis of the credit status of about 2,600 bench stock items that had no demands in the last

year showed that bases would not be required to give full credit for about 60 percent (\$668,000 of \$1.1 million) of the items.

## Base Supply Could Provide Many High-Cost Items

While items with a unit price exceeding \$150 and having one or more demands during the preceding year accounted for about 22 percent of the bench stocks' value at the five bases reviewed, they accounted for less than 2 percent of bench stock line items and for less than 1 percent of bench stock demands. Because the demand for these items is small, providing them from base supply instead of from bench stocks should have little impact on base supply work load.

For example, an engine maintenance activity at Travis Air Force Base stocks an \$8,800 cover for auxiliary power units (NSN 2835-00-076-6485) used on C-141 aircraft. Records show that the activity had requested four covers for bench stocks over the last year from base supply. According to maintenance personnel, the need to replace the cover is apparent when the power unit arrives and obtaining it from base supply would have no impact on maintenance response time because complete repairs to the power unit requires several days after the cover is removed.

In addition, using base supply instead of bench stocks to support maintenance activities should have minimal impact on maintenance times if bases implement Air Force programs to store base supply inventories physically in or near activity work areas. Two Air Force major commands, the Air Combat Command and the Air Mobility Command, have policies that permit base supply to operate forward warehouses, called parts stores, in or near activity work areas. The commands have set a supply response time objective of 15 minutes for parts stores to make sure that supplies are readily accessible. Because parts stores are part of base supply, the items in these stores are controlled by, and visible to, inventory managers.

Three of the five bases that we reviewed had parts stores. However, the three bases did not use their parts stores to reduce bench stock inventories. At Langley Air Force Base, for example, a parts store and three bench stock activities were located within several hundred yards of each other—one of the bench stock activities was located in the same building as the parts store. Our analysis of 68 high-cost items stored at one or more of the three bench stock activities showed that 49 of the items were also stocked at the parts store. To illustrate, 12 pressure gauges



(NSN 6685-00-291-6734), valued at \$282 each, were on hand at the four locations—the three bench stock activities were authorized a total of 6 gauges, and had 11 on hand, while the parts store had a requisition objective of 3 gauges and had 1 on hand and 2 due in.

At Nellis Air Force Base, an aircraft maintenance activity stocked an engine pressure transmitter (NSN 6620-01-199-8580), costing \$1,658, in bench stocks. This same item was stored in a parts store that was about 500 yards from the maintenance activity. Base supply records show that the activity used two transmitters in the past 18 months. Maintenance personnel said that the item was easily accessible on the engine and could be checked and replaced in about an hour. They said that there was no reason why this item could not be stored at the parts store instead of in bench stocks at the maintenance activity.

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## Fewer Bench Stocks Would Reduce Inventory Levels and Improve Asset Visibility

Bench stocks increase overall inventory levels and, therefore, increase the resources (funds, staffing, and space) that must be devoted to managing, buying, maintaining, and storing inventories. In addition, bench stock inventories are not visible to inventory managers. Keeping unused and high-cost items in base supply inventories instead of bench stocks would decrease overall inventory levels and improve asset visibility.

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## Reduced Inventory Levels

Base inventory levels for an item are determined by the base supply requisition objective and the bench stock authorization. The base supply requisition objective is the amount of stock necessary to sustain the current operations of all activities on a base. The requisition objective includes an order and ship time quantity to fill the supply pipeline and a safety level quantity to increase the chances that items will be available after they have been reordered, but before the base is resupplied.

The bench stock authorization is the amount of stock necessary to provide a base maintenance activity with a 30- to 60-day supply of an item. An activity requisitions the authorized quantity from base supply when the bench stock is initially established and, subsequently, when the on-hand quantity is reduced to 50 percent or less of the authorized quantity. A bench stock's initial and replenishment requisitions are used to calculate both the base supply requisition objective and the bench stock authorization. Reducing the number of bench stock items would result in smaller total inventories as illustrated by the following.

At the five bases reviewed, about 19 percent (\$523,000 of \$2.7 million) of the high-cost items having one or more demands in the last year had an authorized quantity of one item. Eliminating bench stock authorizations for these items would reduce base inventory requirements. For example, base supply at Nellis Air Force Base had a requisition objective for four solenoids (NSN 4810-01-142-6495) costing \$2,050 each. An aircraft maintenance activity was authorized one additional solenoid in bench stocks. When the activity uses the solenoid in bench stock, it requisitions a replacement solenoid from base supply. The requisition is recorded as a customer demand for both the base supply requisition objective and the bench stock authorization. Elimination of this item from bench stocks would not change the base supply requisition objective but would reduce the bench stock authorization by one solenoid valued at \$2,050.

About 58 percent (\$1.6 million of \$2.7 million) of the high-cost items having one or more demands in the last year had an authorized quantity of between two and five items at the five bases reviewed. For example, base supply at Travis Air Force Base had a requisition objective for three bearing sleeves (NSN 3120-01-238-3262) costing \$1,314 each. An aircraft maintenance activity was authorized an additional four sleeves in bench stocks. Base supply records show that the maintenance activity requisitioned only five sleeves to replenish bench stocks in the last 18 months. According to our analysis, elimination of this item from bench stocks would have little or no impact on the base supply requisition objective, but would reduce the bench stock authorization by four sleeves valued at \$5,256.

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## Improved Asset Visibility

Visibility over base supply assets is achieved through automatic reports of excess generated by the Standard Base Supply System and submitted through the Defense Automated Addressing System to the inventory control point. The addressing system retains information on excess material for 75 days. If a base requisitions an item that has been reported as excess by another base during that period, the system directs shipment from the base with excess stock to the requesting base. In addition, inventory control points can adjust buy quantities on the basis of the reports. A prior review of Air Force-managed inventories at nine bases showed that there were ongoing or planned procurements for 30 percent of the base supply excess inventories.

Our analysis showed that many bench stock items, if added to base supply assets, would be included on reports of excess. Travis Air Force Base, for

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example, had 51 vibration units (NSN 6620-01-034-4414) costing about \$51,000 on hand—41 in base supply and 10 in bench stock. Base supply had a requisition objective of 13 units and had reported 28 as excess. Returning the bench stocks to base supply would have made 10 additional units available to the inventory control point for redistribution or adjustment of wholesale purchases.

Nellis Air Force Base had 24 simulators (NSN 6680-00-841-5463) costing about \$32,800 on hand—18 in base supply and 6 in bench stocks. Base supply had a requisition objective of 1 simulator and had reported 17 as excess. Returning the bench stocks to base supply would have made six additional simulators available to the inventory control point for redistribution or adjustment of wholesale purchases.

Currently, the Air Force provides only limited visibility over bench stock assets through a system called the Mission Capable Asset Sourcing System. However, the system does not provide the degree of visibility required for base supply assets. For example, DOD's material management regulation requires that base supply assets be visible to wholesale and retail material managers in the other military services and the Defense Logistics Agency. These managers do not have access to the Air Force system.

In addition, Air Force managers with access to the system can obtain only limited information on bench stocks. The system provides only a listing of bases that have an item in bench stocks. Managers needing the item must contact the base by telephone to determine which activity is authorized to stock the item in bench stock, and then must contact the activity to determine whether it has the item on hand.

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## Recommendations

We recommend that the Secretary of the Air Force establish stockage policies to (1) eliminate bench stock authorizations for items that have had no demands in the last year, (2) set a unit price ceiling for adding items to bench stocks, and (3) where feasible, require the return of existing unused and high-cost bench stock items to base supply. We also recommend that the Secretary require bases to justify any exceptions to these stockage policies in writing.

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## Agency Comments

We requested written comments from DOD on October 7, 1993, but none were provided. However, we received oral comments as summarized below.

DOD generally agreed with our findings and recommendations. DOD will ask the Air Force to review its bench stock policies with a view toward (1) requiring managerial action and approval to retain bench stocks that have had no demands in the last year, (2) establishing a price ceiling for adding items to bench stocks, and (3) returning existing unused and high-cost bench stocks to base supply. DOD stated that the Air Force needs to retain the authority to have some high-cost items in bench stocks to support warfighting and readiness goals of tactical units. However, DOD agreed that exceptions to the stockage policies should be justified in writing.

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## Scope and Methodology

We discussed the management of Air Force bench stocks and base supply inventories with officials at the Office of the Assistant Secretary of Defense (Production and Logistics); Air Force headquarters; the Air Mobility and Air Combat Commands; the Air Force Standard System Center; the Air Force Logistics Management Agency; Travis, Nellis, Langley, and Patrick Air Force Bases; and the Nevada Air National Guard. To determine the size of bench stock inventories, we asked each Air Force major command to provide information on the number of line items and dollar value of bench stock inventories authorized to be held by their activities. We also inventoried a stratified random sample of bench stock items at three locations: Travis and Nellis Air Force Bases and the Nevada Air National Guard.

To determine the make up of Air Force bench stocks, we analyzed supply information in automated systems for Langley, Patrick, Travis, and Nellis Air Force Bases and the Nevada Air National Guard. To examine bench stock usage, we analyzed date of last demand and cumulative recurring demand information on the bases' bench stock computer records. The records do not have data on actual issues from bench stocks. The date of last demand reflects the date a bench stock item was last ordered from base supply. Since Air Force regulations limit bench stock authorizations to a 30- to 60-day supply of an item, we used the date of last demand to identify bench stock items that appeared to be unused. To determine the extent of base supply excess inventories, we analyzed base supply computer records that identify items reported as excess.

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To identify alternative policies and practices, we discussed the Navy's management of bench stocks with officials at the Naval Air Systems Command, Naval Supply Systems Command, and Oceana and Fallon Naval Air Stations. We also compared bench stocks at Oceana Naval Air Station and Langley Air Force Base—both are primarily fighter bases that also perform field level maintenance on engines and other components.

We performed our review between November 1992 and September 1993 in accordance with generally accepted government auditing standards.

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We are sending copies of this report to the Chairmen and Ranking Minority Members, Senate and House Committees on Appropriations and on Armed Services, Senate Committee on Governmental Affairs, and House Committee on Government Operations; the Director, Office of Management and Budget; and the Secretaries of Defense, the Air Force, the Army, and the Navy.

Please contact me at (202) 512-5140 if you have any questions. The major contributors to this report are listed in appendix I.

Sincerely yours,



Mark E. Gebicke  
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