STUDY BY THE STAFF OF THE U.S.

General Accounting Office

Logistics Management Issues

The Federal Government owns many billions of dollars of material subject to logistics management functions ranging from determining and satisfying needs to disposal of material no longer needed.

This study examines current and emerging issues relating to the Government's management of these functions. It emphasizes major problems and concerns, congressional interest and needs, and represents the perspective GAO is using to organize its audit efforts.

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FOREWORD

The Federal Government owns many billions of dollars of material subject to logistics management functions. The Department of Defense alone owns material valued at over $213 billion. Such material can range from the largest aircraft carrier to a subminature solidstate semiconductor ship. Because of the size and significance of logistics functions, we devote a substantial part of our audit work to this area.

The Comptroller General has assigned to the Logistics and Communications Division the responsibility for analyzing the relevant legal, economic, social, managerial, and technical issues in the Government's management of its personal property and for planning the office's audit work on those issues. This study is based on our audit plans for work in the logistics management area. It is organized in the form of those issues we believe deserve the greatest emphasis to meet the concerns of the Congress and to help resolve major problems.

Information on this study and our audit plans can be obtained from Richard F. Tucker, Issue Area Planning Director, Logistics and Communications Division, on (202) 275-3663.

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CHAPTER 1

LOGISTICS MANAGEMENT

DEFINITION AND SCOPE

Logistics management, for the purpose of this study, encompasses all of those functions that are required as a result of the Government's ownership or use of property other than real property (land and buildings). Consequently, it includes such functions as:

--Determining and satisfying needs (Chapter 5)

--Storage and preservation (Chapter 7)

--Distribution and transportation (Chapter 8)

--Utilization (Chapter 9)

--Maintenance and repair (Chapter 10)

--Disposal (Chapter 12)

--Cataloging and Standardization (Chapter 12)

It does not include determination of requirements for new major systems--except logistics support systems--or the acquisition process for new systems, and the contracting process itself.

Supply management in the Federal Government is partially centralized under the General Services Administration (GSA) and the Defense Logistics Agency (DLA) but each Federal agency and military service also performs its own supply management functions in varying degrees.

Material subject to logistics management functions can range from the largest aircraft carrier to a subminiature solidstate semiconductor chip. It includes items that may be owned in great quantity and those that are one of a kind. Thus it comprises the millions of items of equipment, major sub-assemblies, repair parts, and consumable supplies in Government inventories and the material contained in the Government's stockpile of critical material.

Material owned by the Federal Government is valued at many billions of dollars. As of September 30, 1977, the Department of Defense alone owned material which was valued at more than $213 billion as shown in the following table.

Material (Personal Property)
Owned By The United States
As Of September 30, 1977

Description	Value (in millions of dollars)
Supply systems material	$ 55,760
Plant equipment	13,330
Industrial fund material	766
Excess and surplus property	4,410
Military equipment in use	139,484
Total	$213,750 1/

1/Values for long-life equipment, such as ships represent acquisition cost. Values of items other than major equipment in supply systems inventories are generally based upon standard prices, representing replacement or estimated purchase price. The value of major equipment is derived from the unit cost based on the most recently executed contract for large quantity production.

Comparable data for civil agencies is not readily available; however, these agencies manage large amounts of material. For example as of September 30, 1977, material inventories on hand in GSA's supply depots totaled more than $207 million. During fiscal year 1977, the value of material shipped to customer agencies from these depots exceeded $725 million. Data reported to GSA by nine civilian executive departments and 19 independent agencies showed that these organizations had supply inventories of more than $837 million on hand as of September 30, 1977 and had issued more than $1 billion worth of material during the fiscal year ending that date.

The importance of this issue area is obvious when one considers the magnitude of the dollars involved and the fact that the way the Government manages its material affects the cost and effectiveness of virtually all Government programs. The two paramount questions that are pertinent when the issue area is considered are:

--Does the Government acquire and retain only those materials that are needed to further approved programs?

--Does the Government operate, maintain, and otherwise manage its material efficiently and economically?

Effective and efficient management of logistics functions is, to a large degree, dependent upon establishing and implementing suitable policies, doing adequate "front end" planning for logistics support of major equipment systems, maintaining accurate and useful management information systems, and independently reviewing operations and identifying needed improvements. (See chapters 3, 4, 6, and 12.)

The objective of GAO's work in this issue area is to:

> Improve the policy and management processes governing the Government's stewardship of material to foster optimum program effectiveness at the lowest possible cost.

RELATED ISSUES

Possession of material by the Government is not an end in itself, material is acquired and managed only to enable the Government to carry out its approved programs. Thus, this issue area, in effect, is related to or supports virtually all other issue areas. It is more closely related, however, to the following:

--Automatic Data Processing

--Internal Auditing Systems for Federal and Federally Assisted Programs

--International Affairs

--Military Readiness, Mobilization Planning, and Civil Preparedness

--Energy

--Materials

--Federal Procurement of Goods and Services

--Science and Technology Policies and Programs

--Environmental Protection Programs

--Transportation Systems and Policies

--Evaluation Guidelines, Techniques, and Methodology

--Accounting and Financial Reporting

--National Productivity

--Communications

MAJOR PROBLEMS AND ISSUES

Many of the problems pertinent to this issue area are grounded in parochialism and resistance to change by Government managers. Often new concepts of performing various functions are accepted on a theoretical basis but little emphasis is given--from top management on down--to getting them implemented.

For example, the single manager concept has been implemented in the Government for a number of functions or activities. The establishment of (1) a single manager for ammunition, (2) the Defense Logistics Agency, (3) the Military Airlift Command, and (4) the General Services Administration are examples. Yet much more can be done. One possibility would be the designation of a single overall logistics manager in DOD.

Insufficient progress in greater intra or interagency logistics support is another problem area that requires GAO's attention. The Government has to identify and implement ways in which it can perform its material management functions more economically and efficiently. Elimination of unnecessary duplicate activities offers the potential for large savings.

Finding better ways to determine needs, manage inventories, and utilize equipment to preclude acquiring more items than are necessary to further approved programs are areas to which GAO has devoted considerable attention in the past because of the potential for savings and will continue to do so in the future.

The failure to identify logistics requirements early in the development stage of major weapons systems or items of equipment and plan for the logistics support of the system throughout its life cycle can result in substantial unnecessary costs over a long period of time. Although DOD has developed an integrated logistics support planning procedure, GAO will have to evaluate the manner in which it is being implemented for new weapons systems now under development.

The military has had problems keeping up with its maintenance workload despite large increases in its maintenance budget and reduced asset activity. Specific areas that need attention include (1) shipyard maintenance, (2) the potential for using private industry for depot maintenance, and (3) the proliferation of Air Force aircraft component repair resources in support of new aircraft. Also, new,more economical maintenance concepts and practices used by private industry have not been adequately considered and adopted when feasible. Much needs to be done to improve maintenance productivity.

A number of serious problems exist concerning the distribution of Government material. Shipments are not being managed to achieve lower transportation costs. Order and shipping times are excessive resulting in unnecessary inventory investment. Loss and damage to material in transit is not minimized. New concepts and techniques in transportation have not been adequately considered.

LONG RANGE OUTLOOK

The magnitude of this issue area is not likely to change substantially in the foreseeable future. The United States will continue to own large amounts of military equipment and spare parts that will be subject to the logistics management functions discussed earlier. Also, the Government's role in meeting the needs of its citizens will undoubtedly continue to require it to manage substantial amounts of material.

Improvements in logistics management have taken place over the last few years but at an agonizingly slow pace. Opportunities abound for the implementation of "better ways of doing things" in all of the logistics management functions. Greater use of the single manager concept, increased intra and interagency sharing of logistics support, improved visibility over repair parts inventories, introduction of more economical maintenance concepts, and better "front-end" logistics planning are but a few of the things that need continued attention by GAO.

MAJOR LEGISLATION AFFECTING LOGISTICS MANAGEMENT

Major legislation enacted by the Congress affecting logistics management in the Government includes:

Federal Property and Administrative Services Act of 1949

This Act created the General Services Administration and imposed certain requirements intended to provide for the Government an economical and efficient system for the procurement and supply of property, the utilization of available property and the disposal of surplus property. Numerous refinements have been brought about by subsequent amendments to the Act.

Budget and Accounting Procedures Act of 1950

This Act requires that Government accounting systems provide both effective control over property and adequate financial information needed for management purposes.

The Armed Services Procurement Act of 1947

This Act prescribes legal requirements relating to the procurement of services and property by DOD, the Coast Guard, and NASA.

1949 Amendments to the National Security Act (Public Law 216 of 1949)

This Act introduced working capital funds into the DOD financial management system as a means of financing inventories of materials and also required for the first time that financial records be maintained for personal property owned by DOD.

Annual DOD and Other Appropriations Acts

These acts, especially those pertaining to DOD, frequently contain requirements or restrictions to be complied with by agencies. Included are such things as maximum or minimum amounts to be expended for specific aspects of material management or for acquisition of particular goods or services from commercial sources. In addition, these acts can impose specific review and reporting requirements on GAO relating to logistics management.

The Defense Cataloging and Standardization Act (1952)

This Act provided the statutory basis and authority for the establishment of a single catalog system for DOD and for its coordination with GSA.

10 U.S.C. 2701 and 3302

These sections of the law require the Secretary of Defense to establish an efficient, economical, and practical integrated supply system to meet the needs of the military services without overlapping operations or functions.

Section 22 of the Interstate Commerce Act

This section allows commercial carriers to offer reduced rates for transportation of Government material.

PRINCIPAL FEDERAL AGENCIES INVOLVED

All agencies of the Government are involved, to a degree, with logistics management functions. However, the preponderance of GAO's work in this issue area has been, and likely will continue to be, related to the Department of Defense and the General Services Administration.

GAO STRATEGY FOR ADDRESSING THE AREA

In addressing the problems we have identified, we plan to emphasize improving system deficiencies that impair sound logistics management at all levels. We will continue to use a building-block approach that will enable us to cover, over time, major facets of certain functions, processes, or activities that have a significant impact on the effectiveness and efficiency of logistics management operations, and the broad concepts, structures, and policies that govern such operations. We will

--examine, on a broad basis, the feasibility of alternative logistics concepts, structures, and policies that could be applied agency or Government-wide to provide necessary mission support at lower cost,

--review the adequacy of the implementation of sound concepts, structures, and policies once they have been generally accepted by Government managers, and

--review the operation of certain functions or processes of logistics management to determine whether they are being performed effectively and efficiently.

CHAPTER 2

LOGISTICS MANAGEMENT ISSUES AND CONCERNS

The following are important logistics management issues and concerns on which GAO audit work will focus over the next 18 months.

* CAN ALTERNATIVE LOGISTICS CONCEPTS, STRUCTURES, AND POLICIES PROVIDE NECESSARY MISSION SUPPORT AT LOWER COST? (CHAPTER 3)

* ARE SOUND LOGISTICS POLICIES ADEQUATELY IMPLEMENTED? (CHAPTER 4)

* CAN DETERMINATION AND SATISFACTION OF NEEDS AT THE WHOLESALE AND RETAIL LEVEL BE IMPROVED? (CHAPTER 5)

* ARE LOGISTICS REQUIREMENTS IDENTIFIED EARLY IN THE DEVELOPMENT STAGE OF COMPLEX WEAPONS SYSTEMS AND LOGISTICS PLANNING PROJECTED THROUGHOUT THE LIFE CYCLE OF THE EQUIPMENT? (CHAPTER 6)

* DO STORAGE AND PRESERVATION SYSTEMS PROVIDE ADEQUATE CONTROL AND PROTECTION OF MATERIAL INVENTORIES? (CHAPTER 7)

* IS MATERIAL DISTRIBUTED EFFICIENTLY? (CHAPTER 8)

* CAN IMPROVEMENTS BE MADE IN THE UTILIZATION OF EQUIPMENT? (CHAPTER 9)

* ARE EQUIPMENT MAINTENANCE PROGRAMS AND PROCEDURES ACHIEVING OPTIMUM EFFICIENCY AND EFFECTIVENESS? (CHAPTER 10)

* CAN U.S. GOVERNMENT PRINTING BE IMPROVED? (CHAPTER 11)

CAN LOGISTICS MANAGEMENT INFORMATION SYSTEMS BE IMPROVED? (CHAPTER 12)

IS UNNEEDED PROPERTY DISPOSED OF PROPERLY? (CHAPTER 12)

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* Deserving of priority attention.

CAN LOGISTICS EFFECTIVENESS BE INCREASED THROUGH IMPROVED CATALOGING AND STANDARDIZATION PRACTICES? (CHAPTER 12)

ARE MANAGEMENT REVIEW PROCESSES ADEQUATE TO IDENTIFY LOGISTICS PROBLEMS? (CHAPTER 12)

The remainder of this study examines these major issues in more detail. Appendix I shows a listing of pertinent GAO reports issued since January 1, 1977.

CHAPTER 3

CAN ALTERNATIVE LOGISTICS CONCEPTS, STRUCTURES, AND POLICIES PROVIDE NECESSARY MISSION SUPPORT AT LOWER COST?

The Government's logistics systems are vital not only to supporting efficient and effective operations in peacetime but the systems must also support a strong military readiness posture and react quickly and effectively to contingency mobilization and war crises.

The Department of Defense is a good example of fragmented logistics efforts. Each military department is responsible for its own logistics needs. That logistics should remain a service responsibility is an article of faith among all the services. What results is not an effective or efficient logistics operation, but rather a giant free-for-all where the status quo is all important.

The scope and costs of Government logistical programs have stimulated much interest on the part of the Congress and officials directing logistical systems and caused them to seek new concepts and organizational restructuring which would reduce costs and enhance the support aspects of the systems.

Several concepts, structures, or policies that have emerged as a result of this interest include:

--National Supply System: The concept of a national supply system has been underway in the Federal Government for more than a decade. Under this system there would be one manager for each supply item throughout the Government thereby eliminating avoidable overlap and duplication in supply functions.

--Single Management Organizations: This concept envisions consolidation of responsibility for all aspects of logistics, or for certain discrete functions (transportation, supply, maintenance, disposal) within the logistics area, under a single organization.

--Reliance on Commercial Sources: The Procurement Commission recommended placing maximum reliance on commercial sources for supply and maintenance support. The concept of maximum reliance on commercial sources

also extends to the discrete logistics functions. Almost each year legislation is introduced to restrict the amount of DOD material transported by organic lift and to utilize instead commercial service. Each year debate arises on the extent our cargo preference laws should be applied to Government-owned material transported by ships.

--Direct Supply Support: A new support concept instituted by the Army. It represents a major departure from the Army's standard supply system which relies on stocks at depots and other intermediate installations as the primary sources of supply. Under the direct support system, peacetime requirements of Army units are provided directly from designated depots in the United States to forward support units eliminating the need for intermediate depots.

--Interoperability of Weapons Systems: U.S. and NATO military units in Europe represent a joint force for controlling Soviet Bloc aggression. There is presently much interest in achieving interoperability of weapons used by NATO members because the many different weapons used by the allied forces prevent consolidation of logistics operations.

PROBLEMS AND CONCERNS

There is a real concern as to the need to centralize and consolidate mangement responsibility to assure that the present independently operated and fragmented logistical organizations can be orchestrated to work in concert in a crisis situation. Although millions have been spent to study and debate these concepts, for many of the concepts there has been little progress toward implementation. For example:

--Despite numerous studies and associated recommendations on DOD's organization, the need for a single logistics manager to more effectively manage the hundreds of billions of dollars involved in the Department's logistics establishment has not been decided.

--Duplicate management of supply items still exists in spite of DOD and GSA efforts to pursue the national supply system concept.

--Duplicative and multilayered support systems within DOD continue because of the desire of the military services to preserve their autonomy and their perceptions that providing logistics support for their forces must be accomplished through separate formal logistics structures.

GAO OBJECTIVES AND EMPHASIS

Our objective in this area is to determine if civil and Defense agency logistics systems can be modified and consolidated to achieve more efficient and economical operations. We are concerned whether logistics managers are adequately considering new concepts or the potential for greater implementation of existing concepts.

Our past efforts have addressed problems and recommended improvements on most of the concepts discussed above. For example, we have highlighted the slow progress toward implementation of the national supply system concept and recommended improvements needed in the Army's direct supply support programs. We have also issued a number of reports that demonstrate that significant savings could be achieved through strengthening and expanding either the single manager approach or consolidating functions under interagency support arrangements to eliminate duplication of effort and waste. Areas reviewed include management of ammunition, calibration and diagnostic methods, packaging research and development, support functions, aircraft depot maintenance, and the management of vehicle repair parts.

We are currently reviewing (1) the need to consolidate duplicative support functions in the Pacific, (2) whether a single manager is needed to oversee DOD acquisition of automated material handling systems, (3) DOD management of rail motor power inventory, and (4) the advantages and disadvantages of alternative management organizations for DOD's air training ranges.

The following questions are particularly significant.

--How can agency and interservice rivalries that are preventing needed improvements in logistical programs be minimized?

--To what degree do the services have to be responsible for their own logistics and does this really require

complete, formal, and separate logistics structures within each service?

--Can logistics operations be improved by having a single manager for all aspects of logistics within an agency or Government-wide?

--Should there be Government-wide managers for discrete logistical functions (supply, maintenance, transportation, and disposal)?

--Can agency logistics managers turn to commercial logistics systems for support; if so, are there assurances that dedicated and reliable sources of support are available to support contingency needs?

--Does the Army's direct supply support concept have potential application in other service logistics systems?

--What actions are needed to achieve greater interoperability of NATO weapons systems to encourage consolidation of logistics operations?

CHAPTER 4

ARE SOUND LOGISTICS POLICIES ADEQUATELY IMPLEMENTED?

Once reasonable unanimity of opinion is reached on the concepts that should govern logistics management and the policies embodying those concepts have been articulated, the policies are implemented. Logistics planning policies have been promulgated--some on a more widespread basis than others and with varying degrees of emphasis--for most of the concepts discussed in chapter 3. The next step in the process is to evaluate the adequacy of the implementation of those logistics policies that can have an important impact on the effectiveness of logistics management and that provide a basis for more economical operation of logistics functions.

PROBLEMS AND CONCERNS

Two primary logistics policies that are being implemented in varying degrees pertain to the (1) reduction of support costs through greater interagency or interservice logistics support and (2) the establishment of single logistics managers for discrete functions. Yet even where an agency has taken corrective action to implement these policies in response to GAO recommendations, shortcomings still exist.

Implementation of policy requires strong support and direction from top management and continuing emphasis at all organizational levels. Too often policies are not implemented effectively because these elements are lacking. Persistent parochialism must be overcome before goals can be achieved. No matter how fully the economy and efficiency benefits are demonstrated, the recipients of interagency or single manager logistics support resist implementation. All kinds of arguments are raised but the central theme is the same, they do not want to rely on someone else for their logistics services.

There is a great potential for producing large savings by eliminating duplicate logistics management of similar equipment and material. Short of single management, there are numerous opportunities to reduce support costs through greater interagency or interservice logistics support. Numerous activities

within the Government have similar missions and must logistically support similar equipment. DOD and civil agencies are flying planes, operating watercraft, using communications and navigation systems and accomplishing similar missions with a high degree of commonality and which frequently are operated within the same geographic area. And usually each agency (1) provides its own logistic support, such as aircraft overhaul, (2) maintains its own inventory of spare parts, and (3) operates its own port facilities.

GAO OBJECTIVES AND EMPHASIS

Our objective in this area is to determine whether accepted logistics concepts are being appropriately implemented.

We have addressed such subjects as (1) greater sharing of aircraft, crews, support facilities and equipment, chiefly by the Air Force, Navy, and Coast Guard in meeting cooperative responsibilities under the National Search and Rescue Plan, (2) redundant air traffic control and aircraft weather requirements managed by Departments of Commerce, Transportation, and Defense, (3) the consolidation potential for Navy intermediate maintenance activities, (4) aeronautical support equipment in civil agencies, and (5) the maintenance of electronics and communications equipment.

Based on our 1973 recommendations, DOD established a single manager responsible for all functions of ammunition management. We are currently analyzing the implementation of this program and, because complete implementation is a gradual process, we envision a need to continuously monitor the program's progress.

We are reviewing the effectiveness of the Federal central coordinator for weather activities.

The following questions are considered to be the most important to be explored.

--Can intra or interagency support be extended to additional items?

--Can base support functions in the same geographical area be further consolidated?

--Has the single manager role been clearly defined and fully implemented--does it include all key functional responsibilities to maximize efficiency and effectiveness?

--Does the single manager have sufficient authority/clout to make things happen? Is the manager organizationally located in the most appropriate place to maximize clout?

--Have the barriers to success of the single manager concept been overcome, such as service parochialism, duplicative records which are kept because of lack of confidence in someone else providing services, etc.?

CHAPTER 5

CAN DETERMINATION AND SATISFACTION OF NEEDS AT THE WHOLESALE AND RETAIL LEVEL BE IMPROVED?

The basic challenge of inventory management is having the proper amount of stock on hand when required--neither too much nor too little. If inventory levels are too low, the supply systems of Federal agencies cannot satisfy customer demands, and must undertake costly and wasteful efforts to recover from out-of-stock positions. If levels are too high, not only has money been spent on inventories which may never be used but a whole train of unnecessary expenditures is set in motion for more warehouses, more transportation, and more personnel; storage and distribution facilities are overcrowded with stocks; maintenance-in-storage workload must be increased; and large excesses are generated which must be purged from the system at a severe financial loss.

The Federal Government's investment in inventories of personal property to satisfy needs of its many programs is enormous. For example, as of September 30, 1977, DOD and GSA wholesale level stocks consisted of varying quantities of over 3.5 million items valued at approximately $55.9 billion. $15.5 billion represented end-item equipments (aircraft, ships, tanks, and weapons systems) and $40.4 billion, represented secondary items and consumables (components, repair parts, supplies, POL, clothing and subsistence). During FY 1977 over $5 billion of these stocks in an excess position were disposed of and stocks valued at $15.9 billion were identfied as being in long supply and candidates for future disposal. As of June 30, 1977, DOD retail and user level stocks held at hundreds of CONUS and overseas installations, organizations and ships were valued at $139.5 billion. Similar stocks on hand at other agencies for their own support amounted to about $500 million.

PROBLEMS AND CONCERNS

There are a number of functions which must be performed properly to assure that sufficient, but not excessive, quantities are available when and where needed. This initially requires identification and determination of valid needs and which items and quantities are available or can be obtained to satisfy those needs. If not immediately available where

the need exists, identification of the required quantities of items must be communicated to the proper sources of logistics support system stocks.

The sources must determine availability and satisfy the original needs from their stocks or from other sources that may be within the Government or commercial. When quantities of items initially determined as needs are received, they may be used immediately or held in stock for potential future use. If the potential future use does not become actual, excesses develop and eventually disposal action must be taken.

The problems of managing and providing logistics support throughout the government arise from a wide variety of reasons and causes. The numerous agencies have widely different roles, missions, and objectives which preclude complete uniformity or standardization of systems. Some of the problems arise from the multiplicity of different items and the quantities of items that must be obtained and stocked in numerous differing storage locations and environments. Other problems are the result of rapid and unpredictable change in technological advantages in equipments and in automated and mechanized systems used to keep track of and to move stocks from their source to the ultimate users. In the military additional problems arise because of the magnitude of inventories, tremendous volume of transactions, distances involved and lack of continuity of personnel at all levels.

Some of the significant problems and concerns are:

--Effective controls are not maintained to insure that items requested to satisfy realistically determined needs are always received and received when needed.

--Logistics systems do not insure that needs are realistically and accurately determined, communicated to the appropriate source, and satisfied in the most efficient and timely manner.

--Logistics systems do not insure that receipts of items are immediately known and available to satisfy needs.

--Effective controls are not exercised to insure that the needs continue to exist when the request to satisfy them could not be filled initially.

--Logistics systems do not provide procedures for realistically determining and identifying the priority of needs and of their being satisfied.

--Logistics support systems do not provide for standardizing the determination of needs in quantities that satisfy those needs most economically.

--Sufficient funds may not be available at the various logistics support levels to provide for satisfying realistically determined needs in the most timely manner.

--Logistics systems do not provide standard procedures for government-wide utilization of stocks.

--Personnel have not been trained adequately to understand and effectively implement and carry out the logistics support systems' procedures.

--Logistics systems, procedures, and equipment are not sufficiently standardized to avoid the disruptions to operations that result from permitted modifications by individual organizations and from personnel rotations.

Although the basic functions involved in inventory management are not exceptionally complex, they become very complex because of the multitude and variety of management structures, systems, procedures, controls, codes, and practices used to accomplish these functions. Most departments and agencies have their own distinctive logistics support system at the wholesale level, at the retail level, and at the user level. Some of these systems are standardized for all like organizations within a department, some permit organizational modification, and some have been developed by the individual organizations based on directed broad guidelines. Methods for communication of needs and their satisfaction, as well as for data development, accumulation, and reporting, may vary from real-time automated systems to periodic reporting through command channels and are being continually changed to perfect the systems.

GAO OBJECTIVES AND EMPHASIS

Our objective is to determine whether logistics support systems are being managed and operated so that realistically determined needed quantities of material are available when and where the need exists and that this is accomplished in the most efficient and effective manner.

There are three levels on which this area must be examined--the wholesale, the retail and the user. Each of these groups of organizations has to carry out its appropriate level of the logistics support functions. These three levels are not necessarily mutually exclusive since actions at any one level affect actions on the other levels. Therefore, when the determination of needs and the effectiveness of their satisfaction is examined, it is generally necessary to simultaneously examine certain aspects of the other levels' operations and performance.

During recent years we have issued a number of reports showing the need for substantial improvements, at the various levels of supply management, in the procedures, practices, and controls employed in determining and satisfying needs. As a result of actions taken by the agencies in response to these reports, we have identified measurable savings of hundreds of millions of dollars.

For example, as part of our continuing effort to evaluate the Navy's fleet logistical support systems, we reported that aircraft carrier requirements were not being determined in a timely and accurate manner and that, as a result, substantial amounts of excess material were being generated which should be redistributed. This report resulted in estimated savings of $130 million. Past efforts relating to Navy fleet support also covered submarines and their tenders.

We also reported that GSA should establish a more reliable and accurate historical data base to support its computed wholesale level inventory needs and should improve its system for identifying and cancelling procurements made to satisfy needs which no longer exist.

Currently, we have eight ongoing assignments directed to various concerns and problems in this area. One assignment is a review of DOD management and control over petroleum products in Korea and the Philippines. Since 1969 we have issued six reports dealing with various aspects of the management and mismanagement of petroleum products in DOD. In addition, we are currently performing a survey of the Army's management of its petroleum products in Europe.

The following questions deserve particular emphasis:

--Do logistics management systems provide appropriate, reliable and accurate data on the range and quantities of material needed?

--Is inventory data at the user and retail levels sufficiently reliable and accurate to determine whether reported on hand quantities are actually available to meet current and future needs?

--Is data on historical usage which is used to establish inventory levels intended for future needs reliable and accurate?

--Are needs promptly communicated to the appropriate source?

--Are needs satisfied in the most efficient and timely manner?

CHAPTER 6

ARE LOGISTICS REQUIREMENTS IDENTIFIED EARLY IN THE DEVELOPMENT STAGE OF COMPLEX WEAPONS SYSTEMS AND LOGISTICS PLANNING PROJECTED THROUGHOUT THE LIFE CYCLE OF THE EQUIPMENT?

Logistics support costs are affected significantly by such matters as (1) the reliability and maintainability designed into a weapons system or other major equipment system, (2) the concepts of operation and maintenance for the system, (3) and the procurement processes used to support the system. If life cycle costs of major equipment systems are to be reduced, a substantial part of this reduction must occur at the time of system definition and development.

The Department of Defense has developed a formal planning procedure called the Integrated Logistics Support (ILS) plan which attempts to link development and production planning with deployment and utilization planning. This has the objective of establishing long-range milestones and phased planning of important events for weapons systems as they move into the DOD inventory. DOD requires all weapons systems managers to use the ILS concept to plan logistics support for new weapons systems.

Under this concept, ILS elements, such as maintenance, supply parts, and support equipment requirements, are planned early in the design stage of new weapons systems rather than after the design has stabilized and changes are apt to be costly. Logisticians, as well as operators, are introduced into the planning process and encouraged to contribute from their experience in supporting and using earlier generations of weapons systems.

Logistics support analysis is one tool used in ILS planning. Contractors are required to develop automated logistics support analysis programs to identify and control logistics data during development and production. These programs are designed to assist management in its evaluation of weapon systems design and operational characteristics, and to help in making sound logistics support decisions. Logistics support analysis data is gathered from various sources and includes information such as component parts identification, maintenance tasks, assembly and disassembly of components, failure rates, support equipment identification, and training needs.

PROBLEMS AND CONCERNS

Some progress has been made in focusing attention on logistics effects during systems design. However, there are a number of problems and concerns that will require GAO's attention for some time.

Several major weapons systems or weapons, such as the F-18 and F-16 aircraft, the XM-1 tank and the Navy HARPOON missile system, are under development by the three military services. A major concern is the adequacy of the "front-end" logistics planning for these systems. Potential problem areas include:

--Transfer of logistics support responsibility from the production contractor to the service,

--Potential for host nation support of systems to be based overseas,

--Planning for acquisition of trained personnel and technical data coincident with introduction of the system into the active force's inventory,

--Maintenance concepts envisioned, and

--Development of initial spare parts provisioning requirements.

Another problem that impacts "front end" logistics decisions is the manner in which the Air Force and Navy base their aircraft throughout the United States. The Air Force positions the same types of aircraft (B-52's for example) at different locations throughout the United States. The Navy, however, positions all aircraft of one type at the same location. Positioning all aircraft of one type at one location should minimize investment in support material, facilities, and equipment. Thus, basing concepts can influence logistics support costs substantially.

A different concern pertains to the type of integrated logistics support planning and decisions that should be made for existing weapons systems being phased out of the active forces and turned over to the Guard and Reserve forces. The potential for consolidating facilities, pooling repair parts, and integrating maintenance, either between the Guard and Reserves or between those components and the active forces must be considered if logistics support costs for such weapons systems are to be minimized.

One other "front-end" decision concern pertains to the determination of requirements for major logistics/support systems such as the Advanced Tanker Cargo Aircraft and AO fleet oilers. Requirements for systems designed primarily for combat support are based on the nature of the logistics systems and other matters such as quantities of war reserve materials, prepositioning policies, and foreign and domestic transportation facilities.

Decisions made at the front end of the acquisition process for new major weapons systems can govern the way that logistics support is provided over the life of the equipment. In other words, the Government can get "locked in" at the outset to the way in which a particular system will be supported. Obviously, any decisions that can be made early in the acquisition process that will minimize support costs without degrading the mission capability and planned combat readiness of a weapons system have the potential for the greatest savings.

GAO OBJECTIVES AND EMPHASIS

Our objective is to assure that logistics support planning for high cost items of equipment has been carried out so that the item of material or system provides maximum utilization with minimum support cost.

We have reviewed the operating and support costs of new weapons systems compared with their predecessors. We could not determine, however, whether Air Force and Navy emphasis on increased reliability and maintainability (an integrated logistics support concept objective) has reduced system operating costs because of lack of data to measure such improvements. We also reviewed the Army's first application of the integrated logistics concept to a major weapon system.

We are currently reviewing integrated logistics support planning for the Trident weapons system and requirements for aerial refueling aircraft.

The following questions are of particular concern:

--Have logistic support considerations been taken into account early enough in the weapons system acquisition process to increase the system's supportability and reduce Life Cycle Costs?

--Are the Services implementing systems engineering programs--such as Logistics Support Analysis, Optimum Repair Level Analysis, and Reliability Centered Maintenance--to provide visibility of operating and support costs as a major facet of systems acquisition management?

--Have logistics support alternatives been selected that complement weapons system design choices and capture potential Life Cycle Cost payoffs?

--Are the services effectively exercising Configuration Management to insure that configuration control procedures include provisions for integrated logistic support planning?

--Have existing supply and maintenance support, test equipment, and other logistic support facilities and equipment, been considered before defining requirements for additional capability?

--Does logistic support planning for co-produced or foreign produced weapon systems adequately reflect overseas and CONUS basing requirements?

--Are Life Cycle Costing Programs an integral part of the Integrated Logistic Support Program?

CHAPTER 7

DO STORAGE AND PRESERVATION SYSTEMS PROVIDE ADEQUATE CONTROL AND PROTECTION OF MATERIAL INVENTORIES?

Millions of material items, costing billions of dollars, are continuously procured, received, stored, and issued by Government depots and other storage activities. These warehousing and storage facilities handle material for both the Department of Defense and civilian activities such as the Veterans' Administration, Department of Agriculture, and General Services Administration. In large part, the material items acquired to support the Government's civil and defense programs are received some time in advance of the time they will be used. This allows the Government to take advantage of cost savings attributable to quantity procurements and to position the material in a way that distribution to ultimate users can be made in an efficient and economical manner.

A recent study of the Government's wholesale distribution depot storage sites showed that there are 67 storage facilities, excluding 81 fuel terminals and 15 ammunition depots. Of these, more than half are Defense facilities. The Government facilities provide 141.5 million gross square feet of storage for material items ranging from the smallest electronic components to large major items of equipment. This wholesale storage effort employs about 22,946 personnel to take care of the $25.4 billion of inventory stored and accounted for at the various locations around the country and overseas. Through the use of complex accountability and issue systems, the depots process more than 15 million material receipts and 37 million material issues each year. The costs of operating these storage facilities are substantial. More importantly, however, the Government's depot system plays a major role in the logistics supply line in the event of a wartime contingency or national disaster.

The effectiveness of material storage operations is measured by the responsiveness of the system to issue the requested material to the user in the proper time frame in a condition which will satisfy the users needs. As customers are adversely affected by delays or inaccuracies in material issues, the Government storage systems must employ procedures which constantly promote and improve their capability to promptly issue and ship the correct quantities of material

requested by the customer. The layout of the storage area and the configuration of material handling systems should promote efficient space utilization and uninterrupted flow of material into, through, and out of the storage area. At the same time material should be provided protection from loss through theft and deterioration. Effective physical inventory and quality controlled care and preservation programs should be implemented to minimize physical losses and material deterioration.

Throughout the storage period the availability of material for issue should be accurately reflected in the inventory management records. As a minimum, this data should show the correct identification, quantity on hand, true condition, and the precise storage area occupied. Whenever, any of these elements change, because of receipts, issues, rewarehousing, condition deterioration, etc., such changes must be promptly and accurately reported and posted to the inventory records. In view of the constantly rising costs and the need to maximize efficiency and economy, management must also stay abreast of new technology and adopt those best suited for Government use.

PROBLEMS AND CONCERNS

The storage and preservation of material is a major segment in the logistics chain and properly implemented, is the key to a responsive material issue system. This area will take on additional importance in the future as dollars available for storage decrease in a peacetime environment and reductions in personnel and consolidation of depot storage facilities become real.

Indicated problems in the control and protection of material inventories are:

--Receipts, issues, and preservation actions affecting material in storage are not accurately reflected on the inventory management records to ensure that those records truly depict the material available for issue.

--Reasonable physical inventory performance standards are not being met under the physical inventory programs.

--The owner of the material does not provide funds for care of supplies in storage. Nor are programs achieving their objective of assuring that the true condition of material is continuously known and recorded.

--Material is not being properly coded for the shelf life program. Shelf life condition coding is not being accomplished in a manner to ensure that maximum usage is obtained from material before disposal, including usage by other user agencies.

--Asset managers are not adequately developing and disseminating guidance on storage and inspection of material.

--Storage facilities do not adequately protect material from loss or deterioration. Security procedures for high value, pilferable, or classified materials are not adequately implemented.

--Storage depots and material handling systems do not effectively utilize space and expedite the receipt, storage, and issue of material.

--Government activities do not employ cost-effective packaging and preservation procedures.

GAO OBJECTIVES AND EMPHASIS

Our objective is to assure that the storage and preservation of material is accomplished effectively and efficiently.

Our prior work focused on the storage function--care and preservation of material, physical inventory accountability, and material shelf life. Consequently, limited work was done on the receipt and issue functions. We will place greater future emphasis on the receiving and issuing functions. One objective will be to determine what impact improved receipt actions can have on the issue of material and the condition of such material when it is removed from storage for issue processing. Another objective will be to determine whether depots are organized to meet established issue priorities and required material delivery dates. The most important questions to explore are:

--To what extent are material receipts at depots properly identified, coded, and processed before being transferred into storage? Can inspections at vendor sources be depended upon to reflect the true condition of the material?

--Have receipt accountability and quality control measures been implemented for material receipts?

--What provisions are made for material receipts which are not compatible with the existing depot systems?

--What improvements could be implemented in the receipt process to eliminate subsequent material issue delays and improve depot responsiveness?

--What effect do depot consolidation actions, such as the Army's direct support system, have on the receipt and issue functions?

CHAPTER 8

IS MATERIAL DISTRIBUTED EFFICIENTLY?

As recently as 1950, the term physical distribution was rarely used in business, government, or academia. Today, integrated physical distribution has emerged as one of the most potent, as well as provocative, aspects of commercial and governmental operations. Businessmen and government managers alike have recognized that advantages and savings achieved through highly efficient manufacturing and procurement techniques can actually be lost as the material moves into the chaotic world of distribution.

Between origin and ultimate destination (the user) a great deal happens in terms of physical distribution. Material is handled and rehandled, hauled by various transportation modes, and stored in a variety of places under differing environmental conditions. It is tossed, dropped, lost, stolen, shoved, and generally banged around.

For a distribution system to operate with optimum efficiency, each transaction or movement must be looked at in terms of its impact on the total system. Economies of time or resources realized in one segment could very well penalize another segment and actually result in diseconomies. For example, it would do little good to obtain highly favorable transportation rates on huge volumes of material only to have the savings eaten up by storage costs at destination. Even within a particular transportation mode, the relative benefits and rates of the hundreds of individual carriers involved must be evaluated to ensure selection of the most favorable one. Factors, such as susceptability to loss and damage, must be weighed against the availability of lower rates when deciding on which shipping mode is more efficient.

The Government spends over $8 billion annually to operate material distribution systems, and it has invested billions more in depot facilities and material handling equipment to support such systems. In recent years Government distribution systems have been in a state of transition as managers have attempted to take advantage of improved communications systems, automated data processing techniques and innovations in transportation concepts. Added have been the problems and benefits associated with deregulation of the transportation industry.

PROBLEMS AND CONCERNS

The immenseness and complexities of distributing Government material coupled with dynamic innovations and drastic shifts within the transportation industry, offer unlimited opportunities for improvements and dollar savings. Some of the significant problems and concerns are:

--Shipments of material are not managed to achieve maximum benefits for the Government.

--Excessive order and shipping time cause higher inventory investment.

--Material in transit or storage is not adequately protected to insure maximum life and to minimize loss and damage.

--New concepts and techniques in transportation have not been given adequate consideration.

--Deregulation within the transportation industry may affect the quality or cost of service and the ability of the industry to perform.

Actions taken by Government managers impact directly and significantly outside of Government. For example, Government systems measure the quality of service rendered by commercial firms involved in the distribution process and they identify areas in need of improvement. Such improvements are enjoyed thereafter by everyone using the services. Likewise, rate analysis by Government managers frequently results in rate reductions which are enjoyed by all users of the service. In other words, anything the Government does in terms of distribution can impact on other than Government interests and could very well influence the price paid for certain commodities by the general public.

GAO OBJECTIVES AND EMPHASIS

Our objective is to assess the effectiveness and efficiency of the distribution operations of Government agencies.

In recent months we have issued a number of reports in this area. These reports covered such subjects as the need for GSA to provide traffic management assistance to civil agencies; the need for improved planning for transporting

strategic petroleum reserves; opportunities to improve control over reusable transportation containers; the lack of uniform security measures during the distribution of arms, ammunition, and explosives; needed improvements in the methods used for distributing vehicle parts in the Government; and the effectiveness of commercial carriers in the transportation of military supplies.

The following questions are particularly significant:

--Are shipments moving at the least cost consistent with users' needs?

--What is the trade-off between using expedited transportation and reducing inventory levels?

--Are in-house facilities and equipment being used effectively?

--Can economies and greater efficiency be achieved by consolidating distribution functions of various agencies?

--Can new concepts and techniques in distribution be applied to Government distribution systems thereby improving the systems and/or reducing Government costs?

CHAPTER 9

CAN IMPROVEMENTS BE MADE IN THE UTILIZATION OF EQUIPMENT?

Effective utilization of equipment, within and among Government agencies, is a must if the Government's investment in equipment is to be kept to the minimum possible for the successful accomplishment of agencies' missions. Government agencies have billions of dollars invested in equipment of all types. New equipment is continually entering agencies' inventories. Close management attention to the experienced utilization of predecessor equipment, and the actions needed to ensure improved utilization of the new equipment, will aid agencies in better projecting equipment requirements. Further, the ever increasing cost of equipment makes the proper utilization and maintenance of equipment already on hand essential.

PROBLEMS AND CONCERNS

Uneconomical and ineffective utilization of equipment can occur in a variety of ways and can result from inadequate management attention at various points in the equipment's life cycle.

Some of the important problems and concerns in this area are:

--Agency equipment requirements determination processes do not ensure that equipment requirements are based on valid usage criteria.

--Agency equipment usage policies and procedures do not ensure that maximum utilization is attained for equipment on hand.

--Agency policies and procedures are not adequate to ensure that equipment is properly maintained to reduce operating costs.

GAO OBJECTIVES AND EMPHASIS

Our objectives are to improve agency processes for determining equipment requirements and to assure that maximum utilization is attained for equipment on hand.

In recent years, we have issued several reports which contain recommendations that are still under consideration by the agencies and the Congress, and which could cause significant reductions in equipment investments.

Our October 1977 report on the need to strengthen the justification and approval process for military aircraft used for training, replacement, and overhaul pointed out that the Air Force and Navy did not properly use past experience and planned utilization in projecting F-15 and F-14 support aircraft requirements. We estimated that requirements for these aircraft were overstated by about $2.5 billion.

Another October 1977 report on alternatives for reducing requirements for spare aircraft engines also pointed out that requirements were overstated due primarily to the use of inappropriate usage standards. The Department of Defense generally agreed with our recommendations on improvements needed in determining spare aircraft engine requirements and is in the process of developing revised criteria for determining needs.

In another report issued in June 1978, we pointed out that improved utilization of administrative vehicles by military activities in Korea could be achieved by consolidating motor pools and improving vehicle operations and maintenance procedures. Savings of over $2 million resulted from implementation of our recommendations.

We have a number of ongoing reviews addressing equipment utilization. The following examples are illustrative of these reviews.

--Aircrew Requirements for Strategic Airlift Aircraft.

--Efficiency and Effectiveness of GSA Motor Pools. In this review, we are determining whether (1) the pools are located so maximum vehicle use is attained, (2) the mix of vehicles are properly determined on the basis of expected use, and (3) vehicles are maintained or replaced based on proper usage criteria.

--Phasing Aircraft Out of the Active Forces' Inventories Into the Reserves and National Guard's Inventories. In this review we are evaluating the requirements for additional support equipment established by the Reserves and National Guard to see if these requirements are based on reasonable usage criteria.

The following questions deserve attention:

--Does the planned utilization appear reasonable to support the type and quantity of equipment determined by an agency to be required?

--Was the past usage of like equipment adequately considered in determining requirements?

--Was consideration given to the potential for shared utilization of the equipment among one or more users to hold down investments?

--Are equipment modifications supported by safety, economy, or efficiency reasons?

--Are analyses of the cost to modify versus replace properly performed?

--Have reasonable usage standards been prescribed to to measure the continuing need for equipment?

--Is equipment no longer needed promptly redistributed to meet another user's needs or disposed of if no needs exist?

CHAPTER 10

ARE EQUIPMENT MAINTENANCE PROGRAMS AND PROCEDURES ACHIEVING OPTIMUM EFFICIENCY AND EFFECTIVENESS?

Federal agencies require equipment in good working order to be able to effectively meet their responsibilities. Therefore, they must have maintenance programs to assure that timely repairs and servicing are accomplished on assets such as aircraft, weapons, vehicles, ships, industrial machinery, and general support equipment. Although we do not know the actual extent of maintenance programs throughout the Government, the Department of Defense estimates that they spend in excess of $20 billion annually for maintenance.

Maintenance is the practice of (1) returning work or inoperable assets to full working condition or (2) extending asset life through regular servicing. It ranges from mere checking the oil of a vehicle by the user to complete overhaul--including updating modifications--of major items, such as aircraft or tanks, at industrial facilities called depots.

PROBLEMS AND CONCERNS

Maintenance requires constant attention to assure that it is effective and efficient. This is because (1) maintenance requirements continually change as assets are updated and use expands or contracts and (2) maintenance responsibility and resources are dispersed among innumerable Federal activities.

There has been strong congressional interest in the introduction of new maintenance concepts and practices. For example, the Congress has stressed the need for the military to:

--Apply the Reliability-Centered Maintenance (RCM) concept of private industry wherein certain asset parts are replaced on failure rather than at specified intervals.

--Make more efficient use of available commercial maintenance information for flight simulators.

The tendency among Federal agencies has been to proliferate maintenance resources to make sure the capability will be available when needed. To the contrary, this has resulted in funding shortfalls which have hampered the overall maintenance effort. Some of the problems and concerns that affect this area are:

--Maintenance resources (skills, equipment, and facilities) are not effectively matched with maintenance requirements.

--Proven maintenance concepts and practices are not effectively transferred among Federal agencies and private industry.

--Maintenance is not being performed by the appropriate Government entity to assure optimum use of resources.

--Private industry is not being used for maintenance when feasible and economically beneficial.

--Maintenance is not timely enough to assure Federal assets are available when needed.

--Interval-oriented maintenance is being performed when a use-until-fail policy could be more appropriate.

--More maintenance could be handled below the depot level.

--Increased automation could improve maintenance quality, timeliness, and economy.

--Backlogs are not being effectively managed.

--Performance is not being effectively measured.

GAO OBJECTIVES AND EMPHASIS

Our objective is to push for improvements in Federal maintenance productivity by evaluating resource management and comparing Federal and private industry practices.

We have conducted major reviews on the productivity of military maintenance and have found cases of extensive underuse of resources, overemphasis on self-sufficiency, ineffective coordination among Federal agencies and failure of agencies to incorporate improved maintenance concepts and practices developed externally.

Specifically, we have focused on the depot level maintenance of ships and aircraft and have (1) evaluated the matching of depot maintenance resources with requirements and (2) compared military maintenance practices to those of private industry. These reviews have shown that there is a need for broader control over Federal resources and that there is much to be gained from Federal agencies adopting some of the concepts and methods of private industry as well as other Federal agencies.

Currently underway are reviews of field maintenance support of Air Force aircraft systems. This and a survey of Army and Navy field maintenance have indicated that field resources can be more effectively managed to improve productivity and effectiveness.

The following questions are particularly significant.

--Do Federal agencies effectively identify their maintenance requirements?

--Can the available capacity of maintenance resources be used more effectively?

--Is private industry used for maintenance of Government-owned items when practical?

--Is unneeded maintenance capacity eliminated?

--Is there an effective exchange of information on proven and innovative maintenance concepts and practices?

CHAPTER 11

CAN U.S. GOVERNMENT PRINTING BE IMPROVED?

Under the provisions of Title 44 of the United States Code, primary responsibility for setting and administering policy for the printing and distribution of Government publications rests with the Joint Committee on Printing (JCP). The responsibilities of the JCP include:

--Oversight of the Government Printing Office's (GPO) operations and policies.

--Establishment of policy for the Federal printing and distribution system through the formulation of regulations.

--Oversight of the operations of almost 300 department and agency printing plants, worldwide.

--Oversight of the Federal Printing Procurement Program.

In fiscal year 1978, total Government printing amounted to about $1.1 billion; about $500 million was procured through GPO. Of this $500 millon, $309 million was procured from commercial contractors and $191 million was done in GPO's printing facilities.

PROBLEMS AND CONCERNS

There are certain problems in the printing area in general and in GPO specifically. Executive agencies' complaints about GPO's responsiveness to their printing needs, the proliferation of documents generated by Government agencies, and the historically low productivity in the printing area are some of the major problems noted.

The need for revisions to the existing organizational structure, policies and procedures for managing Government printing and distribution of public documents is currently receiving extensive congressional attention. Bills were introduced in the House and Senate in June 1979 which would, if passed, have substantial impact on Government printing and distribution. These bills would terminate the role of the JCP, rename GPO the National Publications Agency (NPA) put it in charge of all Government printing and distribution, and establish a Commission to head NPA. The stated purposes of the bills are to provide for improved administration of public printing services and distribution of public documents.

GAO OBJECTIVES AND EMPHASIS

Our objective is to provide as much assistance as possible to the committees considering legislation to improve the existing system for managing Government printing by (1) demonstrating where the current organizational structure is not efficiently and effectively providing printing services to Federal department and agencies and (2) specifically identifying the improvements needed.

Between 1973 and 1977 we issued 24 reports on GPO activities, covering such areas as (1) need to improve printing services provided Federal departments and agencies relating to rapid delivery of orders, (2) opportunities to reduce costs and increase productivity by procuring more printing commercially and by interagency consolidation of in-house printing plants, (3) need to shorten response time in the distribution of documents to the public, and (4) need to improve management and operations of GPO's regional printing procurement offices. In 1977, we curtailed our work in the Government printing area because the JCP contracted with a private firm to review the operations at GPO.

The following questions are of particular concern:

--Is adequate information available on total Government printing?

--What are the existing management controls over such printing?

--Should departments and agencies have more flexibility in the provision of their own printing needs?

--Are agencies' printing plants being effectively utilized?

--Should agencies' printing plants be reduced in number through closures or consolidations?

--Should outside contracting for printing services be increased or decreased? Is it cost-effective?

--Should outside contracting be managed by agencies or through GPO or its successor?

--Can GPO or its successor give greater responsibilities to agencies?

--If the currently proposed legislation is passed:

1. Will agencies have to give up their own printing plants and, if so, how will the transition be made to have all printing work done commercially or by the Public Printer?

2. Will agencies have a viable appeal process for decisions made by the Commission?

3. Who will be responsible for seeing that the Commission's decisions are properly implemented?

CHAPTER 12

OTHER LOGISTICS MANAGEMENT ISSUES AND CONCERNS

CAN LOGISTICS MANAGEMENT INFORMATION SYSTEMS BE IMPROVED?

A multitude of management reporting systems exists in the Federal Government to provide management at all decision-making levels with current and historical data on supply, storage, transportation, and maintenance activities. The importance attributed to data based information systems cannot be overemphasized. Information from these systems is critical to decisions affecting day-to-day actions necessary to maintain visibility and control over the Government's multibillion dollar supply and maintenance activities. Failure to maintain control over these assets and the related production capability results in failure to satisfy consumer needs, acquisition of unneeded material, performance of unnecessary maintenance, additional transportation and storage costs, and ultimately disposal of new and unused surplus material at a fraction of its original cost.

In establishing new management information systems or refining existing ones, the changing demands for greater efficiency and economy of resources should be balanced against the system capability needed to support the operating plans of the Government activity. The design of management information systems should involve networks which consider all interfacing elements in concert and insure the appropriate operating and management information is available at the appropriate point of use in the logistics system.

The military services, the Defense Logistics Agency and civil agencies such as the General Services Administration and the Veterans Administration have made significant commitments to development of computer-based logistics systems. In some cases, the management information system is a common system utilized by many users (DOD and civil). For example, the Defense Logistics Agency, which operates the Government's cataloging system, is a Government-wide repository of identification, technical, and logistical information on some 5.8 million supply items used throughout the Federal Government. The information on supply items, source of supply, Government user specifications, etc., is readily available to all Government users who have a need for this data.

On the other hand, some data management information systems are special applications which primarily serve the program manager responsible for the operation. In this respect, the Navy's Material Maintenance Management System is designed to accumulate maintenance data on ships, aircraft and other major equipment items. The Air Force's Maintenance Management Information and Control System is a base level system for controlling maintenance activities.

Other special systems, such as the Army's Logistics Intelligence File which provides intransit item visibility on requisitioned material, are being looked at as candidates for overall DOD application.

PROBLEMS AND CONCERNS

The management information systems addressed in this area are complex and important to timely completion and effective operation of the logistics pipeline. When performing work in the area, the following problems and concerns need to be addressed:

--Are existing management information systems for intransit visibility of material duplicating information available through other systems?

--Are proposed new intransit visibility and maintenance information systems giving consideration to systems or segments of systems already in place?

--Do existing or proposed work measurement systems for maintenance in Government facilities provide meaningful, timely reports which management can use to measure performance and make decisions?

--Do systems accumulate accurate and reliable data to facilitate maintenance planning and management that will assure timely repair and unkeep of equipment?

--Can overall efficiency and economy be achieved through increased standardization and improvement of similar logistics information system applications?

--Do the logistics support and management information systems provide appropriate, reliable and accurate data and management reports on the range and quantities of items needed and available to satisfy needs as well as on the effectiveness of satisfying those needs?

IS UNNEEDED PROPERTY DISPOSED OF PROPERLY?

The generation of unneeded material is inevitable in light of the large number of different types and vast amounts of material managed by the Government to support its operations. Effective requirements determinations, inventory management, and distribution procedures should minimize generation of such material and, hopefully, restrict it to a reasonable amount. However, the range and depth of items in the inventory, and the complexities of their management, make it unreasonable to expect that all material acquired will ultimately be used as originally envisioned. Material unneeded at its current location by an agency is referred to as long supply, excess material and surplus material is that which is not needed by any agency of the Government.

GSA and DOD have rather comprehensive systems intended to achieve the most economical management of long supply, excess, and surplus material. Basically, these systems are designed to:

--Retain for use that portion of the long supply material for which the cost of retention is less than the cost of disposal.

--Redistribute excess material to meet the needs of other Government agencies or eligible Government-sponsored activities.

--Purge surplus material from Government inventories through (1) donation to eligible recipients, (2) public sale for the highest net monetary return, or (3) destruction or abandonment.

Material which is not needed by its current custodian is often considered to be unimportant and, as a result, may not be accounted for and managed with the diligence accorded needed material. Further, the generation of unneeded property can result in criticism by higher authority. Therefore, the manager having possession of the unneeded material is seldom motivated to advertise its existence. Both of these forces tend to work against what is needed most--an aggressive program to redistribute

the material to fill requirements of authorized users who otherwise may buy new material and to realize top dollar for material which cannot be used.

Lack of appropriate procedures and management attention in this area causes numerous serious problems, such as:

--Unneeded material is retained by Federal activites and allowed to deteriorate or become obsolete when it should be redistributed to other authorized users to satisfy current needs.

--Organizations dispose of material which should be retained for future needs which otherwise will be met through commercial procurement.

--Delays in reporting the existence of excess material to the appropriate organizations prevent its being made available to authorized users before they procure the same type of material.

--Excess material transferred from one Government activity to another without reimbursement is diverted to personal uses because it is not accounted for properly.

--Organizations responsible for promoting redistribution of excess material fail to notify all possible users that the material is available.

--Government organizations acquire excess material for which they do not have valid needs, thereby preventing other activities from acquiring the material and avoiding procurement.

--Property is donated to non-Federal organizations when it is needed by Government organizations.

--Non-Federal organizations acquire surplus property they do not need through donations, thereby depriving other eligible donees of needed material.

--Valuable property is sold for much lower prices than should be realized.

CAN LOGISTICS EFFECTIVENESS BE INCREASED THROUGH IMPROVED CATALOGING AND STANDARDIZATION PRACTICES?

The Federal Catalog System is the official program under which equipment and supplies purchased by 61 Defense agencies, 87 civil agencies, and about 24 foreign governments are uniformly named, described, classified, stock numbered, and the subsequent data published for use by Government and industry. The system, operated jointly by DOD and GSA is the central repository of descriptions and management data for about 6.0 million items of supply.

Government employees in all agencies turn to a catalog system product to identify the supply items they need to help them accomplish their mission. Simple items such as paper, office supplies and furniture are examples. As the Government task becomes more oriented to the large fleets of vehicles and weapon systems used, the dependence on the catalog system data becomes greater. Maintenance people, inventory managers, designers, and military planners all depend on the catalog as a valuable tool for use in their jobs.

Effective cataloging and standardization programs directly affect the multimillion dollar inventory management functions performed by numerous agencies. Ineffective standardization and item entry procedures which allow the cataloging of unnecessary items, inaccurate maintenance of data, or untimely deletion of items can result in the loss of management funds and lack of logistics support which may range from a few hundred dollars per item to the grounding of major end items such as planes, tankers, missiles, etc.

About $85 million is required yearly by the agencies to maintain the catalog data. The data bank computers are operated by DOD at a yearly cost of about $18 million. The data bank is required for and organized into the following segments

--Item identification.

--Utilization and marketing.

--Interchangeability and substitutability.

--Publications.

--Supply management.

--Statistical reports.

About $60 million a year is required to operate the item entry and standardization programs intended to assure that only essential items of the quality needed to meet Government needs are acquired. The entry screening process is an attempt to prevent the cataloging of the same item more than once and to curb the buildup of a large number of unnecessary similar items in the logistics systems. One approach to achieve the latter is to use existing items in the new equipment being developed for the Government.

During the 1970s, about 280,000 new items a year have entered the catalog and supply systems. Standardization programs and techniques have been developed to assure that only essential items are in the catalog system.

An item reduction program is currently funded at $11 million. This area has consistently shown a high payoff for resources devoted. Despite these successes, the program is struggling, with some agencies such as GSA devoting no resources to the area.

Another $6 million a year is required to purge from the supply and catalog system those items no longer needed. As the usefulness of an item decreases, it becomes necessary to schedule its phase-out--the important considerations being to utilize any on-hand inventory of the item before replacement items are introduced.

Since the establishment of the Federal catalog in the early 1950s, numerous system revisions have been made. The most recent started in 1965 and the first phases were declared operational in 1975. To date, the new revisions to fully utilize advanced ADP concepts and the latest communications techniques cost about $75 million to develop. However, because of design and development weaknesses, the new system has not achieved planned performance objectives.

The following questions are considered the most important to be explored.

--Is the catalog and backup data adequate to meet the users' need? One needs to recognize that often these users are relatively inexperienced.

--Is the catalog and backup data adequate to meet the users' need? One needs to recognize that often these users are relatively inexperienced?

--Is the catalog and supporting technical data adequately developed to properly identify item characteristics, parameters, users?

--Is the data made available to everyone, including design contractors to preclude unneeded design and entry of new items?

--Is there a fully automated processing of the masses of data which must be analyzed and compared to achieve a fully standardized Federal catalog system?

--Can greater standardization be achieved in cataloging practices to reduce dual management of identical items by two or more agencies?

--Can better dissemination of catalog data be achieved?

--Are catalog changes being held to the minimum necesssary for effective supply management?

--Can there be, and should there be, greater participation in the catalog system by allied countries to facilitate their support?

--Can the accuracy of catalog data be improved, and can effective procedures be developed for periodic verification of such data?

--Are managers taking every opportunity to improve standardization of items to prevent unneeded items from entering the system and to eliminate items no longer needed?

ARE MANAGEMENT REVIEW PROCESSES ADEQUATE TO IDENTIFY LOGISTICS PROBLEMS?

Essential ingredients in the management of any Federal program, activity, or operation are (1) evaluation of whether objectives are being achieved efficiently and economically and (2) identification of ways in which performance can be improved. Such evaluations can be accomplished in many ways and with varying degrees of emphasis. They can

range from the establishment of formal organizations, such as program evaluation groups, agency audit groups, and inspectors general to ad hoc groups created to review specific problems. Also, many managers institute informal programs of their own to identify and analyze significant variances between actual and planned performance and resource usage.

Equally as important as identifying problems to top-level management is acting effectively to correct them. The various review groups play an important role in this regard since usually the responsibility will be theirs to evaluate the efficacy of actions taken to correct the problems identified by them or others.

The following questions are of particular concern:

--Do logistics managers have effective programs to identify and analyze significant variances between actual and planned performance and resource usage?

--Is top-level management made aware of and does it act effectively to correct identified problems?

--Are the activities of agency audit inspectors general, other informal review groups, and outside study groups addressing the most important logistics problems?

GAO REPORT ON LOGISTICS MATTERS ISSUED SINCE JANUARY 1, 1977

CAN ALTERNATIVE LOGISTICS CONCEPTS, STRUCTURES, AND POLICIES PROVIDE NECESSARY MISSION SUPPORT AT LOWER COST?

Central Manager Is Needed To Coordinate The Military Diagnostic and Calibration Program (LCD-77-427, 5/31/77).

Central Direction Needed For Calibration Program (LCD-77-426, 6/13/77).

Centralized Department of Defense Management of Cargo Shipped In Containers Would Save Millions and Improve Service (LCD-77-227, 11/08/77).

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Automotive Tire Distribution: Dollars Can Be Saved (LCD-77-235, 1/04/78).

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