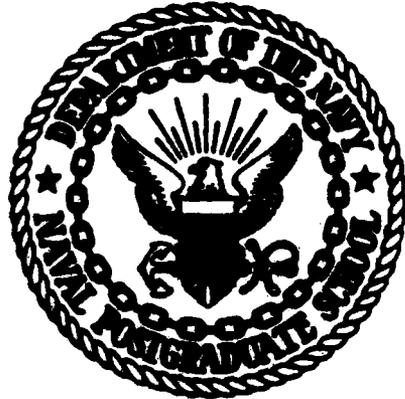


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THESIS

FUNDING DEPOT LEVEL REPAIRABLES IN THE
NAVY STOCK FUND: THE EFFECT ON M.C.A.S.
IWAKUNI, JAPAN

by

Stephen R. McComb

June 1982

Thesis Advisor: P. W. Blondin

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Funding Depot Level Repairables in the Navy Stock Fund: The
Effect on M.C.A.S. Iwakuni, Japan

by

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Submitted in partial fulfillment of the
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MASTER OF SCIENCE IN MANAGEMENT
from the
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ABSTRACT

In 1978, in order to improve the management of Secondary Item Depot Level Repairables (DLRs), the Navy initiated a study and consequently a test to determine the proper method of funding these items. On 1 April, 1981, a three year prototype test involving Navy managed Non-Aviation Depot Level Repairables (DLRs) was implemented. This thesis describes the funding of Depot Level Repairables (DLRs) prior to 1 April, 1981, and as amended after the Non-Aviation Depot Level Repairables (DLRs) migration to the Navy Stock Fund. This thesis then describes the impact this change has had on Marine Corps Air Station Iwakuni Japan, from inception to June 1982. The thesis concludes by offering recommendations to improve supply support for the Marine Corps and that Air Station by improving the interface between the Marine Corps and the Navy Supply System.

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I. INTRODUCTION

A. PURPOSE

On 3 October, 1978, the Assistant Secretary of Defense directed each service to independently review the feasibility of stock funding secondary item repairables. As a result of this memorandum and other pressures, the Navy and Marine Corps began a study which resulted in the United States Navy implementing a three year prototype test to determine the feasibility of funding Supply System Secondary item Depot Level Repairables (DLRs) within the Navy Stock Fund (NSF) vice funding them with Navy procurement appropriations. The Navy study determined that funding Depot Level Repairables (DLRs) in the Navy Stock Fund would provide improved financial flexibility since the stock fund would be able to acquire additional funding authority, or relocate funding authority as needed for those items any time that the need for funding changes could be demonstrated. Under this concept the stock funded Depot Level Repairable (DLR) requirements of the supply system would be virtually "fully funded", and enjoy the flexibility to trade-off repair and procurement as necessary to meet the demand. Based upon this concept, the Navy implemented a prototype test involving only the Non-Aviation oriented Depot Level Repairables managed by one of the Navy's Inventory Control Points (ICP), the Ships Parts Control Center (SPCC). The prototype test as implemented involved about twenty percent of the procurement and repair dollar value of the Navy Supply System's Depot Level Repairables (DLRs); thus providing a realistic test size for determination of the costs and benefits of this concept of supply system financing.

The Marine Corps receives technical aviation support from the Navy for its Procurement Appropriation financed aviation material, and Operations and Maintenance, Navy (O&MN) funding for consumable aviation material. Because the scope of the prototype Navy test was "Non-Aviation", the change in funding for the Depot Level Repairables (DLRs) did not have any significant impact on Marine Corps direct aviation support. However, certain peripheral aspects of ground aviation support for Marine Corps units were affected by this change in funding.

Since the author of this thesis will be assigned to Marine Corps Air Station (MCAS) Iwakuni, Japan upon graduation, this thesis specifically addresses the impact this funding change has had on that Air Station.

B. RESEARCH METHODOLOGY

Information gathering for this thesis includes library research, phone conversations with personnel from Marine Corps Air Station Iwakuni, Marine Corps Air Station El Toro, Marine Corps Air Station Cherry Point, the Ships Parts Control Center, and the Naval Supply Systems Command. Extensive reference material in the form of message traffic and implementation directives was provided by the Logistics Officer, Marine Corps Air Station Iwakuni.

C. THESIS ORGANIZATION

Chapter II provides a background in procurement appropriations, and describes how Non-aviation Depot Level Repairables (DLRs) were funded prior to the prototype test in which the Non-Aviation Depot Level Repairables (DLRs) were financed in the Navy Stock fund. Chapter III examines the Navy Stock Fund, its operations, and the changes which

took place when the Non-Aviation Depot Level Repairables (DLRs) migrated to the Stock Fund. Chapter IV presents the Lewin-Schein change model as an example for implementation of change within an organization and compares the actual implementation of the shift in funding to the Navy Stock Fund to the model. In chapter V, the impact on Marine Corps Air Station Iwakuni of the funding change is examined, and Chapter VI presents the author's conclusions and recommendations.

II. FUNDING DEPOT LEVEL REPAIRABLES IN PROCUREMENT APPROPRIATIONS

A. THE NAVY SUPPLY SYSTEM

The United States Navy is tasked with the projection of power to control the seas in defense of the United States, and to keep merchant lines open. In order to achieve and maintain the capability to perform this mission, the Navy requires adequate weapons systems, a Command and Control system, trained manpower and a logistics system. This thesis deals in the area of logistics, specifically that of spare parts and components in support of weapons systems. Within this arena, the Chief of Naval Operations sets operational requirements for the Navy. The Chief of Naval Material is charged with bringing those weapons systems requirements into being, through the acquisition process, and providing a Logistics System of maintenance and supply support for their operation. As shown in figure 2.1, the Chief of Naval Material operates through five systems commands, Naval Air Systems Command (NAVAIR), Naval Electronics Systems Command (NAVELEX), Naval Sea Systems Command (NAVSEA), Naval Facilities Engineering Command (NAVFAC), and Naval Supply Systems Command (NAVSUP). Three of these, NAVAIR, NAVSEA, AND NAVELEX (termed Hardware Systems Commands) are charged with overall responsibility for acquisition and maintenance of the weapons systems. NAVFAC provides a similar function for facility requirements of ashore naval forces, and NAVSUP is responsible for the structure and operation of the supply system in support of the operating forces and the shore establishment. These three Hardware Systems Commands award contracts for

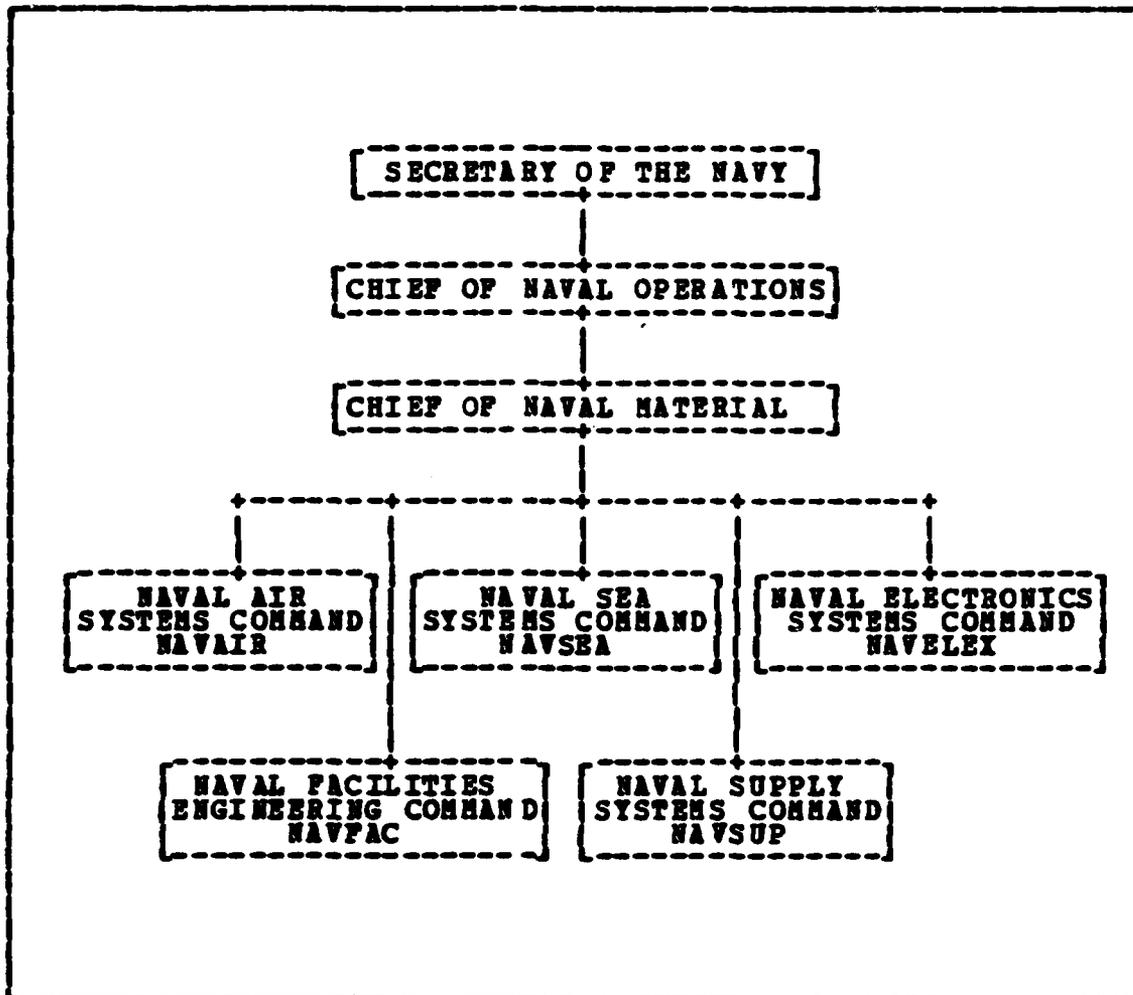


Figure 2.1 Procurement and Operations & Maintenance Funds Flow

provisioning requirements of end items such as aircraft engines, gun directors and missile launchers, and assign program support responsibility to one of the Navy Supply Systems Command managed Inventory Control Points (ICP); the Aviation Supply Office (ASO), or the Ships Parts Control Center (SPCC). Once the Inventory Control Point is assigned program support responsibilities, the Navy Supply Systems Command establishes the logistics policy to be followed. (Inventory Managers Manual, 1981, p. 1-3)

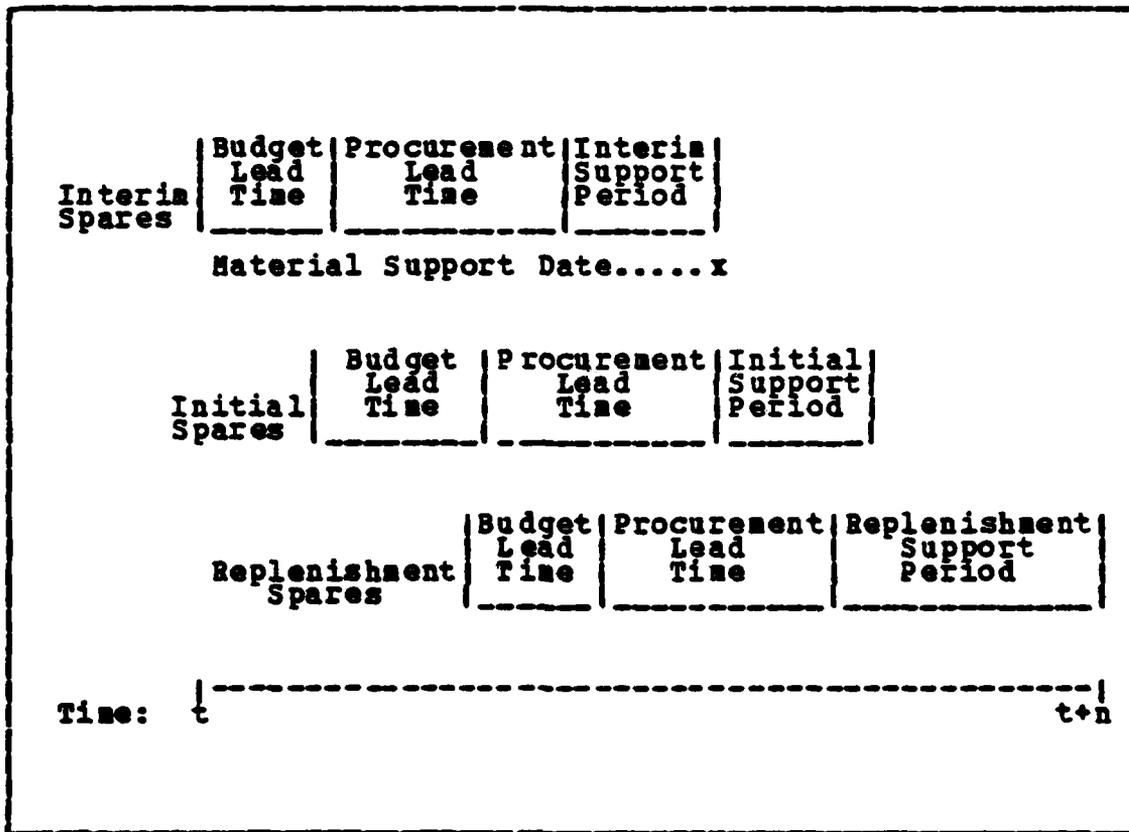


Figure 2.2 Spares Support

Spare parts support for a new weapons system or other end items of equipment are phased into three separate segments: Interim spares support, Initial spares support, and Replenishment spares support, see figure 2.2. Interim spares support is provided from outside the supply system, usually by the contractor, and employed to provide support from the first delivery of a new system in the Navy until the date when the Navy supply system assumes responsibility for supply support, called the Material Support Date (MSD). Initial spares provide support from the material support date through the demand development period for a new system, usually twelve to eighteen months. Replenishment spares

provide support for additional weapons systems deliveries, and continues for the remainder of the weapons system's or other end item of equipment's life in the Navy. While a Hardware Systems Command normally budgets for, and directly executes, the Interim spares support, the responsibility for similar functions for Initial and Replenishment spares is normally delegated to the Navy's Inventory Control Points by the responsible Hardware Systems Command. Inventory Control Points are normally responsible for preparing the Initial and Replenishment spares budgets for the Hardware Systems Commands, and for the procurement and supply system stockage of these spares. The actual determination of the Navy budget remains the responsibility of the Hardware Systems Command, the Chief of Naval Material, and the Chief of Naval Operations. Administration of funds is controlled in execution by the Hardware Systems Commands. (Holoney, 1979, pp. F-1 to F-4)

B. NEEDS DETERMINATION

To determine what material requirements are necessary for support of a weapons system, end item, or component procured by the Hardware System Command, the Inventory Control Point utilizes technical documentation and failure rates provided by the contractor. Once the items necessary for support have been defined, and placed in stock, the Inventory Control Point has a continuing responsibility to make sure that inventory is available when and where the customer, the operator of the weapons system or other end item of equipment, needs it. (Inventory Managers Manual, 1981, P. 1-3)

The Inventory Control Point is responsible for establishing stock levels that will be sufficient to meet recurring replenishment demands for material and to meet known or

fixed requirements for follow-on outfitting of additional systems. In order to be responsive, the Inventory Control Points must forecast customer requirements and order resupply quantities before receipt of the actual customer requests for material. To accomplish this mission, the Navy Inventory Control Points use a complex group of computer programs which are collectively known as the Uniform Inventory Control Program (UCIP) (NAVSUP Pub 514, 1 Jan, 1982, P. 3-24). This series of supply and financial programs uses many procedures and parameters to govern budget execution and the level of inventory review activity. Through execution of this data processing system the inventory manager forecasts how many of a particular item will be needed in a particular period of time (demand); decides how to satisfy the demand, either by procurement or repair, considering how long the procurement or repair cycle will take (leadtime or turnaround time); and executes to provide supply support. (Inventory Managers Manual 1981, pp. 1-11 to 1-22)

Within the Department of Defense each line item of supply is designated by a National Stock Number (NSN) and assigned to a particular service, and its inventory control point, for management. In the event that a service has a requirement for an item which is managed by another service, the non-managing user service must advise the managing service of its requirements in order for the managing service to consider these requirements in its demand forecasts and consequent stockage objectives. This process has come to be called "registering interest" and carries with it the requirement that the non-managing user service agree to reimburse the managing service for all such items issued from stock. (NAVHATINST 4790.23A)

C. DEPOT LEVEL REPAIRABLES

Material carried in the supply system can be divided into two major categories, Principal and Secondary items. Principal items are end items such as aircraft engines, gun directors, and missile launchers. These items are considered to be investments, and are funded by procurement appropriations such as Aircraft Procurement, Navy (APN), Other Procurement, Navy (OPN), or Weapons Procurement, Navy (WPN). Secondary items are other components, spare parts, and consumable supplies which are in support of major end items or principal items. These secondary items are considered either as investment or expense oriented depending on their use, and their level of repairability. Generally secondary items are categorized as investments, and financed by procurement appropriations, if they are designated for repair, or condemnation, at the depot level and are therefore called Depot Level Repairables (DLRs). The Depot Level of Repair is the highest level, based upon the capability and the responsibility to effect complete repair, rework, or renovation of an investment item. It can be accomplished by either a Department of Defense, or a commercial facility. Depot Level Repairable (DLR) items have in the past been issued to Navy users without charge and the cost of repair or rework at the depot level has been financed by Hardware Systems Command centrally managed Operations and Maintenance (O&M) appropriations. The balance of secondary items are considered to be expense items and are either designated for repair in the field rather than a depot, or designated as consumable items which are to be discarded after use or failure. Supply system stocks of expense "type" items are financed by Stock Funds and are ultimately charged to Operations and Maintenance (O&M) or other customer appropriations when issued (Giordano, 1976, pp. 4-5). For further

discussion of investment and expense type items, see Appendix A.

Initially, the decision to classify an item as a repairable or a consumable is made during the provisioning process by the Hardware System Command or designated technical agent. The initial classification of an item is not irrevocable, and each item is periodically reviewed to determine if the classification should be changed from consumable to repairable or repairable to consumable. Classification is based on three questions:

1. Economics: Is the repair price a substantial savings over the replacement price?
2. Time: Is the repair time significantly shorter than the procurement lead time?
3. Technology: Can the item be repurchased? If not, it must be repaired if still needed.

To be classified as a repairable, one or more of the above questions must be answered in the affirmative. (Repairables, 1976, pp. 2 to 5)

Once an item is classified as a repairable, the Hardware Systems Command or its agent makes a determination as to what level of maintenance is capable of performing the repair. Within the repair arena, the lowest level of repair is the Organizational level, the ship or squadron using the item. The next level of repair is Intermediate level, and is accomplished by a ships tender or Marine Corps Aircraft Group, or Navy Wing Intermediate Maintenance Activity (IMA). The highest level of repair is the Depot Level. This level of repair is performed by a Designated Overhaul Point (DOP) such as a Naval shipyard or a commercial contractor. Items designated as Depot Level Repairables (DLRs) are normally more sophisticated, require specialized equipment or training to repair, and are more costly than those

designated for lower levels of repair. When making the decision as to the level of repair, an attempt is made to assign the repair to the lowest level possible in order to minimize costs (Repairables, 1976, pp. 7-8).

A repair cycle for Depot Level Repairables begins when a unit requisitions a ready-for-issue item, and turns in a not-ready-for-issue item or "carcass." Depending on the supply status of the item turned in for repair, the carcass may be repaired immediately or may be held for repair at a future date. Once it is decided to repair a carcass, it is sent to a Designated Overhaul Point. After repair, the ready-for-issue item is returned to the supply system and when required, issued to a customer. (Repairables, 1976, pp. 17-18)

D. FUNDING FOR SUPPLY SUPPORT OF WEAPONS SYSTEMS IN PROCUREMENT APPROPRIATIONS

Prior to 1 April, 1981, supply system funding for procurement of Navy managed Depot Level Repairables (DLR) was contained in three separate appropriations: Aircraft Procurement, Navy (APN); Other Procurement, Navy (OPN); and Weapons Procurement, Navy (WPN). These appropriations were each subdivided into at least two levels; first to Budget Activities, and then to P-1 line items within the Budget Activities. In all the procurement appropriations except Aircraft Procurement, Navy, the P-1 line items for the procurement of Depot Level Repairables were included in the budget activity appropriate for the weapons system end item being procured. The funds for procurement of Depot Level Repairables (DLRs) in Aircraft Procurement, Navy are included in one budget activity (BA-6). (Holoney, 1979)

The three procurement appropriations involved, APN, OPN, and WPN were therefore used as follows:

1. To finance weapon system or end item procurement.
2. To provide Interim spares support for all necessary items.
3. To provide Initial and Replenishment spares support, consisting of Depot Level Repairables (DLRs), in support of these equipments for their life cycle.

These appropriations were available for obligation over a three year period, and had the common characteristic that they were financing the procurement of investment type items.

All Non-Aviation Depot Level Repairables (DLRs) not required for initial outfitting were held in stock at various Navy stock points, and managed by Ships Parts Control Center (SPCC), the Inventory Control Point (ICP) activity. Since these items had already been financed by Procurement Appropriations, but not yet been issued to their ultimate using activities, the value of this inventory is accounted for by the Navy in a stores account called the Appropriation Purchase Account (APA). The Inventory Control Point was responsible for managing the Depot Level Repairables (DLRs) within guidelines and funding constraints provided by the Hardware Systems Commands. After the Depot Level Repairables (DLRs) were initially procured and stocked in inventory to support new equipment acquisitions, procurement could continue over the life cycle of the equipment, with additional procurement being for one of three reasons:

1. To replace items that wore out through normal usage.
2. In reaction to a reduction in stock caused by requisitioning units not returning a carcass to the supply system for repair when ordering a new item.
3. In reaction to changes in demand.

On 1 April, 1981, the funding scenario described above was changed for Non-Aviation Depot Level Repairables (DLRs). This change will be discussed in chapter III.

E. FUNDING REPAIR OF DEPOT LEVEL REPAIRABLES (DLRS) IN THE OPERATIONS AND MAINTENANCE NAVY APPROPRIATION

Prior to 1 April, 1981, funding for the depot repair cost of Depot Level Repairables (DLRs) was provided by the Operations and Maintenance, Navy (O&MN) appropriation. These funds were allocated by the Chief of Naval Operations to the Chief of Naval Material (CNM) who provided suballocations to the three Hardware Systems Commands. As mentioned previously, the three Hardware Systems Commands were responsible for budgeting and control of the funds allocated (NAVCOMPT 071121.2). Prior to 1 April, 1981, there were eight separate budget activities for procurement of Depot Level Repairables (DLRs), and three separate administrators of repair funds, as shown in figure 2.3.

The principal source of replenishment for Inventory Control Point managed stock was the depot level repair programs financed by the Hardware Systems Commands. When a Depot Level Repairable (DLR) needed to be replaced, the customer returned the inoperable Depot Level Repairable (DLR) to an authorized depot for repair, and drew a ready-for-issue item from supply. Since both the initial purchase price of the part, and the cost of repair was centrally funded by the Hardware Systems Commands through procurement or Operations and Maintenance appropriations, there was no cost to the customer. From the customer's viewpoint, the item was considered to be a "free" issue. (NAVHAT GUIDE, 1980)

F. BUDGET DEVELOPMENT, ENACTMENT AND EXECUTION

Funding requirements for additional procurement of Depot Level Repairables (DLRs), and for repairs to existing Depot Level Repairables (DLRs) were determined by the Hardware Systems Commands in conjunction with the Inventory Control

<u>APPROPRIATION</u>	<u>BUDGET ACTIVITY</u>	<u>ADMINISTRATOR</u>
OTHER PROCUREMENT, NAVY	OPN-1 OPN-2 OPN-3 OPN-4	NAVSEA NAVSEA/NAVELEX NAVAIR NAVSEA
WEAPONS PROCUREMENT, NAVY	WPN-2 WPN-3 WPN-4	NAVSEA NAVSEA NAVSEA
AIRCRAFT PROCUREMENT, NAVY	APN-6	NAVAIR
<u>REPAIR APPROPRIATIONS</u>		
<u>APPROPRIATION</u>	<u>BUDGET ACTIVITY</u>	<u>ADMINISTRATOR</u>
OPERATIONS & MAINTENANCE, NAVY	O&M-7	NAVSEA / NAVAIR / NAVELEX

Figure 2.3 Procurement and Repair Appropriations

Point during the normal Department of Defense Planning, Programming and Budgeting System (PPBS) cycle. The Inventory Control Point employed a set of Computer programs to simulate demand for the different items. This demand was then compared to known stock levels. (PHSO MANUAL, 1981) Based upon this data, the program manager determined the level of funding projected to be required for additional procurement, and the funding needed for Depot Level Repairable (DLR) repairs during the budget year. The simulation involved a detailed line item computation, stock number by stock number. The objective of the simulation was to achieve a supply system material availability goal of

85% established by the Chief of Naval Operations. The simulation projected procurement requirements only if there were insufficient ready-for-issue and not-ready-for-issue Depot Level Repairables (DLRs) to meet the expected demand, and projected repair requirements only if not-ready-for-issue carcasses were forecast to be available. This meant that the simulation assumed full funding of either the procurement or repair requirements when computing the reciprocal funding requirement. If the funding for procurement or repair of Depot Level Repairables (DLRs) was less than actually needed in execution then the system material availability would be financially constrained at less than the 85% goal. (Paskowitz, 1978) Once the total funding requirements were determined, they were separated by Program Objective Memorandum (POM) resource sponsor for their use in achieving balanced programs within their assigned POM fiscal constraints. Any procurement or repair requirements for Depot Level Repairables (DLRs) which could not be accommodated by the POM resource sponsor within POM fiscal constraints was considered an unfunded requirement in the Navy's Program Objective Memorandum. Since these budgets encountered adjustments as they moved through the review steps from the Hardware Systems Commands through the Navy levels to the Secretary of the Navy, the Secretary of Defense, the Office of Management and Budget, and finally Congressional review, the achievement of a balanced program became less and less likely. (Holoney, 1979)

After Congress passes an Appropriation Bill and the President signs it, the appropriated funds are apportioned by the Office of Management and Budget to the Department of the Navy. (NAVCONPT, 071100) The Comptroller of the Navy then issues the funds through the Navy Chain of Command to the Hardware Systems Commands. The Hardware Systems Commands

distribute the funds to the Inventory Control Points which obligate each appropriation to meet the needs evident for support at the time of execution.

Since the repair of Depot Level Repairable (DLR) components is a significant workload, the Hardware Systems Commands in conjunction with the Inventory Control Point attempt to develop a program which matches available industrial repair capacity, both government in-house and commercial with funds available. Once the plan is developed, the Inventory Control Point issues Work Requests, Project Orders, or contracts to the designated overhaul points for the repair of Depot Level Repairables (DLRs). (Holoney, 1979) The process was completed as the customers then were able to draw ready-for-issue Depot Level Repairables (DLRs) from the supply system at no cost, and concurrently returned not-ready-for-issue Depot Level Repairables (DLRs) to the rework facility for repair and return to stock.

In the process just described, the computer simulation used for budget development was completed about eighteen months before the beginning of the budget year and the appropriation of funding. Thus budgetary requirements developed in December to March, 1980 would yield appropriations for Fiscal Year 1982, would result in repaired Depot Level Repairables (DLRs) being returned to the supply system in the December 1981 to December 1982 time period, and would result in new procurements arriving into the supply system in the December 1982 to January 1984 time period. This long lead time period from budget development to budget execution contributed to three problems that mitigated successful management of Depot Level Repairables (DLRs).

1. Because requirements were not stable over time, the appropriations enacted were in most cases at variance with actual total funding required for supply support.

2. Even if the total funding was near correct, procurement was divided between eight separate budget activities, and repair funding was controlled by three separate administrators. Therefore, in most cases the funding was at variance with the actual requirement in each budget activity, and at variance with the needs of each repair fund administrator.
3. Because of Congressional restrictions on the transfer of funds between appropriations or on reprogramming funds between budget activities within appropriations, tradeoffs by the inventory manager to provide an increase in procurements or to provide for additional repair of Depot Level Repairable (DLR) carcasses was almost impossible. To transfer or reprogram funds would first require the identification of a source of unused funds, and then if the discrepancy was large enough, it would require Congressional action. In most cases, the inventory manager could not adjust the incorrect funding during that fiscal year, and tried to correct any discrepancy in the next budget cycle. Given budget lead times the proposed corrections would probably be at variance with actual requirements by the time the budget was executed. (Holoney, 1979)

G. SUMMARY

This chapter provided a brief description of the Navy Supply system, and how the Depot Level Repairables (DLRs) were stocked and managed by that system. It described the funding of Depot Level Repairables (DLRs) as it was, prior to the 1 April, 1981 change for Non-Aviation Depot Level Repairables (DLRs). The chapter described both the funding for procurement which was in the separate appropriations; APN, OPN, WPN, and the funding for repair which is in the

O&MN appropriation. The simulation used to determine budget requirements for Depot Level Repairables (DLRs) was discussed along with the funding cycle from formulation through enactment and execution. Finally, limitations of the system were covered to indicate management problems that faced the inventory manager prior to the test migration of Non-Aviation Depot Level Repairables (DLRs) to the Navy Stock Fund.

III. FUNDING NON-AVIATION DEPOT LEVEL REPAIRABLES (DLRS) IN THE NAVY STOCK FUND

A. NAVY STOCK FUND BACKGROUND

As was noted in Chapter II, on 1 April, 1981, the financing of the supply system, and consequently customer financing, for Navy Managed Non-Aviation Depot Level Repairables (DLRs) was changed from Procurement and centrally managed O&M appropriations to the Navy Stock Fund. This chapter briefly discusses the Navy Stock Fund and provides background on the new financing mechanism put into play by the Department of the Navy to finance Non-Aviation Depot Level Repairables (DLRs).

The Navy Stock Fund dates from the late 1800s and is the oldest stock fund in any of the United States Military services. (Fisher, 1962, p. 5). In 1949 with the amendment to the 1947 National Security Act, Congress approved stock funds for the other branches of the military services, with Title 10, USC 2208 authorizing the Secretary of Defense to establish working capital funds to finance supply inventories, principally because of the success achieved by the Navy Stock Fund (Earl, 1965, p. 5). The Navy Stock Fund is operated in accordance with Department of Defense Directive 7420.1 "Regulations Governing Stock Fund Operations" (Wooten, 1980, p.18).

The Navy Stock Fund, a working capital fund, is used to purchase and hold inventories of supply items. Items purchased by the stock fund are held at stock points until they are needed by a customer. In effect, the final costing for the item is held in suspense in the Navy Stock Fund until the ultimate user can be determined and appropriate

funds charged. When items are issued from the Navy Stock Fund to user activities, the user's financing appropriation reimburses the stock fund for the items drawn, thus providing resources which can be used by the stock fund to purchase new items or to replace inventory that has been sold. Because of this last feature, stock funds are categorized within the governments' accounting structure as revolving and working capital funds (Earl, 1965, p. 2).

Prior to April, 1981, the Navy Stock Fund initially financed only the secondary items which were classified as "expense" items. The remainder of the supply system, "investment" items, were funded by procurement appropriations, and were "free issued" to user activities.

B. NAVY STOCK FUND METHOD OF FUNDING

As a working capital or revolving fund, the Navy Stock Fund is not controlled by an annual appropriation. The fund was started by Congress with the formation of a body of capital or "corpus" which was used to purchase supplies. As the supplies were issued to users, the user was charged for the supplies, and these funds were used to purchase more material. The objective of the fund was to break even, that is, to recover from sales enough funds to replace the material sold. (Monahan, 1977, p. 14) The fund is composed of cash and material, as depicted in figure 3.1. The fund is both a holding account, holding inventory for sale, and a revolving fund with a constant transition between cash and material.

The center tank in figure 3.1 represents the holding account aspect of the stock fund, called the "Navy Stock Account" (NSA). This account holds inventory until needed by customers who purchase material from inventory with operating funds. These funds increase the cash in the fund,

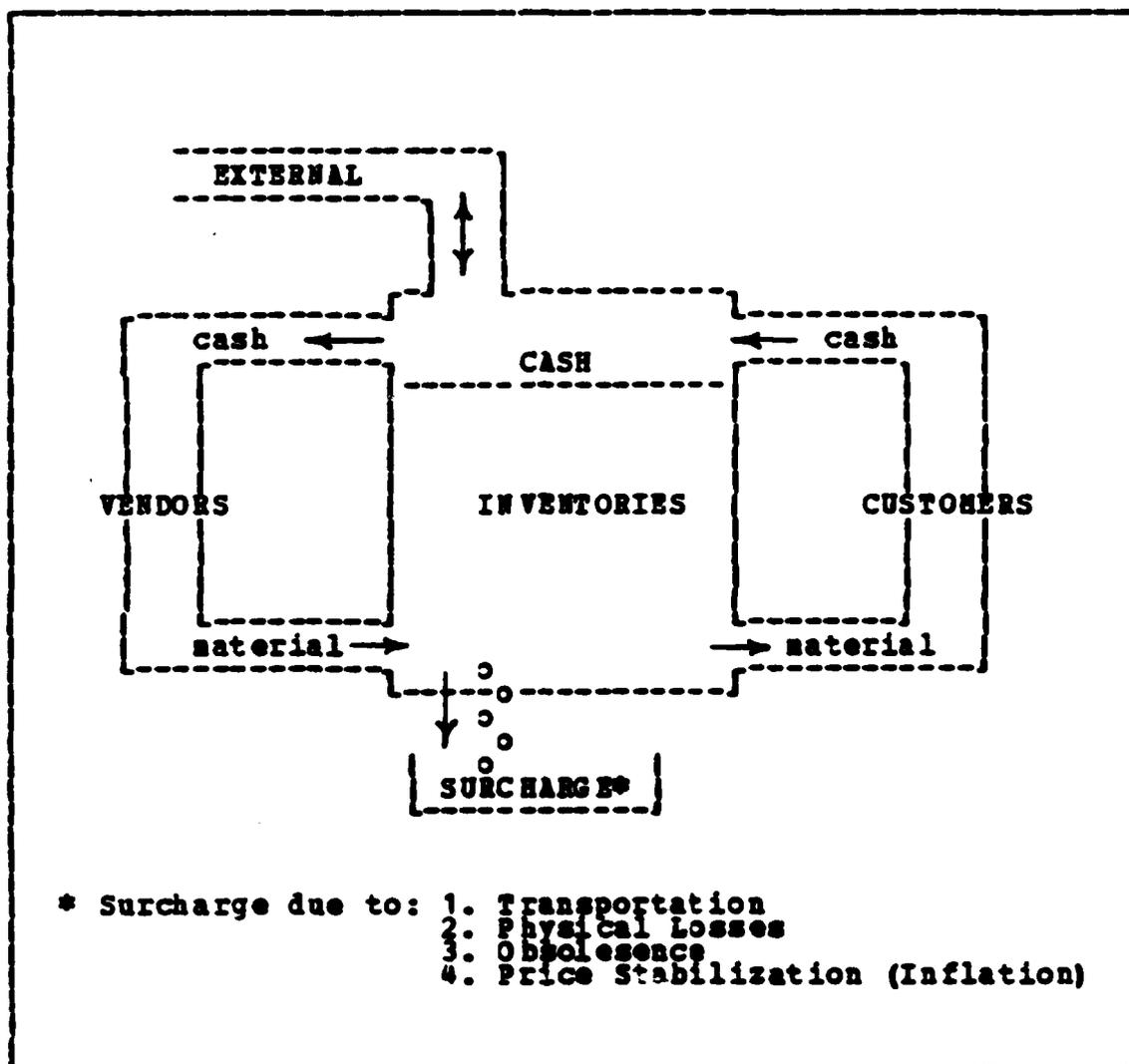


Figure 3.1 Navy Stock Fund

which is used by the stock fund to pay vendors for material to replace inventory sold. Thus with proper pricing, the fund will continue to revolve. The price charged to a customer appropriation for a stock fund item is greater than the price paid by the stock fund for that item because of the surcharge elements included in the sale or "standard stock fund price". The standard price for a stock fund item

includes surcharges which are designed to recoup four types of costs beyond the normal cost of material at the time of purchase: Transportation, Physical Losses, Obsolescence and Price Stabilization as shown in figure 3.1. Transportation costs are experienced by the stock fund for the transportation of material between stock points within the United States. Physical losses includes damage to material while in stock or loss of material. Obsolescence of material in stock occurs either because of technical changes in material requirements which results in material being no longer useful to customers, or the elimination of customer demand for items created by the obsolescence of supported Navy Weapons Systems. Lastly, in order to allow replacement of inventory in an inflationary environment, and allow users to adequately budget for their requirements, a price stabilization surcharge is added to the cost of material to recover a portion of the anticipated inflation between the point of purchase and sale. Through the application of these surcharges to material costs in the setting of an annual standard price, the Navy Stock Fund is able to recoup resources from its customers which approximate its cash outlays for material.

C. NAVY STOCK FUND BUDGETING

Stock fund budgets are prepared at least annually, and are reviewed almost continually. These reviews allow the obligational authority for stock fund operations to be adjusted as necessary to meet increases or decreases in sales (demand) or inventory requirements. Since stock fund budgets are prepared more often and are more current than the budgets for procurement appropriations, they more closely reflect actual needs than the budgets for procurement appropriations. Since it operates on a "no-year"

basis, the stock fund is not subject to annual Congressional Appropriations, and the fund has the flexibility needed to enable it to react to changes in inventory needs. (NAVSSO P-3582, p. VII-3)

Stock fund budgets are constructed to reflect three basic requirements: supply system replenishment of inventory, supply system new item initial provisioning, and supply system war reserve requirements. While the first two areas are essentially similar to that discussed for Procurement Appropriation financed inventory items in Chapter II, the third deserves further explanation. The War Reserve requirements represent an "investment" in inventory during peacetime to allow sufficient stockage to support wartime operations. As such, this aspect tends to work against the revolving nature of the fund and generally requires a cash augmentation to the fund by Congressional Appropriation to finance its execution.

Stock Fund budgets are reviewed through the Navy chain of command, and submitted as part of the Department of the Navy budget to the Department of Defense and the Office of Management and Budget. With approval of the budget by those agencies, and receipt of apportionment of approved funds from the Office of Management and Budget, the Naval Supply Systems Command provides quarterly allocations of stock fund obligational authority to the Inventory Control Points. These allocations contain specific limits on obligation and commitment authority. The Inventory Control Points are then responsible for carrying out the budget, or, depending on actual sales from the fund, increasing or decreasing obligations by an amount equal to the increase or decrease of actual sales as compared to projected sales. Since this obligational authority does not involve a Congressional Appropriation, NAVSUP and its review echelons up the

organization are free to alter the funding constraints for given areas of the fund, or the total fund without reference to Congress.

D. DEPOT LEVEL REPAIRABLES (DLRS) IN THE NAVY STOCK FUND

With the change in funding for Non-Aviation Depot Level Repairables (DLRs) from the procurement appropriations, the Navy Stock Fund gained about 70,000 line items, and experienced a growth in both inventory and sales (Wootten, 1980, P.18). The estimated impact for Fiscal Year 1982 on the Navy stock fund is as shown in figure 3.2 (NSF FY 82 Budget, 25 September, 1981, p. 9 & 81-11).

	WITHOUT DLRS	WITH DLRS
SALES	\$5,565.5 Millions	\$6,066.0 Millions
INVENTORIES	\$2,696.4 Millions	\$4,241.5 Millions

Figure 3.2 Sales and Inventory in the Navy Stock Fund

Because of this shift in supply system funding, requisitioning units are required to pay for the Depot Level Repairables (DLRs) drawn from the Navy Stock Fund with unit operating funds very much like any other stock fund item.

As noted in chapter II, the main replacement source for Depot Level Repairables (DLRs) is the repair of not-ready-for-issue carcasses returned by customers. Therefore, from a supply system maintenance point of view, emphasis is being

placed on recovering not-ready-for-issue "carcasses" from the unit requesting a Depot Level Repairable (DLR) so they may be repaired and returned to inventory as shown in figure 3.3.

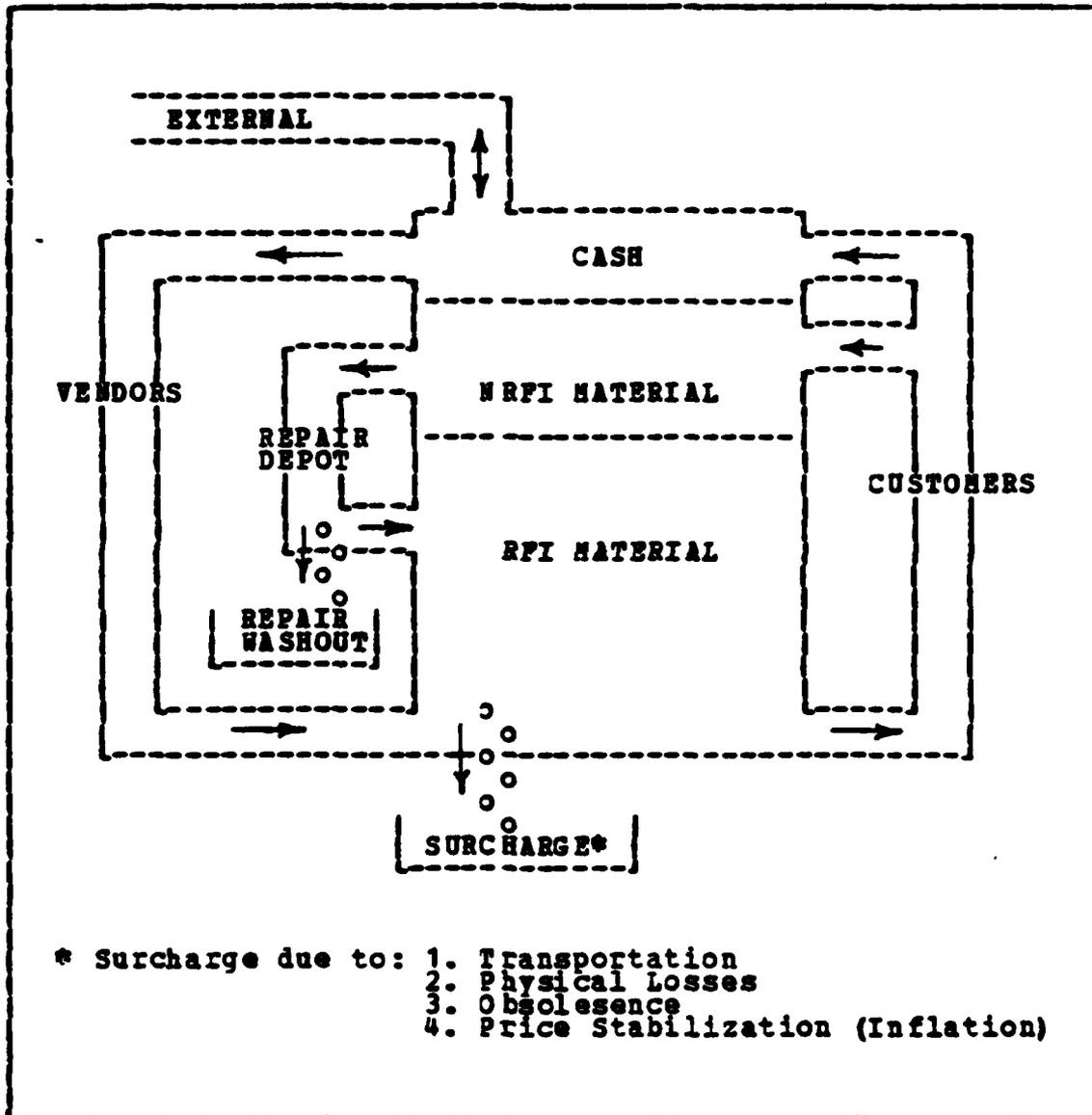


Figure 3.3 Repairables in the Stock Fund

To provide an incentive for the return of the carcasses, a two tier pricing system has been instituted within the Navy Stock Fund for Depot Level Repairables (DLRs). If a customer orders a Depot Level Repairable (DLR) item without indicating that a carcass will be returned for repair, the customer is charged a full standard price which reflects the procurement price and associated surcharges. However, if the customer returns or indicates an intention to return a carcass for repair when ordering a Depot Level Repairable, the customer is charged a reduced price which is called the net price. This net price is based on the average cost to repair the carcass, a portion of the procurement cost based on the probability that the carcass cannot be repaired, (repair washout), plus a pro-rata share of stock fund surcharges. It is advantageous for the customer to return a carcass when ordering a new item because the net price is about 25-30% of the full standard price for the same item. If a customer indicates an intent to return a carcass for repair, the computer at SPCC is programmed to issue the replacement Depot Level Repairable (DLR) at "net" price, then monitor the actual carcass return. If no entry is made to indicate actual return within a specified time period that varies with the Depot Level Repairable customer involved, a process is started to determine if the carcass had actually been returned. If no carcass is returned within a designated time frame, the receiving customer is billed the difference between net price and the full standard price. In sum the customer is billed at full standard price since no carcass was returned. (Wootten, 1980, p. 23)

Depot Level Repairables (DLRs) differ from other items carried in the stock fund in another way, the surcharge rate applied to the item. Because the Depot Level Repairable

(DLR) is repaired and returned to inventory when it fails, the individual Depot Level Repairable (DLR) item cycles through the stock fund on a recurring basis while other consumable stock fund items pass through the fund only once. Therefore, there are more opportunities for the stock fund to recoup the costs associated with physical loss and obsolescence, for Depot Level Repairables (DLRs), and the surcharge applicable to those areas has been set lower than that used for non Depot Level Repairable (DLR) items.

In order to provide resources to fund this new charge at the customer level, appropriation resources were moved, in the Planning, Programming, Budgeting process, from procurement appropriations and from centrally funded component repair appropriations to the customer budgets and their related appropriations (Wootten, 1980, p. 24). These funds were determined and allocated by major claimant and budget activity within financing appropriations based on two years' worth of Depot Level Repairable (DLR) transaction history at the Ships Parts Control Center (CNO letter, 1980). When the test began, the Navy Stock Fund capitalized existing supply system stocks, and customers were required to begin paying for Depot Level Repairables (DLRs) which were on order at the start of the test or ordered during the test. Since the procurement appropriations had already funded the Depot Level Repairables (DLRs) which were on order for the supply system at the time of the start of the test, the Navy Stock Fund has, and continues to experience a cash windfall since it is collecting cash from sales at a faster rate than it has to pay out cash for new stock fund procurements of Depot Level Repairables (DLRs). This windfall will continue until the leadtime for new procurement or repair becomes totally stock funded and a normal expenditure rate is achieved. To keep the cash in the fund at a proper level, and assist in

financing the transition cost in customer appropriations, the Office of the Secretary of Defense directed the stock fund to provide "withdrawal" credits to customers. these withdrawal credits tend to reduce net stock fund sales and customer appropriation expenditures during the "windfall" period. The credits were determined in the same manner as, and as a companion to the initial customer funding listed above, and have been phased in during the first eighteen months of the test. (CNO letter, 1980)

The shift in funding from the procurement accounts and repair accounts to funding through the Navy Stock Fund will provide much greater flexibility for inventory management as it will no longer be constrained by funding in the many separate appropriations and budget activities as discussed in chapter II. Inventory managers will be able to make tradeoffs between funding new procurements or repair, thus ensuring a more responsive use of resources. Since the budgets for the Navy Stock Fund are reviewed frequently, it will be able to react to changes in demand much faster than when the funding was in the Procurement Appropriations.

E. SUMMARY

This chapter briefly described the workings of the Navy Stock Fund, and the fact that the stock fund is not tied to appropriations, but instead uses obligational authority that can be increased or decreased as the situation warrants. The chapter went on to discuss the changes that took place when Depot Level Repairables (DLRs) were added to the stock fund, including the two tier price system that is being used to provide an incentive to return not-ready-for-issue carcasses to the supply system for repair. Finally, the added flexibility that will be gained by the inventory manager to trade off procurement and repair funding for a

balanced program and the currency of stock fund budgets to execution was discussed.

IV. IMPLEMENTATION OF THE CHANGE IN FUNDING NON-AVIATION DLRS FROM PROCUREMENT APPROPRIATIONS TO THE NAVY STOCK FUND

A. CHANGE MODEL

When an organization attempts to change the way it accomplishes its mission, the change requires the support of the people involved in the project, and of the people whose jobs are affected by the change. As discussed by Lawrence B. Sawyer (1981), people usually fear change as a threat to their security, but change can be made acceptable under circumstances such as:

1. The need for the change is understood by operating people.
2. People are assured that the change does not threaten their security.
3. Those affected participate in planning the change.
4. The change is the result of a situation, not the result of a management fiat.
5. The organization is conditioned to accept change.

How can the organization be conditioned to accept change? A basic model used to describe behavioral and organizational change is the Lewin-Schein Model, Figure 4.1. Schein (1961).

The stages of the model are defined by Schein as follows:

Unfreezing: an alteration of the forces acting on the individual such that his stable equilibrium is disturbed sufficiently to motivate him and to make him ready to change; this can be accomplished either by increasing the pressure to change or by reducing some of the threats or resistance to change.

Changing: the presentation of a direction of change and the actual process of learning new attitudes...

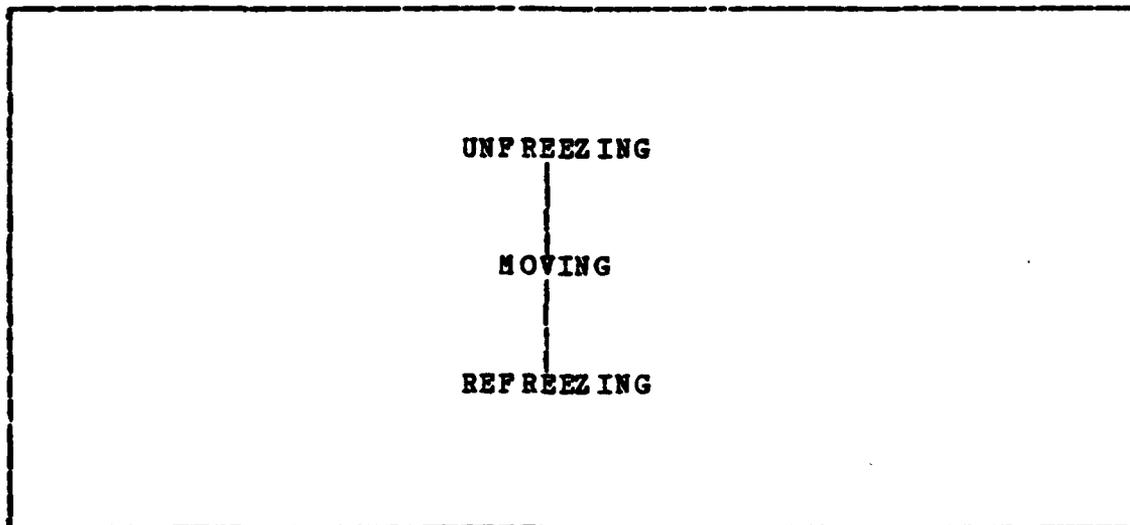


Figure 4.1 Lewin-Schein Change Model

Refreezing: The integration of the changed attitudes into the rest of the personality and/or into ongoing significant emotional relationships. (p. 62)

The Lewin-Schein change model is one that can be used to aid policy implementation in an organization. According to Keen & Morton (1978), the unfreezing stage can explain much about conventional change thinking such as:

1. The need for top management support.
2. The requirement for "a felt need by the client".
3. The requirement for an immediate visible problem to work on.

All of the points listed above enforce the requirement that there be a motivation for change.

While a frozen system is relatively stable, a system that has been unfrozen must move and find a new equilibrium. The movement should be controlled by the implementor, with the implementor focusing on building a "felt need" for which he has the solution. Once the system has moved to the new equilibrium, it must be refrozen to ensure continued use of

the change. The change must be embedded in the organization. (Keen & Morton, 1978, pp. 200-201)

B. ACTUAL IMPLEMENTATION

On 9 May, 1978, the Assistant Secretary of Defense for Manpower, Reserve Affairs, and Logistics established a steering group to monitor study on the feasibility of extending the stock fund concept to Depot Level Repairables (DLRs) (A.S.D. letter, 3 October, 1978). On 30 June, 1978, the Chief of Naval Operations directed that an in-house study be conducted to develop an educated Navy position on the migration of the supply system financing of Depot Level Repairables (DLRs) to the Navy Stock Fund. An additional stimulus for the study was the General Accounting Office request for the Navy to explain why Type Commanders; Air, Surface, and Subsurface; had not been given financial management responsibility for appropriation funded spare parts since they had been given responsibility for Navy Stock Fund items (C.N.O. letter, 30 Jun, 1978).

On 3 October, 1978, the Assistant Secretary of Defense acknowledged the ongoing in-house Navy study, and requested that the Army and the Air Force initiate preliminary analysis of the stock funding of repairables (A.S.D. letter, 3 October, 1978).

The study group was chaired by Mr Robert J. Moloney, MAT-01B, Deputy Director of Resources Management, Headquarters, Naval Material Command. Since the Marine Corps receives all technical aviation support from the Navy supply system, in addition to other common supply support areas, the Marine Corps was invited to participate in the study. This would allow Marine Corps input to the Navy study, and additionally allow the Marine Corps system for managing Depot Level Repairables (DLRs) to be studied as

well. The study group consisted of thirty-five members, seventeen full time, and eighteen part time. The committee members were at the rank of Navy Captain, Marine Corps Colonel. The seventeen full time members included one Marine Corps representative from the Installations and Logistics program analysis section. The eighteen part time members included four Marine Corps representatives as follows:

1. One from aircraft support section of Deputy Chief of Staff for Aviation Plans, Policy and Requirements Division.
2. Two from the Materiel Programs and Budget office of Deputy Chief of Staff for Installations and Logistics Material Division.
3. One analyst from the procurement section of the Fiscal Division.

In addition, a Depot Level Repairables (DLRs) Advisory Committee of fourteen members, composed of Navy Rear Admiral, Marine Corps Brigadier General or above in rank, was assigned to review the study group results. This advisory committee included one Marine Corps Representative, the Assistant Deputy Chief of Staff for Installations and Logistics.

A final draft of the report from the study group was submitted to the Advisory Committee on 13 September, 1978, recommending: that the Navy establish a prototype test of funding Non-Aviation Depot Level Repairables (DLRs) in the Navy Stock Fund and recommending that the Marine Corps maintain its system as it was, not shifting the funding of Depot Level Repairables (DLRs) to the stock fund for Marine Corps managed material. On 16 May, 1979, the Chief of Naval Operations approved the study, directing development of an implementation plan which would enable commencement of the

prototype test in April, 1981. The implementation plan was developed and implementation directed by the Depot Level Repairable (DLR) Prototype Implementation Working Group, reporting through an advisory committee. Since the study had recommended that the funding for the Depot Level Repairables (DLRs) managed by the Marine Corps not be moved to the stock fund, no Marine Corps representative was provided to the implementation working group, however, one Marine Corps Colonel was a representative on the advisory committee. The implementation plan was completed by the working group and was approved by the Chief of Naval Operations on 17 March, 1980 (C.N.O. letter, 17 March, 1980). This plan delineated steps that should be completed to ensure implementation, a time table for completion of these steps, and the command responsible for completing each portion of the implementation plan. It covered the areas thought necessary to provide implementation of the plan within the Navy on time, and with minimum disruption of supply service. After about six months of work, "change one" to the plan was issued to update the plan based upon what had been learned to date (C.N.O. letter, 25 Sept, 1980). Figure 4.1 provides a listing of key implementation dates.

The implementation plan mainly affected the headquarters levels and had minimal effect on the operational units because most of the major changes required were at the headquarters levels. To provide information on how the new changes would affect the operational units, a series of letters, bulletins, and messages were released, each covering a different area. They were mainly concise statements of the change, and how it would affect Navy supply support of the fleet. Most of the Bulletins started with a page marked "important" stating that Non-Aviation Depot

- 9 May, 1978: Assistant Secretary of Defense establishes a steering group to monitor a study of the feasibility of stock funding Depot Level Repairables (DLRs).
- 30 Jun, 1978: Chief of Naval Operations directs an in-house study of the subject.
- 13 Sep, 1978: Final Draft of the study group report recommending a prototype test of Navy stock funding of Non-Aviation Depot Level Repairables, and not recommending Marine Corps stock funding of Marine Corps managed Depot Level Repairables, was sent to the advisory committee.
- 16 May, 1979: Chief of Naval Operations approves the study and directs implementation of the study plan.
- 17 Mar, 1980: Implementation plan approved by the Chief of Naval Operations.
- 1 Apr, 1981: Prototype test of funding Non-Aviation Depot Level Repairables implemented.

Figure 4.2 Key Implementation dates

Level Repairables (DLRs) which had previously been "free" issues were soon to be charged to the receiving activity. By stressing the impact the change would have on customer budgets, and showing that the customer would pay either a "standard" price if no carcass would be returned for repair, or a lower "net" price if one would be returned, an incentive for reading the bulletins was provided. Appendix C provides a listing of the relevant bulletin and messages provided operational units. The information flow just described also helped ensure that the using activities would

be involved, and able to smoothly transition to the new system. To provide a rapid response to questions that might arise concerning the test, two "hot-lines" were established. The first, a Chief of Naval Operations hot-line to address policy questions and problems, and the second, a Ships Parts Control Center hot-line for resolution of procedural problems and implementation issues. Both of these hot-lines were established over six months prior to the beginning of the test.

In order to further include and educate the Navy and Marine Corps on the new program, overview presentations were presented in Washington D. C., and other areas with large concentrations of affected Navy and Marine Corps units. The objective of the initial presentations was to introduce the concept of stock funding Depot Level Repairables (DLRs), and to initiate planning for further training. Then, starting more than ninety days prior to the beginning of the test, a second set of detailed presentations was given. The second set of presentations was to ensure that personnel involved in the test would be trained prior to the implementation date of 1 April, 1981. In the Western Pacific, Headquarters, Fleet Marine Force Pacific was provided a half day briefing during April, 1980, and Navy and Marine Corps units in Japan were provided a one day briefing during February, 1981.

NAVSUP publications P-485 and P-437 provide requisitioning procedures used throughout the Navy, and these publications were changed to reflect the new requisition procedure for Depot Level Repairables (DLRs). Since these publications were used as the basis for local instructions, their change, in conjunction with the training package discussed above, provided uniformity in the training given to involved personnel. (C.N.O. letter 15 April, 1980, pp. 6-1, 6-2)

C. COMPARISON OF THE MODEL AND ACTUAL IMPLEMENTATION

The first step in the implementation of change is to "unfreeze" the system, and as Sawyer (1981) said, "those affected should participate in planning the change". In this case, all major commands affected by the change were invited to participate in the initial study to determine the best way to fund Depot Level Repairables (DLRs). This not only caused the personnel participating in the study to be personally involved, but also, by having people from the involved commands develop the study, a person with intimate knowledge of the plan returned to each involved command as a local expert. This helped to unfreeze those commands and prepare them for change.

After the study group concluded its work, recommending a change in the method of funding Depot Level Repairables (DLRs), the next step was the assignment of an implementation working group for the prototype test. Since the major changes affected the Naval Material Command, the Chief of Naval Material directed the formation of the DLR Prototype Implementation Working Group, and an Advisory Committee. The Advisory Committee was responsible for resolving any policy matters and for evaluation of the prototype program. The committee was chaired by the Deputy Chief of Naval Operations (Logistics), Material Division (OP-41) and consisted of representatives from:

1. Chief of Naval Operations.
2. Commandant of the Marine Corps.
3. Navy Comptrollers Office.
4. Commander in Chief, Atlantic Fleet.
5. Commander in Chief, Pacific Fleet.
6. Naval Supply Systems Command.
7. Naval Military Personnel Command.

The Depot Level Repairable (DLR) Implementation Working Group was composed of members from the following commands:

1. Naval Supply Systems Command.
2. Naval Sea Systems Command.
3. Naval Maintenance and Supply Systems Office.
4. Naval Electronics Systems Command.
5. Naval Air Systems Command.
6. Comptroller of the Navy.
7. Naval Material Personnel Command.
8. Commander in Chief, Pacific Fleet.
9. Commander in Chief, Atlantic Fleet.
10. Office of the Chief of Naval Operations. (CHNAVHAT msg 241220Z May, 1979).

By again utilizing members from the affected commands, the pressure to unfreeze the system and move it toward the desired new position was increased. To accomplish the unfreezing of the operational units, the implementation bulletins and the Ships Parts Control Center Depot Level Repairable Newsletters both provided pressure for change in the direction desired by the implementor. With publication of NAVSUP publications P-485, and P-437, the operational commands were moved to the new position, and refrozen with the change completed.

D. SUMMARY

This chapter described the Lewin-Schein model for implementing change, and after describing the actual implementation process for the change in funding Non-Aviation Depot Level Repairables (DLRs), the model and the actual were compared. The comparison showed that as recommended by the model, the users of the system were the ones who had a large input in designing the change, and that most of the users who were affected by the change had a chance to participate.

**V. IMPACT OF THE FUNDING CHANGE ON MARINE CORPS AIR STATION
IWAKUNI JAPAN**

A. UNITED STATES MARINE CORPS AVIATION SUPPORT

The Department of the Navy consists of both the Navy and the Marine Corps. Within the Department of the Navy, the Chief of Naval Operations is responsible for organizing, training, equipping and maintaining the readiness of Navy Forces, while the Commandant of the Marine Corps has a similar responsibility for Marine Corps forces with one major exception, technical aviation material support (RIMSTOP Vol. II Part I, USN, March, 1976, pp I-1 to I-3). The Chief of Naval Material, under the Chief of Naval Operations, is responsible to the Commandant of the Marine Corps for providing aviation support including:

1. Aircraft.
2. Aircraft armament and communications systems equipment.
3. Training aids and devices.
4. Aircraft ground support equipment and test equipment.
5. Flight clothing and crew equipment.
6. Aviation peculiar and Shipboard Uniform Automated Data Processing System-End Use (SUADPS-EU) equipment.
7. Spares (repairables), repair parts (consumables), fuel and lubricants as appropriate to support (1) through (6) above.

This support is provided the Marine Corps utilizing Navy investment or expense item support funds as applicable. In the Marine Corps, these Navy provided funds are called "blue" dollars, while Marine Corps funds for Marine Corps Air Station support materiel other than aviation support are

called "green" dollars. The aviation support provided is through the Navy supply system to Marine Air Groups (MAGs) for tactical aircraft, and to Marine Corps Air Stations for base support aircraft. (RINSTOP Vol II Part I USMC, March, 1976, pp VII-1 to VII-3)

The funding for aviation expense type items is provided by Operations and Maintenance, Navy (O&MN) funds for which the Navy establishes Operational Target Functional Category Codes (OFCs). OFC-01 funds are used for inflight consumables such as fuel, oil and crew equipment and clothing. OFC-02 funds are used for the purchase of repair parts and consumable supplies in support of the SUADPS-EU computer hardware. OFC-50 funds are used to purchase intermediate and organizational aircraft and ground support equipment maintenance repair parts and other consumables requirements. Allocations of these funds are provided by the type commanders; Commander, Naval Air Force United States Atlantic Fleet (COMNAVAIRLANT), or Commander, Naval Air Force United States Pacific Fleet (COMNAVAIRPAC), to the Fleet Marine Force commander; either Fleet Marine Force, Atlantic (FMFLANT), or Fleet Marine Force, Pacific (FMFPAC), who further allocates funds to subordinate commands. (RINSTOP Vol II Part I USMC, March, 1976, pp VII-1 to VII-3) Investment type items are provided in support of aviation by the Navy Procurement Appropriations are fully funded by one of the three Hardware Systems Commands for the Marine Corps aviation user as well as the Navy user. Therefore, there is no charge to the Marine Corps or Navy unit receiving those items.

In the case being studied, Non-Aviation Depot Level Repairables (DLRs), the Marine Corps has three categories of equipment that are now known to be affected by the prototype test and are outside of the Naval Aviation Funding and support envelope discussed above:

1. Cryptographic.
 2. Air Station Air Traffic Control (ATC).
 3. Marine Corps Air Traffic Control Squadron (MATCS).
- Equipment in all three categories are common to the Navy and Marine Corps and are supported through the Navy supply system. (CNC msg 311309Z March, 1981.)

B. THE PROTOTYPE TEST AT MCAS IWAKUNI

With the approval of the prototype test to fund Navy managed Non-Aviation Depot Level Repairables (DLRs) in the Navy Stock Fund, the Chief of Naval Material initiated an implementation plan to provide a smooth transition to the new method of funding as discussed in Chapter IV. Marine Corps Air Station Iwakuni, Japan received many of the implementing directives through the normal distribution system, but because they were a Marine Corps Air Station, and as such, not part of the Fleet Marine Force, they did not receive all of the directives. Additionally, many of the messages describing the prototype system, were originally addressed to a chain of command senior of MCAS Iwakuni, and after some delay, from one day to a few weeks, these messages were readdressed to MCAS Iwakuni for "information".

On 30 January, 1981, COMNAVAIRPAC released a message discussing; the change in funding for Depot Level Repairables (DLRs), the supply items involved, and the carcass tracking portion of the program (COMNAVAIRPAC msg 301745Z January, 1981). This message was readdressed and forwarded to MCAS Iwakuni on 5 February, 1981, by PHFPAC. On 6 February, 1981, SPCC released a message stating that with the conversion of the Non-Aviation Depot Level Repairables (DLRs) from Procurement Appropriation funding to the Navy Stock Fund, new fund codes would be required for all outstanding Depot Level Repairable (DLR) requisitions to

ensure that the proper funds would be charged after implementation. Since there was a wide range of fund codes which could be used by shore activities, SPCC requested that requisitioning units annotate and return a special advice card for each outstanding Depot Level Repairable (DLR) requisition with the new applicable fund code. That message was readdressed and forwarded by Commander, Marine Corps Bases Pacific (COMMARCORBASESPAC) to MCAS Iwakuni on 11 March, 1981. Since MCAS Iwakuni had not received any new fund codes from COMMARCORBASESPAC it had to use either the old Appropriation Purchase Account (APA) fund codes which were now unacceptable since they would not cause the charge to be levied against MCAS Iwakuni, or it had to use its existing Marine Corps O&MHC fund code.

On 2 March, 1981, Headquarters Marine Corps released a message to major commands stating that the Navy had provided the Marine Corps with increased funding for this program for the third and fourth quarter of fiscal year 1981. Headquarters Marine Corps felt that the funding provided by the Navy would not be adequate, and requested two pieces of data to be reported to Headquarters Marine Corps by 10 March, 1981.

1. Gross dollar value of cryptographic, Marine Air Traffic Control Squadron (MATCS), and Air Station, Air Traffic Control Depot Level Repairables (DLRs) used during the last twelve months.
2. Gross dollar value of cryptographic, MATCS, and Air Station, Air Traffic Control Depot Level Repairables (DLRs) held on backorder or outstanding as of that date.

(CNC msg 021401Z March, 1981). This message was readdressed and forwarded to MCAS Iwakuni by PHFPAC on 4 March, 1981. MCAS Iwakuni responded on 7 March, 1981, showing:

1. Gross dollar value of Depot Level Repairables (DLRs) from March, 1980 thru February, 1981 of \$41,200.00.
2. Gross dollar value of Depot Level Repairables (DLRs) on backorder with SPCC of \$21,220.00

(MCAS Iwakuni msg 071120Z March, 1981).

On 13 March, 1981, less than one month prior to the implementation date, the MCAS Iwakuni supply officer received a memorandum from the Fleet Marine Force Pacific, Supply Officer, which included eight enclosures. These enclosures included all of the important implementation directives including the implementation plan and were dated from 15 April 1980, to 2 March 1981. (Force Supply Officer Memo, 13 March, 1981)

On 23 March, 1981, The Chief of Naval Operations released a message to all operational Navy and Marine Corps units describing; the shift in funding for Non-Aviation Depot Level Repairables (DLRs), the supply items affected, and the dual pricing system for Depot Level Repairables (DLRs), standard price, and net price (CNO msg 231324Z March, 1981). This message included MCAS Iwakuni as an addressee.

On 31 March, 1981, Headquarters Marine Corps released a message to major commands affected by the prototype test. That message discussed the background of the test, and the items affected. It then went on to state:

Effective 1 April 1981, the Navy will initiate a prototype program to test the managing of Non-Aviation DLRs in the Navy Stock Fund (NSF), as opposed to the current management of these items in the Appropriation Purchases Account (APA). The basic change is that those items currently designated as 2H, 4N, 2U, 6U, 4G, 4A, and 6E COG items will migrate from APA to NSF and will be "bought" from the stock fund vice current "free" issue. Although the prototype test has been characterized as "Non-Aviation", Marine Aviation is affected by this program in that Marine Air Station, Air Traffic Control (ATC) and Marine Air Traffic Control Squadrons (MATCS) are operating and maintaining Navy provided equipment supported by this program. MATCS/Air Station ATC equipment consists of commonly used USN/USMC Aviation Peculiar assets

that are comparable to any other aviation weapons system or associated Navy provided equipment in terms of Logistic Management and funding cognizance. NAVCOMPT is currently reviewing the provisions of NAVCOMPT manual, paragraph 074341.2(C) (see Appendix D) that requires MATCS/ATC end users to cite O&MHC funds for material support. Until NAVCOMPT can promulgate a final policy decision for management and funding cognizance of MATCS/ATC support material, these units will requisition material COGs addressed above with a Navy UIC (service codes "R", "V", or "N"). NAVCOMPT concurs with the procedures outlined above.

That message was readdressed to MCAS Iwakuni by COMNAVCORBASESPAC on 12 April, 1981 (CHC msg 311309Z March, 1981). Figure 5.1 is a listing of dates affecting implementation at MCAS Iwakuni.

On 22 April, 1981, MCAS Iwakuni replied to COMNAVCORBASESPAC in regard to the CHC message of 31 March, 1981, stating that they received no Operations and Maintenance, Navy funding, and only used a Navy Service code and Unit Identification Code (N62613) for Appropriation Purchases Account material with fund code 33, and for Navy Stock Account material with fund code 26/27. They requested clarification on which appropriation and fund code should be used when ordering with their Navy Unit Identification Code. (MCAS Iwakuni msg 220646Z April, 1981) This message was readdressed by COMNAVCORBASESPAC to headquarters Marine Corps on 23 April, 1981. One Month later, having received no reply on the request for appropriation and fund code advice, MCAS Iwakuni requested information on the status of their request (MCAS Iwakuni msg 200410Z May, 1981). By 19 June, 1981, MCAS Iwakuni had still not received any direction regarding a proper appropriation and fund code. At this time, the MCAS Iwakuni Logistics Officer called FMFPAC for clarification and was told that the Fiscal Division at Headquarters Marine Corps had the question for action. An answer would be provided when Headquarters Marine Corps responded.

- 2 Mar, 1981: CMC asks for data input by 10 Mar. on cost of DLRs involved in the test.
- 7 Mar, 1981: MCAS Iwakuni responds with cost figures
- 11 Mar, 1981: MCAS Iwakuni receives SPCC message of 6 Feb, 1981 stating need for new fund codes for Depot Level Repairables.
- 21 Mar, 1981: MCAS Iwakuni supply officer receives memorandum from FMPPac supply officer dtd 13 Mar, 1981 that included most major documents on the prototype test.
- 1 Apr, 1981: Prototype test implemented.
- 12 Apr, 1981: MCAS Iwakuni receives CMC message of 31 Mar, 1981 discussing CMC attempts to have the Navy continue funding ATC & MATCU equipment.
- 22 Apr, 1981: MCAS Iwakuni requests a fund code and Navy appropriation for use in ordering required equipment.
- 23 Apr, 1981: COMMARCORBASESPAC forwards MCAS Iwakuni message of 22 Apr. to CMC.
- 20 May, 1981: MCAS Iwakuni requests status of answer to 22 Apr. message.
- 19 Jun, 1981: MCAS Iwakuni requests status of answer to 22 Apr. message, and told that CMC has not responded. They will be informed when an answer is provided.
- 18 Sep, 1981: MCAS Iwakuni told by COMMARBASESPAC to use new fund code to identify costs associated with the prototype test.
- 5 Nov, 1981: MCAS Iwakuni attempted to have 24 requisitions reinstated by SPCC for required supply support using their Marine Corps UIC.
- 18 Nov, 1981: The 5 Nov message was modified to include a Navy UIC and signal code "B".
- 24 Nov, 1981: SPCC cancelled requisitions, stating that the Marine Corps was not a registered user of the items requisitioned.
- 8 Dec, 1981: COMMARCORBASESPAC released a message stating that the requisitions were reinstated and would be processed.
- Jan, 1982: MCAS Iwakuni was informed that the requisitions were cancelled and that FY82 requisitions should now be submitted.

Figure 5.1 Key Dates Affecting Implementation at MCAS Iwakuni, Japan.

On 18 September, 1981, COMMARCORBASESPAC released a message stating that a special cost account code, AA99 (other aviation support) should be established to properly identify the costs associated with the Non-Aviation Depot Level Repairables (DLRs). Using the above cost code, the costs for the Non-Aviation Depot Level Repairables (DLRs) were to be transferred to the flight operations decision unit. This action would allow COMMARCORBASESPAC to provide reimbursement for all Depot Level Repairable (DLR) expenses identified in the decision unit (COMMARCORBASESPAC msg 180906Z September, 1981).

During April it became apparent that the stock funding of Non-Aviation Depot Level Repairables (DLRs) had somehow upset the interservice supply support mechanism employed by MCAS Iwakuni to obtain Depot Level Repairables (DLRs) for its Air Traffic Control and Cryptographic equipment. A brief discussion of the factors involved, admittedly with the benefit of hindsight, is presented to enhance the readers understanding of the various interchanges presented in this chapter. Support for Air Traffic Control Equipment material requirements sits right at the edge of the shift in financial responsibility between Navy, for aviation support, and Marine Corps, for all other support, at MCAS Iwakuni. The Marine Corps had not "registered interest" with the Navy for the Navy managed supplies necessary for its support. Over time, MCAS Iwakuni had learned by experience that these supplies could only be obtained when they encoded their requisitions using their Navy UIC for aviation support vice their Marine Corps UIC because the Marine Corps had not registered interest. Since prior to the Depot Level Repairables (DLRs) test these Depot Level Repairables (DLRs) were issued free to Navy customers, funding was not a problem, to either the Navy or the Marine Corps. However,

past practice, requisition history, was the basis employed by the Navy in re-allocating resources in the Fiscal Year 1981/82 appropriation budgets. Consequently any fiscal year 1981/82 resources for customer support for these items had been positioned in the budget and consequently, appropriations as Navy rather than Marine Corps. MCAS Iwakuni therefore found itself faced with a dilemma. On one hand it could not order these Depot Level Repairables (DLRs) as a Marine Corps unit, and obtain responsive support, since the Marine Corps was not a registered user and further it did not have adequate resources to do so since these had been positioned in the Navy vice the Marine Corps. On the other hand it did not have Navy resources, represented by a fund code, to order them as a Navy unit (Phone Conversation Cdr Garmus, SPCC, 3 Jun, 82).

C. NON-AVIATION DEPOT LEVEL REPAIRABLE (DLR) SUPPLY SUPPORT FOR MCAS IWAKUNI AFTER 1 APRIL, 1981.

Concurrent with the messages presented in section B above, MCAS Iwakuni was trying to operate within the supply system to obtain needed spare parts to keep their equipment operating. Since items on backorder as of 1 April 1981, were considered to be part of the program and as such would require funding by the requesting unit, MCAS Iwakuni was first affected by the prototype test when an item which had been ordered on 27 January 1981, but which was not delivered as of 1 April 1981, was cancelled because the requisition did not contain a fund code that would allow charging expenses to MCAS Iwakuni. After initiation of the prototype test, MCAS Iwakuni unsuccessfully attempted to order parts that were included in the prototype test. MCAS Iwakuni found that when they used their Marine Corps Unit Identification Code (M62613), SPCC treated them as they

would any other service that had not registered interest or made other advance arrangements for supply support since SPCC had no planned demand or funding for the item from MCAS Iwakuni using the Marine Corps UIC, and would cancel the requisition. SPCC advised that if the item was still required, the requesting service, MCAS Iwakuni, would have to submit a Military Interdepartmental Purchase Request (MIPR) which would provide for a contract to be awarded by SPCC for its manufacture and subsequent delivery after the production process (leadtime) was completed (SPCC msg 241211Z November, 1981). Once a contract was awarded by SPCC, the procurement leadtime for most requests would be about twelve months (SPCC msg 131853Z November, 1981). This procedure applied even when SPCC had the part at a stock point, because the material so stocked was provided to meet Navy generated demand, or other service preplanned requirements which did not include MCAS Iwakuni when using its Marine Corps Unit Identification Code.

MCAS Iwakuni had a Navy Unit Identification Code, N62613, which when used would render the request acceptable to SPCC as far as the service code was concerned, since SPCC was forecasting demand for items and ordering them based upon this Navy demand. However, as indicated earlier, MCAS Iwakuni did not have an appropriation and fund code to charge the cost against. Consequently, by November, 1981, seven months after the prototype test was initiated, MCAS Iwakuni had twenty-four Depot Level Repairable (DLR) items which they required but were unable to order through the supply system, representing over \$40,000.00 worth of material. On 5 November, 1981, MCAS Iwakuni attempted to have SPCC reinstate the twenty-four requisitions using their Marine Corps UIC (MCAS Iwakuni msg 050003Z November, 1981). This request was subsequently modified on 18 November, 1981,

when the Navy UIC , M62613 was substituted for the Marine Corps UIC, M62613, and a requisition signal code of "B" was added (MCAS Iwakuni msg 180503Z November, 1981). The addition of signal code "B" to the requisition indicated that the Navy was ordering the material, and the Marine Corps was paying the bill. MCAS Iwakuni thought that by ordering this way it could use the flight operations decision unit fund code and be reimbursed for the cost by COMNARCORBASESPAC.

On 24 November, 1981, SPCC referenced both November messages from MCAS Iwakuni, and again cancelled the requisitions with the following statement:

In response to your 050003Z November, 1981, and 180503Z November, 1981 messages, the Marine Corps is not a registered user for the National Stock Numbers requisitioned. In accordance with Marine Corps Order P4410.22A of 30 March, 1978, a NINSR (Nonconsumable Item Material Support Request) is required. Pending receipt of a NINSR, and subsequent budgeting by SPCC, a MIPR (Military Interdepartmental Purchase Request) will be required for all items listed in the above messages. Service codes "R", "V", and "W" requisitions will be processed as Navy and are exempt from Marine Corps Order P4410.22A requirements.

(SPCC msg 241211Z November, 1981).

On 8 December, 1981, COMNARCORBASESPAC released a message to MCAS Iwakuni stating that they had resolved the difficulty in getting the requisition processed, and that the requisitions involved in the November messages were reinstated and being processed. (COMNARCORBASESPAC msg 080206Z December, 1981).

In January, 1982, MCAS Iwakuni was informed that the requisitions had again been cancelled, and that now fiscal year 1982 requisitions should be submitted. The Marine Corps and SPCC had reached a compromise for processing Non-Aviation Depot Level Repairable (DLR) requisitions which would result in their supply support. The essence of the compromise was that Depot Level Repairables (DLRs) would be issued to MCAS Iwakuni at full standard price and that a

credit would be provided for the difference between standard and net price when a carcass was returned to the first level of Navy supply that provides Transaction Item Reporting to SPCC. At the time of this writing, discussions continue between SPCC and the Marine Corps seeking a final resolution to all aspects of Marine Corps Non-Aviation Depot Level Repairable (DLR) Support. (Phone Conversation with Cdr. Garmus, SPCC, 1 June, 1982)

D. SUMMARY

This chapter described the prototype test as it affected MCAS Iwakuni. It described the actual problems MCAS Iwakuni faced in ordering Depot Level Repairables (DLRs) which were involved in the shift of Non-Aviation Depot Level Repairables (DLRs) to the Navy Stock Fund. It described the source of these problems and provided a view of the situation as it exists today.

VI. SUMMARY AND GENERAL CONCLUSIONS

A. SUMMARY

The purpose of this thesis was to study the prototype test involving transfer of funding Non-Aviation Depot Level Repairables (DLRs) from the procurement appropriations to the Navy Stock Fund, and the impact this change had on NCAS Iwakuni, Japan.

Chapter II provided a back ground on the procurement appropriations involved, discussing the Navy Supply System and the commands involved in procuring and supporting a weapons system. The major categories of items carried by the supply system, principal and secondary, and the funding utilized for their purchase, and if necessary for their repair was described. The method of classifying an item as a consumable or repairable was discussed, and decision questions for classification as a repairable were provided. The chapter also describes the procurement appropriations involved for Depot Level Repairables (DLRs), and what the appropriations provided. The funding of repairs in the Operations and Maintenance appropriation was also discussed. Finally, the budgeting process for these appropriations was described including the restrictions imposed on the Inventory Manager of Depot Level Repairables (DLRs) by funding procurement of a weapons system in one or more procurement appropriations, and the repair of that item in a separate appropriation.

Chapter III examined the Navy Stock Fund, its background, and the method of funding items carried by the stock fund. The concept of working capital was used to explain the idea of the Navy Stock Fund as a revolving fund. The

method of budgeting for the stock fund was explained, including the advantages of the stock fund such as : budget preparation on a frequent basis, and therefore a budget that better reflects the demand of the fleet; the ability to increase or decrease obligational authority for the stock fund depending on demand from the fleet, without being required to receive congressional approval; the ability to trade-off procurement and repair decisions against each other to achieve a cost effective program that is able to meet the needs of the fleet.

Chapter IV described a change model for implementing change within an organization, and then described the implementation process used by the Navy to affect the change in funding Depot Level Repairables (DLRs) from procurement appropriations to the Navy Stock Fund. Finally, the change model and the actual implementation were compared to try and determine the effectiveness of the change within the Navy.

In Chapter V, Marine Corps Aviation support provided by the United States Navy was discussed, and it was shown that even though the prototype test was titled "Non-Aviation", that Marine Corps aviation units still were affected. Affected Marine Corps units had received items involved in the test as "free" issue since they had been fully funded by procurement appropriations prior to the test, and after implementation of the funding change, the affected units were required to purchase the Depot Level Repairables (DLRs). The chapter discussed the test as it impacted MCAS Iwakuni, and showed the dilemma that MCAS Iwakuni faced. If they utilized their Navy Unit Identification Code when initially ordering the Depot Level Repairables (DLRs) the requisitions were rejected by the Inventory Manager because they did not cite a correct fund code that would charge the cost to MCAS Iwakuni. If they used their Marine Corps Unit

Identification Code, the Inventory Manager informed them that the requisitions could not be filled because the Marine Corps was not a registered user of the part requested. This problem was temporarily solved when a fund code was provided to MCAS Iwakuni by COMMARCORBASESPAC and SPCC agreed to provide materiel on a compromise basis.

B. CONCLUSIONS.

1. The Implementation of the funding change was well thought out, and accomplished smoothly in the Navy.

The Navy Implementation Working Group contained representatives from most major commands that were affected by the change in funding. These command members had an input to the implementation plan, and were able to direct and control a smooth transition within the Navy. Major Claimants were provided funding which they distributed to their subordinates for use in purchasing the Depot Level Repairables (DLRs) in the prototype test.

2. The Marine Corps did not realize the magnitude of the funding requirement for the test in a timely manner.

Although the 1 April 1981 implementation date for the prototype program was scheduled by the Navy almost one year in advance of that date, it was not until 2 March 1981 that the Marine Corps asked units to provide an estimate of annual funding requirements for affected materiel, and for an estimate of funding requirements for materiel on back-order as of the implementation date. With this information, Headquarters Marine Corps gained an insight into the level of funding required for the program, and could determine if Navy funding provided for the test would be adequate.

3. MCAS Iwakuni was adversely impacted by the test as it was unable to successfully order required DLR materiel, for over ten months

When the prototype test was implemented on 1 April, 1981, Marine Corps Air Station Iwakuni was informed by SPCC that they were not a registered user for the parts that were in the prototype test, and because of that, they could not order them as a Marine Corps user. It took until January 1982, for the Marine Corps, MCAS Iwakuni, and SPCC to reach a compromise which allowed a reestablishment of "routine" supply support.

4. The lack of a Marine Corps representative on the Implementation Working Group aggravated an otherwise smooth conversion.

After the Depot Level Repairable Study Group recommended that the Marine Corps not change the method of funding Depot Level Repairables (DLRs) managed by the Marine Corps, the Marine Corps did not participate in the Navy Implementation Working Group, and therefore no Marine Corps representative from the Working Group was available to determine the impact the change in funding Navy managed Non-Aviation Depot Level Repairables (DLRs) would have on the Marine Corps.

C. RECOMMENDATIONS

Since the funding of Depot Level Repairables (DLRs) in the Navy Stock Fund seems to be successful for the Navy, adding flexibility in the procurement and repair of those items, the Navy will probably continue to fund the Non-Aviation Depot Level Repairables (DLRs) in this manner, and in a few years may very well fund all Depot Level Repairables (DLRs) in this manner. Because of this, it is recommended that:

1. The United States Marine Corps Air Station, Iwakuni, Japan should ensure that the present funding requirements and procedures are understood, and that the required funding is budgeted for in the future. The

procedures required by the Navy supply system to provide supply support for the Marine Corps should be documented by Headquarters Marine Corps, and used by NCAS Iwakuni when requisitioning required Depot Level Repairables (DLRs).

2. The United States Marine Corps Deputy Chief of Staff for Installations and Logistics, and the Fiscal Director of the Marine Corps should ensure that liason is maintained with the United States Navy offices that will be involved in the implementation planning if the Navy decides to stock fund all Depot Level Repairables (DLRs). It is recommended that representatives be provided to participate with Navy planners in determining the Navy and Marine Corps needs if all Depot Level Repairables (DLRs) migrate to the Navy Stock Fund.
3. That the United States Marine Corps take steps to register interest in the Navy managed Depot Level Repairables (DLRs) and any other secondary items as may be required to ensure uninterrupted supply support.
4. That Headquarters Marine Corps consider establishing a procedure which would allow Headquarters Marine Corps to be advised of interservice supply support problems if the local level is unable to satisfactorily achieve resolution of such problems within a two to three month period, and that Headquarters Marine Corps consider employing high level influence toward their resolution. The extent and duration of problems encountered by NCAS Iwakuni in the stock funding of Depot Level Repairables (DLRs) were injurious to that stations operations and seen to be in opposition to the objectives of the test.

APPENDIX A

DEFINITION OF EXPENSE AND INVESTMENT

The following definitions were taken from Secretary of the Navy Instruction 7040.6B, "Definitions of Expense and Investment Costs".

A. EXPENSES

An expense is an item which contributes to the current support of an activity. Expenses include labor costs (military as well as civilian), materials consumed in use, and services received by the activity which relate to its on going operations. Material is considered an expense when it is consumed upon issue to the final user or issued to be consumed shortly thereafter. The following specific items of material will be treated as expenses:

1. End items of equipment of less than \$3000.00 unit value over which an inventory control point does not maintain centralized individual item management.
2. Nonrepairable spares and repair parts.
3. Assemblies, spares, and repair parts which, although repairable, are not centrally managed recoverable items, and are not designated as repairable by central inventory managers.
4. Food, clothing, and POL items.
5. All items issued from working capital inventories to the point of furthest transfer or most likely end use.

Other items to be treated as expenses are costs of maintenance, repair, overhaul or rework of investment items, service received from others (provided that costs of the

service can be measured feasibly and with reasonable accuracy) and rental payments for leased equipment and facilities on leases initiated by DOD activities.

B. INVESTMENT COSTS

Investment costs are those associated with the acquisition of equipment and real property. Such costs give rise to long-lived assets from which benefits accrue to DOD activities over a long period of time, and which therefore should not be charged as a single year operation expense. The following types of expenditures are investments:

1. Major end items of equipment.
2. Other end items of equipment excluding those of less than \$3000.00 unit value which are not centrally managed by individual item.
3. Centrally managed reparable assemblies, spares and repair parts.
4. Construction (including cost of the land and rights).

Figure A.1 illustrates the basic criteria for deciding whether an item is an expense or an investment cost.

There are certain items for which exceptions to the definitions have been made:

1. Initial outfitting of a major end item of equipment, such as a ship or aircraft, with the furnishings, fixtures, and equipment necessary to make it complete and ready to operate, is part of the initial investment cost.
2. Modification is an investment cost; maintenance is an expense.
3. Costs associated with general construction management (rather than a specific contract) are expenses.
4. Minor construction projects not financed by Military Construction Appropriations nor by funds in the

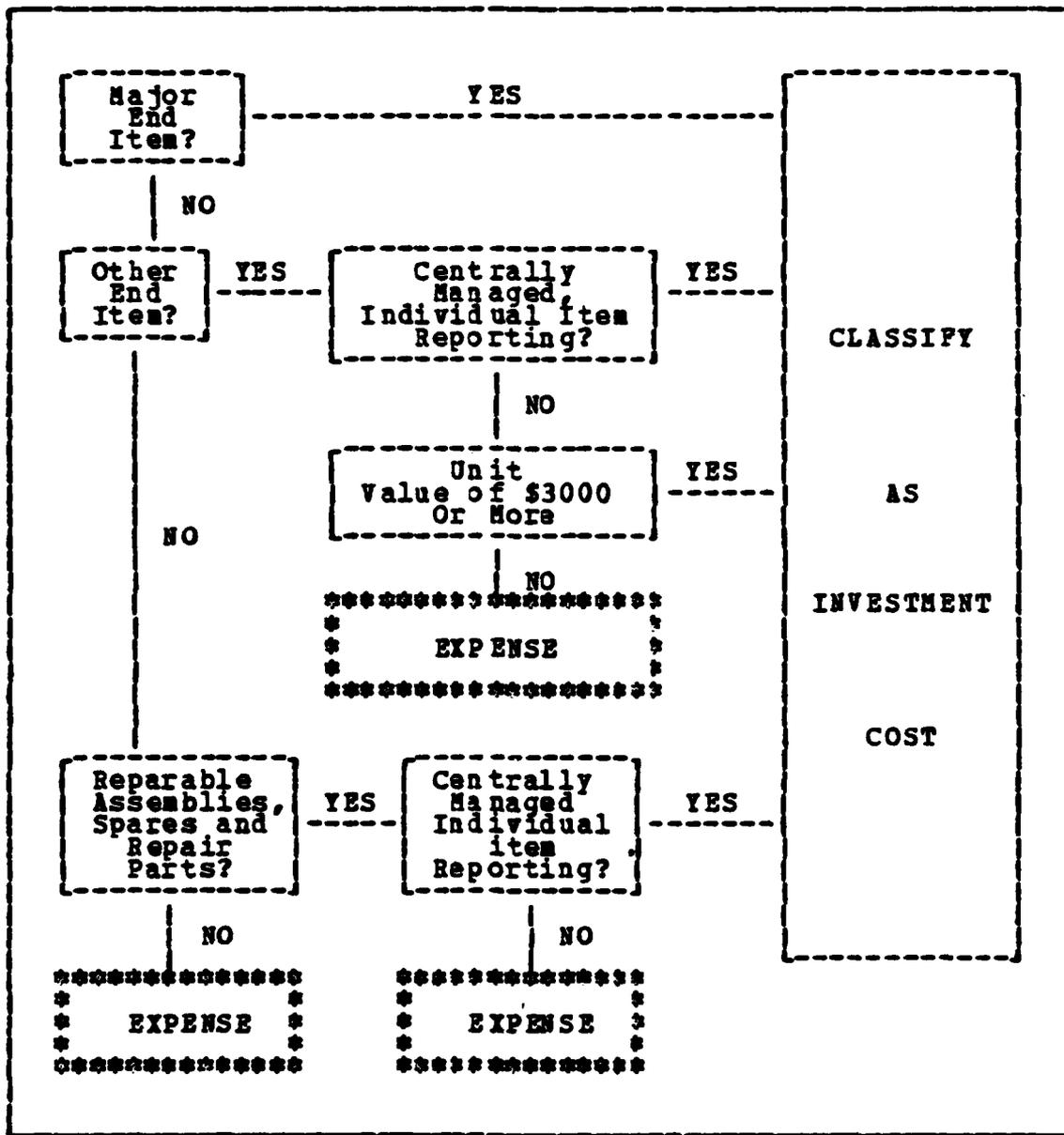


Figure A.1 Investment Cost Decision Diagram

construction portion of the Family Housing appropriation, are expenses.

5. The acquisition function performed at the Headquarters, Navy Facilities Engineering Command is to be treated as an investment cost.

APPENDIX B

WORKING CAPITAL

The following definition of Working Capital is taken from Department of Defense, OASD (Comptroller), "A Primer on Project Prime", November, 1966.

Working capital is a useful device in an accounting system. Its merit has nothing to do with bookkeeping or cost accounting, for it is quite possible to collect costs and keep a set of books without working capital. Rather, working capital is useful primarily as a means of facilitating better management.

As a basis for explaining its usefulness for management, it is helpful to examine first a basic concept and second an obvious fact. The concept is that in the management of operating resources the focus should be on the job that is done with those resources, on the cost of doing that job, and on the person --the manager-- who is responsible for doing the job and incurring the cost. "Cost" here means the amount of resources consumed--that is, expenses. The fact is that often there is a difference in (a) time, (b) place, and (c) personal responsibility, between the purchase of a resource and its consumption. Working capital allows the matching of resources consumed to work done.

Two types of working capital accounts are used in the Department of Defense, stock funds and industrial funds. Stock funds are used to hold the cost of material in suspense until issued and consumed. Industrial funds are used to hold in suspense costs of manufactured items and services provided by DOD units. Both devices permit control to be focused on the point of consumption, rather than on the point of purchase or manufacture.

To illustrate how these funds work, consider the example of a supply item which is purchased by the Defense Supply Agency in Fiscal Year 1966 and consumed on the U.S.S. John F. Kennedy in Fiscal Year 1967. A manager in the Defense Supply Agency is responsible for the procurement; a manager on the U.S.S. John F. Kennedy is responsible for consumption; and other managers are responsible for seeing to it that adequate, but not excess, inventories of the item are on hand in the supply system.

The vendor must be paid for the item when it is bought, and the working capital stock fund permits this to be done and the cost then held in suspense so that it can be charged to the final user only when the item is consumed. Without working capital, the cost would have to be charged to some account at the time and place of acquisition even though the final user might well not be known then. The significance of this is summed up in the terms "free" assets, which is how a manager often describes costs that are charged elsewhere and paid for from some appropriation or allotment or source for which he is not responsible. Although probably no managers deliberately waste resources, there is a natural human tendency not to worry as much about something that is provided free as about something that must be paid for. With extended use of working capital devices, the availability of free assets can be decreased and the proportion of unfunded costs diminished. This is good, because the manager then is more likely to focus commensurate attention on all resources that he consumes, rather than only on those that he happens to purchase from outside vendors.

APPENDIX C

LIST OF PERTINENT IMPLEMENTATION DIRECTIVES

Chief of Naval Operations letter, 412G/731515, Implementation Plan for Stock Funding Non-Aviation Depot Level Repairable Secondary Items 15 April, 1980

Chief Of Naval Operations Letter, 412G/733658, Page Changes to CNO letter 412G/731515 dated 15 April, 1980, 25 September, 1980

Navy Comptroller Notice 7300, New Financial Inventory Report Codes and Cognizance Symbols for Stock Funding Non-Aviation Depot Level Repairables., 23 January, 1981

Naval Supply Systems Command letter 0311/GPB, 22 December, 1980

Naval Supply Systems Command Note 4440, Material Turned Into Store (MIS) Procedures for Stock Funded Depot Level Repairables
promulgation of, 17 March, 1981

Non-Aviation Depot Level Repairables in the Navy Stock Fund Implementation Bulletins:
Number 1, 15 Aug, 1980
Number 2, 12 Sep, 1980
Number 3, 24 Oct, 1980
Number 4, 2 Mar, 1981

Non-Aviation Depot Level Repairable Material Procedural Guide for Non-Automated Activities Operating Within NAVSO P-3013 Procedures, December, 1980

SPCC Coments, Volume XIVIII, Number 2, 11 March, 1981

SPCC Depot Level Repairables Newsletters:
Volume 1, Issue 1, 9 Sep, 1981
Volume 1, Issue 3, 1 Oct, 1981
Volume 1, Issue 4, 27 Oct, 1981
Volume 1, Issue 5, 1 Nov, 1981
Volume 1, Issue 6, 25 Nov, 1981
Volume 1, Issue 7, 15 Dec, 1981

Stock Funding of Non-Aviation Depot Level Repairable Spares (Briefing Forms), Undated.

APPENDIX D

PROGRAM PACKAGE-TACTICAL AIR FORCES, OPERATIONS AND MAINTENANCE, MARINE CORPS

The following is taken from Navy Comptrollers Manual Section III, Paragraph 074341.2C

Section III: Operations and Maintenance, Marine Corps.

074340 Scope

General. The appropriation, Operation and Maintenance, Marine Corps, provides for expenses, not otherwise provided for, necessary for the operation and maintenance of the Marine Corps, as authorized by law;...

074341 Structure and Content

General. The appropriation Operation and Maintenance, Marine Corps (O&MNC), is structured by budget activities which align with the Five Year Defense Program (FYDP)...

Budget Activity 2, General Purpose Forces.

1. Program Package-Land Forces...
2. Program Package-Naval Forces...
3. Program Package-Tactical Air Forces.

This program package contains the tactical air forces that participate as the air component of the Fleet Marine Force in the seizure and defense of advanced naval bases and for the conduct of such land operations as may be essential to the prosecution of a naval campaign. The resources

associated with these operations provide for such things as office supplies; consumables; Marine Corps directed training and travel of military personnel to include emergency leave; maintenance of communication-electronics, engineer, motor transport, Marine Air Traffic Control Unit (MATCU) and Short Airfield for Tactical Support (SATS) related equipment; and initial purchase as well as replenishment and replacement of Marine Corps peculiar individual equipment.

LIST OF REFERENCES

Assistant Secretary of Defense for Manpower, Reserve Affairs, and Logistics letter. "Stock Funding of Depot Level Repairable Components". October 3, 1978.

Chief of Naval Material (CHNAVHAT) message 241220Z May, 1979 to Distribution List

Chief of Naval Operations letter, Serial 412G/731515. Implementation Plan for Stock Funding Non-Aviation Depot Level Repairable Secondary Items. 15, April, 1980.

Chief of Naval Operations letter "Study Directive for Migration of Depot Level Repairables (DLRs) to the Navy Stock Fund (NSF)". 30 June, 1978

Earl, Robert J. An Analysis of the Navy Stock Fund. Masters Thesis, Naval Postgraduate School, Monterey, Ca. 1965.

Fisher, Robert D. The Navy Stock Fund. Masters Thesis, George Washington University, 1962

Fleet Material Support Office (FMSO), Inventory Manager Basic Manual, with Change 1. March 9, 1981.

Giordano, A.A. "The Navy Stock Fund," Navy Supply Corps Newsletter. pp. 4-8, June, 1976.

Inventory Manager's Manual - Cyclic Levels and Forecasting, Navy Fleet Material Support Office, 1981

Keen, Peter G. W., & Horton, Michael S. Scott, Decision Support Systems: An Organizational Perspective Addison Wesley Publishing Company, 1978

Holony, R.J., Chief of Naval Operations report. Depot Level Repairables: An Analysis of Current and Alternative Methods of Funding. 15 August, 1979.

Honahan, David Wilson. An Examination of the Navy Stock Fund. Masters Thesis, Naval Postgraduate School, Monterey, Ca. 1977.

Naval Material Command (NAVHAT), Non-Aviation Depot Level Repairable Material Procedural Guide. December, 1980.

Naval Supply Systems Command, NAVSUP Publication 514, Navy Secondary Item Requirements and Budget Development Manual, Volume I, Background and Management. 7 January, 1982.

NAVSO P-3582, U.S. Department of the Navy. Financial Management Guidebook For Commanding Officers. 30 September, 1980.

Navy Comptrollers Manual, Volume 7, Sections 071100-074421

Navy Stock Fund, Fiscal Year 1982 Reapportionment Request, FY 1983 Budget Estimates. OSD/OMB Submission, 25 September, 1981.

Paskowitz, Sid. "Planning, Programming and Budgetting of Secondary Item Spare and Repair Parts." Navy Supply Corps Newsletter May, 1978.

Reparables: The Inventory Manager's Manual. Ships Parts Control Center, 1976.

Retail Inventory Management and Stockage Policy (RINSTOP), Office of the Assistant Secretary of Defense Installations and Logistics, Working Group Report, Volume II, Part I, United States Marine Corps Supply System Description, March, 1976

Retail Inventory Management and Stockage Policy (RINSTOP), Office of the Assistant Secretary of Defense Installations and Logistics, Working Group Report, Volume II, Part I, United States Navy Supply System Description, March, 1976

Sawyer, Lawrence B. The Practice of Modern Internal Auditing. The Institute of Internal Auditors, Inc., 1981

Secretary of the Navy Instruction (SECNAVINST) 7040.6B Definitions of Expense and Investment Costs. 2 January, 1980.

Schein, Edward H. "Management Development as a process of Influence". Industrial Management Review, Vol. 2, No. 2, Spring, 1961.

Wilund, William Patrick. Pricing for Obsolescence in the Navy Stock Fund: Is there a better way? Masters Thesis, Naval Postgraduate School, Monterey, Ca., 1978

Hootten, J.F. "Cash and Carry in the World of Depot Level Repairables," Navy Supply Corps Newsletter. July, 1980.

Hootten, J.F. "The Navy Stock Fund" Navy Supply Corps
Newsletter. July, 1980.

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