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The efficiency of container shipping has produced a sharp decline in the number of conventional U.S. flag ships. Because of this and the Department of Defense's (DOD's) reliance on U.S. flag commercial shipping, DOD sought to improve its policies, procedures, and methods of shipping ocean cargoes. Recognizing that containerization would be essential in providing logistical support to military forces overseas, in 1970 the Joint Logistics Review Board recommended early development of a container-oriented logistics system for DOD. At present, critical elements of such a system are still lacking, and problems exist which would preclude effective use of the system in an emergency. Findings/Conclusions: DOD could achieve greater progress in container system development by: strengthening its central management of the program, including improving the central management body's decisionmaking process; developing a comprehensive container system plan; and implementing a management procedure to assure accomplishing containerization objectives. The Secretary of Defense could call for greater control, direction, coordination, and monitoring of the military services' containerization development efforts. Recommendations: The Secretary of Defense should direct that: the central management body provide more timely guidance on policy matters and interservice development programs; a comprehensive container system development plan--including concept descriptions and task priorities--is developed to aid central management and the services in coordinating and controlling task development; and a mechanism is established to identify and correct unnecessary and inadequate development and inappropriate funding allocations for specific tasks. (Author/SC)

REPORT TO THE CONGRESS

BY THE COMPTROLLER GENERAL
OF THE UNITED STATES



04541

Container-Oriented Logistics System--Will It Be Ready When Needed By The Department Of Defense?

Efficiency of container shipping has caused its growth in the industry and has produced a sharp decline in the number of conventional U.S. flag ships. Because of this and the Department of Defense's reliance on U.S. flag commercial shipping, the Department sought to improve its policies, procedures, and methods of shipping ocean cargoes.

Recognizing that containerization would be essential in providing logistical support to military forces overseas, in 1970 the Joint Logistics Review Board recommended early development of a container-oriented logistics system for Defense. Seven years later, critical elements of such a system still are lacking, and problems exist which would preclude effective use of the system in an emergency.



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

B-145455

To the President of the Senate and the
Speaker of the House of Representatives

This report discusses the progress made by the Department of Defense in developing a container-oriented logistics system and calls attention to needed improvements.

We made our review pursuant to the Budget and Accounting Act, 1921 (31 U.S.C. 53); and the Accounting and Auditing Act of 1950 (31 U.S.C. 67).

Copies of this report are being sent to the Acting Director, Office of Management and Budget, and to the Secretary of Defense.

James B. Stacks
Comptroller General
of the United States

COMPTROLLER GENERAL'S CONTAINER-ORIENTED LOGISTICS SYSTEM--
REPORT TO THE CONGRESS WILL IT BE READY WHEN NEEDED BY THE
DEPARTMENT OF DEFENSE?

D I G E S T

Containerization involves shipping cargo in truck-like bodies (containers) that can be detached from the wheels and chassis of a truck. When detached they can be

--loaded into specially constructed ships for ocean voyages,

--loaded onto rail flatcars, or

--attached to a prepositioned chassis and then trucked inland. (See p. 1.)

The efficiency of container shipping caused its acceptance within commercial industry and brought a sharp decline in conventional (break-bulk) ships operating under the U.S. flag. The Department of Defense's reliance on the U.S.-flag commercial shipping industry caused the Department to seek ways to improve its distribution policies and procedures. (See p. 1.)

Recognizing that containerization would be essential in providing logistical support to military forces overseas, Defense's Joint Logistics Review Board in 1970 recommended early development of a container-oriented logistics system. Some 7 years later, critical elements of such a system are still lacking, and problems exist which would preclude effective use of the system in an emergency. (See p. 6.)

For example:

--Slow acquiring of container handling equipment. (See p. 6.)

--Limited capability for handling outsized cargo. (See p. 7.)

--Limited over-the-shore discharge capability. (See p. 9.)

The complexity of container distribution system development requires intensive management, but the Department of Defense has never applied such management to this program. Neither the project management nor the present "lead service" approach provides the necessary control, coordination, and direction needed to effectively manage a multiservice system development. (See pp. 12 and 13.)

Under the present lead service approach, the central management body has difficulty in making policy decisions (see p. 14), resolving interservice disputes, and monitoring and coordinating development efforts of the services. (See p. 15.) Also, existing management provides inadequate influence over proposed funding of the services for specific tasks as related to entire system requirements. (See p. 16.)

The Department of Defense could achieve greater progress in container system development by strengthening its central management of the program. This would include

- improving the central management body's decisionmaking process (see p. 14),
- developing a comprehensive container system plan (see p. 15), and
- implementing a management procedure to assure accomplishing containerization objectives. (See p. 16.)

The Secretary of Defense could call for greater control, direction, coordination, and monitoring of the military services' containerization development efforts. Specifically, he should direct that:

- The central management body provide more timely guidance on policy matters and interservice development problems.

--A comprehensive container system development plan--including concept descriptions and task priorities--is developed to aid central management and the services in coordinating and controlling task development.

--A mechanism is established to identify and correct unnecessary and inadequate development and inappropriate funding allocations for specific tasks. (See p. 18.)

The Department of Defense agreed substantially with GAO's general conclusion that the central management body should become more active. The Department indicated that it has and will continue to seek greater progress in developing a container logistics system.

The Department of Defense added that GAO's recommendations will be beneficial in attaining these goals. (See p. 19.)

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ABBREVIATIONS

DOD	Department of Defense
LOTS	Logistics over-the-shore
OSDOC	Over-the-shore discharge of containerships
RORO	roll-on/roll-off

CHAPTER 1

INTRODUCTION

Containerization involves shipping cargo in truck-like bodies (containers) that can be detached from the wheels and chassis of a truck. When the containers are detached from the chassis, they can be (1) loaded into specially constructed steamships for ocean transport, (2) loaded onto rail flatcars, or (3) attached to a prepositioned chassis and trucked inland. Containerization improves the distribution system by allowing the movement of materials from source to user without intermediate handlings.

Containerization is an extremely flexible operation and has many advantages over conventional (break-bulk) transportation. Time in transit is greatly reduced because preloaded containers enable the ocean carriers to achieve a 24-hour turnaround time--that is, to unload and reload vessels within 24 hours. Less loss and damage occurs in properly loaded containers than in conventional shipping. Containers can be loaded and sealed by shippers either at a port or some inland point and remain unopened until they reach overseas consignees.

The efficiency of container shipping caused its acceptance by commercial industry and brought a sharp decline in conventional (break-bulk) ships operating under the U.S. flag. The Department of Defense's (DOD's) reliance on U.S. flag commercial shipping industry for ocean lift caused it to seek ways to improve its distribution policy and procedures.

DOD peacetime use of the commercial container distribution system has been cost-effective for routine shipping requirements. In contingency and wartime situations many DOD shipping requirements are unique. For example DOD may be required to:

- Ship large volumes of cargo quickly.
- Move units with equipment to a "hot spot" quickly.
- Move cargo when ports are either nonexistent or their use denied.
- Ship large volumes of munitions.

DOD must determine inadequacies in the commercial system and provide solutions to these problems. In addition, DOD must

provide alternatives to the commercial system when that system cannot meet military requirements.

Nevertheless, the commercial system will always provide the basic capacity to meet DOD logistics requirements. Consequently, DOD's procedures and equipment must interact with the commercial system.

However, before effective integration can be achieved with the commercial containerized system, the services (Army, Navy, and Air Force) must first integrate their container support equipment, facilities, and procedures. An effectively functioning DOD container distribution system, completely integrated and entirely compatible with the commercial system, is essential for the logistics support of U.S. Forces overseas during contingency mobilization or war.

CHAPTER 2

HOW THE CURRENT MANAGEMENT STRUCTURE EVOLVED

By recommendation of the Secretary of Defense, and the approval of President Nixon, the Joint Logistics Review Board was established on March 1, 1969. The Board was to review worldwide logistics support during the Vietnam era, to identify strengths and weaknesses, and to analyze logistics knowledge gained which might affect future military operations. The Board was composed of eight members representing the Army, Navy, Air Force, Marine Corps, Defense Supply Agency, and the Joint Chiefs of Staff.

In 1969-70 the Board extensively analyzed the logistics operations of the military services. It recommended establishing a DOD-wide container-oriented distribution system. The Board's recommendation was influenced by the economic benefits of containerization and the trend toward replacing commercial break-bulk ships with container ships. Since the Board's study, break-bulk shipping has continued to decline. The growth of container shipping capability in the commercial system accompanied by the decline in break-bulk shipping capability increases the necessity for timely development of a DOD containerized distribution system.

A DOD project to develop a container distribution system was initiated in 1971, with the Army and Air Force as executive services for developing separate but coordinated surface and air container-supported distribution systems. The Deputy Secretary of Defense directed that the surface and air development efforts be conducted under the broad guidance of the Logistic Systems Policy Committee to be assisted by a Joint Container Steering Group.

This report discusses efforts to develop a surface container distribution system for other than ammunition items. Because of the peculiar handling characteristics of ammunition items, ammunition transportation was excluded from this review.

Also, since surface transportation accounts for about 98 percent of DOD's cargo and since most of DOD's resources are directed to developing a surface system, we concentrated our effort on the development of a surface system.

PROJECT MANAGER ASSIGNED

In 1971 the Army, as executive service for developing a surface container system, assigned a project manager to plan, direct, and control the developing and implementing of the system. Initially, the project manager had responsibility for preparing and implementing a project master plan for system development and for coordinating and directing the military services and transportation operating agencies in developing and implementing these tasks. Specifically, the project manager's responsibilities included:

- Identifying specific tasks to be accomplished, agencies responsible for their accomplishment, and target dates for completion.
- Planning, directing, and controlling resources authorized for executing approved projects.
- Coordinating with interfacing agencies.
- Executing tasks to conform to the master plan, including implementation by agencies responsible for tasks.
- Developing, testing, and obtaining approval of hardware, software, procedures and concepts relating to all aspects of container-supported distribution systems.

MASTER PLAN APPROVED

A project master plan was prepared which outlined 22 tasks for developing equipment, policies, and procedures which were considered essential for a surface container system. (App. I lists the 22 original tasks established under the project manager.) These tasks included a variety of activities within each military service and DOD transportation operating agency.

In August 1973 the project master plan was approved. In January 1974 after receiving a status report on the tasks assigned to the project manager, the Assistant Secretary of Defense (Installations and Logistics) concluded that the project had progressed sufficiently to allow the services and operating agencies to assume management responsibility for the tasks. Accordingly, all but two tasks were re-assigned to individual services and operating agencies, with the project manager retaining responsibility for ammunition restraint and logistics over-the-shore operations (LOTS). Overall coordination of development efforts was shared by the project manager and the Steering Group.

PROJECT MANAGER TERMINATED

In July 1975 the project manager's charter expired. The two remaining development tasks were assigned to the responsible military services and overall coordination responsibility to the Steering Group, which retained its original responsibility for coordinating surface and air development programs to insure mutual compatibility of procedures and equipment.

A Container Systems Standardization/Coordination Group was established under the Steering Group to provide technical assistance. The former Group monitors all ongoing efforts relating to container systems in the services and operating agencies. This responsibility includes maintaining contact with the many military components involved, identifying problems, such as duplication and conflicting requirements, and recommending solutions to the Steering Group. The coordinating group also updates and implements the project master plan.

In eliminating the project manager's office and transferring development responsibilities to the services and transportation operating agencies, DOD, in effect, shifted from centralized management approach to one involving a more decentralized "lead service." Under this latter approach, the services and operating agencies have direct responsibility for developing and implementing specific surface containerization tasks related to their individual missions. Overall monitoring and coordination of efforts rests with the Steering Group. The services and the transportation operating agencies also have a major role in coordinating their container development tasks with those of other military components to assure common interface.

When the project master plan was revised in August 1976, 8 of the original 22 tasks had been completed. Four tasks had either been discontinued or development had reached an impasse, and the remaining 10 tasks had yet to be completed.

Most uncompleted tasks related to three major development areas:

- Special purpose containers for handling outsized cargo and equipment for stuffing and handling containers.
- Methods, procedures, and equipment for offloading containers where no port exists or the port is unimproved.
- Methods for containerizing ammunition.

CHAPTER 3

CRITICAL ELEMENTS OF CONTAINER SYSTEM LACKING

In 1970 the Joint Logistics Review Board recommended early development of a DOD container-oriented logistics system. Some 7 years later, critical elements of such a system are still lacking, and problems exist which would preclude effective use of the system in an emergency or war situation.

Military equipment used to handle break-bulk cargo is unsuited for container operations, and commercial handling equipment will not operate in the demanding environments (unsurfaced areas and rough terrain) of military operations. Also, much military cargo will not fit in closed containers, and insufficient open-sided containers (flatracks) exist in the commercial inventory to satisfy military needs.

In addition, the commercial container system depends on sophisticated port facilities which may be destroyed or denied during military operations. It is questionable whether DOD has adequate over-the-shore container landing capability where container ports do not exist.

ACQUIRING CONTAINER HANDLING EQUIPMENT HAS BEEN SLOW

The Army in 1970 recognized a need for specialized forklifts to stuff and unstuff containers. However, enough forklifts will not be available until 1979. Without the specialized equipment, containers cannot be efficiently handled in the field in peacetime. In an emergency or war, container loading and unloading would become even more critical.

Beginning in October 1971 the Army's "Field Materials Handling Equipment Family" study recommended a low mast, 2,500-pound capability, rough-terrain forklift to move cargo in and out of containers since most pallet loads would not exceed 2,500 pounds. In July 1973 the Department of the Army approved developing this forklift because current methods of stuffing and unstuffing containers (forklifts without rough-terrain capability, manual loading and unloading, or winching methods) were inefficient and caused operation delays and damage to cargo or containers. However, until the required forklift could be developed, the Army Materiel Command's only alternative was to continue sending inadequate substitute forklifts to the Army in the field.

In December 1974 the Army revised the requirement for rough-terrain forklifts from a 2,500-pound capacity to a 4,000-pound model which could handle both regular cargo and heavier ammunition pallet loads. This change in forklift capacity requirements was a primary reason for the delay in providing necessary forklifts to Army users.

In early 1976 the Army's Tank Automotive Command stated that the 4,000-pound rough-terrain forklift would be unavailable until the third quarter of fiscal year 1979. Again, another substitute item had to be sent to the Army in the field until the 4,000-pound forklift was available.

In May 1976 the Army ordered 970 rough-terrain forklifts for container stuffing and unstuffing and other uses. Delivery of these forklifts should be completed as planned by 1982 at a cost of about \$39 million.

Delays in providing adequate equipment to Army users were discussed in a June 13, 1975, message to Headquarters, Army Materiel Command, from the Commander-in-Chief of the U.S. Army in Europe. This letter described the critical nature of the container unstuffing situation. The commander-in-chief emphasized the Army's reliance on containers, the need for rough-terrain forklifts, the inadequacies and maintenance problems of existing equipment, and Army Materiel Command's unresponsiveness to the existing need for Army field units.

CAPABILITY FOR HANDLING OUTSIZED CARGO LIMITED

In an emergency, commercial industry must make a large number of containerships available for DOD use. To use these ships effectively, DOD would have to containerize a substantial part of its cargo, including some outside cargo which cannot be loaded into a regular container. As a result, open-sided containers (flatracks) would have to be employed.

Open-sided containers are primarily used to carry vehicles and oddly shaped break-bulk cargo--such as pipes, lumber, etc.--that either require little protection from the weather or cannot fit in regular dry cargo containers. Flatracks can accommodate loads up to 12 inches wider than regular container loads. Appendix II is a photograph showing a vehicle being transported on a flatrack.

Flatracks would provide the loading flexibility necessary to use the modern containership, which is estimated to be the mainstay of the future merchant fleet available for DOD use.

Cargo can be selectively unloaded from flatracks, even when container support equipment is unavailable in forward areas. However, commercial industry does not have enough flatracks to support projected military operations. Flatracks comprise less than 1 percent of all U.S. commercial containers, an insufficient quantity for meeting military requirements, especially in the larger sizes needed for vehicle transport.

At the time of our review, one manufacturer estimated that a simple 20-foot commercial flatrack would cost approximately \$3,500 to \$4,000 and a 40-foot flatrack between \$5,000 to \$5,500. Flatracks with other desirable features, such as ends that form ramps, would be more costly. However, we were told that flatracks designed for one-way deployment/contingency use may be less expensive than stronger flatracks designed for repeated use.

In a briefing to the Joint Container Steering Group in early 1976, the Container Systems Standardization/Coordination Group concluded that if commercial flatracks are unavailable in sufficient quantities, and if the United States does not have sufficient shipping other than container ships to support deployment plans, then three viable alternatives remain:

- Procure flatracks.
- Subsidize commercial industry to support the military need.
- Increase other shipping capabilities.

Regarding these alternatives, a considerable investment would be required to procure enough flatracks for DOD's needs. For example, one 1971 Army study on flatrack use estimated a need for between 20,000 and 30,000 flatracks to deploy a 5-division force. According to one Army official, however, this study did not consider alternatives to flatracks--such as roll-on/roll-off (RORO) ships--which would significantly reduce the flatracks needed.

DOD officials have informally contacted several commercial firms concerning these firms' willingness to acquire and maintain flatrack inventories under Government subsidization. DOD would then lease the flatracks from these businesses as needed. Although some firms appeared interested, we were told that commercial industry might be reluctant to participate if large quantities of flatracks were required in the near future since the commercial firms would bear the costs of adding a new item to their inventories which had little commercial use.

At its February 1976 meeting, the Joint Container Steering Group discussed the need for flatracks and later asked the Joint Chiefs of Staff to determine DOD's requirements, if any, for flatracks. The Joint Chiefs indicated that flatracks had been considered in its joint strategic capabilities plan for fiscal year 1976 but did not provide specific requirements. Because requirements were not known, the Steering Group was unable to provide guidance on deploying outsize cargo if suitable commercial ships, other than containerships, are unavailable to support deployment plans.

OVER-THE-SHORE DISCHARGE CAPABILITY LIMITED

The commercial container distribution system which DOD uses depends on a sophisticated port environment. In wartime, port facilities may be destroyed, denied, or tactically desirable to bypass. Therefore, to adequately support combat operations, a capability must exist to move cargo over unimproved shorelines or through inoperable ports (over-the-shore container capability).

Over-the-shore discharge of container ships (OSDOC) involves

- unloading cargo from ships at sea (ship unloading subsystem),
- transporting the cargo from ship to shore (lighterage subsystem), and
- moving the cargo to a designated beach area to await further distribution (shoreside subsystem).

The OSDOC system would be used in two basic military operations--amphibious operations and LOTS operations. The Navy and Marine Corps are primarily responsible for amphibious operations, and the Army for LOTS. Although these missions have similarities, each is unique.

The amphibious operation consists of a launched attack in which combat forces land on a hostile shore. An amphibious operation is carried out in three phases--initial assault, immediate follow-on, and resupply. The initial assault is supported by naval amphibious ships. During the immediate follow-on, supplies and equipment are also landed from naval ships and commercial ships as necessary. Because of shortages in amphibious ships, the immediate follow-on often depends on commercial ships (that is, containerships, break-bulk ships, bargeships, RORO ships) provided the ships can

be offloaded in the desired area. Commercial ships are used for resupply, and containers are used as early as possible in this resupply phase.

LOTS operations involve loading and unloading ships without fixed port facilities in nonhostile territory. In wartime LOTS operations involve phases of theater development in which no enemy opposition exists. For successful LOTS operations, the service must be able to deploy LOTS system equipment to the objective area, discharge cargo without fixed port facilities, and interface with cargo distribution operations ashore. A LOTS operation may either follow an amphibious operation or be conducted separately.

The basic difference between LOTS and amphibious assault missions centers around the projected length of operation and the tactical environment. The Navy's amphibious operation is relatively short and is conducted under threat of hostile action. The Army's LOTS operation is generally longer and is operated in a relatively secure, nonhostile environment.

One Army proposal for an OSDOC operation involves using a large crane to offload containerships and an air cushion vehicle to transport containers from ship to beach. The large crane and air cushion vehicle would also be used in Army coastal, harbor, and inland waterway missions.

To support its amphibious operations, the Navy currently has sectionalized causeways which can be used to ferry supplies and equipment. The Navy is developing an improved causeway system for use in both amphibious and LOTS operations. Part of this improved system would be the potential to form elevated piers to support container cranes.

The Joint Logistics Review Board in 1970 recognized that containers would be required in over-the-shore logistics operations because of the commercial fleet's transition from break-bulk ships to containerships. Both the Joint Logistics Review Board and the project master plan for a surface container distribution system reported that LOTS operations probably would be required during the early stages of a major conflict when ports are overloaded, destroyed, or denied. The Board also recommended that the services jointly develop and test the capabilities and procedures necessary for LOTS container operations and procure the required quantities of equipment needed to support contingency operations in underdeveloped areas. The 1973 project master plan outlined seven projects which would be required to develop an adequate LOTS container capability. These seven projects are described in appendix III. In November 1977 only one of the seven major projects had been completed.

A Joint Army-Navy LOTS operational test of currently developed equipment and techniques was completed in the summer of 1977. DOD officials expect that a realistic assessment of capabilities and limitations should be possible based on these test data.

In December 1971, all LOTS components were expected to be developed and tested by December 1978. The military departments now plan to complete their over-the-shore system development by 1980. We found, however, that funding and developmental uncertainties may cause further delays.

No adequate capability for sustained over-the-shore container operations currently exists according to DOD officials. However, a very limited capability can be employed by using test equipment and existing organizations. In our opinion, much must be done to complete OSDOC development to enable the services to conduct satisfactory over-the-shore container operations.

CHAPTER 4

MANAGEMENT OVER CONTAINER SYSTEM DEVELOPMENT

SHOULD BE STRENGTHENED

In establishing the surface container-oriented distribution system, DOD recognized the need for intensive management of the development program. Intensified management, as described in DOD Directive 5010-14, "System/Project Management," requires a central management authority responsible for planning, directing, and controlling the definition, development, and production of a system.

In designating a project manager to head the surface container system development program, the Army attempted to apply intensive management procedures, as directed by the Deputy Secretary of Defense. However, for various reasons, the project manager was either unable to or chose not to exercise intensive management responsibility.

Our discussions with past project managers and other DOD officials and our review of project records and correspondence showed both accomplishments and inadequacies. The project manager successfully developed a project master plan which identified specific surface containerization tasks to be accomplished and assigned responsibilities for those tasks. To a limited extent, the project manager also coordinated the task development efforts of responsible DOD components. However, the project manager did not exercise his authority to direct and control development and production of system components. Also, he did not control resource allocations for specific tasks.

The lack of funding control over container system development tasks probably most hindered the project manager's timely managing system development. Without funding control, the project manager could only try to persuade the services and transportation operating agencies to move toward specific tasks and to conform to the objectives stated in the master plan. Although intensive management procedures called for a central authority for planning, directing, and controlling the definition, development, and production of a system, the office of the project manager functioned primarily as a planning and coordinating body, while the direction and control of the development remained with the services and the transportation operating agencies.

PROJECT MANAGER PHASED OUT--
DECENTRALIZED APPROACH ADOPTED

In July 1975 the project manager's charter expired. Remaining development tasks were assigned to the responsible military services, and overall coordination responsibility was assigned to the Steering Group, which retained its original responsibility for coordinating surface and air development programs for insuring compatibility of procedures and equipment.

In eliminating the project manager's office and transferring development responsibilities to the services and transportation operating agencies, DOD, in effect, shifted from an attempted centralized management approach to one involving a more decentralized lead service.

The rationale of the Assistant Secretary of Defense (Installations and Logistics) for the reassignment of management responsibility was that container development had progressed to a point where management responsibility could be assigned to the various operating services and agencies. Officials in the Assistant Secretary's Office also told us that project management had served its intended purpose with the development of a surface containerization master plan.

The decision to deactivate the project manager position followed an executive session of the Steering Group. Prior to the decision, individuals associated with the Logistics Systems Policy Committee, Army, Marine Corps, and Air Force officials working with containerization, and a number of other top level logisticians expressed strong opposition to deactivation. They considered the phaseout of the project manager premature, arguing that many critical tasks had not been sufficiently developed to insure their completion and implementation by the functional elements of the services and transportation operating agencies. Opponents of the phaseout also believed that accomplishing the remaining tasks required the intensive, centralized management that the project management concept provided.

RESPONSIBILITIES DISPERSED UNDER
PRESENT MANAGEMENT APPROACH

Under the present decentralized, lead service approach, management responsibilities were officially dispersed to the various services and transportation operating agencies. Recognizing that overall responsibility for developing, managing, and implementing a container system still represented a complex management and coordination problem, the Steering Group

was retained to provide a centrally monitored overview of container system development. This responsibility includes

- meeting with services and agencies to evaluate the status of subsystem development,
- insuring development problems are identified and required action taken,
- insuring satisfactory progress is made, and
- evaluating the development funding plans of the services and agencies.

A chart showing the present management structure and the responsibilities assigned to the services and transportation operating agencies is included as appendix IV.

NEED TO STRENGTHEN JOINT STEERING GROUP DECISIONMAKING PROCESS

The Steering Group, as now composed, has not provided the timely guidance for attaining satisfactory progress in achieving a container-oriented distribution system. The Steering Group, which is chaired by an official of the Office of the Assistant Secretary of Defense (Manpower, Reserve Affairs, and Logistics) is composed of general and flag officers from each of the services, the Defense Logistics Agency, and the Joint Chiefs of Staff. The group seeks agreement of all members before making a decision. However, DOD officials told us that when members disagree this desire for consensus within the Group may hinder decisionmaking.

Upon termination of the DCD project manager, the Steering Group was expected to guide and expedite DOD efforts in producing effective solutions for container distribution system development problems. However, Steering Group meetings do not appear directed toward decisionmaking. A review of the minutes of Steering Group meetings from July 1975 to June 1976 showed that the meetings largely consisted of informational and status briefings concerning container system development. Our review revealed only one Steering Group policy decision during this period--to ship ammunition in 20-foot containers when containerization is appropriate. While this decision constitutes a significant commitment to containerization for munition distribution, a more fundamental question concerning the extent that ammunition would be shipped by containers in contrast to break-bulk was discussed by the Steering Group for 7 months without a decision. The extended discussions on this issue illustrate the delays that occur when Group consensus is sought.

NEED FOR COMPREHENSIVE CONTAINER SYSTEM DEVELOPMENT PLAN

Developing a coordinated DOD container distribution system requires establishing overall objectives, a system concept, and specific tasks for accomplishing objectives. Since the DOD container distribution system involves all military services and transportation operating agencies, a comprehensive system concept description and delineation of developmental responsibilities as applicable to each DOD activity are necessary to insure standard equipment, policies, and procedures.

The project master plan set up project tasks for developing equipment, policies, and procedures which were considered essential for developing a surface container distribution system. The plan also assigned responsibility and target dates for task development.

The master plan had several weaknesses, however, which limited its effectiveness as a management tool. The plan was primarily hardware-oriented and did not describe how various system components would be integrated into a total surface system. In our opinion, such a description is necessary to insure that the services' attention and efforts are directed toward the specific areas chosen by the Steering Group. However, before development of an overall system concept, each service must develop its own detailed system concepts to meet their own logistics needs. These system concepts should describe the source-to-user movement of containerized material in the logistics system during peacetime, wartime, and emergency situations.

The plan also failed to assign development priorities for the tasks. Establishing priorities is important to insure systematic development and appropriate allocation of resources. Finally, the plan did not provide a system for responsible DOD components to report task progress and developmental problems to DOD management for monitoring and coordination.

DOD officials recognized that the old plan was no longer operational. Consequently, in August 1976, the Steering Group approved a revised project master plan which updated the status of development tasks. This plan assigned milestones for each task, projected dollar requirements, and provided for periodic task status reports. Although these changes are an improvement over the old plan, the revised plan still contains no concept description and fails to assign priorities for task accomplishment. In our opinion, the lack of an overall system concept description hinders the services

in formulating total system containerization tasks which will be compatible within the services and with the efforts of commercial industry. Similarly, without a concept description, the Steering Group may have difficulty in assessing the services' development efforts in achieving a DOD-wide container distribution system.

Failure to assign priorities for task accomplishment may block the Steering Group in exercising control over the services' allocation of their resources for specific tasks. Also, the likelihood increases that the services may not fully use their resources allocation because they are unaware of the priority requirements of the entire DOD system.

MEANS TO ASSURE ACCOMPLISHMENT OF
CONTAINERIZATION OBJECTIVES IS NEEDED

To effectively control and coordinate development of a DOD-wide surface container distribution system, the Steering Group needs some means to insure that the services follow the development tasks in the master plan. To accomplish this, the Steering Group should be periodically informed about on-going development efforts, problems encountered, and new projects undertaken. The old master plan required no periodic status reports by the services. Consequently, the Steering Group received no systemized information on which to monitor and coordinate the services' efforts. The new master plan, by requiring semiannual reports to the Steering Group, should provide more information to the Group on the services' development efforts.

An improved reporting system is not enough, however. The Steering Group must be able to assure that the services are directing task development efforts in accordance with overall DOD containerization objectives. To do this the Steering Group needs authority to (1) redirect the services' efforts when the group identifies deviations from the master plan, (2) approve new projects, and (3) make sure the services allocate resources to priority tasks.

The Steering Group could strengthen control over service-directed task development by exercising greater influence over service funding allocations. Although the Assistant Secretary (Manpower, Reserve Affairs, and Logistics) has approval authority over the services' budget requests for containerization development, officials from the Assistant Secretary's Office told us they are not actively involved in services' allocations for specific container system resource tasks.

Under current procedures, each participating service budgets its portion of the surface system development effort. Funds for the containerization program, along with all other budget items, are subject to numerous budget reviews. If adequate funds from each participating service are unavailable, the containerization program can be delayed, and the plans of other services can be upset. To prevent this situation, management must improve identification of the program funds.

Greater central influence over funding would assure that the services are applying their resources to overall system needs and would allow DOD to prevent unnecessary development or deviation by a service from its assigned responsibilities. It would also aid DOD in monitoring, coordinating, and controlling system development efforts.

CHAPTER 5

CONCLUSIONS, RECOMMENDATIONS, AND AGENCY COMMENTS

CONCLUSIONS

Growth in commercial industry reliance on container ships, rather than break-bulk ships, has caused DOD to examine all components of the commercial system for compatibility with DOD requirements. Although 7 years have elapsed since the Joint Logistics Review Board first recommended developing a container-oriented logistics system, critical elements of such a system are still lacking. Container handling equipment is inadequate, insufficient open-sided containers exist, and DOD's over-the-shore capability is limited.

As a result, full container capability cannot be used effectively, and no adequate capability for sustained over-the-shore operations exists, particularly in underdeveloped areas.

The complexity of container distribution system development requires intensive management, but DOD has never applied such management to this program. Neither the project management nor the present lead service approach provides the necessary control, coordination, and direction needed to effectively manage a multiservice system development.

Under the present lead service approach, the central management body has difficulty in making policy decisions, resolving interservice disputes, and monitoring and coordinating the services' development efforts. Also, existing management provides inadequate influence over the services' proposed funding for specific tasks as these tasks relate to entire system requirements.

We believe that DOD could progress further in container system development by strengthening central management of the program. In implementing management changes, DOD should be aware of the need for program development continuity. Any changes, therefore, should be instituted with minimal disruption of the ongoing program.

RECOMMENDATIONS

The Secretary of Defense should direct that the Assistant Secretary of Defense (Manpower, Reserve Affairs, and Logistics) provide greater control, direction, coordination, and monitoring of the military services' containerization development

efforts. Specifically, the Assistant Secretary should take action to assure that:

- The Steering Group provides more timely guidance on policy matters and interservice development problems.
- A comprehensive container system development plan-- including concept descriptions and task priorities-- is developed to aid central management and the services in coordinating and controlling task development.
- A mechanism is established whereby corrective action can be taken when the Assistant Secretary identifies unnecessary and inadequate development, and inappropriate funding allocations for specific tasks.

AGENCY COMMENTS

DOD substantially agreed with our general conclusion that the central management body should be more active in policy guidance, resolving interservice disputes, and monitoring and coordinating the services' development efforts. Defense indicated that central management efforts involved in developing a highly complex container logistics system have been and will continue to be reviewed to strengthen these efforts and to achieve greater progress. DOD added that our recommendations will be beneficial in further attainment of these goals.

A copy of DOD's response is included as appendix V.

CHAPTER 6

SCOPE OF REVIEW

Our examination included a review of pertinent studies, correspondence, and other records relating to container system development. We also analyzed the practices and procedures of containerization.

We interviewed officials of (1) each service involved in container systems management and development, (2) transportation operating agencies, and (3) the Office of the Assistant Secretary of Defense for Installations and Logistics (now Manpower, Reserve Affairs, and Logistics). We visited various locations, including

--U.S. Army Logistics Center and Quartermaster School,
Fort Lee, Virginia,

--U.S. Army Transportation School, Fort Eustis, Virginia,

--U.S. Army Armament Command, Rock Island, Illinois, and

--Sea-Land Service, Inc., Elizabeth, New Jersey.

In addition we observed the following demonstrations:

--Joint Balloon Transport System Test,

--Joint LOTS LASH ship pretest,

--container handling equipment for use over the beach.

ORIGINAL TASKS ESTABLISHED UNDER THE PROJECT MANAGERTask

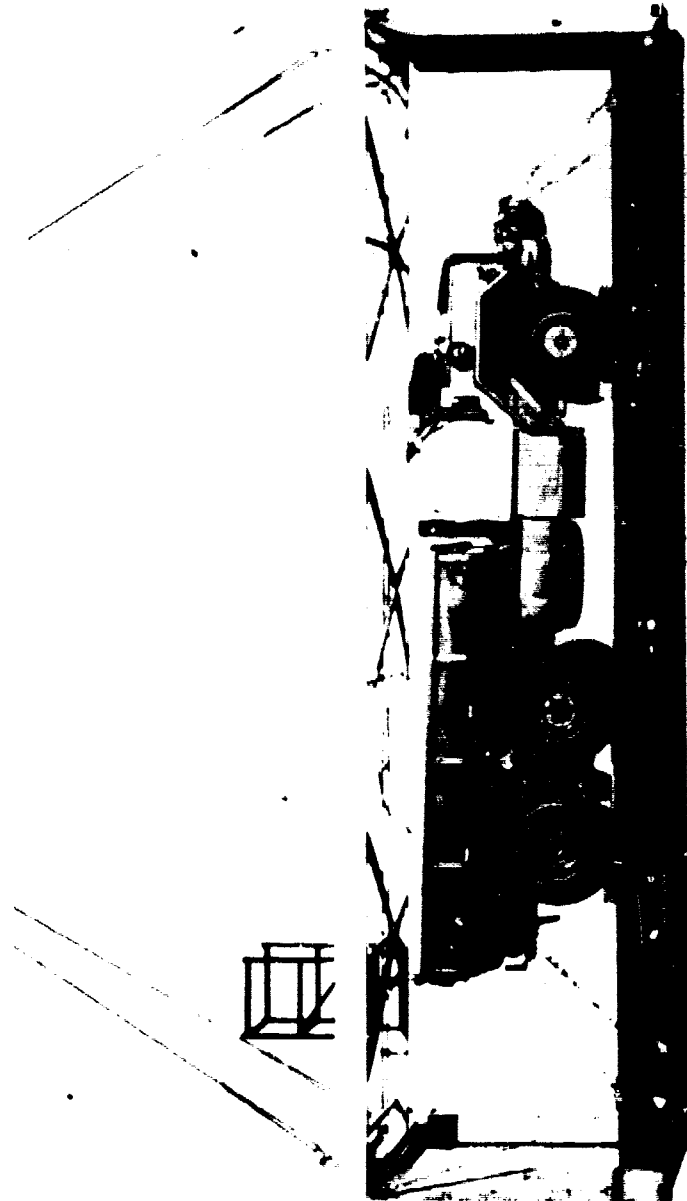
- 1 Establish a surface container-supported distribution concept
- 2 Determine services' peacetime tonnage requirements
- 3 Determine services' wartime tonnage projection for deployment/resupply flows
- 4 Establish a system providing for control of military-owned/leased containers and monitorship over movement of commercial containers carrying military cargo
- 5 Develop concept and prototype hardware for evaluating automatic sensing and reporting of container movement
- 6 Develop system providing containerized cargo movement compatibility with system objectives for visibility of supplies in transit
- 7
 1. Publish joint operating procedures for surface container general cargo and ammunition operations
 2. Prepare documentation procedures for container contents/shipments
- 8
 1. Determine requirements for acquisition of commercial container equipment & facilities to support war plans
 2. Establish procedures/plans to acquire and allocate intermodal container system to meet national priorities
- 9 Prepare change to DOD Instruction 4500.37 requiring that shelters and special purpose vans will conform to ANSI/ISO standards
- 10 Test "The Electronic Label Logistics System" (TELLS) for future system application
- 11 Coordinate requirements for plans to develop marshaling areas, container handling facilities, revetments, ramps, platforms at depots, ammunition plants and ports

Task

- 12
 1. Coordinate requirements to develop marshalling areas, container facilities, revetments, ramps, platforms as required at ammunition ports
 2. Coordinate the requirements for plans to develop additional berths, piers, gantries, road/rail access and related facilities required at general cargo ports in CONUS and other facilities as required overseas
- 13 Determine standards for packaging, packing and preservation (PP&P) of supplies in surface containers
- 14 Coordinate movement requirements for pilot operations covering both general cargo and ammunition movements
- 15 Develop, test, and obtain approval for procurement of initial increment of cargo handling equipment suitable for container operations
- 16 Develop, test, and obtain approval for procurement of initial increment of surface cargo container handling equipment
- 17
 1. Develop container offshore discharge methods/equipment
 2. Convert non-self-sustaining ships (NSS) to self-sustaining ships (SS)
 3. Develop elevated pontoon causeway capability/system
 4. Develop, test, and procure lighterage
 5. Develop pendulation and vertical motion control devices to be installed on cranes for offshore discharge
 6. Conduct offshore discharge of containership (OSDOC)
 7. LOTS/port containership discharge handling equipment
- 18
 1. Determine requirements, obtain approval, and procure initial increment of:
 - a. general-purpose containers
 - b. special-purpose containers
 2. Develop, test, obtain approval of an ammunition dunnage system to convert commercial containers into certified ammunition carrying containers
 3. Develop/recommend ammunition stowage criteria for containers

Task

- 19
 1. Establish qualitative/quantitative requirements and prepare procurement specifications for a family of chassis dual purpose break-bulk/container transporters (semitrailers)
 2. Establish qualitative/quantitative requirements and prepare procurements specifications for a commercial type linehaul truck tractor
 3. Develop, test, obtain approval, and procure initial increment of 463L adapter for MILVAN chassis
- 20 Conduct general cargo and ammunition pilot operations using MILVANS and available equipment, facilities, and techniques
- 21 Publish Revised Joint Operating Procedures covering use of containerized cargo distribution equipment and techniques in:
 - a. logistic support
 - b. research, development, and engineering
 - c. configuration management
 - d. procurement
 - e. test and deployment
 - f. reporting
- 22 Orderly transference of responsibilities



FIVE-TON TRUCK ON FLATRACK CONTAINER.

SEVEN PROJECTS IN 1973--PROJECT MASTER PLANProject description

SHIP UNLOADING SUBSYSTEM

1. Develop container offshore discharge methods/equipment

The major project for the ship unloading subsystem. Hardware includes platforms, cranes, mooring devices, wavelessening devices, fenders. Other considerations include training, maintenance, transportability.

2. Convert nonself-sustaining ships to self-sustaining ships

Ten elements to this project. Includes identifying candidate containerships, determining quantity and types of cranes required, determining time required to convert ships, preparing a crane storage plan, procuring necessary cranes, etc.

3. Develop pendulation and vertical motion control devices to be installed on cranes for offshore discharge

By reducing container motion during offshore discharge, less containers will be damaged, and container lift cycle times will be shortened. Technical risks are associated with these motion control devices.

4. Develop, test, and procure lighterage

Includes surface or aerial equipment such as barges, amphibian, landing craft, causeway ferries, air cushion vehicles, and helicopters. New craft must be container-capable.

5. Develop elevated pontoon causeway capability/system

To be used as a ferry, floating platform, or elevated platform.

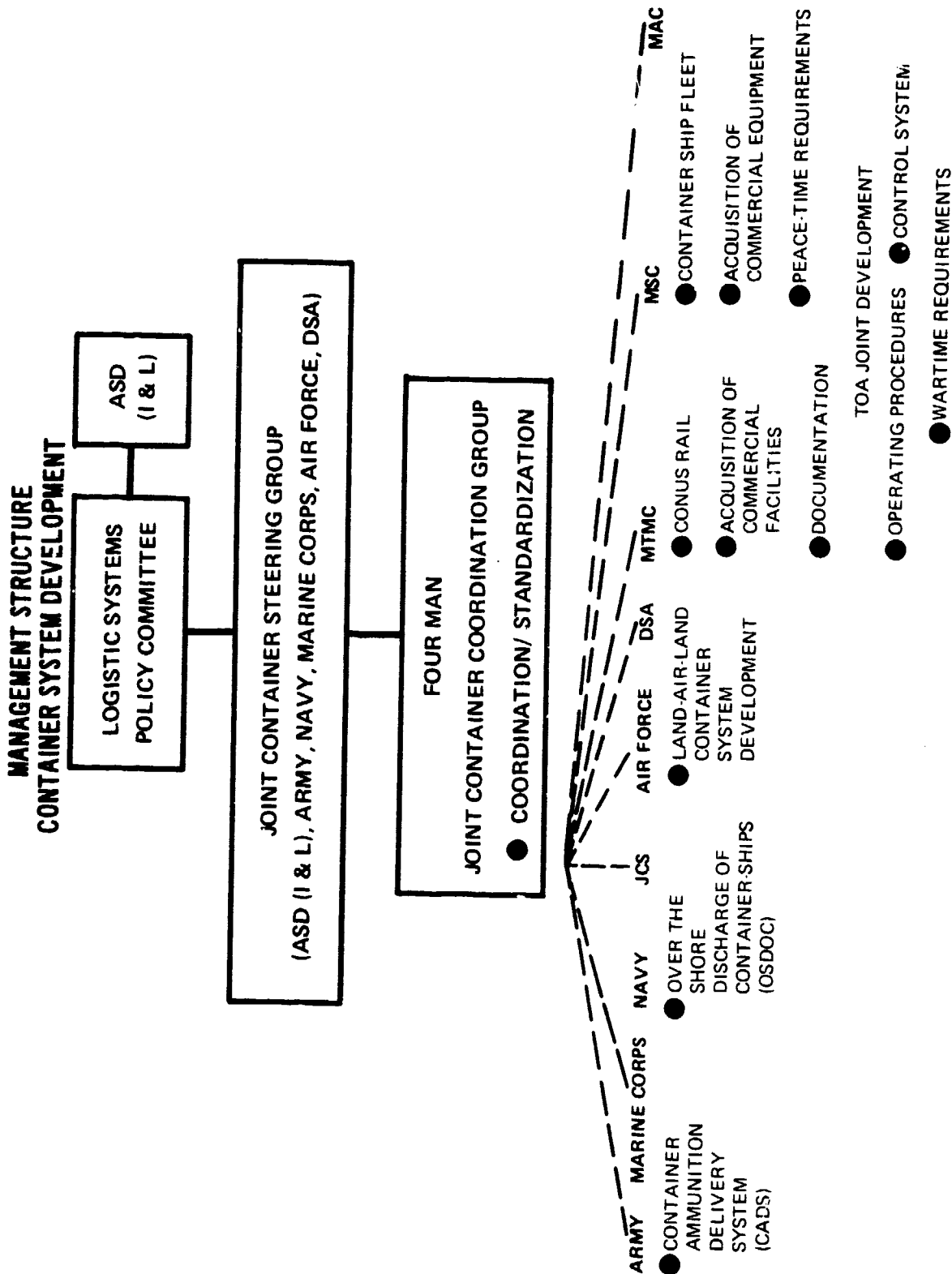
6. Develop IOTS/Port containership discharge handling equipment

Includes large cranes for use on Army self-elevating barge piers. Also includes handling equipment to move containers off lighterage and across the beach to a transfer area for inland movement.

7. Conduct offshore discharge of containership tests (OSDOC)

Joint tests of current capability.

In November 1977 only the last project (conduct offshore discharge of containership tests) of the seven major projects had been completed.





MANPOWER,
RESERVE AFFAIRS
AND LOGISTICS

ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D. C. 20301

7 OCT 1977

Mr. F. J. Shafer
Dir, Logistics and Communications
Division
U. S. General Accounting Office
Washington, D. C. 20548

Dear Mr. Shafer:

This is in response to your letter to the Secretary of Defense transmitting copies of your draft Report dated July 26, 1977 on the "Container-Oriented Logistics System - Will It Be Ready When Needed?" (OSD Case #4676).

In reviewing this draft Report, as revised, we substantially agree with the general conclusion that the central management body should become more active in policy guidance, resolving interservice disputes and monitoring and coordinating the Services' development efforts. Under the lead Service approach, the Joint Container Steering Group has exercised the coordination of container and logistics systems development while recognizing the Services' unique mission requirements and prerogatives.

The central management efforts involved in developing this highly complex system have been and will continue to be reviewed to determine means by which it can be strengthened to achieve greater progress. The recommendations included in the draft Report will be beneficial in further attaining those goals.

Sincerely,

ROBERT B. PIRIE, JR.
Principal Deputy Assistant Secretary
of Defense (MRA&L)

PRINCIPAL OFFICIALS
RESPONSIBLE FOR ADMINISTERING
ACTIVITIES DISCUSSED IN THIS REPORT

	<u>Tenure of office</u>	
	<u>From</u>	<u>To</u>
<u>DEPARTMENT OF DEFENSE</u>		
SECRETARY OF DEFENSE:		
Dr. Harold Brown	Jan. 1977	Present
Donald H. Rumsfeld	Nov. 1975	Jan. 1977
James R. Schlesinger	July 1973	Nov. 1975
William P. Clements, Jr. (acting)	Apr. 1973	July 1973
Elliott L. Richardson	Jan. 1973	Apr. 1973
Melvin R. Laird	Jan. 1969	Jan. 1973
DEPUTY SECRETARY OF DEFENSE:		
Charles W. Duncan, Jr.	Jan. 1977	Present
William P. Clements, Jr.	Feb. 1973	Jan. 1977
Kenneth Rush	Feb. 1972	Jan. 1973
Vacant	Jan. 1972	Feb. 1972
David Packard	Jan. 1969	Dec. 1971
ASSISTANT SECRETARY OF DEFENSE (MANPOWER, RESERVE AFFAIRS AND LOGISTICS):		
Dr. John P. White	May 1977	Present
Carl W. Clewlow (acting)	Apr. 1977	May 1977
ASSISTANT SECRETARY OF DEFENSE (INSTALLATIONS AND LOGISTICS) (note a):		
Dale R. Babione (acting)	Jan. 1977	Apr. 1977
Frank A. Shrontz	Feb. 1976	Jan. 1977
John J. Bennett (acting)	Apr. 1975	Feb. 1976
Arthur I. Mendolia	Apr. 1973	Mar. 1975
Hugh McCullough (acting)	Jan. 1973	Apr. 1973
Barry Shillito	Feb. 1969	Jan. 1973

	Tenure of office	
	From	To
<u>DEPARTMENT OF THE AIR FORCE</u>		
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
John L. McLucas	July 1973	Nov. 1975
John L. McLucas (acting)	May 1973	July 1973
Robert C. Seamans, Jr.	Feb. 1969	May 1973
UNDER SECRETARY OF THE AIR FORCE:		
John J. Martin (acting)	Apr. 1977	Present
Vacant	Nov. 1976	Apr. 1977
James W. Plummer	Dec. 1973	Nov. 1976
Vacant	July 1973	Dec. 1973
John L. McLucas	Mar. 1969	July 1973
ASSISTANT SECRETARY OF THE AIR FORCE (MANPOWER, RESERVE AFFAIRS, AND INSTALLATIONS):		
Joe Meis (acting)	July 1977	Present
James P. Goode (acting)	Jan. 1977	July 1977
ASSISTANT SECRETARY OF THE AIR FORCE (ACQUISITION AND LOGISTICS):		
John J. Martin	July 1977	Present
ASSISTANT SECRETARY OF THE AIR FORCE (INSTALLATIONS AND LOGISTICS) (note b):		
Vacant	May 1977	July 1977
Richard J. Keegan (acting)	Jan. 1977	May 1977
J. Gordon Knapp	Mar. 1976	Jan. 1977
Richard J. Keegan (acting)	Feb. 1976	Mar. 1976
Frank A. Shrontz	Oct. 1973	Feb. 1976
Richard J. Keegan (acting)	Aug. 1973	Oct. 1973
Lewis E. Turner (acting)	Oct. 1972	Aug. 1973
Philip N. Whittaker	May 1969	Sept. 1972

Tenure of office
From To

DEPARTMENT OF THE NAVY

SECRETARY OF THE NAVY:

W. Graham Claytor, Jr.	Feb. 1977	Present
Gary D. Penisten (acting)	Feb. 1977	Feb. 1977
Joseph T. McCullum	Feb. 1977	Feb. 1977
David R. MacDonald	Jan. 1977	Jan. 1977
J. William Middendorf	June 1974	Jan. 1977
J. William Middendorf (acting)	Apr. 1974	June 1974
John R. Warner (acting)	May 1972	Apr. 1974
John H. Chafee	Jan. 1969	May 1972

UNDER SECRETARY OF THE NAVY:

R. James Woolsey	Mar. 1977	Present
Vacant	Feb. 1977	Mar. 1977
David R. MacDonald	Sept. 1976	Feb. 1977
John Bowers (acting)	July 1976	Aug. 1976
Vacant	Mar. 1976	June 1976
David S. Potter	Aug. 1974	Mar. 1976
Vacant	June 1974	Aug. 1974
J. William Middendorf	June 1973	June 1974
Frank Sanders	May 1972	June 1973
John W. Warner	Feb. 1969	May 1972

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

Edward Hidalgo	Apr. 1977	Present
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ASSISTANT SECRETARY OF THE NAVY
(INSTALLATIONS AND LOGISTICS)
(note c):

Dr. John J. Bennett	Sept. 1976	Apr. 1977
Jack L. Bowers	June 1973	Sept. 1976
Charles L. Ill	July 1971	May 1973

	<u>Tenure of office</u>	
	<u>From</u>	<u>To</u>
<u>DEPARTMENT OF THE ARMY</u>		
SECRETARY OF THE ARMY:		
Clifford Alexander	Feb. 1977	Present
Martin R. Hoffman	Aug. 1975	Jan. 1977
Howard H. Callaway	July 1973	Aug. 1975
UNDER SECRETARY OF THE ARMY:		
Walter B. Laberge	July 1977	Present
Vacant	Jan. 1977	July 1977
Norman R. Augustine	May 1975	Jan. 1977
Vacant	Apr. 1975	May 1975
Herman R. Staudt	Oct. 1973	Apr. 1975
ASSISTANT SECRETARY OF THE ARMY (INSTALLATIONS, LOGISTICS, AND FINANCIAL MANAGEMENT)		
Alan J. Gibbs	June 1977	Present
ASSISTANT SECRETARY OF THE ARMY (INSTALLATIONS AND LOGISTICS) (note d):		
Alan J. Gibbs	Apr. 1977	June 1977
Edwin Greiner (acting)	Jan. 1977	Apr. 1977
Harold L. Brownman	Oct. 1974	Dec. 1976
Vacant	Aug. 1974	Oct. 1974
Eugene E. Berg	Nov. 1973	July 1974
Vincent P. Huggard	Apr. 1973	Nov. 1973
a/The Assistant Secretary of Defense (Installations and Logistics) has been changed to the Assistant Secretary of Defense (Manpower, Reserve Affairs and Logistics).		
b/The Assistant Secretary of the Air Force (Installations and Logistics) has been changed to the Assistant Secretary of the Air Force (Acquisition and Logistics).		
c/The Assistant Secretary of the Navy (Installations) has been changed to the Assistant Secretary of the Navy (Manpower, Reserve Affairs and Logistics).		
d/The Assistant Secretary of the Army (Installations and Logistics) has been changed to the Assistant Secretary of the Army (Installations, Logistics, and Financial Management).		

(943272)