

DOCUMENT RESUME

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The Department of Defense Should Increase Efforts to Implement Vertical Controls over Military Stock Funds. LCD-77-437; B-159797. September 7, 1977. Released September 14, 1977. 42 pp. + enclosure (6 pp.).

Report to Sen. John L. McClellan, Chairman, Senate Committee on Appropriations; by Elmer B. Staats, Comptroller General.

Issue Area: Facilities and Material Management: Supply and Maintenance Operations Reporting Systems (703).

Contact: Logistics and Communications Div.

Budget Function: National Defense: Department of Defense - Military (except procurement & contracts) (051).

Organization Concerned: Department of the Navy; Department of Defense; Department of the Army; Department of the Air Force.

Congressional Relevance: Senate Committee on Appropriations.

The Senate Committee on Appropriations requested a followup review on actions taken by the Department of Defense (DOD) to implement centralized controls over Defense stock funds. DOD has five stock funds which are all under the policy guidance of the Secretary of Defense. Each military service operates a fund to provide for its own needs.

Findings/Conclusions: The Air Force and the Navy have implemented vertical controls over important segments of their stock funds. Vertical controls have not been extended to all Air Force and Navy stock fund items primarily because DOD has not adequately coordinated service implementation of vertical management. The Army has not implemented vertical controls over any part of its stock fund which operates on a decentralized basis. Army inventory managers did not control their stocks as efficiently as their Air Force and Navy counterparts. The Air Force and Navy implementation demonstrated that the concept is feasible and effective, that it provides better supply responsiveness to stock fund customers, and that it makes more efficient use of stock fund assets. The delay in implementing vertical stock funds resulted in larger stock fund capital needs.

Recommendations: The Secretary of Defense should: develop an overall plan for improving logistics management and stock funding; establish a system to assure that ongoing or contemplated efforts by the military services and the Defense Logistics Agency are assessed for conformance with the coordinated long range plan; and assure strong monitoring of the Defense Logistics Agency's assignment to develop the standardized computer systems model and timely implementation of the Retail Inventory Management Stockage Policy in order to facilitate interservice vertical management. (Author/SW)

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*REPORT TO THE COMMITTEE
ON APPROPRIATIONS
UNITED STATES SENATE*

*BY THE COMPTROLLER GENERAL
OF THE UNITED STATES*



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The Department Of Defense Should Increase Efforts To Implement Vertical Controls Over Military Stock Funds

While the Department of Defense has made some progress in implementing centralized or vertical controls over military stock funds, the Department's efforts to coordinate implementation of vertical controls within and among the services have not been adequate.

Therefore, improvements in stock fund operations which would result from the implementation of vertical management are being delayed.



COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-159797

The Honorable John McClellan
Chairman, Committee on Appropriations
United States Senate

Dear Mr. Chairman:

Our followup review of Department of Defense efforts to implement vertical controls over military stock funds was made in response to your June 17, 1976, request.

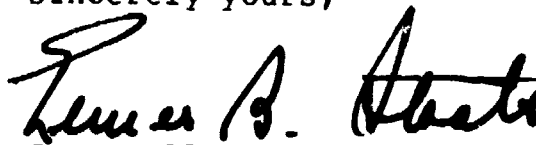
You also asked that we determine:

1. The exact status of the Department of Defense efforts to implement vertical stock fund organization. (See pp. 10 to 19.)
2. The reasons why the military services have not proceeded more quickly in implementing vertical stock funds. (See pp. 32 to 40.)
3. The impact that the failure to implement vertical controls has had on stock fund capital. (See pp. 22 to 27.)

At the direction of the Committee, we did not solicit written comments from the Department of Defense. However, we have considered its informal comments, where appropriate, in preparing the report.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 7 days from the date of the report. At that time we will send copies to the Secretary of Defense; the Secretaries of the Army, Navy, and Air Force; the Director of the Defense Logistics Agency; and the Director, Office of Management and Budget. We will also provide copies to the House Committee on Government Operations, the Senate Committee on Governmental Affairs, the House Committee on Appropriations, and to the House and Senate Committees on Armed Services and make copies available to others upon request.

Sincerely yours,


Thomas B. Staats
Comptroller General
of the United States

TROLLER GENERAL'S
RT TO THE SENATE
ITTEE ON APPROPRIATIONS

THE DEPARTMENT OF DEFENSE
SHOULD INCREASE EFFORTS TO
IMPLEMENT VERTICAL CONTROLS
OVER MILITARY STOCK FUNDS

D I G E S T

The Chairman, Senate Committee on Appropriations, asked GAO to perform a followup review on actions taken by the Department of Defense to implement centralized controls over Defense stock funds. In his request, the Chairman referred to a 1974 report in which GAO recommended that the Secretary of Defense require all military services to use vertical stock funds.

Under the vertical stock fund organization, inventory managers control and are responsible for the efficient management of all stock fund material without regard to its location. This includes stock fund material stored at depots in the United States, overseas, and on board ships. Two elements important to the vertical stock fund concept are (1) inventory managers must have visibility over all stock fund material under their control--that is, know how much is on hand and where it is located and (2) inventory managers must own stock fund material and have the authority to order the movement from one storage location to another.

GAO found that some progress has been made in implementing vertical stock funds. Both the Air Force and the Navy have implemented vertical controls over important segments of their stock funds. (See p. 10.)

However, vertical controls have not been extended to all Air Force and Navy stock fund items. This is primarily because Defense has not adequately coordinated service implementation of vertical management. For example, Defense has not replied to the military proposals for extending vertical management controls submitted in February and March 1975. (See p. 40.)

Army opposition to giving inventory managers ownership of installation-level stocks has further delayed the extension of vertical stock fund controls. The Army has not implemented vertical controls over any part of its stock fund operation. Its stock fund operates on a decentralized basis, and GAO found that Army inventory managers did not control their stocks as efficiently as their Air Force and Navy counterparts. (See p. 20.)

GAO believes that the Air Force and Navy applications of vertical stock fund management have demonstrated that the concept is feasible and effective, that it provides better supply responsiveness to stock fund customers, and that it makes more efficient use of stock fund assets. GAO concluded that the management of the Army stock fund would likewise benefit if the Army applied vertical controls. (See p. 36.)

The delay in implementing vertical stock funds results in larger stock fund capital needs. GAO found, for example, that the slower requisition processing times for the Army in Europe adds approximately \$9 million to the theater's inventory requirements. (See p. 24.)

Finally, GAO found that before vertical controls can be implemented over Defense Logistics Agency stock fund material, Defense must coordinate the efforts of the military services so that any new changes in stock fund organization or automated equipment are compatible with Defense's vertical management concepts. (See p. 41.)

The Secretary of Defense should:

- Develop an overall plan for improving logistics management and stock funding.
- Establish a system to assure that any ongoing or contemplated efforts by the military services and the Defense Logistics Agency are assessed for conformance with the coordinated long-range plan.

--Assure strong monitoring of the Defense Logistics Agency's assignment to develop the standardized computer systems model and timely implementation of the Retail Inventory Management Stockage Policy in order to facilitate interservice vertical management.

At the direction of the Committee staff, GAO did not solicit formal Defense comments. However, the Department's informal comments have been considered, where appropriate, in preparing this report.

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ABBREVIATIONS

ADP	Automatic Data Processing
ASO	Aviation Supply Office
DLA	Defense Logistics Agency
DOD	Department of Defense
DSU	Direct Supply Unit
GAO	General Accounting Office
GSA	General Services Administration
ICP	Inventory Control Point
LOGPLAN	Logistics Systems Plan
O & M	Operations and Maintenance
OSD	Office of the Secretary of Defense
SIMS	Selected Item Management System
SPCC	Ships Parts Control Center
TIR	Transaction Item Reporting
USAREUR	U.S. Army, Europe

CHAPTER 1

INTRODUCTION

In June 1976 the Senate Committee on Appropriations asked the General Accounting Office to make a followup review on actions taken by the Department of Defense (DOD) to implement vertical controls over military stock fund material. In making this request, the Chairman referred to a recommendation made in a 1974 GAO report "Department of Defense Stock Funds--Accomplishments, Problems, and Ways to Improve" (B-159007, April 2, 1974). In this report, GAO recommended that the Secretary of Defense require all military services to use vertical stock funds.

We were asked to follow up on this recommendation and to determine:

1. The exact status of DOD's efforts to implement vertical stock fund organization.
2. The reasons why the military services have not proceeded more quickly in implementing our recommendations.
3. The impact on stock fund capital of the failures to implement our recommendation.

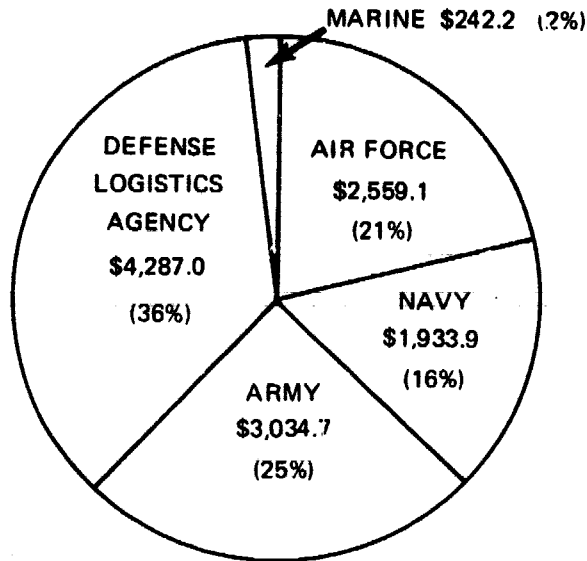
WHAT IS A STOCK FUND?

A stock fund is a system of financing the purchase of material and holding it for sale to users. Stock fund material generally consists of low-value, expense-type items, and the stock fund's customers are for the most part military units. Proceeds from sales to customers are used to purchase additional inventory for future sales.

DOD has five stock funds which are all under the policy guidance of the Secretary of Defense. Each military service operates a fund to provide for its own needs. The Defense Logistics Agency (DLA) stock fund buys common-type items to sell to the services. Each stock fund is responsible for its own supply and financial management, although overall control is retained by the Secretary of Defense.

The following chart shows the relative sizes of the service stock funds in fiscal year 1976.

FY 76 (\$ MILLIONS)
DOD STOCK FUNDS (\$12,056.9)



SCOPE OF REVIEW

Our fieldwork was conducted between September 1976 and May 1977. It included an analysis of pertinent records and discussions with officials at the respective stock fund headquarters.

Department of Defense:

Office of the Assistant Secretary
of Defense (Manpower, Reserve Affairs and Logistics)

Office of the Assistant Secretary of Defense
(Comptroller)

Defense Logistics Agency, Washington, D.C.

Defense Fuel Supply Center, Washington, D.C.

Defense General Supply Center, Richmond, Virginia

Army:

Headquarters, U.S. Army, Washington, D.C.

U.S. Army Materiel Development and Readiness
Command, Alexandria, Virginia

U.S. Army Aviation Systems Command,
St. Louis, Missouri

U.S. Army Tank-Automotive Materiel
Readiness Command, Warren, Michigan

U.S. Army Headquarters, Europe

U.S. Army 8th Infantry Division, Germany

Navy:

Naval Supply Systems Command, Washington, D.C.

Ships Parts Control Center, Mechanicsburg,
Pennsylvania

Air Force:

Headquarters, U.S. Air Force, Washington, D.C.

Headquarters, Air Force Logistics Command,
Wright-Patterson Air Force Base, Ohio

Warner-Robins Air Logistics Center,
Warner-Robins Air Force Base, Georgia

U.S. Air Force Headquarters, Europe

Zweibrucken Air Base, Germany

CHAPTER 2

WHY VERTICAL STOCK FUNDS?

In a report dated August 2, 1974, we recommended that the Secretary of Defense require the military services to use the vertical stock fund concept. We told the Secretary of Defense that the vertical organization of stock funds offered certain advantages, including more efficient use of inventory investment dollars and better service for stock fund customers.

Under the vertical organization, the stock fund inventory managers control, and are responsible for the efficient management of, all stock fund material. This includes not only material stored at the national depots but also material at base supply offices overseas, at installation depots, and on board ships.

Key elements of vertical supply management are:

1. The inventory managers have visibility over all material under their control; i.e., they know how much is on hand and where it is located. For large accounts, such as major depots, this visibility is provided by high-speed computers which interface with computers at the inventory control point.

For smaller accounts, periodic reports to the inventory manager provide asset visibility.

2. The inventory managers "own" the material under their control and have the authority to order stocks moved from one storage location to another. One aspect of ownership is called "vertical stock funding" because material is paid for and "funded" by the wholesale stock fund until it is delivered to the customer. Another aspect is called "vertical stock management," in which the wholesale inventory manager has the authority to control stocks at the intermediate level as well as at the wholesale level.

An example of a vertically controlled stock fund is the Navy's Ship's Parts Control Center fund under which the inventory managers have visibility over stocks stored at 64 shore-based activities in the United States and overseas and on 34 ships.

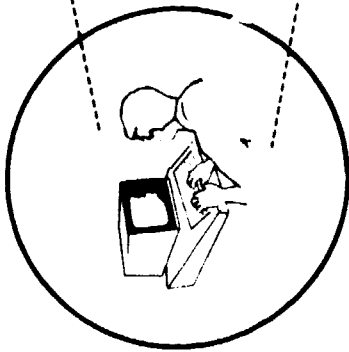
Vertical funds are not confined to service lines. The Defense Logistics Agency will have a major role in managing DLA procured and managed stocks in military service warehouses. Under the vertical model envisioned by the Secretary of Defense, the service retail-level stock funds will requisition DLA-managed material directly from the inventory managers. The inventory managers will (1) ship DLA-managed material directly to the service retail stock funds and (2) will continue to own and have visibility over this stock until it is sold to stock fund customers. As noted later in this chapter, a prerequisite for the inventory manager's visibility is a standardized computer system for DOD-wide logistics management. For example, at present, the Defense Fuel Supply Center buys, owns, and manages bulk petroleum for all military services in overseas areas and in the future will expand this responsibility to include visibility and ownership of bulk petroleum in U.S. military storage tanks all over the world.

Because vertical inventory managers own the stocks they are responsible for and because they have visibility over these stocks, the vertical system offers major advantages. Among these are:

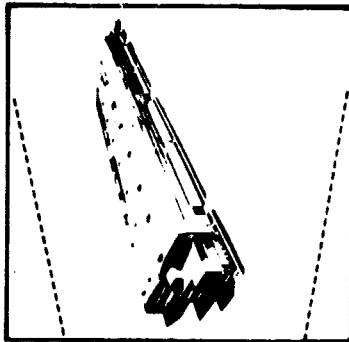
1. Administrative costs of operating the stock are less. Under the vertical system the stock fund buys material from commercial sources and sells to military users--one buy transaction, one sell transaction. By contrast, the horizontal system requires two or more buy and sell transactions before stock is delivered to users.
2. Investment in stock fund material can be reduced. Reducing administrative requirements also reduces the time required to process requisitions. Because users can obtain material faster, they do not have to stock as much.
3. Material readiness is higher. The inventory manager's better visibility enables him to resolve "not operational due to lack of spare parts" conditions faster by ordering lateral transfers between commands. Lateral transfers can frequently be made faster than shipments from wholesale depots.

A second type of organization used by DOD stock funds is called a horizontal system. By contrast, it is a decentralized system under which separate installation-level stock funds, or retail stock funds, operate independent of

**ASSET VISIBILITY
HORIZONTAL**

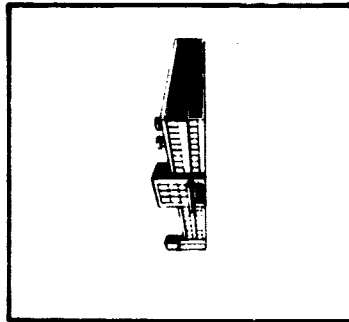


**WHOLESALE
STOCK FUND**

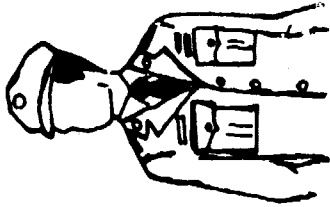


**DEPOT
LEVEL**

RETAIL STOCK FUND

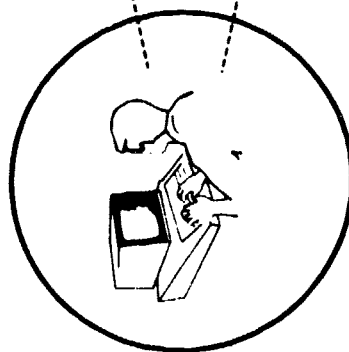


**INSTALLATION
LEVEL**



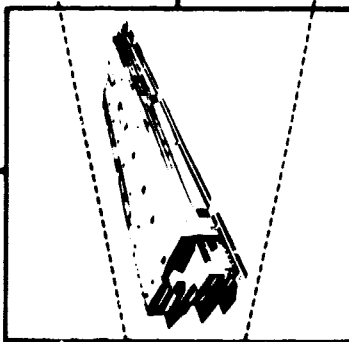
USER

**ASSET VISIBILITY
VERTICAL**

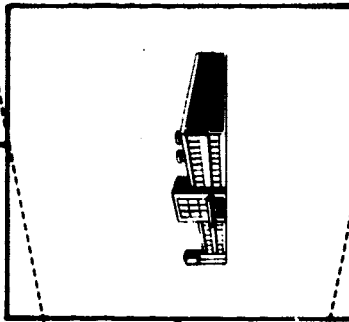


**INVENTORY
MANAGER**

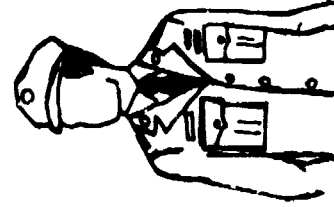
WHOLESALE STOCK FUND



**DEPOT
LEVEL**

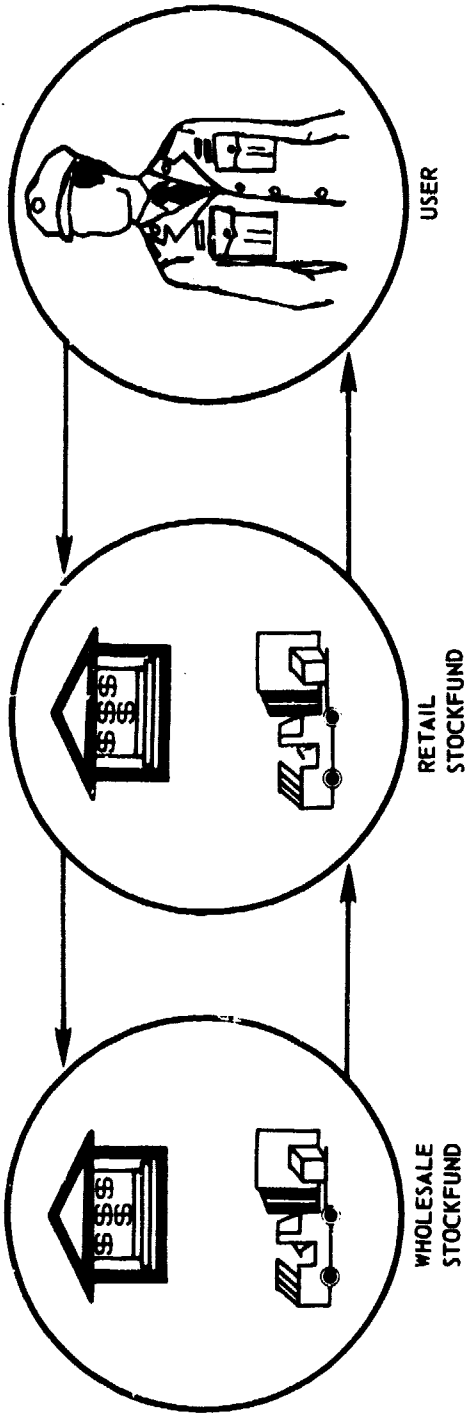


**INSTALLATION
LEVEL**

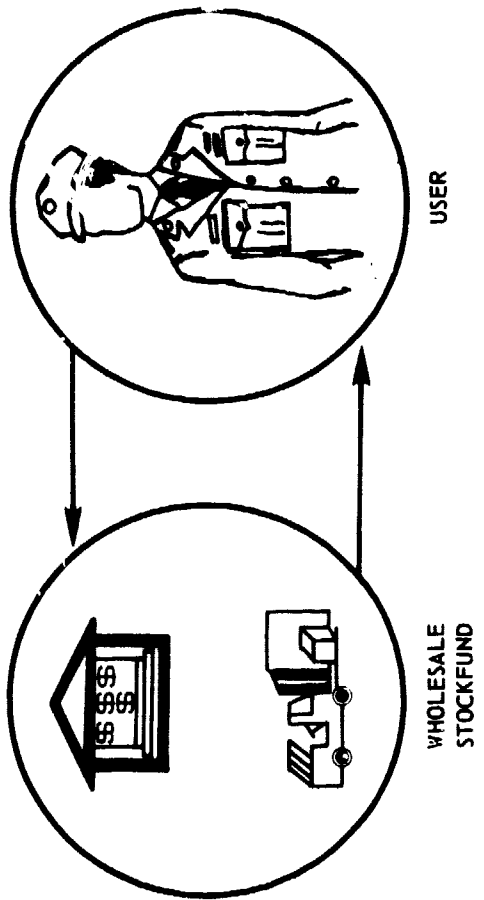


USER

HORIZONTAL TRANSACTION



VERTICAL TRANSACTION



the central inventory manager. Unlike the vertical stock fund, inventory managers under the horizontal system have visibility over and own only these stocks located at the national level. This is shown on page 6.

Since the retail stock fund under the horizontal system is a separate entity, it must "buy" material from the wholesale stock fund and then resell the material to its primary customers, the using units. Vertical stock funds on the other hand sell material directly to the using units as shown on page 7.

PREREQUISITES TO IMPLEMENTING VERTICAL MANAGEMENT

Two major prerequisites must be met before vertical supply management and stock funding can be implemented, especially on an interservice basis. Each service must have compatible automated systems at the wholesale and intermediate levels to provide wholesale-level inventory managers with visibility over retail-level stocks. A model for such a system is now being developed under DLA's phase II bulk fuels program. Secondly, the Retail Inventory Management Stockage Policy study must be completed to provide a standard stockage policy (range and depth), which takes into account the services' operational environment and applies to inventory stockage points throughout DOD. The study will also establish policies to insure that item managers could not arbitrarily redistribute assets from the retail level. The objective of this policy is to avoid the Army's concern that wholesale inventory managers do not adequately consider the local commanders' requirements before redistributing material. This problem is discussed further on page 32.

The cost of introducing a compatible computer system DOD-wide solely to implement a vertical management system would probably not be cost effective. An acceptable alternative, however, is to replace existing systems as they become obsolete. Any such endeavor would require diligence on DOD's part in designing an acceptable system and soliciting acceptance from the services. DOD would also have to police the implementation of such a system to insure that it is applied as intended.

Applying the vertical concept to the Army stock fund

From our examination of the problems in the operation of the Army stock fund, we have concluded that vertical

controls would improve the management of the Army's stock fund. We also found support for this conclusion by comparing the Army's horizontal system with the Air Force and Navy vertical stock fund operations. Almost every indicator we examined showed that the Air Force and Navy vertical systems were superior.

We recognize, however, that the implementation of a vertical system will not provide a cure for all Army stock fund problems. Army officials are attempting to improve the training of supply personnel and to implement a standardized computer system of the type both the Air Force and Navy use to manage stock fund assets.

CHAPTER 3

VERTICAL MANAGEMENT IN THE AIR FORCE, NAVY, AND DEFENSE LOGISTICS AGENCY STOCK FUNDS

Both the Navy and the Air Force successfully operate vertically managed and vertically funded supply systems.

Although these services have applied variations to the system, both have as part of their supply systems the following key elements:

- Air Force and Navy inventory managers have visibility over material under their control.
- Inventory managers own and have the authority to redistribute stocks.

As described later in this chapter, both Air Force and Navy vertical systems are limited to those items for which those services have cataloging and procurement responsibility. They manage other items, such as DLA and General Services Administration (GSA) items, under a horizontal system.

The DLA stock fund, the largest of the military stock funds, sells most of its commodities under a horizontal system. However, two classes of material, bulk fuels and subsistence, are being converted to vertical controls. An automated management system is currently being prepared by DLA which, when completed, will extend the control and visibility of DLA inventory managers from procurement to service base warehouses all over the world.

THE AIR FORCE STOCK FUND

The Systems Support Division of the Air Force has been vertically integrated since its inception in July 1968. This Division is the largest of seven Air Force stock fund divisions and its inventory consists primarily of wholesale-level, Air Force-managed stocks. The remaining six Air Force stock fund divisions are horizontally managed, and the inventories consist mainly of stocks requisitioned from the DLA stock fund or purchased directly from commercial suppliers.

Organization for supply and financial management

As of June 30, 1976, the Air Force stock fund managed inventories valued at \$2,559.1 million as shown below.

Air Force Stock Fund
as of June 30, 1976

<u>Divisions</u>	<u>Number of line items</u>	<u>Inventory</u>	<u>Sales</u>
		(millions)	
Systems support	477,805	\$1,873.5	\$ 659.1
General support	915,887	288.3	1,011.9
Fuels	141	244.8	1,589.9
Medical/dental	15,000	26.5	80.2
Clothing	1,530	14.5	39.9
Commissary	4,200	108.6	1,317.1
Academy	14,000	<u>2.9</u>	<u>6.2</u>
Total		<u>\$2,559.1</u>	<u>\$4,704.3</u>

The six horizontally managed divisions process requisitions directly to the inventory manager, which may be DLA, GSA, or another service, or may buy locally to replenish stocks. The wholesale-level source of supply for all the line items in the Air Force stock fund is shown in appendix I.

Systems Support Division

In the Systems Support Division, the wholesale-level inventory manager has knowledge and control over total system assets from the time of acquisition to the time of sale to a user. This capability enables the inventory manager to make worldwide requirements computations; to procure supplies; to position, redistribute, and dispose of assets; and to control excess. The Division provides responsive supply support through an automated, standardized, and centralized system combined with extensive use of communications and transportation.

The Systems Support Division, which manages weapon systems related items, is a two-echelon system with direct requisitioning by bases from centralized inventory managers. Wholesale inventories are stored and managed by the Air Force Logistics Command through its five air logistics centers. The inventory managers, supply depots, and the

major overhaul facilities for the principal Air Force weapon systems are located at these centers. The Air Force has no overseas depots and supports Air Force units worldwide from these five continental U.S. depots. The units normally operate from stationary bases although mobility would be required during wartime when alternate base locations may be used.

The Air Force uses a standard base supply system at all bases worldwide. Each base requisitions directly from the inventory manager, and material is shipped directly to base supply points where it is stored or sold to users.

The standard base supply system, using UNIVAC 1050-II computers exclusively for supply operations, can update supply information on a near real time basis. This facilitates movement of personnel between locations and minimizes orientation and training, permits centralized standard programming, and enhances review of worldwide supply operations.

The standardized computer systems are compatible with both wholesale and retail inventories and offer significant advantages:

- Excess reporting capability. Any assets which are excess to the bases' needs are reported quarterly by computer to the wholesaler. The Air Logistics Center may direct (1) redistribution to another Air Force base to satisfy a backorder, (2) return of the item to the wholesale level, (3) local disposition, or (4) retention of the material. During fiscal year 1976, assets totaling \$22 million were returned to the wholesale level; \$31 million were redistributed to other bases; and \$13 million were disposed of at the bases.
- Automatic requisitioning capability. Daily, the computers at the bases recompute the balance of assets on hand and, if more items are required, requisition the items from the Air Logistics Center.
- Retail stratification data capability. The retail level provides the Air Logistics Center a report quarterly showing the dollar values of all assets, the requirements for war reserves and operating needs, and all stocks on hand in excess of war reserves and operating needs.

--Special item reporting capability. After September 30, 1977, the retail level will report weekly to the wholesale level on individual items that are in critical supply or have annual issue value exceeding \$50,000.

Systems Support Division has inventory visibility and control

More than 92 percent of the financial value of the Division's inventory is located within the wholesale Air Logistics Center complex; the remaining inventory is positioned at retail-level bases. Air Force officials believe that vertical management has enhanced both item and financial inventory controls by improving visibility at the wholesale level.

Also, we found that improved item and dollar visibility enabled the inventory managers to consider all available assets in computing worldwide requirements.

Systems Support Division sales and transfers

The Air Force positions 92.5 percent of the inventory value (\$1,732.2 million) at the wholesale level because the air logistics centers not only transfer items to the retail level but also make 65 percent of the total sales. The remaining 35 percent of sales are made by the intermediate level at the bases, as illustrated in the chart on page 14.

Cost savings associated with vertical management

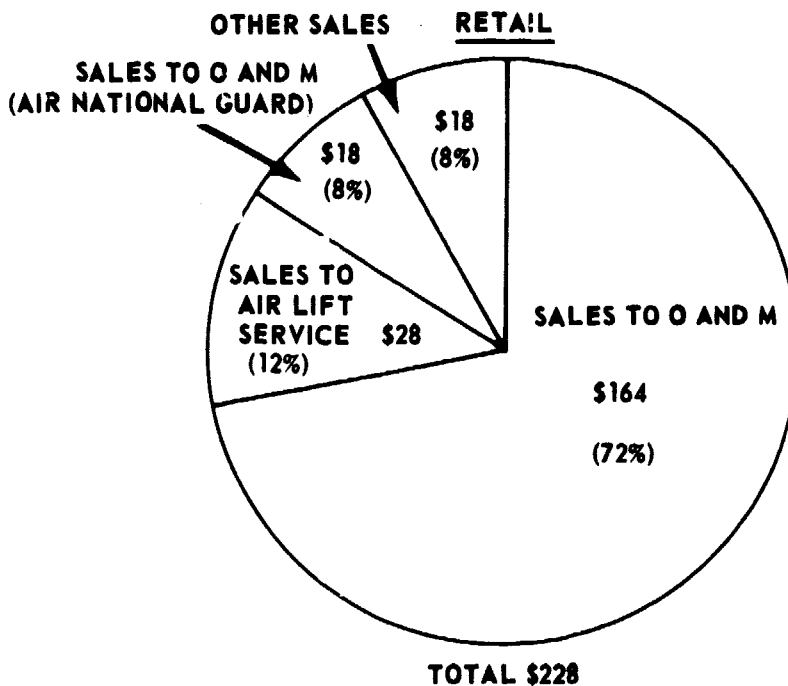
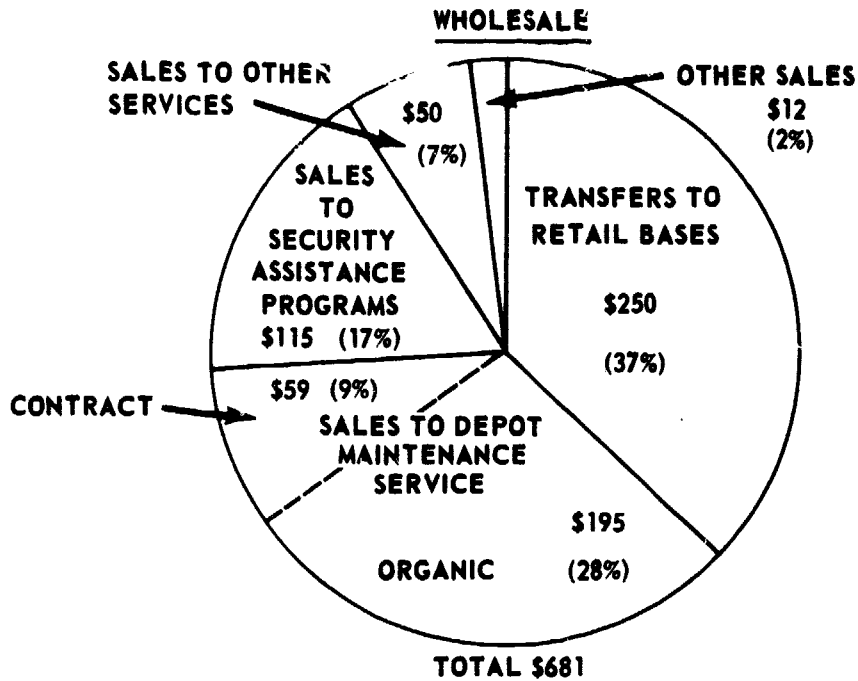
The Air Force considers the Systems Support Division a successful vertically managed stock fund. However, because the Division has been vertically organized from the beginning, Air Force officials could not provide us comparative cost savings associated with a vertically managed versus a horizontally managed stock fund. Chapter 4 provides illustrations of how vertical management enhanced supply performance by the Air Force in Europe.

Problems in the financial management of the Systems Support Division

The Office of Management and Budget has expressed concern over the Air Force financial management of the Systems

**MAGNITUDE OF SALES AND TRANSFERS AIR FORCE STOCK FUND
FISCAL YEAR 1976**

\$ IN MILLIONS



Note: "O and M" means operation and maintenance.

Support Division and thus far has denied this Division relief from certain financial restrictions not required of the other Air Force stock fund divisions.

We did not review the accounting system of the Systems Support Division during this assignment. We plan, however, to perform such a review in the near future.

THE NAVY STOCK FUND

The Navy employs both vertical and horizontal material management systems in its secondary, or consumable, item management. Wholesale stocks are managed vertically by the Inventory Control Points (ICPs) and retail stocks are managed horizontally.

Navy stock fund organization

The Navy stock fund operation responsibility is exercised by the Naval Supply Systems Command. The two ICPs--the Aviation Supply Office (ASO) in Philadelphia, Pennsylvania, and Ships Parts Control Center (SPCC), in Mechanicsburg, Pennsylvania--manage all of their secondary items through vertical stock funds. Thus, they maintain visibility of these items at all stock points. ICP visibility over this material continues until it is issued to consumer activities.

On the other hand, the Navy stock fund's retail system is managed on a horizontal basis. The retail system stocks items purchased from DLA, GSA, and other service stock funds. At the end of fiscal year 1976, Navy stock fund inventories totaled nearly \$1.9 billion.

<u>Wholesale stock fund</u>	<u>Inventory</u>	
		(millions)
Ships Parts Control Center	\$ 517.9	
Aviation Supply Office	<u>876.7</u>	
		1,394.6
 <u>Retail stock fund</u>		
Fleet Material Support Office	423.0	
Naval Publications and Forms Office	13.9	
Navy Resale Systems Office	<u>60.1</u>	
		<u>497.0</u>
		<u>\$1,891.6</u>

Most Navy stock fund material is located at the Naval Air Stations, Naval Supply Centers, Naval Shipyards, and the ammunition depots and weapons stations.

Navy stock fund operation

ICPs maintain item visibility and inventory control of the wholesale assets through either daily transaction item reporting (TIR) from the stock points or through cyclic (monthly or quarterly) asset reports submitted by the stock points. The primary factors that determine which of these two reporting systems is used are: automatic data processing (ADP) hardware and software capacities, inventory value, value or frequency of demands, and adequacy of staffing. Generally as unit prices increase or the value of demand for a specific period increases so does the likelihood that the material will be managed in a vertical mode. For example, the Naval Air Station, Bermuda, ASO-managed inventory (\$0.7 million) is managed by cyclic reporting while the Naval Air Station in Norfolk, Virginia, ASO-managed inventory (\$145.5 million) is managed by TIR.

TIRs reflect receipts, issues, and other transactions which affect stock balance. An ADP software constraint currently prevents either ICP from receiving daily TIRs from more than 45 stock point "reporters." However, the Navy is expanding ADP storage capacity to accommodate up to 150 additional activities' reporting to each ICP.

Currently 41 activities submit TIRs to ASO for aviation material, and 45 activities submit TIRs to SPCC for ship-related items. The ICPs compute wholesale system requirements for each item and then "push" replenishment material to these stock points based on forecast demand. Assets at all stock points are available to the ICPs to satisfy worldwide requirements.

Currently, 95 percent of the total value of Navy ICP-managed inventory is visible to the ICP on an item-by-item basis; TIR visibility is available on about 70 percent of the total Navy stock-funded inventory. Cyclic asset reporting, which covers approximately 3 percent of the ICP-managed inventory, is performed by stock points holding stock fund material. As is the case with TIR material, the items reported to the ICPs are available for worldwide use but on a much more restricted basis and usually for only high-priority requirements or in unique operational or contingency situations.

Financial management

As part of a separate effort, we have been assisting the Navy for about 2 years in documenting an acceptable accounting system. The Navy has not provided us with an acceptable system to date in either the wholesale or retail divisions.

While in this assignment we found that the logistics aspects of the Navy's wholesale system functioned successfully, we did not review the Navy's accounting system for stock funds.

Major benefits of the Navy's vertical management systems

The Navy stock fund's vertical management offers two major benefits.

- Excess stock reporting capability. Like the Air Force, the Navy system automatically identifies stock excess to a stock point's needs. As a general rule, the inventory manager will not redistribute excesses until a requirement occurs at another activity. During fiscal year 1976, inventory managers redistributed stocks valued at more than \$56 million.
- Requisitioning capability. For most TIR units, ICPs push material to the stock points. Replenishment quantities are computed from demand histories available at the ICPs. Most non-TIR stock points pull material from the ICPs, but replenishment quantities are computed using the same criteria as the ICPs use to push material to TIR stock points. This requisitioning capability contributes to the Navy stock fund's low ordering and shipping times of 18 days in the continental United States and 38 days to overseas locations for routine requisitions.

DLA STOCK FUND

DLA operates the largest military stock fund. During fiscal year 1976 inventories amounted to \$4.3 billion and sales amounted to \$5.4 billion. DLA manages about 1.9 million line items, primarily low-dollar-value items. About 85 percent of DLA's items have a unit price of less than \$25.

These items are managed through six Defense Logistics Centers which act as ICPs. The value of inventories controlled by each Center is shown below.

	<u>Value</u>
	(millions)
Construction material	\$ 465.3
Electronics	561.1
Industrial supplies	451.9
Fuels	970.4
Personnel	1,427.4
General material	<u>410.9</u>
	<u>\$4,287.0</u>

DLA items are controlled by the Defense Logistics Centers. The Centers compute systemwide requirements, procure material, designate storage locations, process requisitions, designate the warehouse that ships items, bill customers, and declare excess material no longer needed. The Centers, therefore, perform the whole range of financial and quantitative functions needed to manage the items assigned to them.

DLA has two automated computer systems which integrate inventory management and depot distribution management. The Standard Automated Materiel Management System controls such inventory management functions as determining requirements, procurement, distribution, financing, and cataloging. A second system, the Mechanization of Warehousing and Shipping Procedures, controls depot functions--receiving, shipping, and warehousing.

Even though DLA has centralized financial and stock control, most items are supplied to the military services through a horizontal system. DLA inventory managers own and have visibility over material from procurement to shipment to DLA warehouses. After material is shipped from DLA warehouses, however, inventory managers lose ownership and visibility.

When DOD is successful in implementing interservice vertical controls, DLA inventory managers will

- own DLA-managed items in military base warehouses, worldwide;
- have item or dollar value visibility over these stocks through the DOD-wide standard computer systems; and

--have the authority to redistribute within a service or between services.

The military services' intermediate-level supply activities will, in turn, requisition DLA material directly from the inventory managers. We believe this will (1) reduce the number of accounting transactions involved in the current system under which DLA inventory managers sell to service inventory managers who, in turn, resell material to intermediate-level stock fund activities and (2) permit interservice redistribution of DLA excesses.

Although vertical controls have been implemented over two DLA-managed classes of material--bulk petroleum and subsistence--many problems need to be resolved before vertical management can be extended to other items. The most important of these problems involve (1) establishing a stockage policy common to all services and (2) establishing a computer system with compatibility and the capacity to manage DLA items carried in service inventories.

This responsibility belongs to the Department of Defense. Our observations on DOD's progress in resolving these problems are given in chapter 5.

CONCLUSIONS

We believe the Air Force and the Navy have successfully implemented vertical management over important segments of their stock funds. In both services we found that:

1. The inventory manager can perform the full range of inventory functions on a worldwide basis.
2. Responsive supply support is provided through an automated, standardized, and centralized system combined with extensive use of communications and transportation.
3. Computer systems at the wholesale and retail levels are standardized with associated compatibility.

In order to maximize the benefits of vertical management, systems standardization is a prerequisite. Also, standardization can yield other benefits such as significant savings in the cost of training personnel to operate the system.

CHAPTER 4

ARMY STOCK FUND MANAGEMENT

COULD BE IMPROVED

The Army makes a strong distinction between vertical stock funds and vertical stock management, and it has not adopted vertical stock funding. Although the Army has made some efforts to apply elements of vertical stock management in its Selected Item Management Program, these generally have not been successful. We believe that using both vertical stock funding and vertical stock management would improve management of the Army stock fund.

The Army's system for managing its stock fund assets is decentralized. Retail stock is excluded from the wholesale inventory manager's control; and assets at the direct support units are not part of the stock fund and, thus, are also excluded from the wholesale inventory manager's control. Because of their resulting limited visibility over retail stocks and because information provided to them is usually incomplete and outdated, wholesale inventory managers cannot effectively redistribute excess stocks nor order redistribution of assets to meet high-priority requirements.

The horizontal system of stock management also results in a longer time for requisition processing and, consequently, a large requisitioning objective and inventory in Europe. All of these factors combine to place Army wholesale inventory managers at a disadvantage in comparison to Navy and Air Force wholesale inventory managers who, in most cases, have either dollar or item visibility.

The Army is taking steps to make certain improvements in the vertical management of intermediate-level stocks. For example, computer compatibility is planned for selected items in the continental United States by 1978 and overseas by 1980. This system will provide item managers with improved visibility over the selected items at the retail level.

The Army does not plan, however, to transfer ownership to the wholesale inventory manager. The primary reasons for opposing this aspect of vertical control are:

1. The Army prefers that the field commanders retain control over all intermediate-level assets, contending that loss of this control would compromise field commanders' control over those supplies needed to perform their missions.
2. The Army wants DOD to provide evidence that vertical controls are cost beneficial.
3. The Army wants assurance that logistics responsiveness will not be compromised.

It is our opinion that inventory managers need ownership of all stock fund assets before they can effectively control them. Our evaluation of the Army's position is presented later in this chapter.

ARMY ORGANIZATION FOR SUPPLY AND FINANCIAL MANAGEMENT

The Army stock fund is divided into a wholesale and a retail level. At the wholesale level, six inventory control points manage assets by specific commodity groupings: missiles, weapons and fire control, tank and automotive, aircraft, electronics, and ground support equipment. The Army Materiel Development and Readiness Command is responsible for policy direction for the wholesale-level Army stock fund, and the six major subordinate commands are responsible for managing the material, including procuring new items. The wholesale fund sells material to the retail stock fund, which in turn is reimbursed by customers from funds allocated by the major Army commands. This results in multiple buying and selling transactions from the time of the original procurement until delivery to the user.

The retail divisions of the eight major Army commands, five within the continental United States and three overseas, manage the retail stock fund. Each command with supply responsibilities operates branches of the retail stock fund at installations in the continental United States and support elements overseas. The retail (intermediate) level maintains communication with the wholesale level and the general and direct support unit levels; it requisitions material, obligates funds, supports contingency and war plans, and provides limited services such as stock records support for subordinate or supported supply activities. The Army is phasing down overseas depot level stocks with the objective of stocking only wholesale and direct support unit peacetime inventories.

Overseas depot stocks are limited to war reserves, operational project items, and a safety supply of stock items having no reserve or project stocks. (See app. III.)

The direct support level is mission oriented and maintains stocks required for field operations. Direct support units must be mobile in order to support and move with combat operations. Direct support units buy stock with operations and maintenance funds and, except for selected items, do not report stock levels to either retail or wholesale inventory managers.

Stock funds overseas

For overseas commands, materials are requisitioned and delivered in various ways, depending primarily on the type of commodity, its priority, and the type of unit. For example, in Europe, materials shipped from the United States are generally sent to the division supply support unit, which distributes the material to direct support units for storage or release to users.

Value of inventories and transactions

As of June 30, 1976, the Army stock fund inventory was valued at about \$3.05 billion. The national inventory control points managed about \$2.23 billion in inventory consisting of about 240,000 stock-funded line items. About \$1.98 billion, or 89 percent, of the inventory is held at the wholesale level, and about \$250 million is located at the retail level. The remaining \$830 million of inventory consists of items provided and managed by the retail divisions or military assistance programs and mobilization material.

Army retail divisions purchased approximately \$2.87 billion of stock-funded assets in fiscal year 1976. About \$414 million, or 14 percent, was purchased from wholesale inventory control points. Most retail items were purchased from the Defense Logistics Agency, the General Services Administration, local sources, and other military services.

ARMY'S HORIZONTAL SYSTEM REQUIRES LARGER INVENTORIES

We compared supply operations at Army and Air Force headquarters in Europe and at Zweibruecken Air Base and 8th Infantry Division of the Army's VII Corps. We found that the Air Force's vertically managed system provided

faster response than the Army's horizontal system. The order and shipping time was much less. Since Air Force units were able to obtain material faster, they did not need to stock as much.

Order and Shipping Times
For the European Theater
in Days

<u>System and service</u>	<u>Requisitioning process</u>	<u>Total order and shipping time by priority group</u>		
		<u>I</u>	<u>II</u>	<u>III</u>
Vertical Air Force (note a)	1	11.8	17.3	51.3
Horizontal Army	5 to 15	36.11	55.1	65.3

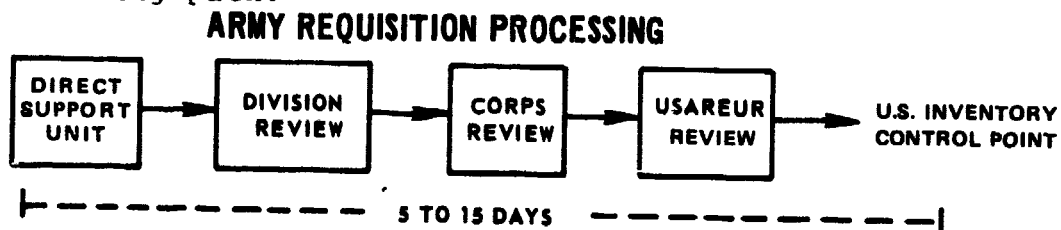
a/Systems Support Division.

The main reasons for these differences include:

- Multiple requisition reviews in the Army took 5 to 15 days versus an Air Force average of 1 day.
- The Air Force vertical management system provided better item availability in U.S. depots.
- The Air Force used air transportation for priority categories I and II, whereas the Army generally used surface transportation.
- The Air Force required less time to record items arriving in Europe and to distribute them.

Multiple Army review levels
increase requisitioning time

Army requisition processing in Europe is 4 to 14 days longer than Air Force processing. Though there are a number of variations in processing steps, requisitions often take the following path:



Generally, overseas support units submit requisitions to theater inventory management centers for editing and funding. Except for high-priority requirements, requisitions are screened against theater excess stocks or long supplies before being passed to ICPs in the United States.

Under the Army's horizontal stock fund concept, budgetary authority is passed from one level of command to the next. Consequently, obligations must be accounted for by the USAREUR Materiel Management Center, the corps, the division, and the user for each requisition. A buying and selling transaction occurs at each level, and each applies funding data. Requisitions are usually carried by courier from the forward support company, or direct support unit, to the division's supply support activity. The supply support activities forward requisitions either by courier or by transceiver to successive processing levels. As much as 1 day can elapse while transferring requisitions between each level.

By contrast, Air Force transaction takes only 1 day. The wholesale inventory manager owns all base-level stocks and no comparable buying and selling transaction occurs. The Air Force requisition is, in effect, merely a request for a change in warehouse locations.

Air Base	U.S.
[-----1 day-----]	

Further the Army review is primarily intended to determine whether the needed stocks are available--not to determine whether the item should be requisitioned. The Air Force inventory manager carries out this same function much faster by simply interrogating his computer records to determine whether the needed items are on hand within the theater.

The time difference amounts to about 4 to 14 days, not including delays in recording arriving inventory. Because order and shipping time is an element of requisitioning objectives, the Army has a requisition objective which averages 13.2 days longer than the Air Force. We estimate that this slower Army processing adds approximately \$9 million to USAREUR inventory requirements.

While we did not perform detailed work in other Army commands, we noted that similar problems are being reported. For example, Army units in Japan require more than 14 days to process requisitions, and those in Hawaii require 6.4 days. In fact, the Army standard for overseas commands ranges from

5 to 7 days. All of these Army activities must, therefore, stock additional material to compensate for the protracted pipeline time.

We believe that the implementation of vertical management of the Army stock fund would result in faster requisition processing. The major DSUs, if part of a vertical stock fund, could transmit requisitions directly to wholesale inventory managers and thereby eliminate the multiple review and financial accounting levels now required.

LESS EXCESS STOCK ACCUMULATES FOR VERTICALLY MANAGED AIR FORCE ITEMS

Air Force vertically managed items have had lower accumulations of stocks. For example, at June 30, 1976, for vertically managed stocks, excesses in Europe were 10.9 percent of the inventory on hand. The Army's horizontally managed stocks had accumulated excesses of 18.9 percent of the inventory on hand.

Excess Inventory Accumulations

<u>System</u>	<u>As of</u>	<u>Stock on hand</u>	<u>Excess amount</u>	<u>Percent excess</u>
		(millions)		
Vertical	June 30, 1975	\$ 12.6	\$ 1.0	8.1
Air Force	June 30, 1976	18.2	2.0	10.9
Horizontal	June 30, 1975	21.5	2.7	12.5
Air Force	June 30, 1976	24.0	3.3	13.8
Horizontal	June 30, 1975	116.2	28.9	24.8
Army	June 30, 1976	121.0	22.9	18.9

Through November 1976, Zweibruecken Air Base had excess stocks amounting to 6.7 percent of their vertically managed items. For horizontally managed stocks, excesses were 12.4 percent of inventory received.

Other factors related to but separate from vertical management also affected the Army's excess position.

At the 8th Infantry Division, duplicate inventories are maintained at Headquarters and Headquarters Company (a supply support activity) and three corresponding forward support companies (direct support units) which are located near the

units they serve. Along with these duplicate inventories, generous criteria for computing requirements and infrequent reporting have resulted in accumulations of excess material. Following are several examples of the excess situations we encountered at the 8th Infantry Division.

Examples of Items in Excess
October 29, 1976

<u>Item</u>	<u>Per unit cost</u>	<u>Requisition objective</u>	<u>On hand</u>	<u>Number in excess</u>	<u>Value of excess</u>
Incandescent lamp	\$ 3.62	238	8,954	8,478	\$30,690
Turbocharger Control Valve assembly	612.00	24	89	41	25,092
	308.00	6	21	9	2,772
	158.00	6	19	7	1,106

A radiator was excess at both main and forward support companies. The radiator, valued at \$181, had a total requisitioning objective of 9 while 36 were on hand. Ten of these valued at \$1,810 were excess at October 29, 1976.

According to Army officials, as much as 50 percent of Army excess in Europe is due to accumulations of major items of equipment which have gone out of service. As shown below, the visibility which Air Force inventory managers have over material stored at equivalent locations permits them to identify such accumulations of excesses. Army inventory managers do not have this visibility.

VERTICAL MANAGEMENT INCREASES
INVENTORY CONTROL AND FLEXIBILITY

Vertical management of supplies promotes flexibility and inventory control. For example, the Air Force closely monitors inventory demands from base level. The ability to anticipate demands and transfer inventory from location to location, as required, results in lower inventory levels and reduced stock excesses.

Lack of visibility and control
decreases Army supply responsiveness

In the Army's horizontal supply system, the wholesale inventory managers have little actual inventory visibility and control below the wholesale level. Possibilities for

lateral supply actions are difficult to identify, and even if they had asset visibility, wholesale managers could not direct redistribution. One official said that instruction from the inventory manager to redistribute excess assets from one location to another can be ignored because the inventory manager does not own the assets and, therefore, cannot require the holding activities to ship the material. (In some instances, the data reported to the inventory manager was inaccurate; in other instances, the data was untimely and the installation reports were outdated by the time they were received.)

Vertical management in Europe provides increased responsiveness to users

Air Force readiness rates are increased by laterally transferring urgently needed parts from one unit to another. This contributes to the highest degree of demand satisfaction among the supply systems in Europe.

Percent of Parts Provided Upon Request
From European Inventory
as of November 1976

Vertical:		
Air Force	a/	85 percent
Horizontal:		
Air Force	a/	85 percent
Army	b/	71 percent

a/Vertically managed items have a higher satisfaction record than Air Force horizontally managed items, according to Air Force officials, but data is not accumulated separately for vertical and horizontal operations.

b/Represents data from 98 of the 319 Army units authorized to requisition supplies.

Air Force lateral supply actions

For the Air Force, lateral supply actions take place between two field stations when one has equipment not operationally ready due to lack of repair parts. Two methods are possible. First, because the ICP in the United States has visibility or knowledge of the worldwide inventory levels, including the 32 European supply accounts, and owns the base-level stocks, it can order the transfer of parts. Secondly, each airbase can identify from inventory listings whether another European base stocks an inventory item; transfers between bases are not inhibited by accounting or funding technicalities.

Further, the Air Force in Europe has its own fleet of aircraft to transport the items. The time required for such lateral supply actions is as little as 1 day compared to about 11 days to receive inventory from the United States.

Volume of lateral actions

About 1,200 lateral actions take place among European airbases each month. For example, from September through November 1976, 84 percent of the items required to meet the F-4 aircraft's emergency parts supply in Europe were provided from in-theater stocks including lateral supply actions among European airbases. At Zweibruecken Air Base about 120 incoming lateral supply actions are arranged each month and as many as 175 occurred during September 1976. ^{1/} As a result, Zweibruecken obtained most of its urgently required repair items from theater stocks.

Lateral actions less prevalent in Army

Stock fund inventory is purchased by the Army major subordinate commands in Europe, each acting independently. Little actual inventory visibility is provided within or among the three European Corps or to the wholesale-level ICPs. When lateral supply actions are attempted, they are usually made intra-Corps. Because inventory transferred between Corps requires accounting transactions to record the purchase or sale of inventory, inter-Corps lateral supply actions seldom take place.

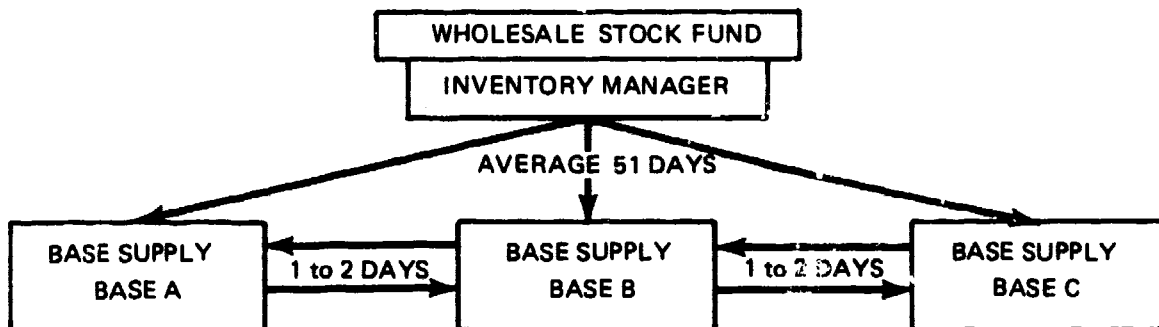
Assets visibility within each Corps is restricted to weekly reporting of items each unit is authorized to stock. Because of rapid stock level changes, these lists are frequently outdated by the time they are received. Consequently, lateral supply actions are often unsuccessful. At the 8th Infantry Division, an estimated 80 percent of the lateral supply attempts were unsuccessful each month.

A comparison of Air Force and Army distribution channels for high-priority requisitions is shown in the illustration on page 29.

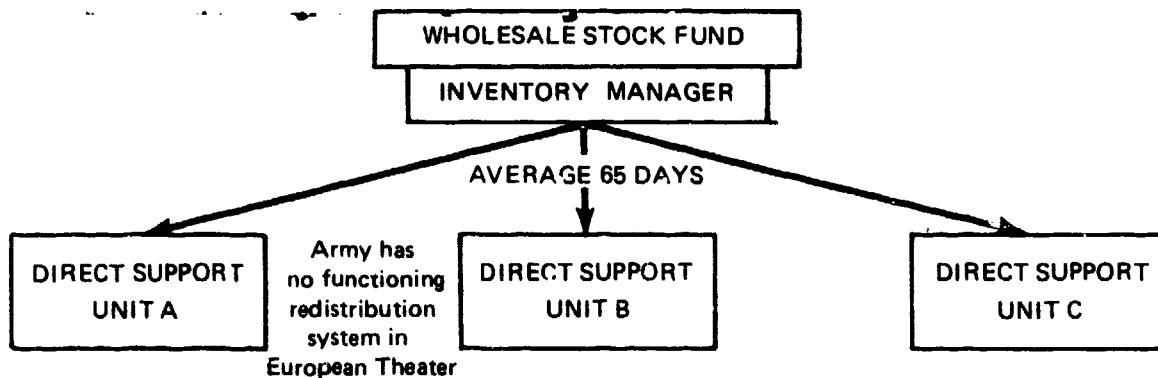
^{1/}In addition, about 100 lateral transfers are effected from Zweibruecken stocks to other bases each month.

**ILLUSTRATION COMPARING AIR FORCE AND ARMY METHODS
OF DISTRIBUTION – EUROPEAN THEATER**

AIR FORCE STOCK FUND



ARMY STOCK FUND



Inventory balancing also achieved

Lateral supply actions can also be used to balance inventory levels among supply points in anticipation of demand changes. Zweibruecken transferred an average of about 20 percent of the Systems Support Division inventories they had received to other locations. ^{1/} Only 4 percent of Air Force horizontally managed inventory and little Army inventory was transferred as a balancing action.

ARMY DOES NOT HAVE ASSET VISIBILITY AND CONTROL OVER STOCK FUND INVENTORY

Army item managers have asset visibility and control over the Army-managed items at the wholesale level. The Commodity Command Standard System, which is linked with Army depots by an automatic digital network, provides asset visibility on a daily basis.

Currently, the Selected Item Management System (SIMS) provides the item manager with visibility on secondary items at the retail level. This system includes both stock fund and non-stock-fund items. SIMS items selections are based upon a high dollar value of annual demands and upon criticality. As of June 30, 1976, this system included 1,253 stock funded items and 1,421 non-stock-funded items with annual dollar values of demands of \$298.2 million and \$40.9 million, respectively. These (stock funded) items represent only 37 percent of the annual dollar value of total demands for stock fund items.

SIMS data is late and in a nonstandard format

SIMS has been only marginally effective because asset information provided to inventory managers is not timely. The data is reported monthly from the intermediate level and quarterly from overseas direct support units. Also, the data is in nonstandard form and must be converted into formats usable at the national ICPs. Frequently, the elapsed time for transmitting, editing, converting, and mailing to the ICPs is 45 to 75 days.

^{1/}Disposition of inventory: other air bases, 67 percent; depots, 30 percent; repair, 3 percent.

Further improvements are planned

DOD believes a prerequisite for vertical supply management is centrally designed, standard automated systems for the wholesale and intermediate levels.

The Army is giving priority to developing a standard automated logistics system at all support levels. The Standard Army Intermediate Level Supply System will replace the nonstandard supply system at the retail level and will be compatible with the Commodity Command Standard System used by the national ICPs. Standardization will improve the entire supply system, including daily asset reporting for intensive management of selected secondary items.

Planned improvements have been delayed

We pointed out to the Secretary of Defense in a July 1974 letter (B-146828) that the Army's SIMS was not achieving its objectives. Among other problems, data was not timely or accurate. At that time, the Army's scheduled completion dates for installing the two standard computer systems were January 1975 for the Commodity Command Standard System and July 1975 for a Standard Army Intermediate Level Supply System. Delays and system changes occurred. As of March 1977, the Army planned to extend the intermediate-level system to overseas commands by May 1978 and to continental U.S. locations by June 1980. It is anticipated that the Commodity Command Standard System will have interface capacity with the Standard Army Intermediate Level System about July 1978.

Other factors influence supply responsiveness

Although vertical supply management and stock funding enhance supply performance, another factor which improved Air Force supply performance was that it has a standardized computer system dedicated to supply management. In addition, the Air Force has established a supply career whereby personnel develop expertise and staffing continuity is maintained. By contrast, the Army often assigns personnel temporarily to supply units and has no supply career field. Army officials at all levels told us that lack of training and experience contributed to inefficiencies in the Army system.

Another factor which influenced Air Force order and shipping times was the method of shipment. The Air Force

made greater use of air transportation than the Army. In January 1977, however, the Army began increasing its use of air delivery to Europe and this should improve Army delivery times. New Army procedures may also eliminate delays in distributing receipts within Europe.

WHY HASN'T THE ARMY IMPLEMENTED VERTICAL STOCK FUNDS?

The Army has opposed vertical stock funding because of reluctance to put system stocks at the retail level under control of the wholesale inventory manager. One of the Army's management principles is decentralized command and control over resources. Under this philosophy, the Army attempts to provide the field commander control, including financial control, over the assets necessary to fulfill his mission.

We evaluated these objections and pertinent aspects of the Army's supply management and stock fund system to determine what impact the present horizontal system has on the Army's supply operations.

Centralized resource control does not preclude mission readiness

The Army believes that field commanders cannot effectively accomplish assigned missions without control of all theater assets, including those at the using units, at the direct and general support units, and at the intermediate level (continental U.S. installations and overseas depots).

In an effort to decrease intermediate-level stockage, the Army has implemented the Direct Support System which supplies DSUs from wholesale-level stocks. DSUs are not part of the stock fund but instead are funded by operation and maintenance (O&M) appropriation.

The DSU is the last level which maintains stock record accounts. Therefore, it is the lowest level to which vertical management techniques could be extended. At present, however, many DSUs have no automated capability while other units have inadequate and nonstandard systems. The Army told DOD that, as standardized systems are developed and reporting is cost effective, assets and requirements information will be reported but that repositioning of these inventories will be limited. Further, the Army has no plans to change to vertical stock funding for items positioned at DSUs.

We believe that, with an efficient and responsive supply system, commanders could maintain readiness without owning stocks. We found this true in the Air Force, and we believe this concept would also benefit the Army. Supplies would continue to be stored at DSUs as they are at Air Force base supply offices but be owned by the stock fund until sold to the ultimate user. Commanders would be able to maintain financial control over their operating and maintenance budgets which are used to purchase supplies. In fact, the system should increase the commander's financial flexibility since his operating and maintenance funds would not be committed to an item until it was required by a user.

While the Army has not officially objected to vertical management at the DSU level on the basis that the DSU's mobility would be inhibiting, this question is a major concern to Army officials. DSUs in Europe, for example, are not now mobile because they have insufficient equipment to move stocks and personnel and equipment in one move.

The Army's objective, however, is to establish a 90-percent mobility capability for DSUs; consequently, any plan for extending vertical controls to DSUs must consider this objective. Among the questions that should be addressed are:

1. Are computers needed to manage DSU stocks small enough to be transported and can they be transported without damaging the equipment?
2. Does the system provide redundancy or a back-up system for supply management in the event the DSU computers are lost in battle?
3. Is it cost effective to put computers in all DSUs?
4. What type of equipment is needed to provide communications between DSUs and higher supply levels?

We believe these problems can be successfully resolved. In fact, many were resolved during a 1975 study made at the direction of the USAREUR Deputy Chief of Staff for Logistics. In this effort, USAREUR examined the feasibility of establishing vertical control over DSU stocks at the Corps level. The study proposed that these controls be implemented as an extension of the Standard Army Intermediate Level Supply System. (See p. 31.) Key features of the USAREUR proposals were:

- "Data Stations" (mini-computers) with limited storage capability would be established at every DSU within USAREUR. The computer model proposed was small enough to be easily housed in a van and inexpensive enough to be installed at all DSUs. This equipment is available commercially.
- Data station functions would be limited to computing receipts, issues, and ending balances (and certain other related functions).
- Records of transactions (on storage discs) would be radio transmitted or sent by courier to more sophisticated computers at the Corps level.
- The Corps computers would provide all other supply management needs such as demand histories, substitutability data, and supply analyses and would compare the quantity of stocks on hand between DSUs.
- In the event a DSU deployed outside its Corps areas of responsibility, the computer would extract the DSU's demand history data. One copy would be sent to the DSU which could operate for up to 30 days independent of Corps support. One copy would also go to the receiving Corps.
- Redundancy would be provided by the duplication of data stored in the DSU and Corps computers--if the Corps computer was lost, the DSU computer could continue to function within the capabilities of the data stations; if a DSU data station were lost, the Corps would have a record of its transactions and could reconstruct its records.

This illustrates, in our opinion, that the mechanics of vertical controls can be worked out without detracting from the DSU's objectives for mobility.

Both the Air Force and the Navy have successfully implemented vertical management and stock funding with those items managed within their respective services, as discussed in chapter 3. The Navy has maintained high rates of performance as measured by standard DOD indicators. Although the Navy's requirements for supplying ships cannot be compared directly to the Army's mobility requirements, elements of mobility and flexibility are an integral part of the Navy's supply system. Nevertheless, the Navy achieved better order and shipping times than did the Army.

Army Order and Shipping Times
in Days
Fiscal Year 1976

	Average all <u>requisitions</u>	Total order and shipping time by priority groups		
		<u>I</u>	<u>II</u>	<u>III</u>
Continental United States	25.8	21.2	25.8	30.5
All overseas	59.3	42.3	63.2	72.5

Note: Statistics based on Direct Support System reports include both stock fund and non-stock-fund requisitions. Stock fund data cannot be separated.

In contrast, the Navy filled priority group III requisitions in the United States in 18 days and overseas requisitions in 38 days.

Cost benefits

The Army made two major cost studies, in August 1974 and April 1976, to determine the feasibility of applying vertical stock funding to the continental U.S. portion of the Army stock fund. Both studies claimed disadvantages to such implementation, citing, for example, a need for additional staffing.

In our opinion, however, these studies were inconclusive because both failed to identify major benefits associated with vertical stock funding, such as greater item manager flexibility in positioning material without financial constraints. Also, neither study associated dollar amounts with major types of costs cited for changes in software, hardware, and telecommunications equipment, nor did these studies address the question of supply responsiveness to the customer. As discussed in chapter 5, we believe that such studies should be made under the guidance and direction of DOD.

Finally, the Army's official opposition to vertical controls is not shared by all Army logisticians. As noted earlier in this chapter, inventory managers described their difficulties in effectively redistributing stocks stored at the direct support units. Further, in July 1975, the Deputy Chief of Staff for Logistics, USAREUR, recommended that the

new automated systems being implemented to manage the SIMS expanded program be extended to provide visibility over DSU stocks in Europe. In making this recommendation, he stated that:

"The majority of our logistics resources and most of the problems causing failures in our supply support are at the DSU level. The principal contributing factors to inefficient support are attributed to the complexity of supply management functions and the inefficient ADPE [automated data processing equipment] and ADP software available at the DSU level. Centralized supply management will provide the on-line visibility and control necessary to simplify DSU operations, increase supply satisfaction, reduce current stockage requirements and reduce unnecessary field return of items * * *."

CONCLUSIONS

The Army's supply management system gives inventory managers visibility over secondary items, including both stock funded and non-stock-funded items, but the asset data reported to inventory managers is untimely and inaccurate.

The nonstandard and inadequate automated supply systems lack compatibility between the wholesale and retail levels. Because the retail-level accounting does not compare with that at wholesale level, the information reported must be converted before it is usable by the ICPs. This delays the submission of the data to the inventory manager. Timely reporting of those intensively managed selected stock fund items cannot be attained until the computer systems are operational. We believe that the horizontal stock fund organization, where the wholesale inventory manager loses visibility and control over items sold to the retail level, adversely affects supply management. Reduced visibility affects redistribution of assets, contributes to the need for higher inventory levels and excess stocks, and in general decreases supply performance.

We believe that implementing the vertical concept would give Army field commanders efficient, responsive supply support. Both the Air Force and the Navy have successful vertical management and stock funding and maintain high rates of performance.

CHAPTER 5

DOD SHOULD INCREASE ITS EFFORTS TO IMPLEMENT

VERTICAL MANAGEMENT OF STOCK FUNDS

The Office of the Secretary of Defense's (OSD's) effort to assist the services in implementing a vertical management system was strong in the early 1970s. The Assistant Secretary of Defense for Installations and Logistics and the Logistics Systems Policy Committee actively fostered long-term planning and coordination for changing major logistical operations. General objectives for improving DOD operations through vertical management were established by joint agreement among the services, Defense Logistics Agency, and OSD. Since that time, however, OSD actions to implement these objectives have been limited.

DOD LOGISTICS SYSTEMS POLICY COMMITTEE

The Logistics Systems Policy Committee was established in March 1970 to develop a long-range plan for improving the DOD logistics system. The Committee was intended to be the major DOD mechanism for logistics planning, including coordinating the services' long-range concepts, objectives, and planning.

Early in its tenure, the Committee authorized a task group to develop the Logistics Systems Plan (LOGPLAN). The LOGPLAN published in June 1971 endorsed the vertical management concept.

While the issues were being deliberated by the Committee, the Army contracted with the Logistics Management Institute to study the impact of vertical management on its operations worldwide and to make appropriate recommendations. This study, completed in June 1973, supported both vertical supply and financial management as envisioned in the LOGPLAN profile. Although the Army never formally rejected the Institute's recommendations, it launched an in-house study shortly thereafter. This study was conducted at about the same time as the expansion of the Army's Direct Supply Support concept.

Further development of the LOGPLAN, to formalize its concepts as new DOD policy, required a prolonged series of deliberations, particularly those objectives having to do with vertical financial management of stock fund items. The specific objectives and implementing actions were not adopted with the full concurrence of the Committee until May 28, 1974. The specific objective relating to vertical funding is shown below.

"Expense type items assigned to the Military Services and the Defense Supply Agency (DSA)[1] will be financed in accordance with the vertical stock funding concepts established for each Military Service and DSA to the extent that cost benefits will accrue and logistic responsiveness to the operating forces is not lessened. Supporting systems will be made standard to the degree practicable, and will be tailored to the form of vertical supply management employed."

To implement the plan, OSD, DLA, and each service were asked to develop a concept of vertical stock management and to develop a time-phased plan for applying the vertical stock fund concept.

The Committee's charter expired June 30, 1976, after it completed the task of developing the initial LOGPLAN. Most of the objectives in the plan have not been achieved.

OTHER DOD POSITIONS ON VERTICAL MANAGEMENT OF STOCK FUNDS

In May 1972, the Assistant Secretary of Defense (Installations and Logistics) issued a concept paper for implementing vertical management operations in 1975-80. This document stated that supply operations were becoming more vertically oriented. Although this orientation was more pronounced for investment items because of the higher cost involved, it was also increasingly applied to the management of stock fund items. This concept paper was jointly developed by the staffs of both the Assistant Secretary of Defense (Installations and Logistics) and the Assistant Secretary of Defense (Comptroller).

The following principal advantages for vertical management of stock fund items were cited.

- Item managers' worldwide knowledge and control of assets would increase management efficiency.
- Increased system-wide visibility would result in more effective use of DOD inventories.

1/The Defense Supply Agency is now called the Defense Logistics Agency.

- More effective use of inventories would permit reductions in total inventories or improved system-wide stock balances and increased supply response with the same inventories.
- Reduction in total inventories and/or improved DOD-wide stock balances would result in reduced operations and maintenance costs per unit of support (less labor costs in handling, inventorying, etc., and reduced requirement for warehouse space).
- Increased worldwide visibility for selected items and high-response ADP systems would increase combat readiness; i.e., permit rapid screening of high-priority requisitions against total DOD assets.
- Reducing the number of stock fund sales transactions would significantly reduce accounting transactions without reducing combat effectiveness.
- Flexibility for any required positioning of material without financial constraints would be increased.

Basic questions regarding implementation of vertical management

The May 1972 concept paper recognized that the reactions to the proposed changes in management of stock fund items would vary by service component and that the suitability of vertical stock funding and vertical supply management for each service must consider the differences in mission assignment, management orientation, and current and planned system configurations.

DOD officials informed us the product of a joint task group which has proposed a standard "Retail Inventory Management and Stockage Policy" is now being considered. If implemented, this policy would protect the basic interests of all parties within the logistics pipeline, including the DOD item manager and the line commanders. It would remove a principal roadblock to installing vertical stock funding posed in the past because line commanders would be protected by standard distribution and redistribution criteria from indiscriminate redistribution of their on-order/on-site stock by the DOD item managers. Aside from Retail Inventory Management and Stock Policy and the publication of a further memorandum discussed below, DOD has made little progress in the last 18 months toward a vertically oriented management system.

DOD efforts to implement vertical management

According to officials, there is a consensus in DOD that vertical stock funding is feasible only when vertical supply management concepts have been effectively employed. Vertical supply management, which provides control and visibility by item managers over inventory items at wholesale, intermediate, and retail levels, is necessary to insure that the inventory at various supply levels is properly managed. Further, DOD officials believe that vertical stock funding should be used to the extent that cost benefits will accrue and logistic responsiveness to operating forces is not lessened.

In October 1974, the Deputy Secretary of Defense sent a memorandum entitled "Materiel Management in the Vertical Environment" to each of the military services and the Defense Logistics Agency. The memorandum provided further guidance for phased implementation of vertical material management. Each service was directed to develop specific proposals for implementing this concept. OSD intends to implement vertical supply management and stock funding on a time-phased, incremental approach. Implementation would first be on an intraservice basis, followed by an interservice basis, with final extension to supply management sources outside DOD, such as GSA. The services were asked to submit proposals according to these three phases. Upon receipt of the service proposals, an OSD committee was to evaluate them and make appropriate recommendations for approval and implementation. The memorandum recognized that such implementing actions would be long range in nature due to the magnitude of the task.

The October OSD memorandum was supplemented in January 1975 by another memorandum which sought to clarify the concept of vertical management and to assist the services and DLA in completing their proposals. OSD again indicated that, due to the current state of development of most automated logistic systems, transitional planning for and application of vertical supply management would be evolutionary.

OSD action on component plans and proposals

The services and DLA responded to OSD in February and March 1975, but the degree of responsiveness varied. The Air Force referred to its success with vertical stock funding and expressed a desire to retain vertical management but raised a series of cautions related to interservice employment.

At the other extreme, the Army disagreed philosophically with any change from its then-current approach of using horizontal funds to manage the logistics pipeline.

We were informed by officials of the services and DLA that they were never formally notified of the results of any OSD evaluation of their responses. OSD officials on the other hand said that the input from the services raised more questions than it answered. The OSD committee, however, did begin a formal evaluation of the Army's response, but it was never completed because of differences in opinion within OSD over the issues involved and how to proceed. No further formal evaluation has taken place.

CURRENT DOD EFFORTS IN GUIDING VERTICAL MANAGEMENT

The Office of the Assistant Secretary of Defense (Manpower, Reserve Affairs, and Logistics) and the Assistant Secretary of Defense (Comptroller) are responsible for providing guidance to the services in implementing vertical management. This effort now appears to be limited or static.

We were told that the ongoing OSD effort associated with vertical supply management and stock funding amounted to approximately 2 staff-years. These efforts are currently limited to interservice application in the areas of bulk fuels, subsistence, and commissaries. In addition, the Retail Inventory Management Stockage Policy Study (see p. 39) is now being evaluated. A standard DOD-wide stockage policy is expected to be published about October 1977. The estimated date for completing development and implementation of the standardized computer system model being developed under DLA's phase II bulk fuels program is now December 1978.

CONCLUSIONS

OSD action to further develop a DOD-wide plan for implementing a vertical supply management and stock funding system for expense items ceased in March 1975 except for limited interservice application in the areas of bulk fuel, subsistence, and commissaries.

RECOMMENDATIONS

We recognize the magnitude of the effort required to implement vertical supply and stock fund management throughout DOD. Because of the size and complexity of the supply and financial management systems, long-range planning for

systematic and evolutionary actions is necessary. In the absence of a coordinated comprehensive implementation plan, however, the military services and DLA will continue pursuing uncoordinated efforts. Consequently, we believe OSD should take timely action to complete the development of an overall implementation plan.

We recommend that the Secretary of Defense develop an overall plan for improving logistics management based on vertical supply management and stock funding.

We also recommend that the Secretary of Defense:

- Establish a system to assure that any ongoing or contemplated efforts by the military services and DLA are assessed for conformance with the coordinated long-range plan.
- Assure strong OSD monitorship of DLA's assignment to develop the standardized computer systems model and timely implementation of the Retail Inventory Management Stockage Policy in order to facilitate interservice vertical management.

AIR FORCE STOCK FUNDNUMBER OF LINE ITEMS AND WHOLESALE SOURCE OF SUPPLYJUNE 30, 1976

<u>Division</u>	<u>Number of line items</u>	<u>Source of supply</u>
Systems support	477,805	Air Force - 100%
General support	915,887	DSA - 86% Commercial - 4% Army - 4% Navy - 3% GSA - 2% Manufactured - 1%
Fuels	141	Commercial - 45% Air Force - 39% DLA - 16%
Medical/dental	15,000	a/DLA - 65% a/Commercial - 35%
Clothing	1,530	DLA - 100%
Commissary	4,200	DLA - 92% Commercial - 8%
Academy	14,000	Commercial - 95% DLA - 5%

a/Predicated on total dollar value of purchase; no specific detail maintained on line item by source.

COMPARISON OF
SUPPLY FUNCTIONS PERFORMED AT
VARIOUS LEVELS IN EUROPE

<u>Functions</u>	<u>Performed at levels</u>	
	<u>Air Force</u>	<u>Army</u>
Financial accounting	Air Force Base	Division Corps a/USAREUR - MMC
Inventory maintenance and control	Air Force Base	Division Corps USAREUR - MMC
Excess management	Air Force Base	Division Corps USAREUR - MMC
Requisition processing	Air Force Base	Division Corps USAREUR - MMC
Management and procedures	Air Force Base Air Force, Europe	Division Corps USAREUR - MMC Army Headquarters Europe
Equipment management	Air Force Base Air Force, Europe	Division Corps USAREUR - MMC Army Headquarters Europe

a/USAREUR Materiel Management Center.

ARMY STOCK FUNDS--LEVELS AND PURPOSES OF MATERIAL STOCKAGE

<u>Type funding</u>	<u>Level</u>	<u>Activity</u>	<u>Type stock</u>
Wholesale Army stock fund	Wholesale-level support	National Inventory Control Point	Operating project and war reserve stocks
Retail Army stock fund	Intermediate or retail	Continental United States installations	Prepositioned war reserves and operating stocks (operating stocks being reduced with direct supply support)
Customer funds	Direct supply unit	Overseas field depots	Prepositioned war reserves, project and limited safety level
		Divisional and non-divisional direct support units	Operating stocks

OTHER GAO REPORTS RELATED
TO THE MATTERS DISCUSSED IN
THIS REPORT

Department of Defense Stock Funds-Accomplishments, Problems, and Ways to Improve	B-159797 - April 12, 1974
Department of Defense Stock Funds' Declining Financial Position	B-159797 - June 16, 1976
Letter Report to the Secretary of Defense on "GAO Survey of the Army's Selected Item Man- agement System"	B-146828 - July 3, 1974

PRINCIPAL OFFICIALS RESPONSIBLE FOR
ACTIVITIES DISCUSSED IN THIS REPORT

Tenure of office
From To

DEPARTMENT OF DEFENSE

SECRETARY OF DEFENSE:

Harold Brown	Feb. 1977	Present
Donald H. Rumsfeld	Nov. 1975	Feb. 1977
James R. Schlesinger	July 1973	Nov. 1975
William P. Clements, Jr. (acting)	Apr. 1973	July 1973
Elliott L. Richardson	Jan. 1973	Apr. 1973

ASSISTANT SECRETARY OF DEFENSE
(MANPOWER, RESERVE AFFAIRS, AND
LOGISTICS):

Dr. John P. White	May 1977	Present
Dale R. Babione (acting)	Jan. 1977	Apr. 1977
Frank A. Shrontz	Feb. 1976	Jan. 1977
John J. Bennett (acting)	Mar. 1975	Feb. 1976
Arthur I. Mendolia	June 1973	Mar. 1975
Hugh McCullough (acting)	Jan. 1973	June 1973

ASSISTANT SECRETARY OF DEFENSE
(COMPTROLLER):

Fred P. Wacker	Sept. 1976	Present
Terence E. McClary	June 1973	Sept. 1976
Don R. Brazier (acting)	Jan. 1973	June 1973

DIRECTOR, DEFENSE LOGISTICS
AGENCY:

Lt. Gen. Woodrow E. Vaughn (USA)	Dec. 1975	Present
Lt. Gen. Wallace H. Robinson, Jr. (USMC)	July 1973	Dec. 1975

SECRETARY OF THE AIR FORCE:

John C. Stetson	Apr. 1977	Present
Thomas C. Reed	Jan. 1976	Apr. 1977
James W. Plummer (acting)	Nov. 1975	Jan. 1976
Dr. John L. McLucas	June 1973	Nov. 1975
Dr. Robert C. Seamans, Jr.	Jan. 1969	May 1973

<u>Tenure of office</u>		
	<u>From</u>	<u>To</u>

DEPARTMENT OF DEFENSE (cont'd)

SECRETARY OF THE ARMY:

Clifford L. Alexander	Feb. 1977	Present
Martin R. Hoffman	Aug. 1975	Feb. 1977
Howard H. Callaway	July 1973	Aug. 1975
Robert F. Froehlke	Jan. 1971	Apr. 1973

SECRETARY OF THE NAVY:

William G. Claytor, Jr.	Feb. 1977	Present
J. William Middendorf	Apr. 1974	Jan. 1977
John W. Warner	May 1972	Apr. 1974