Logistics Management Institute

Retain Secondary Items for Foreign Military Sales – A Sound Business Decision

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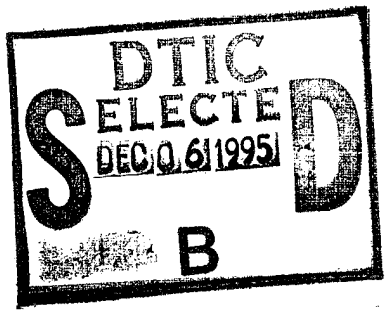

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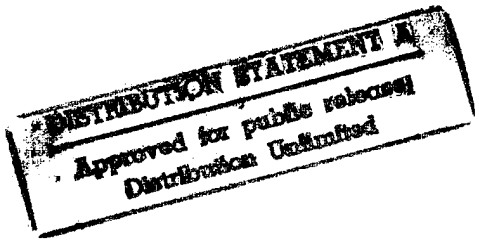

LMI

REPORT DOCUMENTATION PAGE

Form Approved
OPM No.0704-0188

1. AGENCY USE ONLY *(Leave Blank)*	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	Jun 94	Final

4. TITLE AND SUBTITLE

Retain Secondary Items for Foreign Military Sales — A Sound Business Decision

5. FUNDING NUMBERS

C MDA903-90-C-0006

PE 0902198D

6. AUTHOR(S)

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7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

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2000 Corporate Ridge
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8. PERFORMING ORGANIZATION REPORT NUMBER

LMI– SA301R1

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

Defense Security Assistance Agency
1111 Jefferson Davis Highway
Suite 201 Crystal Gateway North
Arlington, VA 22202

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT

A: Approved for public release; distribution unlimited

12b. DISTRIBUTION CODE

13. ABSTRACT ***(Maximum 200 words)***

The report examines current DoD retention policies for secondary items as they pertain to the supply support of foreign military sales (FMS) other than those programmed under Cooperative Logistics Supply Support Arrangements and grants-in-aid.

The analyses indicates that retention of assets solely for FMS that otherwise would become DoD excess not only would improve supply support but would produce net revenues 6 to 13 times greater after all costs than under current disposal policies. The retention of less than five percent of the wholesale secondary item assets currently disposed of would not adversely affect the inventory reduction program or the base closure program.

The report outlines the concept of an FMS Reserve; a methodology for computing the reserve limits based on each item's FMS demand, demand variance, and a prescribed probability of being sold within an established selling period; and the policy changes necessary to implement the concept.

14. SUBJECT TERMS

Retention policies, DoD excess, DoD potential reutilization stocks, foreign military sales, supply support, DBOF revenues, inventory reduction, improved business practices, business decisions.

15. NUMBER OF PAGES

99

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	UL

June 1994

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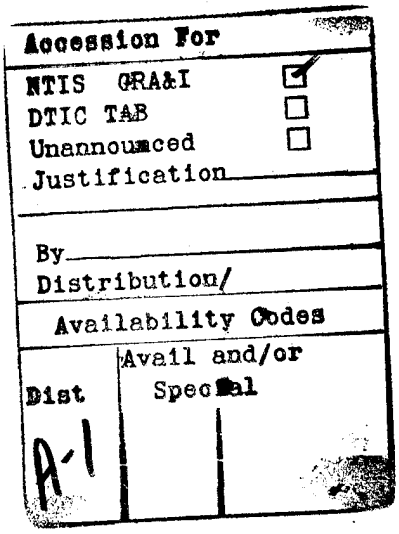

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Prepared pursuant to Department of Defense Contract MDA903-90-C-0006. The views expressed here are those of the Logistics Management Institute at the time of issue but not necessarily those of the Department of Defense.

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Executive Summary

For the past several years, DoD's emphasis on materiel retention has evolved to the point of keeping only the minimal number of assets needed to support the mission. It recently issued a revised and more stringent retention policy for secondary items that directs the DoD Components to dispose of some assets they previously retained. Because of the magnitude of force-level reductions, the inactive inventory, and other inventory management issues, Congress has imposed restrictions on sales revenues generated by the Defense Business Operations Fund (DBOF) that may be reinvested in the procurement of new inventory.

The Defense Security Assistance Agency (DSAA) and the Military Services are concerned about the effect that this more restrictive policy will have on the support of the U.S. security assistance program. In view of those concerns, DSAA asked the Logistics Management Institute to analyze policies and business practices related to the supply support of foreign country weapon systems, determine whether problems exist, and recommend appropriate solutions.

During FY92 and FY93, DoD averaged $2 billion a year in foreign military sales (FMS) of secondary items other than sales programmed under the cooperative logistics supply support arrangement (CLSSA).

- The DoD disposed of $18.4 billion worth of wholesale secondary item assets in FY93.
- Of the $18.4 billion, approximately $940.6 million or 5.1 percent of the assets are in a "like new" issuable condition and match items with non-CLSSA and CLSSA-nonprogramed requisitions.
- If DoD were to retain $387 million of those assets (no significant impact on inventory or base closures as it represents less than 3 percent of the disposals and about four average warehouses), it would have a 99 percent probability of their being sold within 13 years based on current demand patterns.
- The net present value of the potential revenue generated after all expenses from *retaining* the materiel for FMS is $252 million. In contrast, the net present value of continuing the current *disposal* policy is $19 million.

- Even if only half were sold, the net present value of potential revenue after all expenses would be $128 million. The *retention* alternative would generate from 6 to 13 times more net revenue than *disposal*.

We recommend that OSD take the following actions:

In order to take advantage of this rare opportunity to increase DBOF revenue, offset costs that need to be recovered through cost recovery rates (approximately 90 percent of the benefit would be to the U.S. forces), and improve support to FMS customers,

Establish an FMS Reserve for the retention of assets solely for FMS in accordance with the concept outline in Appendix A of this report, and revise the related policies as we suggest in Appendix B.

Retention of assets, in general, has acquired a bad reputation – they are looked upon as "unneeded" – because of the perceived lack of management and viable economic basis for retaining billions of dollars in inventory. Thus, to justify retaining materiel for support of FMS, the probability that it will actually be sold must be high.

In order to ensure a uniform, economically viable, and flexible basis for determining the maximum quantity to be retained in the FMS Reserve,

Establish the reserve limit in accordance with the Economic Quantity Limit (EQL) methodology described in this report. That methodology is based on an annual recomputation of each item's FMS demand, demand variance, and at least a 99 percent probability of being sold within a 13-year selling period.

As a part of downsizing and normal weapon system modernization, some models of weapon systems are being phased out of the U.S. forces' inventory. The DoD Components are aggressively pursuing the sale and transfer of those weapon systems to authorized foreign countries, and future support for those systems is a factor in the success of their efforts. Present policies require the disposal of all secondary item support assets unique to those systems normally within one year of elimination from the U.S. forces' inventory (a one year extension can be authorized).

To encourage sales of obsolete weapon systems, provide more responsive support to foreign countries, and increase DoD revenues,

Change the policies as provided for in Appendix B of this report to permit retention on an economic basis of parts peculiar to weapon systems no longer in the U.S. forces' inventory.

Secondary items are being disposed of at an exceedingly high rate. Each passing day may result in the disposal of assets that should be retained to support future FMS.

To implement the FMS Reserve at the lowest possible cost and in the shortest feasible time and to minimize the premature disposal of potential FMS Reserve assets,

Assign initial responsibility, including management and performance reporting, to the inventory control point with integrated materiel management responsibility for all items eligible for inclusion in the FMS Reserve and subsequently explore the feasibility of assigning responsibility to a private-sector contractor for FMS-peculiar items.

Full implementation of the FMS Reserve concept, including management and performance reporting – activities that are critical to the evaluation of the policies and operations – requires changes to computer systems. The inclusion of those changes in the DoD Logistics Corporate Information Management (CIM) program will require time.

In order to implement the total FMS Reserve concept at an earlier date,

Explore the feasibility of developing a "stand-alone" desktop computer application for use in conjunction with existing inventory control point management systems.

Contents

Contents (Continued)

Contents (Continued)

CHAPTER 1

The Problem

INTRODUCTION

Background

During the past several years, the emphasis on materiel retention within the Department of the Defense (DoD) has evolved to the point of keeping the minimal assets necessary to support the mission. This evolution culminated with the issuance of more restrictive retention policies. The DoD Inventory Reduction Plan of May 1990 established inventory reduction goals for 7 years. These reduction goals are to be met through a series of improved business practices, including the aggressive disposal of DoD excess materiel. The plan was incorporated into the DoD Defense Management Review Decision (DMRD) 987, *Inventory Reduction Plan Improvements*. In addition to establishing inventory reduction goals, DoD placed constraints through the Defense Business Operations Fund (DBOF) budget process on the amount of sales revenues that could be reinvested in the procurement of new inventory. Because of this action, the magnitude of the inactive inventory and other inventory management issues, Congress has continued to impose restrictions on the percentage of sales dollars that may be reinvested.

As the Services and the Defense Logistics Agency (DLA) changed their materiel retention practices, a dramatic increase in the disposal of excess materiel occurred. In FY88, DoD disposed of almost $6.5 billion worth of materiel worldwide, and by FY93, that amount had grown more than fourfold to a level of $29.3 billion worldwide; it included all major end items except ships and aircraft. The standard price value of wholesale secondary item assets included in the FY93 worldwide disposals was $18.4 billion. The continuing downsizing and restructuring of the Military Services will keep disposal values relatively high well into the future as the demand for assets shrinks and materiel is turned in by end users and retail supply activities.

The OSD, recognizing this new environment, issued a revised retention policy for secondary items to the Military Services and DLA in January 1993. That policy is more stringent than the policy it replaced and will cause the Services and DLA to dispose of some assets they previously retained. It will reduce the quantity of retainable assets by eliminating one asset retention category, combining two retention categories into one, and limiting the circumstances under which assets are retained for sale to foreign customers. These changes are being implemented by the DoD Components but are not yet reflected in the disposal values.

The Task

Security assistance is a vital element of our national security strategy and DoD policy. The Defense Security Assistance Agency (DSAA) and the Military Services are concerned about the possible adverse impacts of this more restrictive materiel retention policy and the major ongoing DoD disposal effort on the U.S. security assistance program.

Therefore, DSAA tasked the Logistics Management Institute (LMI) to analyze the policies, procedures, and business practices related to the support of foreign country weapon systems, determine whether problems exist, and if they do, recommend appropriate solutions.

The Report

Definitions

Security assistance requisitions are either foreign military sales (FMS), [which are funded by a foreign country, or other forms of security assistance (e.g., grant-in-aid)]. For purposes of this report, the FMS requisitions are categorized in two ways (non-FMS requisitions are not within the scope of this report). The first category addresses their relationship to cooperative logistics supply support arrangements (CLSSA), and the second, their role in requirements determination. Both revised categories are pertinent to current and proposed retention policies.

- There are two types of CLSSA FMS requisitions: programmed and nonprogrammed.
  - Programmed requisitions are those under foreign military sales offers (FMSO) IA for which the foreign government has financed the inventory and for which the procurement lead time (FMSO IB) has elapsed.
  - Nonprogrammed requisitions are those for which the procurement lead time has not elapsed or those that exceed the foreign country's investment. From a supply support perspective, these requisitions are processed the same as non-CLSSA FMS requisitions.
- Non-CLSSA FMS requisitions are all those funded by foreign countries other than CLSSA sales. [Non-CLSSA FMS does not include other forms of security assistance, (e.g., grant-in-aid.)] For this report and the proposed changes, CLSSA-nonprogrammed requisitions are included with the non-CLSSA FMS.

- FMS requisitions are classified as recurring or nonrecurring based on the following definitions:
  - Recurring requisitions include all CLSSA-programmed and nonprogrammed requisitions, all non-CLSSA FMS replenishment requisitions, and special support packages developed in conjunction with the sale of excess weapon systems from the U.S. forces' inventory.
  - Nonrecurring requisitions include all other security assistance requisitions (e.g., provisioning and initial issue developed in conjunction with the purchase of in-production weapon systems) and grant-in-aid requisitions.

Purpose

This report provides a response to the following key questions:

- Is DoD disposing of materiel as excess that should be retained to support FMS?
- If yes, what is the magnitude of the problem?
- What are the recommended actions?

The response to those questions is accomplished through

- a review of the revised DoD retention policies and the current DoD Component practices,
- an analysis of FMS requisitions and matching disposal actions,
- an examination of the costs and benefits of retaining limited assets versus disposals, and
- recommendations, including proposed policy changes.

Retention Policies and Practices

DoD Policy Changes

In January 1993, DoD issued DoD Instruction (DoDI) 4140.60, *DoD Materiel Management,* and DoD 4140.1-R, *DoD Materiel Management Regulation,* and canceled 43 directives and instructions.[1] The new instruction and regulation provide the policy guidance for all the logistical areas formerly covered by the

[1]For a complete listing of the canceled directives and instructions, refer to DoD Directive 4140.1, *Materiel Management Policy,* 4 January 1993.

canceled directives and instructions, including materiel retention. The implementation of the new retention policies by the Services and DLA is continuing.

Under the new policy, the number of retention categories was reduced from three to two by eliminating the Numeric Retention Stock (NRS) category. The categories of Economic Retention Stock (ERS) and Contingency Retention Stock (CRS) were retained. ERS is defined as that portion of the quantity of an item greater than the Approved Acquisition Objective (AAO) that is determined to be more economical to retain for future peacetime issues than to dispose of and satisfy any future requirements through new procurement and/or repair. An item must have a "reasonably predictable demand rate" to warrant economic retention. CRS includes that portion of the quantity of an item greater than the AAO and ERS for which there is no predictable demand or quantifiable requirement, and that normally would be allocated as potential reutilization stock, except for determination that the quantity will be retained for specific contingencies.

No changes were made to the ERS policies. The policies in both the old and new instruction and regulation limit the retention to predictable recurring U.S. force demands to include CLSSA-programmed requirements.

The language in DoDI 4140.60 and DoD 4140.1-R does not indicate which, if any, foreign demands are to be included in those computations. However, the OSD stated intent is to limit foreign demands for ERS computations to CLSSA-programmed demands.

The old CRS policy included three specific subcategories:

- *Subcategory A – Military Contingency:* assets needed to meet military contingencies for U.S. forces;
- *Subcategory B – Foreign Military Demand:* assets held in expectation of foreign military demand; and
- *Subcategory C – General Contingency:* assets based on potential usefulness, for extreme reprocurement problems, or other special considerations involving nonmilitary contingencies, such as civil emergencies or natural disaster relief.

The new retention policy provides no guidance as to acceptable categories of contingencies. According to the new policy those categories are to be developed by OSD. However, elsewhere the new regulation prescribes a report titled *Supply System Inventory Report* that shows a category under CRS called potential security assistance stock. That subcategory would indicate that a contingency for foreign military demand is planned.

From an FMS perspective, the most significant change is a major restriction not found in the former policy. The new policy requires that all unique items associated with a weapon system be disposed of within a year of phasing a

weapon system out of the U.S. inventory. The head of the agency managing the asset may extend that period by an additional year if national security interests warrant. This change is particularly significant in view of the downsizing of U.S. forces and the sale of systems or models being phased out of the active U.S. forces inventory.

Table 1-1 provides a comparison of the previous and current DoD retention policies. The following subsection presents a brief synopsis of each DoD Component's current retention practices.

Table 1-1.
Comparison of DoD Retention Policies

Demand category	Economic retention stocks		Contingency retention stocks	
	Previous	Current	Previous	Current
CLSSA Programmed	Yes	Yes	No	No
All other demands	No	No	No	No
Nondemand based	No	No	Yes	Pending
Maximum after removal of system from U.S. inventory	0	0	No limit	2 years

Summary of Polices and Practices

Table 1-2 summarizes how the Services and DLA develop their ERS limits, especially as they relate to FMS. How these practices compare with the new DoD retention policy is also shown. (For details see DoD Component Retention Policies in Appendix C.)

Table 1-2.
Economic Retention Stocks for Security Assistance

Demands Category/Agency	CLSSA programmed	CLSSA nonprogrammed All non-CLSSA	Grant-in-aid (recurring)	Grant-in-aid (nonrecurring)	Retention limit (years)
Consumables					
New DoD policy	Yes	No	No	No	Variable
Current procedures					
Army	Yes	No	Yes	No	RO + 7
Navy	Yes	No	No	No	8 – AAO
Air Force	Yes	No	No	No	AAO + 1 to 15
DLA	Yes	Yes	Yes	Yes	10
Reparables					
New DoD policy	Yes	No	No	No	Variable
Current procedures					
Army	Yes	No	Yes	No	RO + 7
Navy	Yes	No	No	No	8 – AAO
Air Force	FMSO IA	No	No	No	AAO + 18.5

Note: RO = requirements objective.

Table 1-3 summarizes how the Services and DLA develop their CRS limits, especially as they relate to FMS. How these practices compare with the new DoD retention policy is also shown.

Table 1-3.
Contingency Retention Stocks for Security Assistance

Demands Category/Agency	All CLSSA	Non-CLSSA recurring	Non-CLSSA nonrecurring grant-in-aid	Contingency nondemand based	Retention limit (years)
Consumables					
New DoD policy	No	No	No	Pending	Pending
Current procedures					
Army	No	Yes	No	Yes	Not limited
Navy	No	No	No	Yes	2
Air Force	No	No	No	Yes	Not limited
DLA	No	No	No	Yes	Not limited
Reparables					
New DoD policy	No	No	No	Pending	Pending
Current procedures					
Army	No	Yes	No	Yes	Not limited
Navy	No	No	No	Yes	2
Air Force	Yes (less FMSO IA)	Yes	Yes	Yes	18.5

Key Observations

The following are key observations concerning retention policies and practices within DoD:

- Neither the Services nor DLA has completed implementation of the new DoD materiel-retention policy, and the full impact of the changes on FMS is not yet reflected.
- Neither the old nor the current policies permit the inclusion of recurring or nonrecurring FMS demands, except CLSSA-programmed demands, in the ERS limits.
- Neither the old nor the current policies permit retention of assets in the CRS to meet any predictable or quantifiable FMS demands.
- A major new constraint under the new DoD policies is the limitation on retaining support items unique to weapon systems no longer used by the U.S. forces. Normally, retention is limited to 1 year but the head of the agency managing the item may extend that period by 1 year if national security interests warrant. When implemented, this policy will have an adverse impact on FMS.
- The new policy has not yet provided specifically for any FMS contingency.

- The Services' and DLA's ERS computations are automatically fed into the system while CRS computations must usually be entered manually.

- Insofar as economic retention is concerned, we made the following observations:

  - DoD economic retention policies have not changed, and CLSSA customers are supported by the same economic retention limits as U.S. forces.

  - Retention limits used by the Services vary from 1 year to 18.5 years.

  - The Army and the Navy have lowered their caps on the maximum number of years of retention.

  - The Army includes grant-in-aid as well as CLSSA-programmed demands.

  - The Air Force includes all CLSSA-programmed demands in the economic retention for consumables but only the FMSO IA quantity for reparables.

  - DLA includes all security assistance demands in the economic retention limits currently because of the Special Defense Acquisition Fund (SDAF).

- We made the following observations regarding contingency retention limits:

  - The Air Force includes all security assistance recurring and nonrecurring demands in its reparable item 18.5-year contingency limit computations and the subtracts the FMSO IA requirement. None of the recurring or nonrecurring demands are included in the consumable item computation.

  - The Army includes only non-CLSSA-recurring demands.

  - Neither the Navy nor DLA includes recurring or nonrecurring demands in contingency limits.

  - All DoD Components permit varying degrees of retention for "contingencies;"" however, the emphasis on inventory reduction minimizes use.

INVENTORY REDUCTION

Factors Contributing to Inventory Reduction

INVENTORY REDUCTION PLAN

One of the 10 major objectives of the *Inventory Reduction Plan* (IRP) is the timely disposal of nonessential or inactive materiel. The Services and DLA in coordination with OSD, established their respective inventory reduction goals, which were incorporated into DMRD 987. Because of the projected force-level reductions, the large value of inactive inventory, and other inventory management issues, DoD and Congress placed restrictions on DBOF sales revenues that may be reinvested in the procurement of new materiel. However, the reinvestment limitations do not apply to the proceeds from FMS (100 percent of FMS proceeds may be reinvested). Together, the inventory reduction goals and the perception that the restrictions on reinvestment are related primarily to inactive inventory resulted in a substantial increase in the transfer of materiel to the Defense Reutilization and Marketing Service (DRMS).

FORCE CHANGES

Another factor contributing to inventory reduction is the downsizing and restructuring of the U.S. forces. The downsizing of the military is being expanded and accelerated. Those actions in turn lead to generating retention stocks and DoD Potential Reutilization Stocks. A reduction in consumption has a multiplier effect on reducing the requirement levels at both the retail and wholesale levels. Those reductions may result in retail excess that is either transferred to DRMS locally or returned to the wholesale system. Likewise, the wholesale-level reductions may result in potential DoD reutilization assets. An example of the magnitude by which force structure is being eliminated is shown in Table 1-4.

Table 1-4.
Selected Force Structure Reductions

Force structure	Baseline	Base force	Plan
Army divisions	28	18	15
Tactical fighter wings	34	26	18
Aircraft carriers	15	13	12

Under the currently planned force structure, the number of Active Duty military personnel is projected to be slightly more than 1.4 million, down 0.6 million from the FY90 level of more than 2 million. The cumulative effect of all these reductions is to eliminate some weapon system models entirely and to

decrease the requirement for other weapon systems and secondary items, thus generating large quantities of DoD potential reutilization assets, some with FMS support potential.

Table 1-5 shows some specific weapon systems in the U.S. inventory that are being phased out within the next 12 years or having their requirements reduced. Foreign countries will lose supply support on a stocked basis for those items unique to the weapon system within 2 years of the system being phased out of the U.S. inventory under current policy. Also, for five of the seven weapon systems, the United States will dispose of a large number compared to the foreign countries' inventories. Those assets currently retained for the weapon systems being eliminated will either be reutilized against other U.S. force requirements or stratified as DoD Potential Reutilization Stocks and ultimately disposed of. The retention of those assets to support the weapon systems in foreign countries' inventories or being sold to them could benefit both the United States and the foreign countries in the form of increased revenue for the United States and more responsive supply support for the foreign countries.

Table 1-5.
Selected Weapon System Elimination and Reductions

Weapon system	Quantity purchased by foreign countries	Confirmed additional sales	Projected U.S. system phase-out date (year)	Estimated phase-out quantity	Projected U.S. system reduction date (year)	Estimated reduction quantity
M-48	794	0	1994	1,133	NA	NA
M-60	3,447	354	1998	3,868	NA	NA
A-4	813	64	2002	212	NA	NA
F-4	952	0	2005	320	NA	NA
F-5	669	0	2005	38	NA	NA
UH-1H	604	0	NA	NA	2000	1,500
C-130	292	0	NA	NA	1995	24

Note: NA = not available.

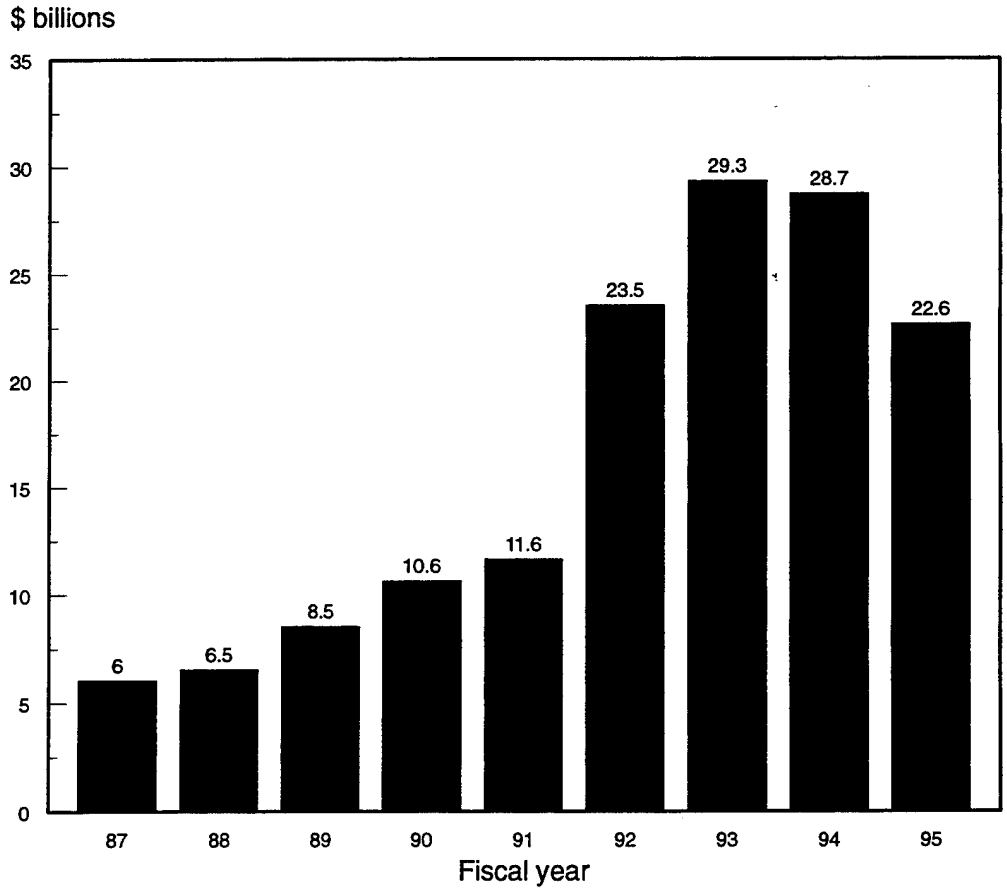
Effect on Foreign Countries

The Military Services are aggressively transferring weapon systems to foreign countries as those systems become excess or obsolete as the result of the restructuring and downsizing. For example, the U.S. Army determined that it was more economical to sell M-60 tanks at a substantial discount than to pay all the costs associated with their decommissioning. The U.S. Navy plans to sell a combination of 40 DDG-2s and FF-1052s ships to foreign countries. These additional sales of weapon systems are increasing both the quantity of U.S.-origin weapon systems in foreign country inventories and the requirements for follow-on spare and repair parts support. In fact, today more U.S.-origin aircraft are in foreign country inventories than in the U.S. inventory. Foreign country

inventories of many U.S.-origin weapon systems continue to increase as measured against U.S. inventory quantities. The downsizing of the U.S. forces and the elimination of some weapon systems from the U.S. inventory can have two adverse impacts on FMS support. First, the U.S. forces' AAO and retention limits will be reduced, thereby decreasing the reservoir of assets available for FMS. Second, for systems no longer in the U.S. inventory, under the current policies, retention of assets is not permitted.

Disposal of DoD Excess

The impact that IRP and downsizing has had on total DoD worldwide disposals is shown in Figure 1-1. The data include major end items (except ships and aircraft) as well as secondary items; therefore, the exact impact of the IRP cannot be determined. The average annual value of DoD disposals at standard prices for the three years prior to the IRP was $7 billion.



Values for FYs 94-95 are estimates

Figure 1-1.
Worldwide Disposal Trend

By the end of FY93, 3 1/2 years after the IRP was promulgated, disposals had grown over fourfold to $29.3 billion. The wholesale secondary item disposals were $18.4 billion or 63 percent of the worldwide total.

This upward disposal trend peaked in FY93 and is expected to level off in the outyears. However, the outyear estimates may not include all recent force reduction decisions and the actual disposals may be higher.

The FY93 wholesale secondary item net disposals exceeded $18 billion. The non-CLSSA and CLSSA-nonprogrammed requisition value for stocked items is $2.2 billion.

FOREIGN MILITARY SALES

Total Security Assistance Requisitions

Security assistance sales and requisitions are categorized into three major groups: CLSSA, non-CLSSA, and other security assistance programs such as grant-in-aid. CLSSA requisitions are further subdivided into programmed (foreign countries have invested in the supply pipeline) and nonprogrammed. Requisitions are for both National Stock Number (NSN) items and part-numbered items (those with no NSN). The NSN requisitions are for stocked and nonstocked items.

Table 1-6 shows the total volume of security assistance requisitions for FY92 and FY93 and how they were distributed among the several categories. The number of CLSSA requisitions remained fairly constant for the two years, but the number of non-CLSSA requisitions increased by 240,059 or 87 percent. The number of other security assistance requisitions declined by 50 percent. Requisitions for part-numbered items (no NSN assigned) account for 170,273 of the two-year total of 2.1 million security assistance requisitions.

Table 1-6.
Security Assistance Requisitions for FY92 and FY93

Category	Total number of stock numbers	Number of requisitions		
		FY92	FY93	Total
CLSSA	331,394	549,850	594,624	1,144,474
Non-CLSSA	344,559	275,706	515,765	791,471
Other	55,665	87,965	44,414	132,379
Total	571,604	913,521	1,154,803	2,068,324

Note: The same stock number may appear in more than one category and includes non-NSNs.

FMS Non-CLSSA and CLSSA-Nonprogrammed Requisitions

Because current policies provide for the inclusion of only CLSSA-programmed demands in the requirement levels (including ERS) for the U.S. forces and include only the nonrecurring and unpredictable requirements for other security assistance programs in the CRS, our focus is on determining whether retention policies should provide for the non-CLSSA and CLSSA-nonprogrammed FMS. Table 1-7 displays the requisition volume in terms of numbers and values for FY92 and FY93. The total value of the stocked item FMS requisitions for the two years was $4.3 billion.

Table 1-7.
FMS Requisitions for FY92 and FY93 (dollars in thousands)

Category	FY92		FY93		Total	
	Number	Value $	Number	Value $	Number	Value $
Nonstocked — NSN items	40,966	165,358	58,322	287,911	99,288	453,269
Stocked total — NSN items	717,724	1,927,527	951,908	2,416,673	1,670,632	4,344,200
CLSSA-programmed	75,775	64,446	147,299	173,272	223,074	237,718
CLSSA-nonprogrammed	407,781	1,122,088	383,348	990,659	791,129	2,112,747
Non-CLSSA	235,168	740,993	421,261	1,252,742	656,429	1,993,735
(Nonprogrrammed and nonCLSSA)	642,949	1,863,081	804,609	2,243,401	1,447,558	4,106,482

Figure 1-2 illustrates the very small portion (3.34 percent and 7.17 percent) of the total FMS requisitions for secondary items authorized to be supported with retention stocks; that is the CLSSA-programmed portion. The non-CLSSA and CLSSA-nonprogrammed requisitions accounted for $4.1 billion or about 95 percent of the two years of FMS requisitions for stocked secondary items. It is this major segment of our FMS that is without specific retention authority.

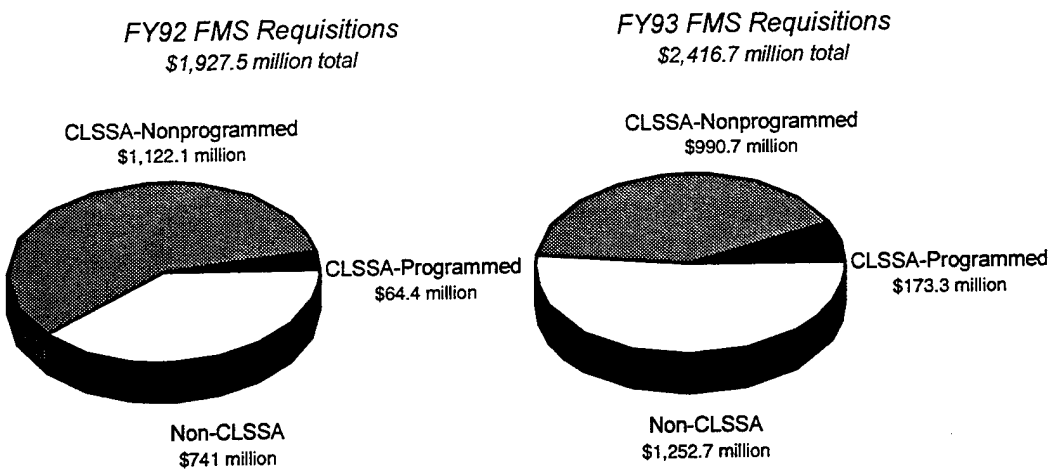


Figure 1-2.
FY92 and FY93 Requisitions for Stocked Items

Potential Impact of Disposal on Foreign Military Sales

The previous paragraphs have quantified the extent to which wholesale secondary item assets have been transferred to DRMS and the magnitude of the FMS. The next question is the degree to which the assets being disposed of are both issuable and are the items being requisitioned by foreign countries.

To assist in answering that question, we obtained from each of the Service International Logistics Control Offices (ILCOs) the non-CLSSA and CLSSA-nonprogrammed requisitions for the four sample inventory control points (ICPs) covering the 15-month period from April 1992 through June 1993. DRMS provided the net disposal data for those activities for the same time period. (For details see Matching FMS and Disposals in Appendix C).

Table 1-8 shows that 98,436 NSNs with assets valued at almost $3.0 billion transferred from the four sample ICPs to DRMS. Of the total, 79,089 NSNs, (80.3 percent) had Condition Code A (serviceable, issuable without qualification) assets valued at about $1.6 billion or 52.4 percent of the total excess transferred. Of the $1.6 billion issuable assets, $151.2 million or 9.7 percent represent NSNs for which one or more non-CLSSA or CLSSA-nonprogrammed requisitions were received by the four sample ICPs.

Table 1-8.
Annualized Sample Disposals of Wholesale Secondary Items

Category of disposals	Number of NSNs	Percent	Value (millions)	Percent
Total disposals	98,436	100.0	2,964.7	100.0
Condition Code A disposals	79,089	80.3	1,553.7	52.4
Condition Code A with FMS non-CLSSA and/or CLSSA-nonprogrammed demands	3,916	4.0	151.2	5.1

Table 1-9 shows the total value of sales at the current demand rate if we retained enough assets to meet those demands for 10, 15, and 20 years. Two projections are made. The first is based on the disposals of the four sample ICPs, and the second is based on the $18.4 billion total wholesale secondary item disposals for FY93 and the ratios developed from the sample (see Table 1-8).

Table 1-9.
Potential Non-CLSSA and CLSSA Nonprogrammed Support from Sample and Total Disposal (dollars in thousands)

Number of years of support	Sample disposals	Percentage of excess assets retained	Total FY93 wholesale disposals
10	65,703	2.2	405,733
15	76,571	2.6	479,502
20	84,921	2.9	534,830
Total excess	2,964,656		18,442,400

Of the $2,965 million (annualized) value of the total net disposal actions by the four sample ICPs, $77 million (or 2.6 percent) could have been used to supply non-CLSSA FMS and CLSSA-nonprogrammed up to 15 years at the standard price rather than being disposed of at the low rate of return from DRMS (this assumes that the next 15 years of demand are similar to the sample). No final conclusions can be drawn as to the degree that any adverse impact on the support of future FMS based solely on disposals. The retention and DoD potential reutilization assets held by the ICPs must be applied first.

The DoD transferred $18.4 billion of excess wholesale secondary item assets to the DRMS during FY93. To the extent that the four sample ICPs are representative of the total DoD wholesale operations and future issues are similar to the 12-month sample, potentially from $203 million to $609 million of the wholesale DoD excess transferred to DRMS during FY93 could have been sold to foreign countries at the standard price over a 10-year period rather than recouping only $4.1 million to $12.2 million from disposal (assumes proceeds of 2 percent of

standard price). If a 15-year retention period were used, the potential sales could range from $240 million to $719 million compared to disposal returns of $4.8 million to $14.4 million. Additional operating and storage cost would be incurred from retaining the assets. (The substantial net yield potential is discussed in Chapter 2).

We estimate the storage space required by the retention of 10 years of the applicable FY93 excess assets to be the equivalent of approximately four average warehouses. The retention of 15 years of assets would require approximately five average warehouses. These estimates assume no commingling in the same bins and racks with items common to the U.S forces, which would reduce the warehousing requirement.

The estimates of potential sales from the assets transferred in FY93 indicate the greatest possible benefit that could be realized by retaining the assets rather than transferring them to DRMS. The real impact must take into consideration the wholesale stock position of each item, including the retention assets, the DoD potential reutilization assets not yet transferred, and the operating cost of retaining the assets for future FMS sales. We must also consider the potential for additional assets to become excess as the result of the downsizing and restructuring of the U.S. forces.

Key Observations

The following are key observations concerning inventory reduction and foreign military sales:

- DoD and congressional restrictions on secondary item obligation authority have arisen from the projected force-level reductions, the high levels of inactive inventory, and other inventory management issues which when coupled with the IRP goals offer major incentives for inventory reduction by means that include accelerated disposal.

- The military downsizing and restructuring will generate more inventory to be reduced, and, thus, DoD worldwide disposals will remain at relatively high levels for the foreseeable future.

- FMS will represent an increasing business segment to DoD, and at this time DoD retention policy does not recognize the non-CLSSA and CLSSA-nonprogrammed demands, which constitute 95 percent of the FMS.

- The four sample ICPs transferred $3.0 billion in secondary item assets to DRMS in a 12-month period. Only $151.2 million, or 5.1 percent, of those assets was both issuable and matched non-CLSSA requisitions.

- The sample indicates that $76.6 million of FMS could have been made in a 15-year period from the $3.0 billion of secondary item assets that was transferred to DRMS in a single year. When projected to the $18.4 billion total

DoD wholesale disposals for FY93, that translates under improved business practices to an estimated potential of $479.5 million in sales (FY93 dollars) over 15 years at the current demand rate rather than the average DRMS return of $14.4 million. Retention of the assets would also result in increased operating and storage costs.

- The estimated space requirements of four to five average warehouses are not enough to preclude any planned base closures.

- Selection and retention of assets for non-CLSSA and CLSSA-programmed FMS would

  - have no significant adverse impact on the IRP because only 2 to 3 percent of the DoD potential reutilization assets would have to be retained,

  - provide more responsive supply support to friendly foreign countries by increasing the issues from on-hand assets rather than waiting the normal procurement lead time, and

  - accrue economic benefits to the United States from selling potential excess assets at standard price rather than the less than 3 percent return from disposal.

CHAPTER 2

Possible Solutions

LIMITED COST/BENEFIT ANALYSIS

Introduction

The following facts have emerged from the preceding discussions:

- The DoD is generating, and will continue to generate, relatively large quantities of excess secondary items.
- Large amounts of those excess assets could be sold to foreign governments to satisfy non-CLSSA and CLSSA-nonprogrammed requisitions if held for that purpose rather than being transferred to DRMS. The sale of those assets could result in substantial financial gain to the U.S. government.
- The DoD needs a methodology to determine how many, and for how long, assets should be retained in support of FMS with a high degree of assurance that it is economically more viable to retain than to dispose of potential excess assets immediately.
- The FMS sales are excluded from the congressional reinvestment limitation and therefore help in the replenishment of inventory for the U.S. forces.
- The DoD management initiatives and policies neither encourage nor permit the best utilization of assets excess to those required by U.S. forces. A new concept is required to improve the financial return to DBOF and thereby reduce costs that must be recovered in the standard price charged to the U.S. forces.
- To the extent that assets are currently retained for non-CLSSA and CLSSA-nonprogrammed FMS, they are commingled with assets retained for U.S. forces. No system is in place to quickly identify the value of such assets, the extent of sales against those assets, or performance indicators that disclose whether sound business judgments are being made and to economically justify the retention of such assets.
- The retention of assets, in general, has acquired a bad reputation, such as "unneeded," because of the perceived lack of adequate management of billions of dollars of inventory and the inability of DoD to respond to "reasonable requests" for information.

This cost-benefit analysis is not intended to provide a precise measure of the comparative economic benefits of *disposing of* or *retaining*. It is intended to provide an order of magnitude and a range of expectations upon which DoD management may rely in confirming or revising policies.

Economic Justification for Establishing an FMS Reserve

Introduction

The retention of assets in a reserve for solely FMS results in increased operating costs in the form of inventory management costs, storage costs, physical inventory losses, and potential loss through obsolescence. Those additional costs can be recovered only through sales of materiel. If no assets are sold for the purposes for which they were retained, those costs are recovered by increasing the cost recovery rates on other materiel that is sold. If, however, retaining the assets results in a sale rather than a loss through transfer to DRMS, that sale increases the base for recovering costs and at the same time reduces the costs to be recovered in the standard price. Both actions result in a general reduction of the standard prices for all customers but primarily for the U.S. forces.

A traditional economic retention model (ERM) performs a break-even analysis to determine the maximum number of years that stock should be held. That number is the year when the cost to hold a marginal unit of stock is equal to the cost of not holding the unit. The cost to hold a unit of stock over time is the combined costs of storage, losses, obsolescence, and investment weighted by the probability that the unit will not be used to satisfy a demand. The cost of not retaining the unit is the cost of disposal less the return from disposal and the cost of reprocurement if needed to satisfy a backordered demand.

The ERM in the form described above does not best fit the unique conditions of the FMS Reserve.

Criteria for an Acceptable Limit Methodology

Because the FMS Reserve only retains assets that are excess of the retention limits of U.S. forces, an economic quantity limit (EQL) for the FMS Reserve does not need to consider the cost of reprocurement, a major cost consideration in not retaining stock. Also, since disposals average a net return rate of about two cents on the dollar, the cost of not retaining stock in this case is insignificant in comparison to the cost of holding stock unless there is a high probability that it will be demanded. Therefore, an EQL for the FMS Reserve should focus on the probability of a demand for retained units of stock and the risk of an economic loss to the United States if such demand fails to materialize.

Because of the small FMS demand base (about 10 percent of the U.S. forces demand) and the wide range of demand variances, the methodology should be based on the demand variance of the individual item.

Proposed Method for Computing the Reserve Economic Quantity Limit

We propose that DoD use an EQL that incorporates the probability that retained assets will be sold within a prescribed selling period. The EQL should be based on the FMS demand for each individual NSN and its mean to standard deviation ratio. For details of the methodology and the results of computing EQLs for the 400,000 FMS items, see the EQL Methodology subsection in Appendix C.

The FMS EQL should be used on an item-by-item basis, with DoD establishing a uniform maximum sales period and a target probability that the quantity of assets held will be sold during the sales period if the demand pattern continues. Thus, the computed retention period of an item will be a function of its demand history and demand variability as captured in its standard deviation.

Through these three factors — the item demand to standard deviation ratio, the desired probability target, and the selling period — DoD can control the quantity of assets retained in FMS Reserve.

Selecting the Selling Period

The third element in establishing an EQL is the selling period; that is, the maximum time period within which the retained quantity should be sold. Increasing the selling period increases the retention quantity but also increases the operating costs and the risk of reduced demand over the selling period. Thus, it also increases the risk of not selling the retained materiel. Conversely, shortening the selling period reduces the operating costs and reduces the risk of decreased demand. It also increases the risk of disposing of materiel that could have been economically retained and sold.

We varied the selling period in our model using a 99 percent probability. The results reflected a 1-year change in the retention years for each year of change in the selling period. The maximum retention years are always 1 year less than the selling period. With a 13-year selling period, the weighted average retention period for the 410,294 items is 9 years. That represents a longer period than the Army and Navy use for ERS. It is 1 year less than DLA uses and about half of what the Air Force uses for economic retention computations.

Quantifying Economic Benefits

Introduction

Next, in three steps, we compare the economic benefits from immediate disposal to those that can be realized by retaining assets for 13 years for future FMS. First, we simulate an individual item applying the proposed methodology and selling period. Second, we develop the potential FMS to disposal ratios from the four-ICP sample. Finally, we apply both the simulation yield ratios and the

four-ICP potential sales ratios to the total value of the wholesale secondary item disposals for FY93.

ITEM SIMULATION

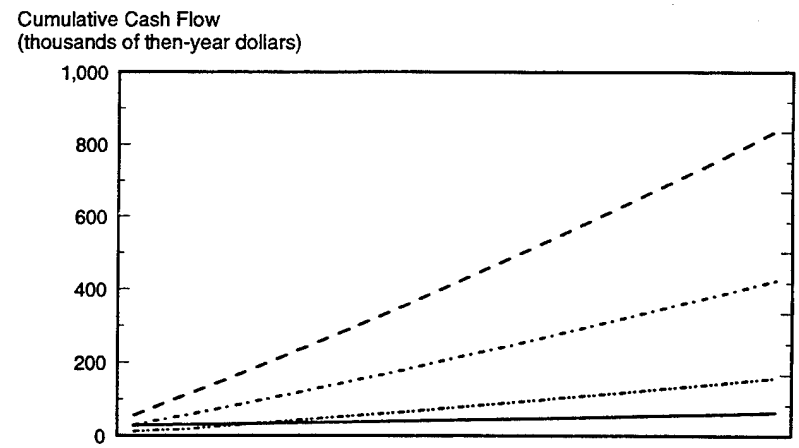
To examine the costs and proceeds associated with retaining assets for future sales over a period of time, we selected an item for simulation. We simulated the costs and proceeds to retain DoD excess assets exclusively for non-CLSSA and CLSSA-nonprogrammed FMS (Case 1) over a 13-year period and compared the results with those of transferring the assets to DRMS immediately. For details see Item Simulation Data and Assumptions in Appendix C. To test the sensitivity of the results to a major decline in demands, we also simulated retaining the same amount assets with a 50 percent decrease in demands (Case 2), an 80 percent decrease in demands (Case 3), and a 90 percent decrease in demands (Case 4). The results for each case are compared with the return that would be received if the assets were disposed of immediately (Disposal). In each case, we recomputed the EQL every two years. Our other assumptions were as follows:

- For Reserve Case 1, we assumed that a 99 percent probability that all assets would be sold within a 13-year period is required. Based on the demand history for the selected item and assuming the current demand rate continues, that resulted in limiting the assets to be retained to a quantity equal to 9 years of demand.

- For Reserve Cases 2, 3, and 4, we reduced the sales to 50, 20, and 10 percent, respectively, of Case 1.

Figure 2-1 displays the cumulative cash flow in "then-year" dollars over the 13-year period. The data reflect the net proceeds for Case 1 based on the 99 percent probability of sale within the 13 years. The retention of 9 years of materiel for sale to FMS customers results in a net gain to the United States compared to the net return from immediate disposal. The delta ranges from $772,995 (Case 1) to $7,208 (Case 4 not shown). Those differences are based on recomputing the limits biannually (the proposed policy provides for annual recomputation that would increase the net revenues).

The net present value (NPV) is $371,760 in Case 1 (100 percent sold) and $188,144 in Case 2 (even if only 50 percent are sold) compared with the disposal value of $28,527. The simulated case clearly demonstrates the economic advantage to DoD of 6 to 13 times by reserving for future FMS rather than transferring those assets to DRMS.



Years	1	2	3	4	5	6	7	8	9	10	11	12	13
Case 1 –	55.1	111.6	169.6	229.0	289.9	352.2	416.1	481.7	548.9	617.9	688.9	762.0	837.2
Case 2 -·-	28.9	56.1	86.4	116.3	148.2	179.0	212.5	244.4	279.6	313.3	350.3	386.6	423.7
Case 3 ···	11.8	18.2	30.1	41.4	53.5	64.8	77.8	90.6	104.0	116.5	130.3	144.1	158.8
Disposal—	28.5	30.5	32.6	34.9	37.4	40.0	42.8	45.8	49.0	52.4	56.1	60.0	64.2

Figure 2-1.
Comparison of Net Proceeds from an FMS Reserve with Transfer to DRMS

DISPOSALS

We used the simulation results and the sample data used to develop Table 1-9 to estimate the financial return to the United States based on the total FY93 disposal of wholesale secondary item assets. The four-ICP sample indicated that 2.1 percent of the disposal value would support 9 years of FMS. Those sales are based on non-CLSSA and CLSSA-nonprogrammed demands only. We applied the 2.1 percent to the total wholesale secondary item asset disposals of $18.4 billion for FY93 to estimate the potential 9-year foreign military sales of $387.3 million.

Table 2-1 shows the results of applying the simulation's ratios to $387.3 million of the FY93 disposals.

The data show the net yield at the end of the 13-year selling period (considering all costs and losses) from immediate disposal and from retaining assets for FMS. Retention is more profitable compared to immediate disposal even if only 10 percent of the initially forecasted sales materialize as long as the limits are recomputed periodically and subsequent disposal actions taken. The NPV from immediate ***disposal*** is $19.4 million and the NPV from ***retention*** is $252.4 million if 100 percent of the materiel is sold and $127.8 million even if only 50 percent is sold.

Table 2-1.
Potential Economic Benefits from FMS Reserve Compared to Immediate Disposal (dollars in thousands)

Description	Single item simulation	FY93 wholesale disposals	Delta in favor of reserve (Year 13)
Beginning of period 9-year reserve assets @ standard price	$570	$387,290	N/A
Immediate disposal value	29	19,365	N/A
Disposal value compounded in 13 years	64	43,609	N/A
100 percent sold in 13 years	837	568,542	$524,933
50 percent sold in 13 years – EQL adjusted every 2 years	424	287,757	244,148
20 percent sold in 13 years – EQL adjusted every 2 years	159	107,667	64,058
10 percent sold in 13 years – EQL adjusted every 2 years	71	48,411	4,802

Note: N/A = not applicable.

We estimate that retaining the $387.3 million in assets would initially require approximately four average DoD warehouses out of over 1,000 at 85 percent occupancy.

Implementation

The FMS EQL should be incorporated into the Logistics Corporate Information Management (CIM) as the standard DoD methodology for computing the maximum limits for the FMS Reserve.

The Services and DLA will need time to implement the FMS Reserve EQL model. In the interim, we have the 2-year quarterly demand records, the demand to standard deviation ratios, and the FMS Reserve limit quantity for all stocked NSNs with requisitions during the 2-year period. OSD could make those data available to the DoD Components for near-term implementation. The weighted average of 9 years could be used for any NSN for which we do not have data. This time period was computed using our recommended sales period of 13 years, a 99 percent probability that all assets will be sold during the sales period for the 410,294 stocked NSNs with FMS requisitions during FY92 and FY93.

Another interim approach is for each DoD Component to develop its own computer application to compute a reserve limit by item. The volume of NSNs involved is relatively small. This volume could be further reduced by limiting the computations to those NSNs with assets above the AAO. Computations should be done annually.

Key Observations

The following are key observations regarding the economic analysis of the alternatives to *dispose of* or *retain* assets for FMS:

- The economic analyses are not intended to provide precise measures of the comparative economic benefits of the two alternatives — *dispose of* or *retain*. These analyses are intended to provide an order of magnitude and a range of expectations upon which management may rely in confirming or revising policies.

- The traditional ERM does not best fit the unique conditions of an FMS Reserve EQL.

- The EQL methodology should focus on the probability that there will be a demand for retained units of stock, and if not, then on the risk of an economic loss to the United States. Because of the small demand base, the methodology should be predicated on the FMS demand variance of the individual item.

- Four elements should determine the maximum EQL for each item: its demand rate, demand variance, the probability target, and the selling period. OSD should control the latter two.

- Item simulation demonstrates that it is more cost-effective to retain assets within constraints than to dispose of them even if only 10 percent of the original demand forecast is ultimately sold as long as the limit is adjusted as demand changes.

- A 13-year selling period generates item retention limits ranging from 8 to 12 years.

- DoD transferred $18.4 billion worth of wholesale secondary item assets to DRMS in FY93. We estimate that of that amount, $387.3 million would have been used to satisfy non-CLSSA and CLSSA-nonprogrammed demands for an average of 9 years.

- The NPV of the net yield from the $387.3 million at the end of a 13-year selling period (after all expenses and losses) is estimated to be $252.4 million if 100 percent is sold and $127.8 million even if only 50 percent is sold compared with an NPV of $19.4 million if the assets are transferred to DRMS immediately.

- The $387.3 million worth of assets would initially require approximately four average DoD warehouses at 85 percent occupancy.

- Reserving assets for FMS provides more responsive, off-the-shelf support to foreign countries (the procurement lead time averages from 9 to 33 months).

- FMS sales in lieu of disposal should provide a substantial economic benefit to U.S. forces and should result in reducing the DBOF cost recovery rate by converting losses into revenue.

THE FMS RESERVE CONCEPT

Introduction

We have discussed the economic and other benefits resulting from retaining otherwise excess DoD materiel for FMS and how much DoD should retain. We now address the question of how best to manage an FMS Reserve. Congress, the General Accounting Office, the DoD Inspector General, and DoD management officials have expressed reservations about the economic soundness of past retention practices.

Because of those concerns, DoD needs to take an approach that will provide visibility of the retained assets and the ability to evaluate the related policies and operations and make changes as necessary.

Objectives

The following objectives should be met in developing a concept for improved business practices to obtain the best net return and to improve supply support to friendly foreign governments from retaining and utilizing a small portion of the DoD Potential Reutilization Stocks .

- Obtain the largest net return for DoD Potential Reutilization Stocks and thereby minimize the costs to be recovered in the standard prices to be paid by U.S. forces.

- Authorize the retention of materiel for non-CLSSA and CLSSA-nonprogrammed FMS, and place the retention of materiel for that purpose on a economically viable business basis that is beneficial to U.S. forces and to foreign countries.

- Develop the most cost-effective alternative for managing and accounting for materiel reserved for FMS with the objective of precluding the retention of those assets from adversely affecting the wholesale budgets and reinvestment for the support of U.S. forces.

- Ensure that all costs incurred in supporting FMS are reimbursed by the foreign governments.

- Improve secondary item support to friendly foreign governments.

- Provide timely visibility of (1) materiel held specifically for FMS other than CLSSA-programmed and SDAF and (2) the related transactions.

- Provide a feedback and measurement system to permit management to evaluate related policies and their execution and to be able to demonstrate that the FMS Reserve is operating on a sound business basis at no cost to U.S. forces.

The Concept

The following paragraphs outline the policies and management requirements of an FMS Reserve to achieve the objectives stated above. Subsequently in this chapter, we offer three options for an FMS Reserve manager. The concept envisions administrative and procedural changes under all options, but organizational changes or physical movement of assets are not inherent in the concept. Such changes may be required under some of the manager options. The concept is discussed in more detail in Appendix A. The necessary policy and procedural changes are provided in Appendix B.

Policies

The following policies are required in order to establish an FMS Reserve to meet the objectives stated:

- An FMS Reserve will be established to retain Condition Code A assets that otherwise would be stratified as DoD potential reutilization stocks for potential FMS non-CLSSA and CLSSA-nonprogrammed sales.

- All costs of providing FMS support to foreign countries will be recovered from the foreign countries through the DBOF cost recovery rates and/or security assistance surcharges.

- No requirements or assets for FMS will be included in U.S. forces requirement levels or in the ERS except for CLSSA-programmed and SDAF requirements. Only humanitarian aid may be included in the CRS.

- The FMS requisitions will be coded as "recurring" or "nonrecurring" based on the definitions proposed in Appendix A and Appendix B (DoD 4140.1-R).

- The FMS Reserve shall consist of two segments. The first is an "FMS Recurring Reserve" to support current recurring demands. The second is an "FMS Transitory Reserve" to preclude the premature disposal of DoD potential reutilization assets required to support future increased recurring demands resulting from the sale of additional excess weapon systems from the U.S. forces' inventory.

- The FMS Recurring Reserve maximum limit will be computed annually based on past FMS recurring demands, exclusive of CLSSA-programmed demands, using an OSD-approved FMS EQL formula, probability target, and selling period.

- The FMS Transitory Reserve maximum limit will be based on a supply support package related to the sale of excess weapon systems from the current U.S. inventory under either current or firm planned negotiations of an FMS case or an approved definitized case. The reserve limit for the support package will be based on its annualized demand and an OSD-approved FMS EQL formula, probability target, and selling period.

◆ The FMS Reserve shall be maintained in a separate ownership code from those assets held primarily for the support of U.S. forces and FMSO I and II.

- The FMS Reserve will be uncoupled from U.S. forces assets and will not be affected automatically by the U.S. forces asset position in the budget or stratification processes.

- Assets will be transferred between ownership accounts for the U.S. forces and the FMS Reserve only under the specified conditions.

◆ The following policies will apply to the transfer of FMS Reserve assets:

- Only Condition Code A assets that otherwise would stratify as DoD Potential Reutilization Stock may be transferred to the FMS Reserve and only in quantities not exceeding the total FMS Recurring Reserve and FMS Transitory Reserve limits.

- All recurring FMS requisitions other than CLSSA-programmed requisitions will be processed against FMS Reserve assets before being processed against U.S. forces assets.

- Transfers from the FMS Reserve are authorized only when

  - the assets exceed the maximum FMS Reserve limit. In that case, the assets will be transferred to U.S. forces ownership code if the assets are needed to fill deficits below the retention limit and, if not, will be processed as DoD Potential Reutilization Stocks; or

  - the assets are within the reserve limits and a deficit exists below the AAO for the U.S. forces. In that case, the assets will be transferred only in sufficient quantities to bring the total on-hand and on-order assets to the AAO.

- Assets within the reserve limits will not be transferred to fill shortages in U.S. forces economic or contingency retention limits.

- Because assets are being retained in the reserve for FMS, foreign countries will be eliminated from the DRMS screening process for Condition Code A assets of DoD-managed secondary items and are no longer authorized to purchase DoD Potential Reutilization Stocks or excess Condition Code A materiel for those items at reduced prices.

- DoD will recover all costs associated with FMS supported directly from procurement rather than inventory, including maintenance of catalog and technical data, requisition processing, contracting, and general and administrative expenses.

MANAGEMENT

The acceptance and success of the FMS Reserve are dependent upon how well the reserve is managed, its objectives achieved, and related policies executed. Of primary importance is the operation of the reserve on a sound business basis. The validity of the FMS Recurring and Transitory Reserve limit forecasts will be a key factor in evaluating the operations of the reserve.

To provide management at all levels within DoD with the capability of evaluating the operations of the FMS Reserve and to be able to respond to congressional inquiries, information is needed on the size and operations of the reserve. We propose that the needed information be contained in an *FMS Reserve Financial Statement,* (Table 2-4) an *FMS Transitory Reserve Requirement Evaluation Report,* a separate FMS Reserve segment of the *Central Secondary Item Stratification (CSIS)* report, and a separate total in the annual *Supply System Inventory Report (SSIR).* Each report would be accompanied by key performance indicators and trend analyses. If a portion of the FMS Reserve is managed under either Option B or C as discussed later in this chapter, a separate set of reports would be submitted.

Key Observations

The following are the key observations on the establishment of an FMS Reserve:

- Congress, the General Accounting Office, the DoD Inspector General, and DoD management officials have expressed reservations about the economic soundness of past retention practices and the inability to provide requested data.

- The FMS Reserve provides a cost-effective concept for managing and accounting for materiel reserved for FMS with the objective of precluding the retention of those assets from adversely affecting the wholesale budgets and reinvestment for support of U.S. forces.

- The FMS Reserve concept places the retention of materiel for FMS on an economically viable business basis that is beneficial to the U.S. forces and to foreign countries.

- The FMS Reserve concept provides a feedback and measurement system to permit management to evaluate and change related policies and their execution and to be able to demonstrate that the reserve is operating on a sound business basis at no cost to the U.S. forces.

- The FMS Reserve concept provides for timely visibility of materiel held specifically for FMS and related transactions.

- All costs for providing FMS support to foreign countries will be recovered from the foreign countries through the DBOF cost recovery rates and/or security assistance surcharges.

- The FMS Reserve assets will be uncoupled from U.S. forces assets in a separate ownership code and will not automatically affect or be affected by the U.S. forces asset position in the budget or stratification processes.

- The maximum FMS Reserve limit is varied by item based on an EQL that considers the individual item demand history, its demand variance, and an OSD-established target probability of being sold within the OSD-established selling period.

- The FMS Reserve concept provides for retention of Condition Code A materiel for new firm planned cases and approved cases as well as past recurring demands.

- Foreign countries will be eliminated from the DRMS screening process for Condition Code A assets of DoD-managed secondary items and are no longer authorized to purchase excesses of those assets at reduced prices.

FMS Reserve Manager Options

Introduction

In the preceding paragraphs, we have established the need for reserving otherwise excess DoD assets for future non-CLSSA and CLSSA-nonprogrammed FMS, demonstrated and quantified the economic benefits to DBOF and other benefits to FMS customers, and described the concept of an FMS Reserve, the objectives, necessary policy changes, and how it would operate (see Appendix A for complete details).

Now we must answer the following questions: what are the management objectives, who could manage an FMS Reserve and what is the most cost

effective and responsive arrangement for doing so, and how quickly can it be implemented?

After setting forth objectives that should be satisfied by any manager selected to manage the FMS Reserve and provide the supply support function for nonstocked items, we describe and compare three generic options. (Of course, many other variations and combinations are also possible.)

Objectives

The following objectives should be met in selecting the organization to implement and manage the FMS Reserve as an improved business practice for utilizing DoD Potential Reutilization Stocks. The option should

- obtain the best net return for DoD Potential Reutilization Stocks and thereby minimize the costs recovered in the standard prices paid by U.S. forces while improving secondary item supply support to friendly foreign governments,
- provide the most cost-effective option for managing and accounting for materiel reserved for FMS,
- ensure that all costs incurred in supporting FMS are reimbursed by the foreign government either through DBOF cost recovery rates or security assistance surcharges,
- provide timely visibility of materiel held specifically for FMS other than CLSSA-programmed and SDAF and visibility of the related transactions,
- ensure the feedback of operational data specified in the concept to enable management to evaluate related policies and their execution and to be able to demonstrate that the FMS Reserve is operating on a sound business basis at no cost to U.S. forces,
- maintain or improve customer response time,
- minimize start-up cost and time,
- ensure the capability of the manager to fulfill the responsibilities and carry out the operations in accordance with the FMS Reserve concept,
- have the ability to obtain depot-level maintenance support for the customer and provide procurement services for nonstocked items, and
- be consistent with other DoD policies, including "one item, one manager."

Three Manager Options

Option A: Managed by Inventory Control Points

In this option, management of the FMS Reserve for common and FMS-peculiar items is delegated to the ICP that currently has integrated materiel management (IMM) responsibility for the item. The IMM organization will continue to perform all the functions it normally performs. Those functions include cataloging, inventory management, arranging for depot-level maintenance, procurement, and technical support. Assets will remain in place and be physically commingled with U.S. forces assets but administratively segregated by ownership code. The ICP will also be responsible for all materiel management responsibilities related to non-CLSSA and CLSSA-nonprogrammed requisitions for items not included in the reserve (nonstocked items). If Option C (described subsequently) is adopted, the responsibilities of the ICP for FMS-peculiar items (items no longer used by the U.S. forces) will be reduced.

All management reporting requirements and policy constraints on reserve limits apply.

Option B: Managed by a Security Assistance Organization

In this option, management of the FMS Reserve for common and FMS-peculiar items is delegated to a single security assistance Organization (SAO) (existing or new) as an operating agency under DBOF. The organization will be responsible for managing and distributing the assets physically transferred from U.S. forces, including returning assets to U.S. forces as required, processing transfers to disposal, processing non-CLSSA and CLSSA-nonprogrammed requisitions, and arranging for depot-level maintenance and purchasing of FMS-peculiar items. Cataloging and technical support for all items remain with the IMM as well as procurement and arranging for depot-level maintenance for items common to the U.S. forces. If Option C is adopted, the responsibilities of the SAO for FMS-peculiar items will be reduced.

All management reporting requirements and policy constraints on reserve limits apply.

Option C: Managed by a Private-Sector Contractor

Under this option, management of the FMS Reserve is contracted out to a private-sector firm. That company would be responsible for managing only FMS-peculiar items; that management will include only transferring, storing, and issuing reserve assets. Items common to U.S. forces would be managed under Options A or B. The contractor arranges for depot-level maintenance and performs the procurement function when reserve assets are depleted and for nonstocked items. The contractor will bear the cost of approved transfers of assets to the reserve. The DBOF will bear the cost of transferring assets to DRMS.

All management reporting requirements and policy constraints on reserve limits apply.

We restricted Option C to FMS-peculiar items. That restriction is based on the fact that 99 percent of the NSNs requisitioned by non-CLSSA and CLSSA-nonprogrammed customers are also used by U.S. forces. Delegating management of the FMS Reserve to a contractor for those common items would result in dual management, warehousing, and other costs for over 410,000 items. DoD has been working for 20 years to eliminate dual management of the same items. The interface between the ICPs and the contractor would be more complex and more extensive. FMS-peculiar items are no longer used by U.S. forces and dual management would not exist.

Comparison of the Option Characteristics

Tables 2-3 through 2-7 list the various characteristics of the three options. They range from those common to all options to those unique to a single option and are grouped by functional area.

The FMS Reserve

The characteristics of the FMS Reserve apply equally to all options with the exception of Items 5 and 6. Because by definition the FMS-peculiar items that would be managed by the contractor are not used by U.S. forces, such items should not have to be returned to the ownership of U.S. forces. All policies related to establishing the reserve, managing assets, and disposing of excesses apply equally to all options, including a private contractor (see Table 2-3).

Table 2-3.
The FMS Reserve Characteristics of Options

Characteristic	Option A	Option B	Option C
1. With the exception of humanitarian aid, all assets retained for non-CLSSA and CLSSA-nonprogrammed requirements will be held only in the FMS Reserve.	√	√	√
2. FMS Reserve limits will be computed using DoD-prescribed policies and methodologies.	√	√	√
3. Assets in excess of U.S. forces retention limits (potential DoD reutilization stock) will be transferred to the FMS Reserve up to, but not in excess of, the reserve limits.	√	√	√
4. All FMS Reserve limits and assets will be identified with a unique ownership code and will be uncoupled from U.S. forces requirements and assets during the stratification and budgeting processes.	√	√	√
5. When U.S. forces assets fall below the AAO, FMS Reserve assets will be returned only in amount required to preclude a budget deficit.	√	√	
6. When FMS Reserve assets exceed the reserve limit and are DoD potential reutilization stocks, the excess assets will be returned to fill any U.S. forces deficit below the maximum retention limit.	√	√	
7 Any assets above the reserve limit and not required by the U.S. forces will be transferred upon approval to DRMS in accordance with current DoD policy.	√	√	√

Ownership and Financial

Under all three options the inventory remains under DBOF ownership. Under Option C, the inventory will be handled as government-furnished property (GFP) under the appropriate Federal Acquisition Regulation (FAR) procedures in addition to the FMS Reserve policies and procedures. Item 5 is unique to Option C. The contractor will be paid from its portion of the cost recover rate. The difference between the contractor's share and the total would accrue to DBOF (see Table 2-4).

A critical element in the continued acceptance of the FMS Reserve concept is the inclusion of Item 3 in all manager options.

Table 2-4.
Ownership and Financial Characteristics of Options

Characteristic	Option A	Option B	Option C
1. Ownership of the FMS Reserve assets remains under DBOF until the assets are either sold to FMS customers or transferred to DRMS.	✓	✓	✓
2. DBOF pricing and cost recovery policies continue to apply, and assets will be sold at full standard price.	✓	✓	✓
3. All FMS Reserve assets will be included but reported separately in DBOF financial accounting reports, budgets, the annual SSIR prepared for Congress, the FMS Reserve *Financial Statement,* and the Transitory Reserve Requirement Evaluation Report.	✓	✓	✓
4. Foreign countries will no longer be authorized to buy Condition Code A excess DoD-managed secondary items	✓	✓	✓
5. The total MAUC of materiell sold would accrue to DBOF. The cost recovery rate would be allocated between DBOF and the contractor based on the functions specified in the contract. The government would recover the MAUC and its operating cost based on its portion of the cost recovery rate. The contractor would be compensated for costs based on the cost recovery rate sharing agreement. That agreement would provide for reimbursement of the contractor for actual costs and a profit not to exceed the contractor's maximum cost recovery rate in the contract.. The contractor would also benefit from any savings resulting from increased efficiency. The contractor would not be compensated for costs exceeding the maximum amount stipulated in the contract.			✓

Note: MAUC = material acquistion unit cost.

Materiel Management and Requisition Processing

Option A is straightforward and does not require new interfaces with other organizations or organizational changes. It would require system changes. Both Options B and C require the establishment of new organizations, procedures, and systems. Option B requires the processing of those requisitions for common items for which there are no FMS Reserve assets to be passed to the appropriate ICP for processing against U.S forces assets or procurement. Option B also results in extensive dual management between the SAO and the ICP resulting in an overall increase in operating costs. Under Option C, only the contractor would process requisitions for FMS-peculiar items (see Table 2-5).

Table 2-5.
Materiel Management and Requisition Processing Characteristics of Options

Characteristic	Option A	Option B	Option C
1. All management remains with the IMM in existing organizations.	✓		
2. Management is divided between the IMM and the reserve manager.		✓	✓
3. A new organization structure is required to manage assets in the reserve to process requisitions.		✓	✓
4. Extensive new policies, procedures, and transactions are required for interface between the reserve manager and the ICPs and DRMS.		✓	✓
5. Assets will include both items common to the U.S. forces and foreign countries and FMS peculiar items unless combined with Option C.	✓	✓	
6. Assets will include only items peculiar to FMS and requires either Option A or B to manage items common to the U.S. forces.			✓
7. Non-CLSSA and CLSSA nonprogrammed requisitions will be routed to the ICP and processed against FMS Reserve assets first, and when depleted, requisitions will automatically be processed against U.S. forces assets under current rules.	✓		
8. All FMS non-CLSSA and CLSSA nonprogrammed requisitions will be routed to the security assistance activity first and processed against the reserve assets. If the assets are not available and the item is used by the U.S. forces, the requisition is passed to the appropriate ICP for processing using current policies.		✓	
9. Non-CLSSA and CLSSA-nonprogrammed requisitions for FMS-peculiar items are routed to the contractor for processing against the reserve			✓

Procurement and Maintenance

Both Options B and C require the establishment of new procurement offices to purchase FMS-peculiar items. The items may be available from the same sources that provide common items. The ICP would be required to maintain the technical data and provide assistance as required (see Table 2-6).

Table 2-6.
Procurement and Maintenance Characteristics of Options

Characteristic	Option A	Option B	Option C
1. Performs all FMS procurement for common and FMS peculiar items unless Option A is combined with Option C.	✓		
2. Performs procurement functions only for non-CLSSA FMS-peculiar items when on-hand assets are depleted unless Option B is combined with Option C.		✓	✓
3. Obtains and schedules depot-level maintenance support for common and FMS-peculiar items unless Option A is combined with Option C.	✓		
4. Obtains and schedules depot-level maintenance support for FMS-peculiar		✓	✓

Option A does not require any physical movement of the FMS Reserve assets. Both Options B and C do require the physical movement of assets. Under Option B, the movement could be on base, whereas under Option C, off-base transportation to the contractors warehouse(s) is required (see Table 2-7).

Table 2-7.
Storage and Distribution Characteristics of Options

Characteristic	Option A	Option B	Option C
1. Assets qualifying for inclusion in the reserve would be administratively transferred only and remain commingled with U.S. forces assets. No physical movement or storage changes would be involved. Minimum additional storage space would be required.	✓		
2. Assets transferred from Potential Reutilization Stocks to the FMS Reserve are physically moved to DLA-managed DoD-storage warehouse(s) specifically designated to handle FMS Reserve assets. Maximum additional storage space would be required.		✓	
3. 27 Assets transferred from Potential Reutilization Stocks to the FMS Reserve are physically moved to the contractors storage warehouse(s) specifically designated to handle FMS Reserve assets. Maximum additional storage space would be required.			✓

EVALUATION

Option A — Inventory Control Point

The assignment of responsibility for the management of the FMS Reserve for common and FMS-peculiar items, including support of all non-CLSSA and CLSSA-nonprogrammed requisitions, to the ICP with current management responsibility for the item has many advantages and few disadvantages.

- Advantages
  - ICPs are organized, staffed, and equipped to perform the required management functions.
  - The FMS Reserve assets are only administratively segregated and costly rewarehousing and transportation are avoided.
  - Management information would not have to be transferred.
  - Use of ICPs is consistent with the DoD philosophy of one item, one manager.
  - This management should generate the greatest net return.

- Limited implementation without management reporting could be accomplished in the near term.
- Start-up time and costs would be minimal.
- Could be used in conjunction with Option C for FMS-peculiar items if that is demonstrated to be cost-effective.

- Disadvantages
  - Full implementation would require a stand-alone personal computer (PC) system until the CIM system is programmed and operational.
  - Current policies and procedures will have to be revised to be consistent with the concept and to implement the changed requirements (see Appendix B).
  - Data processing systems will have to be revised to provide for processing requisitions against the reserve assets and to provide the required management data and reports.

Option B — Security Assistance Organization

The assignment of responsibility for the management of the FMS Reserve for common and FMS-peculiar items, including support of all non-CLSSA and CLSSA-nonprogrammed requisitions, to an SAO has few advantages and many disadvantages.

- Advantages
  - It places responsibility with an organization dedicated to providing security assistance support.
  - It removes all FMS-peculiar items from the U.S. forces inventory (those items remain under DBOF ownership).

- Disadvantages
  - It requires the establishment of an ICP-type organization with the attended problems of funding, staffing, and training and the transfer of inventory management records.
  - It requires the establishment of a procurement office and transfer of files from existing procurement offices.
  - It requires the development of policies, procedures, and data systems.
  - It incurs the cost of picking and moving FMS Reserve assets.

- ► It provides the least net return to DBOF.
- ► It would increase materiel flow between U.S. forces and the FMS Reserve.
- ► It incurs the greatest start-up time and cost.
- ► There would be dual management of common items between the ICP and the SAO.
- ► Would increase storage space requirements.
- ► Customer response time for common items without reserve assets would be increased.

Option C — Private-Sector Contractor

Assignment of responsibility for FMS-peculiar items to a private-sector contractor has some advantages. However, thus far, we have not determined the net change in revenue compared to Option A.

- ◆ Advantages
  - ► It establishes a single manager for all FMS-peculiar items.
  - ► It removes all FMS-peculiar items from U.S. forces inventory (ownership of the items remains under DBOF).
  - ► It would not be implemented unless it was proven more cost-effective, i.e., unless the contractor can perform the assigned functions at a lower cost than the ICPs (the contractors must pay all start-up costs, including the initial transfer of reserve assets to the contractors' storage facilities).
  - ► No dual management would occur.
  - ► It could operate in conjunction with either Option A or B.
- ◆ Disadvantages
  - ► It establishes a new procurement office and requires the transfer of information from existing procurement offices.
  - ► It requires substantial effort to develop bid packages, solicit bids, and award, administer, and audit the contract.
  - ► Substantial start-up time and cost would be incurred.

- New transactions would have to be developed between the government and the contractor.
- A cost would be incurred in picking and moving FMS Reserve assets to the contractor.
- Additional policies and procedures would have to be developed.

Key Observations

The following key observations relate to the options and selection of a manager for the FMS Reserve:

- The policies, operations, reporting requirements, and performance measures must apply equally under all options, including a private-sector contractor.
- Option A, *ICPs Manage the FMS Reserve,* is clearly the most cost-effective option for items common to the U.S. forces and FMS and would generate the largest net revenue.
- Option A is the easiest to implement and would have shortest start-up time and lower start-up costs.
- Option B, *An SAO Manages the FMS Reserve,* is clearly the least cost-effective option for common items and has the longest start-up time.
- Option C, *A Private-Sector Company Manages the Reserve for FMS-Peculiar Items,* is viable if the contractor can perform the assigned functions satisfactorily and at a lower cost than the government.

CHAPTER 3

Summary and Recommendations

INTRODUCTION

During the past several years, DoD's emphasis has evolved to the point of keeping the minimal assets necessary to support the mission. Because of the projected force reduction, the magnitude of the inactive inventory, and other inventory management issues, Congress has also imposed restrictions on the percentage of DBOF sales revenues that may be reinvested in the procurement of new inventory.

The DoD, recognizing this new environment, issued a revised retention policy for secondary items to the Services and DLA in January 1993.

That policy is more stringent than the policy it replaced and will cause the disposal of some assets previously being retained.

Security assistance is a vital element of our national security strategy and DoD policy. DSAA and the Military Services are concerned about the possible adverse impacts of this more restrictive materiel retention policy and the major ongoing DoD disposal effort on the U.S. security assistance program.

SUMMARY

Retention Policies and Practices

We analyzed the policy changes and the practices of the DoD Components from the perspective of their impact on FMS.

- The current policy requiring the disposal of unique secondary items in support of weapon systems no longer in the U.S. forces' inventory will adversely affect the responsiveness of FMS support for those systems.

- Current policies neither encourage nor permit the best utilization of assets excess to those required by U.S. forces to meet recurring or nonrecurring FMS demands except CLSSA-programmed demands.

- The average annual non-CLSSA and CLSSA-nonprogrammed requisition value of $2.2 billion for stocked secondary items is the major segment of FMS (about 95 percent) and current policy does allow assets to be retained to satisfy these recurring requirements.

Inventory Reduction

The *DoD Inventory Reduction Plan* of May 1990 established inventory reduction goals for 7 years. These reductions are to be met through a series of improved business practices, including aggressive disposal of DoD excess materiel.

- By the end of FY93, 3 ½ years after the IRP was promulgated, worldwide disposals had grown over three-fold to $29.3 billion of which over $18 billion were wholesale secondary item assets.

- The military downsizing and restructuring will generate additional inventory reduction, and the DoD worldwide disposals are likely to remain at relatively high levels for the foreseeable future.

- Selection and retention of assets for non-CLSSA and CLSSA-programmed FMS would not have a significant adverse impact on the IRP since only 2 percent to 3 percent of the DoD potential reutilization assets would be retained.

Limited Cost/Benefit Analysis

The retention of assets results in increased operating costs in the form of inventory management costs, storage costs, physical inventory losses, and potential loss through obsolescence. Those additional costs can be recovered only through sales of materiel. If there are no sales for the purposes for which the assets were retained, then those costs are recovered by increasing the cost recovery rates on other materiel that is sold. If, however, retaining the assets results in a sale rather than a loss through transfer to DRMS, that sale increases the base for recovering costs and at the same time reduces the costs that must be recovered in the standard price.

- The economic analyses provide an order of magnitude and a range of expectations upon which management may rely in confirming or revising policies to ***dispose of*** or ***retain***.

- The traditional ERM does not best fit the unique conditions of an FMS Reserve EQL.

- Transfers of excess to DRMS results in a return to DBOF of only about 2 percent of the standard price.

- An EQL methodology should focus on the probability of a demand for retained units of stock, and in the absence of such a demand, minimal risk of an economic loss to the United States.

- Four elements should determine the maximum EQL for each item: its demand rate, demand variance, the probability target, and the selling period. OSD should control the latter two.

- Using the proposed EQL with a 13-year selling period and a 99 percent probability, generates item retention limits ranging from 8 to 12 years with a weighted average of 9 years for the 410,000 NSNs. Items with an average annual demand of 1 or less are limited to a quantity of 1.

- Our simulation demonstrates that it is substantially more cost-effective to retain assets within constraints than to dispose of them even if only 10 percent of the original demand forecast is sold.

- Non-CLSSA and CLSSA-nonprogrammed FMS requisitions for FY92 and FY93 averaged over $2 billion per year. In FY93, DoD disposed of $18.4 billion of secondary item wholesale assets. Under EQL, DoD would retain $387 million, representing a weighted average of 9 years of FMS demand. Under current demand patterns, there is a 99 percent probability of selling that materiel within 13 years. The NPV of the potential revenue generated after all expenses from the two alternatives are to *retain*: $252 million and *dispose of*: $19 million (current policy). Even if only half were sold, the NPV of the potential net revenue would be $128 million. The *retention* alternative would generate from 6 to 13 times more net revenue than the *disposal* alternative.

- The $387.3 million assets would initially require approximately four average DoD warehouses at 85 percent occupancy.

- The FMS Reserve presents a rare opportunity to increase DBOF revenues that do not require reinvestment and could be used to reduce the cost recovery rates (and, incidentally, 90 percent of the benefit would go to the U.S. forces).

The FMS Reserve Concept

Congress, the General Accounting Office, the DoD Inspector General, and DoD management officials have expressed reservations concerning the economic soundness of past retention practices. Because of those concerns, DoD requires a concept that will provide visibility of the retained assets and evaluation of the related policies and operations.

The FMS Reserve concept envisions administrative, procedural, and system changes, but organizational changes or physical movement of assets are not inherent in the concept. Such changes may be required under some of the manager options. The concept is discussed in more detail in Appendix A. The necessary policy and procedural changes are suggested in Appendix B.

- The FMS Reserve concept authorizes the retention of materiel for non-CLSSA and CLSSA-nonprogrammed FMS in a separate ownership account. All recurring FMS requisitions other than CLSSA-programmed requisitions will be processed against FMS Reserve assets first.

- The concept provides the timely information required by management to operate the reserve on a sound business basis, evaluate the operations and related policies of the FMS Reserve, and to be able to respond to congressional inquiries.

- The DBOF cost recovery rates and/or security assistance surcharges will recover all costs of providing FMS support from the foreign countries.

- The DRMS screening process for Condition Code A assets of DoD-managed secondary items will exclude foreign countries and excesses of those assets will be sold at the standard price.

- The FMS Reserve provides a cost-effective concept for managing and accounting of materiel reserved for FMS, with the objective of precluding the retention of those assets from adversely impacting on the wholesale budgets and reinvestment for support of U.S. forces.

FMS Reserve Manager Options

Who could manage an FMS Reserve, *what* is the most cost-effective and responsive arrangement, and *how* quickly can it be implemented?

We examined three options (many other variations are possible) for a manager of the FMS Reserve. Under Option A, management of the reserve is delegated to the ICP that currently has IMM responsibility. Under Option B, management of the reserve is delegated to a single SAO (existing or new). Under Option C, management of FMS-peculiar items only is contracted out to a private-sector firm.

The selected manager should provide the most responsive supply support, best net return from the DoD Potential Reutilization Stocks, and be capable of providing timely feedback of operational data specified in the concept.

- The policies, operations, reporting requirements, and performance measures must apply equally under all options, including a private-sector contractor.

- Option A, ICPs manage the FMS Reserve, is clearly the most cost-effective option for items common to the U.S. forces and FMS, would generate the largest net revenue, and may be the most cost-effective for FMS peculiar.

- Option A is the easiest to implement and would have the shortest start-up time and lowest start-up costs.

- Option B, An SAO manages the FMS Reserve, is clearly the least cost-effective option for common items, has the longest start-up time, and is probably not cost-effective for FMS-peculiar items.

- Option C, A Private-Sector Contractor Manages the FMS Reserve for FMS-Peculiar Items, is viable if the contractor can perform the assigned functions satisfactorily and at a lower cost than the government. Option C must be used in conjunction with either Option A or B.

RECOMMENDATIONS

We recommend that OSD take the following actions:

To take advantage of this rare opportunity to increase DBOF revenue and decrease recovery cost rates (approximately 90 percent of the benefit would be to the U.S. forces),

- *Establish an FMS Reserve for the retention of assets solely for FMS in accordance with the concept outlined in Appendix A and revise the related policies as provided for in Appendix B.*

To ensure a uniform, economically viable, and flexible basis for determining the maximum quantity to be retained in the FMS Reserve,

- *Establish the reserve limit in accordance with the EQL methodology described in this report. That methodology is based on each item's FMS demand, demand variance, and at least a 99 percent probability of being sold within a 13-year selling period.*

To encourage sales of obsolete weapon systems, provide more responsive support to foreign countries and increase DoD revenues,

- *Change the policies as provided for in Appendix B of this report to permit retention on an economic basis of parts peculiar to weapon systems no longer in the U.S. forces inventory.*

To implement the FMS Reserve at the lowest possible cost and in the shortest feasible time to minimize the premature disposal of potential FMS Reserve assets,

- *Assign initial responsibility, including management and performance reporting, to the ICP with IMM responsibility for all items eligible for inclusion in the FMS Reserve and subsequently explore the feasibility of assigning responsibility to a private-sector contractor for FMS-peculiar items.*

In order to implement the total FMS Reserve concept at an earlier date,

- *Explore the feasibility of developing a "stand-alone" desktop computer application for use in conjunction with existing ICP inventory management systems.*

APPENDIX A

A Reserve for Foreign Military Sales: The Concept

BACKGROUND

The restructuring of the U.S. forces has resulted in inventories of secondary-item assets that may exceed the Authorized Acquisition Objective (AAO). The AAO is the inventory needed through the budget year by U.S. forces, friendly foreign governments participating in the cooperative logistics supply support arrangement (CLSSA) program, and the Special Defense Acquisition Fund (SDAF). Under DoD policies, the Services and Defense Logistics Agency (DLA) compute an economic retention limit to retain assets for future requirements that exceed the AAO. Economic Retention Stocks (ERS) are limited to U.S. forces, CLSSA-programmed, and SDAF requirements. The prior DoD retention policies, reflected in DoD Directive 4100.37, *Retention and Transfer of Materiel Assets* (canceled by DoD Directive 4140.1, *Materiel Management Policy*, January 4, 1993), specifically authorized the retention of assets "in expectation of foreign military demand not covered by cooperative logistics agreements" as a part of the Contingency Retention Stock (CRS). The current DoD Instruction 4140.60, *DoD Materiel Management*, January 5, 1993, while retaining CRS, deleted all references to foreign military demands. Both the prior and current policies limited CRS to that portion of the quantity of an item "for which there is *no predictable demand or quantifiable requirement* [emphasis added] and that normally would be allocated as Potential Reutilization Stock, except for a determination that the quantity will be retained for specific contingencies."

Congress, the General Accounting Office, the DoD Inspector General, and DoD management officials have expressed reservations concerning the economic soundness of past retention practices. In May 1990, DoD issued the *DoD Inventory Reduction Plan,* which was incorporated into the Defense Management Review Decision (DMRD) 987, *Inventory Reduction Plan Improvements.* In the plan, the DoD, as part of its overall effort to achieve economies and efficiencies, established a goal to save $18 billion over the next 7 years. In addition to establishing inventory-reduction goals, the DoD placed constraints, through the Defense Business Operations Fund (DBOF) budget process, on the percentage of the proceeds from sales of materiel that could be reinvested in inventory. Because of the magnitude of the inactive inventory, Congress also has imposed restrictions on the percentage of sales dollars that may be reinvested.

The DoD is exceeding its inventory-reduction goals. The trend of increasing inventory investment was reversed in 1990 with a $4.3 billion reduction. In 1991, an additional $16.2 billion reduction was achieved, and reductions of approximately $5.9 billion and $5.7 billion were projected for 1992 and 1993, respectively. (As it has reduced its investment in inventory, the DoD also has reduced the costs of holding inventory, including storage, losses, and obsolescence.) A substantial portion of the inventory reduction has been achieved by transferring the excess materiel to the Defense Reutilization and Marketing Service (DRMS) with an average return of about 2 cents on the dollar.

While U.S. forces are downsizing and reducing inventories, foreign countries are increasing their inventories of U.S. origin weapon systems. As a result, the ratio of foreign country inventories to U.S. inventories is increasing. For example, foreign countries now have a larger inventory of U.S. origin aircraft than the U.S. forces. (After-sale follow-on support contributes to the success of the sale of U.S. origin systems.) Foreign military sales (FMS) of secondary items averaged over $2 billion per year for the past 5 years and contributed significantly to the reduction of inactive U.S. inventory. Furthermore, FMS are generally at the full standard price, plus a surcharge to cover administrative costs of the program, in contrast to the average return of about 2 cents on the dollar for items disposed of through the DRMS.

Prudent business practice dictates that materiel be sold at the full price whenever the net return (sales price less costs) is greater than the net disposal proceeds. Therefore, materiel in excess of the retention levels for U.S. forces (currently, DoD Potential Reutilization Stocks) should be reserved, rather than declared DoD excess, if there is a reasonable probability of CLSSA-nonprogrammed or non-CLSSA FMS.

OBJECTIVES

Business practices for utilizing DoD Potential Reutilization Stocks must be developed to obtain the best net return and to improve supply support to friendly foreign governments. Specific objectives include the following:

- Obtain the largest net return for DoD Potential Reutilization Stocks and thereby minimize the surcharges paid by the U.S. forces.
- Authorize the retention of materiel for non-CLSSA and CLSSA-nonprogrammed FMS and place the retention of materiel for that purpose on an economically viable business basis that is beneficial to the U.S. forces.
- Develop the most cost-effective alternative for managing and accounting for materiel reserved for FMS that does not adversely affect the wholesale budgets and reinvestment for the support of U.S. forces.
- Assure that all costs incurred in supporting FMS are reimbursed by the foreign government.

- Improve secondary-item support to friendly foreign governments.
- Provide timely visibility of materiel held specifically for FMS other than CLSSA-programmed and SDAF and visibility of the related transactions.
- Provide a feedback and measurement system that enables management to evaluate related policies and their execution and to demonstrate that the FMS Reserve is operating on a sound business basis at no cost to the U.S. forces.

THE CONCEPT

The following paragraphs outline the policies, operations, and management requirements of an FMS Reserve to achieve the objectives stated above. As discussed in Chapter 2, the FMS Reserve manager could be an inventory control point (ICP), a security assistance organization, or a private-sector contractor. The establishment of an FMS Reserve would require administrative and procedural changes; organizational changes or physical movement of assets are not inherent in the concept, but such changes may be required under some of the manager options.

Policies

Policies to achieve the objectives for an FMS Reserve include the following:

- All costs of providing FMS support to foreign countries will be recovered from the foreign countries through DBOF billings or security assistance surcharges.
- No requirements or assets for FMS will be included in the U.S. force requirement levels or in the economic and contingency retention categories except for CLSSA-programmed requirements and humanitarian aid.
- An FMS Reserve will be established to retain Condition Code A assets that otherwise would be stratified as DoD Potential Reutilization Stocks for potential non-CLSSA and CLSSA-nonprogrammed FMS.
- FMS requisitions will be coded as recurring or nonrecurring:
  - Recurring requisitions include all CLSSA-programmed and nonprogrammed requisitions, all non-CLSSA FMS replenishment requisitions, and special support packages developed in conjunction with the sale of excess weapon systems from the U.S. forces' inventory.
  - Nonrecurring requisitions include all other FMS (e.g., provisioning and initial issue developed in conjunction with the purchase of

in-production weapon systems) and other security assistance programs such as grant-in-aid requisitions.

- The FMS Reserve will consist of two segments: an FMS Recurring Reserve to support current recurring demands and an FMS Transitory Reserve to preclude the premature disposal of DoD potential reutilization assets required to support future increased recurring demands resulting from the sale of additional excess weapon systems from the U.S. forces' inventory.

  - The maximum limit of the FMS Recurring Reserve will be computed annually based on past FMS recurring demands, exclusive of CLSSA-programmed demands, using an OSD-approved FMS economic quantity limit (EQL) formula. (See Appendix B, *Proposed Changes to DoD Policies*).

  - The maximum limit of the FMS Transitory Reserve will be computed based on a supply support package related to the sale of excess weapon systems from the current U.S. inventory — either current or firm planned negotiations of an FMS case or an approved definitized case for the sale of weapon systems from the current U.S. inventory — using an OSD-approved FMS EQL formula. For items without prior recurring reserve demands upon which to compute a limit the default number of years will be the minimum allowed by OSD.

    - One-half the annualized consumption rate will be used to compute the limit (When the process is fully automated, the annualized demand will be decreased quarterly by one-quarter as the recurring demand used to compute the Recurring Reserve limit is increased to preclude duplicating requirements.) The support package for a case under negotiation will be limited to items and quantities with a reasonable expectation of being funded by the foreign country.

    - The maximum time for inclusion in the reserve of a specific support package being negotiated is limited to 12 months from the date of entry into the reserve. If negotiations have not resulted in an approved funded case within the 12-month limit but prospects are good, the Military Service may request an extension not to exceed 12 months from the Defense Security Assistance Agency (DSAA). If the extension is granted, the total support package requirements (line items and quantities) must be adjusted to be within the expected funding limit, and the annualized rate must be provided to the sources of supply to update the reserve limits. If the extension is not approved, the items and quantities will be removed from the reserve.

    - When a case is approved and funded, the items and quantities included in the reserve during negotiations will be replaced by the items and quantities specified in the case, and the annualized rate

will be provided to the sources of supply to update the reserve limits.

- The maximum time for including an approved and funded support case in the reserve is 24 months from the approval date. Quarterly, the reserve manager will review the transitory reserve file for cases with an approval date of 24 months or older and remove those cases (items and quantities) from the FMS Transitory Reserve limit as the actual requirements will be reflected in the Recurring Reserve.

- The FMS Reserve will be maintained in a separate ownership code from those assets held primarily for the support of U.S. forces and FMSO I and II.

  - The FMS Reserve will be uncoupled from assets of the U.S. forces and will not be affected automatically by the U.S. forces' asset position in the budget or stratification processes.

  - Assets will be transferred between ownership accounts for the U.S. forces and the FMS Reserve only under the following conditions:

    - Only Condition Code A (issuable without qualification) assets that otherwise would stratify as DoD Potential Reutilization Stock may be transferred to the FMS Reserve and only in quantities not exceeding the total Recurring and Transitory limits.

    - All recurring FMS requisitions other than CLSSA-programmed requisitions will be processed against FMS Reserve assets first. If assets are available, they will be identified as being issued from the reserve. If assets are not available, requisitions for common items will be processed against serviceable on-hand assets held for the peacetime requirements of U.S. forces and CLSSA programs that are above the reorder point, and requisitions for FMS-peculiar items will generate procurement actions.

    - Transfers from the FMS Reserve will be authorized only when there is a deficit below the AAO for the U.S. forces, and then only in sufficient quantities to bring the total on-hand and on-order assets to the AAO, or when the assets exceed the maximum FMS Reserve limit. In the latter case, the assets will be transferred to the U.S. forces' ownership code if the assets are needed to fill deficits below the retention limit; otherwise, they will be processed as DoD Potential Reutilization Stocks. Assets within the reserve limit will not be transferred to fill shortages in U.S. forces economic or contingency retention limits.

- Foreign countries will be eliminated from the DRMS screening process for Condition Code A assets of DoD managed secondary items and no longer

will be authorized to purchase DoD excess Condition Code A materiel for those items at reduced prices.

- When it is determined that it is more cost-effective to dispose of assets of an item rather than retain them solely for FMS, the remaining assets may be sold on a one-time basis at reduced prices with the understanding that any future support normally will be provided from procurement as a non-stocked item. Otherwise, all sales of serviceable secondary assets from U.S. inventory to foreign countries will be at standard prices.

- FMS supported directly from procurement rather that inventory will recover all costs, including maintenance of catalog and technical data, requisition processing, contracting, and general and administrative expenses, associated with such support.

Operations

The major tasks involved in operating the FMS Reserve and interfaces with other operations include the following:

- The OSD will establish a separate ownership code for the FMS Reserve.

- The ICPs will compute and establish the initial FMS Recurring Reserve limits using an OSD-approved FMS Reserve limit formula. (Subsequent reserve limits will be computed by the reserve manager using the OSD-approved reserve limit formula.)

- Military Services will

  - compute any authorized support package requirements,

  - assign a project code to identify the potential case,

  - assign the effective date (which begins the temporary hold period), and

  - provide each source of supply with the specific project code, effective date, national stock number, and annualized quantity.

- Reserve managers will establish FMS Transitory Reserve limits for cases under negotiation and for approved definitized cases based on the annualized demand rates provided by the Military Services and on the OSD FMS Reserve EQL formula.

- The ICPs will remove all FMS requirements except for CLSSA-programmed and SDAF demands from current economic retention limits.

- The ICPs will remove all FMS requirements from current contingency retention limits except for humanitarian aid.

- The ICPs will stratify assets to determine DoD Potential Reutilization Stocks and transfer such assets to the FMS Reserve up to the limit.

- The International Logistics Control Offices (ILCOs) will code all FMS provisioning, initial issue, and all grant-in-aid requisitions as nonrecurring. All other requisitions, including CLSSA-nonprogrammed demands, will be coded as recurring requisitions. CLSSA-programmed and nonprogrammmed requirements will be determined by the Cooperative Logistics Program Support Codes in position 72 of the requisition.

- Reserve managers will first process all recurring FMS requisitions, except CLSSA-programmed and SDAF demands, against the FMS Reserve assets and identify issues made from the reserve. If no assets are available, a security assistance reserve manager will pass the requisition to the appropriate ICP for processing against U.S. forces' assets in accordance with current policies. Contractors will purchase the required assets for FMS-peculiar items.

- Reserve managers will recompute Recurring Reserve limits annually by applying the FMS Reserve EQL formula to all recurring FMS requisitions except CLSSA-programmed demands. (Contractors will use the FMS Reserve EQL formula to compute the recurring reserve limits subsequent to the initial computation.)

- Reserve managers will compute the Transitory Reserve limits upon receipt of a new case under negotiation. When the case is approved, reserve managers will replace a case under negotiation using one-half the annualized demands provided by the ILCOs.

- Reserve managers will remove FMS Transitory Reserve limits for cases under negotiations when project negotiations are completed or when 12 months (unless an extension has been granted by DSAA) have expired, whichever comes earlier. (This task does not apply to contractors.) Reserve managers will remove FMS Transitory Reserve approved case limits not later than 24 months after the case was approved. (This task does not apply to contractors.)

- Periodically, reserve managers will review assets and limits to assure that assets do not exceed limits.

  - If assets exceed FMS Reserve limits and assets of the U.S. forces are below the retention limits, reserve managers will transfer the assets above the reserve limit to the U.S. forces' ownership/purpose code. (Security assistance managers will coordinate with the appropriate ICP. This task does not apply to contractors.)

  - If assets exceed FMS Reserve limits and are not required by the U.S. forces, reserve managers will transfer the excess to DRMS. (Contractors will require authorization.)

- When a budget deficit is projected for U.S. forces' assets and assets are available in the FMS Reserve, reserve managers will transfer assets up to the deficit amount (not to exceed the AAO) to the U.S. forces' ownership/purpose code. (Security assistance managers will coordinate with the appropriate ICP. This task does not apply to contractors.)

Management

The acceptance and success of the FMS Reserve is dependent upon how well the reserve is managed, whether its objectives are achieved, and how related policies are executed. Of primary importance is the operation of the reserve on a sound business basis. The validity of the FMS Recurring and FMS Transitory Reserve limit forecasts will be a major determinant in evaluating the operations of the reserve.

To enable DoD management at all levels to evaluate the operations of the FMS Reserve and to respond to congressional inquiries, information concerning the size and operations of the reserve is required. That information will be contained in an *FMS Reserve Financial Statement,* an FMS Transitory Reserve Requirement Evaluation Report, a separate FMS Reserve segment of the *Central Secondary Item Stratification (CSIS) Report,* and a separate total in the annual *Supply System Inventory Report (SSIR).* Each report will be accompanied by key performance indicators and trend analyses. A separate set of reports will be submitted for any portion of the FMS Reserve managed by a security assistance organization or a contractor.

Financial Statement

Each Service and DLA will prepare a semiannual *FMS Reserve Financial Statement,* shown in Figure A-1, for each FMS Reserve manager. The financial statement is the primary means for reporting the status of the FMS Reserve program. The report shows the beginning and ending limits for the two FMS Reserve categories — recurring and transitory — along with the total limit. For actual operations, the increases and decreases to the FMS Reserve assets are shown. The Services and DLA will provide their reports to the Office of the Deputy Under Secretary of Defense for Logistics. (Security assistance organization reports will be submitted through DSAA and contractor reports will be submitted through the contracting officer.) Informational copies will be furnished to the OSD Comptroller and DSAA.

FMS RESERVE FINANCIAL STATEMENT

(Dollars in thousands)

Opening Position		
FMS Recurring Reserve limit BOP	$ X,XXX,XXX	
FMS Transitory Reserve limit BOP	X,XXX,XXX	
Total FMS Reserve limit BOP		$ X,XXX,XXX
Materiel inventory on hand BOP		X,XXX,XXX
Price changes		XXX,XXX
Repriced inventory BOP		X,XXX,XXX
Changes		
Transfers from DoD Potential Reutilization Assets		X,XXX,XXX
Total FMS from the reserve		X,XXX,XXX
Transfers to U.S. forces AAO		X,XXX,XXX
Transfers to U.S. retention stocks in lieu of DRMS		X,XXX,XXX
Transfers to DRMS (disposals)		X,XXX,XXX
Inventory losses		X,XXX,XXX
Other adjustments		X,XXX,XX
Closing position		
Materiel inventory on hand EOP		X,XXX,XXX
FMS Recurring Reserve limit EOP	X,XXX,XXX	
FMS Transitory Reserve limit EOP	$X,XXX,XXX	
Total FMS Reserve limit EOP		$X,XXX,XXX

Figure A-1.
Financial Statement

Reserve Limits Evaluation

The methods used to compute FMS Reserve requirements are critical to the program's success. These methodologies must avoid retaining more assets in the FMS Reserve than FMS customers are likely to use during the planning horizon. Otherwise, charges will arise that the FMS Reserve is really a way used by the Services and DLA to retain additional assets for U.S. forces. The use of a single OSD-approved FMS EQL model addresses this issue for the FMS Recurring Reserve. This model will ensure standard computations throughout DoD using known inputs and parameters.

The requirements of each support package are based upon a unique set of factors. To ensure the validity of the limits established for the FMS Transitory Reserve, the Services and DLA will provide the report shown in Table A-1 annually with the *FMS Reserve Financial Statement.* This report, *FMS Transitory Limit Evaluation,* will show the initial and the definitized equipment levels for each case approved during the annual reporting period. The difference will be computed by NSN and summarized by case to determine whether the initial case

requirement forecasts are reliable or whether management action is required to improve the projections.

Table A-1.
FMS Transitory Reserve Limit Evaluation

Case number	Under negotiations estimates		Approved case definitized		Negotiated limited over-estimated		Negotiated limited under-estmated	
	Number of lines	Dollar value	Number of lines	Dollar value	Number of lines	Dollar value	Number of lines	Dollar value
Total								

PERFORMANCE INDICATORS

Meaningful performance indicators and trend analyses will accompany the above reports and the FMS Reserve segment of the CSIS. The following are some of the possible indicators:

- FMS Reserve inventory turnover (on-hand EOP balance/sales)
- Percentage of disposals (disposals/on-hand EOP)
- FMS Reserve inventory as a percentage of total inventory (on-hand EOP/total inventory)
- Percentage of Reserve on hand (on-hand EOP/total FMS Reserve limit EOP)
- Percentage of overestimated value (dollar value overestimated/dollar value estimated)
- Percentage of underestimated value (dollar value underestimated/dollar value estimated)
- Trends from year to year.

APPENDIX B

Proposed Changes to DoD Policies

INTRODUCTION

In this appendix, we suggest changes to DoD policies that are required to implement the recommendations contained in the report. The following policies are affected: DoD Directive 2000.8, *Cooperative Logistics Supply Support Arrangements;* DoD Instruction 4140.60, *DoD Materiel Management,* DoD 4140.1-R, *DoD Materiel Management Regulation;* DoD 7000.14-R, *Financial Management Regulation;* DoD 4140-17-M, *Military Standard Receipt and Issue Procedures;* DoD 4160.21-M, *Defense Reutilization and Marketing Manual;* and DoD 5105.38-M, *Security Assistance Management Manual.* No changes are reflected for DoDI 4140.60 because of the pending recision. All required changes are included in DoD 4140.1-R.

The proposed changes reflect improved business practices beneficial to the U.S. forces for the retention of assets and for supporting security assistance. The changes are consistent with the policies expressed in DoD Directive 5132.3, *DoD Policy and Responsibilities Relating to Security Assistance.* That policy states that "Security assistance, an important instrument of national security policy, is an integral element of the DoD mission. The development and execution of the program shall be accorded the same high degree of attention and efficiency as other DoD programs. To the extent practical, security assistance requirements shall be integrated through the same DoD systems, facilities, and procedures."

Deletions to the current language are shown as strikethroughs, and proposed additions are shown in bold italics.

DOD DIRECTIVE 2000.8

Current Language

DoD Directive 2000.8 provides guidance for the preparation of cooperative logistic supply support arrangements (CLSSAs). It also establishes constraints on such arrangements.

Paragraph E1 recognizes that it may be necessary to assist a foreign government in developing support systems for defense equipment not in the active inventory of U.S. forces or in limited use by U.S. forces. However, it states that "Normally CLSSAs may not be offered to support these systems." Notwithstanding that limitation, Paragraph E6 states that "Negotiations involving the sale of US defense materiel and weapon systems shall include full consideration

of the operational use of such materiel and systems, and provisions for effective concurrent and follow-on logistic support. As appropriate, follow-on spare and repair parts support shall be provided through the establishment of CLSSAs."

Paragraph 1a of Enclosure 2, Guidelines, states that "All CLSSAs will involve the investment of funds of the FMS country in the U.S. inventory. For consumable (stock fund) items will not be on the basis of a specific list of anticipated parts needed, but on the basis of on-hand and on-order levels required to support the dollar value of CLSSA anticipated needs. For repairable (appropriation account) items, on-hand and on-order levels will be either on a dollar or on a line-item basis. Investment on a line-item basis may be concluded only when the laws or procurement regulations of a particular country require that its investment be identified to specific items and quantities." However, paragraph 3a of Enclosure 2 and paragraph E4 of the directive provide for the use of Special Program Requirements (SPRs), which are item specific, as the means for providing requirement and funding information.

Proposed Language

E. PROCEDURES

1. This Directive is primarily addressed to the spare and repair parts support of defense systems common to U.S. and foreign forces. It may be necessary to assist a foreign government in developing support systems for defense equipment not in the active inventory of U.S. forces or in limited use by U.S. forces. Normally, CLSSAs may not be offered to support these systems ***except for items common to other weapon systems in the U.S. inventory***. Sales of equipment being phased out of the active inventory shall normally be conditional, on explicit understanding with the recipient that such support shall be limited and may be terminated.

2. Change reference to DoD Instruction 2140.1.

3. Change reference to DoD Instruction 2140.1.

4. For ***consumable items and nondefinitized reparable*** items to be supplied by ***another Military Service or*** by the Defense Logistics Agency (DLA), the Military Departments shall submit ~~Special Program Requirements (SPRs)~~ ***a DD Form_____, [To be developed] with the revised dollar value of the foreign country's equity in FMSO IA inventory levels to the supplying Component*** and, ***if an increase, deposit*** the cash, obtained from foreign participants ***to the Defense Business Operations Fund (DBOF),*** to finance increased inventory levels ~~to the DLA~~. Notification ***of a change in the equity for financing inventory levels should be made*** as soon as possible after the signing of the new arrangement or when the existing agreement is ~~significantly revised~~ ***increased or decreased by more than 5 percent.*** ~~The provisions of Chapter 11, DoD 4140.22-M (reference (d)) provide guidance for submitting SPRs to augment DLA stock levels to accommodate a new or revised CLSSA.~~

5. [Author's note: text not changed.]

6. Negotiations involving the sale of U.S. defense materiel and weapons systems shall include full consideration of the operational use of such materiel and systems, and provisions for effective concurrent and follow-on logistical support. As appropriate, follow-on spare and repair parts support shall be provided through the establishment, ***amendment, or modification*** of CLSSAs.

G. CRITERIA

11. Item records of supply transactions shall be maintained by appropriate Inventory Control Points in such a manner that the current status of the transactions may be available in order to determine: (a) equity negotiation and termination requirements, and (b) a pro rata share of excess items, ***not to exceed their current FMSO IA investment,*** applicable to weapons systems being supported for which the customer shall be held responsible. FMS Reserve limit records shall be reviewed before excess material is transferred to ~~Property Disposal Activities~~ ***Defense Reutilization and Marketing Service*** activities . If stockage of excess ***definitized reparable*** items resulted from CLSSA demands, the foreign participant shall be notified that applicable items shall be charged against the FMSO I equity and disposition instructions requested. ***Excesses in consumable and nondefinitized reparable items that result from lack of CLSSA demands shall be charged against FMSO IA equity on a monetary, not item, basis.***

Enclosure 2, GUIDELINES

3. The equitable follow-on supply support offered to foreign participants under a CLSSA is executed in two stages through separate FMSO: FMSO I and FMSO II.

a. When a FMSO I case is signed, funded, and implemented by both parties, the foreign participant purchases and the Military Department concerned establishes a financial equity for the country in appropriation and ***DBOF***-funded secondary items procured and stocked in the U.S. logistic system. The Military Department ***and DLA*** will use this equity investment for procurement to provide appropriate augmentation of DoD stocks of secondary items, in preparation for foreign participant stock withdrawals. These items are used to replenish foreign in-country stocks supporting the defense systems defined in the FMSO I. The foreign customer will be advised that negotiation of a separate CLSSA case for those items managed by another Military Department ***or DLA*** will be required to obtain those items on a CLSSA basis. Where the DoD Component is other than the Military Department sponsoring the CLSSA, ~~funded SPRs may be submitted~~ ***DD Form_____*** **[To be Developed]** ***will be used to inform the supplying DoD Component of the amount of the foreign participant's investment in inventory and will provide the basis for establishing or revising inventory levels.*** ~~If funded SPRs are submitted, funds obtained from foreign participants to finance increased inventory levels, submitted under the provisions of Chapter II of DoD 4140.22-M (reference (d)), will provide the basis for initial pipeline establishment~~

b. A procurement lead time period ***(administrative and production)*** will elapse between the time the FMSO I is implemented and DoD stock augmentation is completed. A FMSO II requisitioning case may be established concurrently with the FMSO I. However, FMSO II requisitions will not be processed ***as a programmed requirement*** until DoD stock augmentation is complete ***based on the supplying DoD Component's procurement lead time.*** ~~For DLA-managed items, requisitions shall not be submitted as CLSSA requisitions for 9 months (procurement lead time) subsequent to submission of SPRs (see Chapter II, DoD 4140.22-M, reference (d)).~~

DoD REGULATION 4140.1-R

Current Language

Regulation 4140.1-R implements DoD Instruction 4140.60. It does not provide specifically for reserving materiel for foreign military sales (FMS), and it limits Contingency Retention Stocks (CRS) to those for which there is no predictable demand or quantifiable requirement. The proposed changes provide procedures for an Foreign Military Sales (FMS) Reserve in support of past recurring demands and qualifying planned or approved support cases.

Proposed Language

CHAPTER 3

REQUIREMENTS

F. Stratification

2. Procedures

b. The Central Secondary Item Stratification (CSIS) and the Local Secondary Item Stratification (LSIS) will uniformly display the materiel requirements and associated asset status of individual secondary items and generate summaries of essential information. ***A separate CSIS will be prepared for the FMS Reserve category.*** The stratification tables will be based on data and factors used in the daily management of the individual items. The tables will provide the foundation for developing secondary item procurement and depot maintenance budgets, determining the readiness status, and relating assets to the Approved Acquisition Objective. If a methodology other than stratification is used as a found, an audit trail to the appropriate stratification table must be submitted to the OASD (P&L).

CHAPTER 4

ASSET MANAGEMENT

A. Requisitioning

1. Policy

d. Requisition Priority

(4) All FMS requisitions other than CLSSA-programmed requisitions will be processed against FMS Reserve assets first and will be identified as being issued from the reserve. If FMS Reserve assets are not available, requisitions will be processed against on-hand serviceable assets, held for peacetime requirements of U.S. forces and CLSSA programs, that are above the reorder point.

B. Materiel Retention

1. Policy

a. Principal and secondary items shall be stratified appropriately as Approved Acquisition Objective (AAO) Stock (a combination of the two categories formerly known as Approved Force Acquisition Stock and Approved Force Retention Stock), Economic Retention Stock (ERS), Contingency Retention Stock (CRS), (formerly Contingency Retention Stock and Numeric Retention Stock), ***Foreign Military Sales Reserve Stock,*** and Potential Reutilization Stock (formerly Potential Excess Stock).

(1) Integrated Materiel Managers (IMMs) may retain wholesale items up to the sum of the AAO, ERS, ~~and~~ CRS, ***and FMSRS.***

(2) Wholesale items that are essential to the operation of a weapon system shall be retained in inventory in quantities sufficient to support the number of systems that are in use. Inventory quantities shall be reduced in proportion to any reduction in the number of systems in use. Wholesale items not essential to the operation of a weapon system shall be retained in inventory in minimal quantities. Items retained for support of a weapon system will be identified and disposition instruction will normally be issued within 1 year of the phaseout of the weapon system from the inventory. ***Prior to the transfer to DRMS, assets will be transferred to fill shortages in the FMS*** Reserve.

(3) The Department of Defense will stock materiel to support major end items during their active DoD service. ~~These stocks may be held for up to 1 year after the end items have been removed from DoD service, with a written determination by the Commander of the applicable IMM that holding the stocks is in the interest of the Department of Defense, or up to 2 years, with a determination by the Head of the Agency responsible for maintaining the stocks that they are required in the interest of national security.~~ ***DoD Components will***

retain assets excess to U.S. forces' needs in an FMS Reserve for sale to foreign countries. FMS Reserve limits are recomputed annually. Assets *within the FMS Reserve limit are held until the end of the OSD-designated selling period or until there has been no demand for the assets for 2 consecutive years, whichever comes first.*

(4) Decisions to retain items in ERS, ~~or~~ CRS *or FMSRS* will be confirmed annually by the IMMs.

2. Procedures

b. Economic and Contingency Retention Stocks

(4) No requirements or assets for foreign military sales will be included in the U.S. forces' requirement levels or in the Economic Retention Stocks except for CLSSA-programmed requirements or other funded requirements (e.g., SDAF). The only assets authorized for inclusion in the Contingency Retention Stocks are those for foreign humanitarian assistance.

c. Foreign Military Sales Reserve

(1) The FMS Reserve for the support of non-CLSSA and CLSSA-nonprogrammed demands shall consist of two categories: an FMS Recurring Reserve and an FMS Transitory Reserve. (See Chapter 6, Paragraph E, "Foreign Military Sales Reserve," for more detail.)

(a) The FMS Recurring Reserve maximum limit will be computed annually based on past FMS recurring demands, exclusive of CLSSA-programmed demands, using an OSD-approved FMS economic limit formula. The Office of the Deputy Under Secretary of Defense for Logistics is responsible for providing the general formula parameters.

(b) The FMS Transitory Reserve maximum limit will be computed, using an OSD-approved FMS economic limit formula, based on one-half the annualized demand specified in supply support packages related to the sale of excess weapon systems from the current U.S. inventory under either (1) current or firm planned negotiations of a non-CLSSA FMS case or (2) an approved definitized non-CLSSA FMS case for the sale of weapon systems from the current U.S. inventory.

(2) Only Condition Code A assets that would otherwise stratify as DoD Potential Reutilization Stock may be transferred to the FMS Reserve and only in quantities not exceeding the total Recurring and Transitory limits. These assets will be maintained in a separate ownership code from those held to support U.S. forces and CLSSA customers.

(3) Transfers from the FMS Reserve are authorized only in the following instances:

(a) There is a deficit below the AAO for the U.S. forces and then only in sufficient quantities to bring the total on-hand and on-order assets to the AAO.

(b) The assets exceed the maximum FMS Reserve limit. In that case, the assets will be transferred to the U.S. forces' ownership code if the assets are needed to fill deficits below the retention limit. If not needed to fill deficits, the assets will be processed as DoD Potential Reutilization Stocks.

(c) Assets within the reserve limit will not be transferred to fill shortages in U.S. forces' economic or contingency limits.

F. Supply System Inventory Report

4. Instruction for Preparing DD Form 1138-1

b. Reporting Data

Header data item #	Field legend	Card columns	Explanation/instruction
1 through 9			(No change from current regulation)
~~9a~~ ***10***	~~Potential Security Assistance Stock~~ ***Foreign Military Sales Reserve***	93 – 100	Enter $ value of materiel
		101 – 108	Enter $ value of materiel
~~10.~~ ***11***	Potential Reutilization/ Disposal Stock	109 – 116	Enter $ value of materiel
		117 – 124	Enter $ value of materiel
~~11~~ ***12***	Total Assets	125 – 132	This entry must equal the sum of all the assets excluding line 6a ~~and 10a~~
		133 – 140	This entry must equal the sum of all the assets excluding line 6a ~~and 10a~~

CHAPTER 5

MATERIEL DISTRIBUTION

G. Reutilization and Marketing

1. Policy

k. Foreign countries are ineligible to screen DoD centrally managed secondary items in Condition Code A and are not authorized to purchase DoD excess materiel for those items at reduced prices except nonstocked items and OCONUS excess.

CHAPTER 6

OTHER LOGISTICS PROGRAMS

E. The Foreign Military Sales Reserve

1. Policy

a. DoD Components will establish an FMS Reserve using a separate ownership code for the assets retained in the reserve. DoD components will retain, for potential FMS, non-CLSSA and nonprogrammed CLSSA sales Condition Code A assets up to the FMS Reserve limit that otherwise would be stratified as DoD Potential Reutilization Stocks.

(1) CLSSA-programmed and SDAF demands are included in U.S. forces' Economic Retention limit.

(2) Foreign humanitarian aid contingency requirements are included in the U.S. forces' Contingency Retention limit.

b. The FMS Reserve shall consist of two segments — an FMS Recurring Reserve and an FMS Transitory Reserve. The purpose of the FMS Transitory Reserve is to permit retention of DoD Potential Reutilization Assets required to support future increased recurring demands resulting from the sale of additional weapon systems from the U.S. forces' inventory.

(1) The FMS Recurring Reserve maximum limit will be computed annually based on past FMS recurring demands, exclusive of CLSSA-programmed demands, using an OSD-approved FMS economic limit formula. When the annual demand quantity is 1 or less, the maximum retention is not measured in years but is a quantity of 1.

(2) The FMS Transitory Reserve maximum limit will be computed using an OSD-approved FMS economic limit formula and will be based on a supply support package related to the sale of excess weapon systems from the current U.S. inventory under either (1) current or firm planned negotiations of an

FMS case or (2) an approved definitized case for the sale of weapon systems from the current U.S. inventory. One-half the annualized consumption rate used in the negotiations or approved case will be used to compute the limit based on the formula.

(a) The support package for a case being negotiated will be limited to items and quantities with a reasonable expectation of being funded by the foreign country.

(b) The maximum time for inclusion in the reserve of a specific project support package being negotiated is limited to 12 months from the date of entry into the reserve.

(c) If negotiations have not resulted in an approved funded case within the 12-month limit but prospects are good, the Military Service may request an extension not to exceed 12 months from the Defense Security Assistance Agency (DSAA). If granted, the total support package requirements (line items and quantities) must be adjusted to be within the expected funding limit and the annualized rate provided to the sources of supply to update the reserve limits. If the extension is not approved, the items and quantities will be removed from the reserve.

(d) When a case is approved and funded, the items and quantities included in the reserve during negotiations will be replaced by the items and quantities definitized and funded in the approved case, and the annualized rate will be provided to the sources of supply to update the reserve limits.

(e) The maximum time for including an approved and funded support case in the reserve is 24 months from the approval date. Quarterly, the ICP will review the Transitory Reserve file for cases with an approval date of 24 months or older and remove those cases (items and quantities) from the FMS Transitory Reserve limit as the actual requirements will be reflected in the Recurring segment of the Reserve.

c. Transfers to the FMS Reserve are authorized whenever U.S. forces' Condition Code A assets stratify as Potential Reutilization Stock but only in quantities not exceeding the total Recurring and Transitory limits.

d. Transfers from the FMS Reserve are authorized in the following instances:

(1) There is a deficit below the AAO for the U.S. forces and then only in sufficient quantities to bring the total on-hand and on-order assets to the AAO.

(2) The assets exceed the maximum FMS Reserve limit. If the assets are needed to fill deficits below the retention limit, they will be transferred to the U.S. forces' ownership code. If they are not needed, they will be processed as DoD Potential Reutilization Stocks.

(3) When assets are within the FMS Reserve limit, they will not be transferred to fill shortages in U.S. forces' economic or contingency stocks.

e. FMS requisitions will be coded as recurring or nonrecurring based on the following definitions:

(1) Recurring requisitions include all CLSSA-programmed and non-programmed requisitions, all non-CLSSA FMS replenishment requisitions, and special support packages developed in conjunction with the sale of excess weapon systems from the U.S. forces' inventory.

(2) Nonrecurring requisitions include all other FMS (e.g., provisioning and initial issue developed in conjunction with the purchase of in-production weapon systems) and other security assistance programs such as grant-in-aid requisitions

f. All FMS requisitions other than CLSSA-programmed requisitions will be processed against FMS Reserve assets first and will be identified as being issued from the reserve.

g. Foreign countries will be eliminated from the Defense Reutilization and Marketing Service screening process for Condition Code A assets of DoD-managed secondary items and no longer will be authorized to purchase DoD excess Condition Code A materiel for those items at reduced prices.

h. Assets of an item that has not been requested for 2 consecutive years will be transferred from the FMS Reserve. When it is no longer cost-effective to retain assets of an item solely for FMS, the remaining assets may be sold on a one-time basis at reduced prices with the understanding that any future support will be provided from procurement as a nonstocked item. Otherwise, all sales of serviceable secondary assets from U.S. inventory to foreign countries will be at standard prices.

i. FMS supported directly from procurement rather than inventory will recover all costs associated with such support, including maintenance of catalog and technical data, requisition processing, contracting, and general and administrative expenses. Where this support is limited, cost recovery rates will be adjusted accordingly. Cost recovery rates will not include the costs of support not provided, such as overseas transportation.

2. *Procedures*

a. Assets in the FMS Reserve shall be maintained in a separate ownership code from those assets held primarily for the support of U.S. forces and FMSO I and II. Only Condition Code A assets that otherwise would stratify as DoD Potential Reutilization Stock may be transferred to the FMS Reserve and only in quantities not exceeding the total Recurring and Transitory limits.

b. ICPs will:

(1) Establish and maintain the FMS Recurring Reserve, a subcategory of the FMS Reserve. The limit is based on an OSD-approved FMS Reserve economic limit formula and annual recurring demands:

(a) The initial FMS Recurring Reserve limit will be computed on the basis of 2 years of recurring FMS demand exclusive of CLSSA-programmed demands.

(b) Subsequent Recurring Reserve limits will be computed annually using all recurring FMS requisitions except CLSSA-programmed demands.

(2) Establish and maintain the FMS Transitory Reserve, a subcategory of the FMS Reserve. Materiel is retained in this subcategory for the items in each supply support package related to the sale of excess weapon systems from the current U.S. inventory under either (1) current or firm planned negotiations of an FMS case or (2) an approved definitized FMS case. For each item, an FMS Transitory Reserve Retention limit will be computed using the OSD FMS Reserve economic limit formula:

(a) Compute the Transitory Reserve limits for new cases under negotiation and approved definitized case replacing cases under negotiation based on one-half the item's annualized demand rate provided by the Military Services or ILCOs.

(b) Remove FMS Transitory Reserve limits for cases under negotiation when project negotiations are completed or after 12 months (unless an extension has been granted by DSAA), whichever comes earlier.

(c) Review quarterly the Transitory Reserve file for cases with an approval date of 24 months or older and remove those cases (items and quantities) from the FMS Transitory Reserve limit as the actual requirements will be reflected in the recurring segment of the reserve.

(3) Remove all FMS requirements except for CLSSA-programmed and SDAF demands from current economic retention limits.

(4) Remove all FMS requirements except humanitarian aid from current contingency retention limits.

(5) Stratify assets quarterly to determine DoD Potential Reutilization Stocks and transfer such Condition Code A assets to the FMS Reserve up to the maximum limit.

(6) Process all recurring (excludes provisioning and initial issue) FMS requisitions other than CLSSA-programmed requisitions against FMS Reserve assets first. If assets are available, they will be identified as being issued from the reserve. If assets are not available, requisitions for common items will be processed against serviceable on-hand assets held for the peacetime requirements of U.S. forces and CLSSA programs that are above the reorder

point, and requisitions for FMS-peculiar items will generate procurement actions.

(7) Periodically review assets and limits to assure that assets do not exceed limits:

(a) If assets exceed the FMS Reserve limits and if the U.S. forces' assets are below the retention limits, transfer the excess to the U.S. forces' ownership code.

(b) If assets exceed the FMS Reserve limit and are not required by the U.S. forces, transfer the excess to DRMS in economical disposal quantities.

(8) When a budget deficit is projected for U.S. forces' assets and assets are available in the FMS Reserve, transfer assets up to the deficit amount to the U.S. forces' ownership code.

c. Military Services and/or ILCOs will:

(1) Compute any authorized support package requirements.

(a) Assign a project code to identify the potential case.

(b) Assign the effective date (begins the temporary hold period).

(c) Provide each source of supply with the specific project code, effective date, national stock number (NSN), and annualized quantity.

(2) If negotiations have not resulted in an approved funded case within the 12-month limit but prospects are good, the Military Service may request an extension not to exceed 12 months from the Defense Security Assistance Agency (DSAA). If granted, the total support package requirements (line items and quantities) must be adjusted to be within the expected funding limit and the annualized rate will be provided to the sources of supply to update the reserve limits. If the extension is not approved, the items and quantities will be removed from the reserve.

(3) When a case becomes approved and funded, the ILCO will notify the ICPs of the definitized items and annualized demand rates. On the basis of these new data, the ICP will recompute the FMS Transitory Reserve limit an OSD-approved FMS economic retention model The ICP will use only one-half of the annualized demand rate for definitized items.

(4) Code all provisioning, initial issue, and grant-in-aid requisitions as nonrecurring. All other FMS requisitions, including CLSSA-nonprogrammed demands, will be coded as recurring requisitions. CLSSA-programmed and nonprogrammed requirements will be determined by the cooperative logistics program support codes in position 72 of the requisition.

3. FMS Reserve Economic Quantity Limit Computation Methodology

a. The FMS Reserve economic quantity limit (EQL), unlike standard ERMs, focuses on the probability that there will be a demand for a retained unit of FMS Reserve stock within a specified period. Because the FMS Reserve retains only Condition Code A assets that are excess to U.S. forces' retention limits, the FMS Reserve EQL does not need to consider the cost of reprocurement. Also, since disposals average a small net return rate, the benefit of not retaining stock in this case is insignificant in comparison to the cost of holding stock if there is a high probability that the stock will be demanded. The Services and DLA must use an FMS Reserve EQL approved by the Office of the Deputy Under Secretary of Defense for Logistics.

b. The FMS Reserve EQL formula is expressed as

$Pr(X,Y) >= probability\ target$

where

Pr (X,Y)> the probability that X years of excess assets will be sold in Y years.

Assuming that demand is distributed normally, Pr(X,Y) can be redefined in terms of the standardized normal variable Z, which is given by

$Z = (XD-YD)/Std = (D/Std)(X-Y)$

where

X = retention period,

Y = sales period (period during which all assets should be sold),

D = annual item recurring non-CLSSA demands and CLSSA-nonprogrammed demands, and

Std = standard deviation of these demands.

Note: for those items with low demand, some other type of distribution may be used.

c. The Office of the Deputy Under Secretary of Defense for Logistics will provide the values for the target probability and the sales period (Y) to the Services and DLA.

d. Annually, the Services and DLA will use the FMS Reserve EQL formula to compute a retention period and a corresponding quantity for each item they manage in the FMS Reserve.

4. <u>Management of the FMS Reserve</u>

To enable DoD management at all levels to evaluate the operations of the FMS Reserve and to respond to congressional inquiries, information concerning the size and operations of the reserve is required. That information will be

contained in an FMS Reserve Financial Statement, an FMS Transitory Reserve Requirement Evaluation Report, a separate FMS Reserve segment of the Central Secondary Item Stratification (CSIS) Report, and a separate total in the annual Supply System Inventory Report (SSIR). Each report will be accompanied by key performance indicators and trend analyses.

a. Financial Statement

Semiannually, each Service and DLA will prepare an FMS Reserve Financial Statement for each inventory control point. The primary means of reporting the status of the FMS Reserve program, the report shows the beginning and ending limits for the two FMS Reserve categories — recurring and transitory — along with the total limit. For actual operations, the increases and decreases to the FMS Reserve assets are shown. The Services and DLA will provide their reports to the Office of the Deputy Under Secretary of Defense for Logistics. (Contractor reports will be submitted through the contracting officer.) Informational copies will be furnished to the OSD Comptroller and DSAA.

FMS RESERVE FINANCIAL STATEMENT

(Dollars in Thousands)

OPENING POSITION		
FMS Recurring Reserve Limit BOP	$ X,XXX,XXX	
FMS Transitory Reserve Limit BOP	X,XXX,XXX	
Total FMS Reserve Limit BOP		$ X,XXX,XXX
Materiel Inventory On Hand BOP		X,XXX,XXX
Price Changes		XXX,XXX
Repriced Inventory BOP		X,XXX,XXX
CHANGES		
Transfers from DoD Potential Reutilization Assets		X,XXX,XXX
Total FMS Sales from the Reserve		X,XXX,XXX
Transfers to U.S. force's AAO		X,XXX,XXX
Transfers to DRMS (disposals)		X,XXX,XXX
Inventory Losses	X,XXX,XXX	
Other Adjustments	X,XXX,XXX	
CLOSING POSITION		
Materiel Inventory On Hand EOP		X,XXX,XXX
FMS Recurring Reserve Limit EOP	X,XXX,XXX	
FMS Transitory Reserve Limit EOP	$X,XXX,XXX	
Total FMS Reserve Limit EOP		$X,XXX,XXX

b. Reserve Limits Evaluation

The methods used to compute FMS Reserve requirements are critical to the program's success. The FMS Reserve program must avoid retaining more assets than FMS customers are likely to use during the planning horizon. Otherwise, charges will arise that the FMS Reserve is really a category used by the

Services and DLA to retain additional assets for U.S. forces. The use of a single OSD-approved economic reserve limit model addresses this issue for the FMS Reserve recurring category. This model will ensure standard computations throughout DoD using known inputs and parameters.

The requirements of each support package are based upon a unique set of factors. To ensure the validity of the limits established for the FMS Transitory Reserve, the Services and DLA will provide, annually, with the FMS Reserve Financial Statement, a report titled FMS Transitory Reserve Limit Evaluation. This report will show, for each case approved during the annual reporting period, the initial requirement levels and the definitized requirement levels by case. The difference will be computed for each NSN and summarized by case to determine whether the initial case requirement forecasts are reliable or if management action is required to improve the projections.

FMS Transitory Reserve Limit Evaluation Report

Case number	Under negotiations estimates		Approved case definitized		Negotiated limits over-estimated		Negotiated limits under-estimated	
	Number of lines	Dollar value	Number of lines	Dollar value	Number of lines	Dollar value	Number of lines	Dollar value
Total								

c. <u>*Performance Indicators*</u>

Meaningful performance indicators and trend analyses will accompany the above reports and the FMS Reserve segment of the CSIS. The following are some of the possible indicators:

(1) FMS Reserve inventory turnover (on-hand EOP balance / sales).

(2) Percentage of disposals (disposals / on-hand EOP).

(3) FMS Reserve inventory as a percentage of total inventory (on-hand EOP / total inventory).

(4) Percentage of reserve on hand (on-hand EOP / total FMS Reserve limit EOP).

(5) Percentage of overestimated value (dollar value overestimated / dollar value estimated).

(6) Percentage of underestimated value (dollar value underestimated / dollar value estimated).

(7) Trends from year to year.

d. Central Secondary Item Stratification

A separate FMS Reserve segment of the Central Secondary Item Stratification (CSIS) report will be prepared for each item in the FMS Reserve. and summaries of essential information generated. These reports will be generated at the same time each Service and DLA produce their normal CSIS reports.

e. Supply System Inventory Report

The Supply System Inventory Report will include a separate entry for the total dollar value of materiel in the FMS Recurring reserve and Transitory reserve.

APPENDIX L

DEFINITIONS

Contingency Retention Stock. That portion of the quantity of an item greater than the AAO and economic retention stock for which there is no predictable demand or quantifiable requirement, and that normally would be allocated as *Foreign Military Sales Reserve Stock or* Potential Reutilization Stock, except for a determination that the quantity will be retained for specific *U.S. contingencies or foreign humanitarian contingencies. The contingency reserve will not be used to retain materiel for foreign military sales.*

Economic Retention Stock. That portion of an item greater than the AAO determined to be more economical to retain for future peacetime issues than to dispose *of* and satisfy projected future requirements through new procurement and/or repair. To warrant economic retention, an item must have a reasonable predictable demand rate *limited to recurring U.S. forces' demands and Allied Forces CLSSA-programmed demands.*

Foreign Military Sales Nonrecurring Demand. FMS nonrecurring demand include FMS requisitions not qualifying as recurring demand (e.g., FMS provisioning and initial issue developed in conjunction with the purchase of in-production weapon systems) and grant-in-aid requisitions.

Foreign Military Sales Recurring Demand. All CLSSA-programmed and nonprogrammed requisitions, all non-CLSSA FMS replenishment requisitions, and special support packages developed in conjunction with the sale of excess weapon systems from the U.S. forces' inventory.

Foreign Military Sales Recurring Reserve. A subcategory of the FMS Reserve. Materiel is retained in this subcategory based on a reasonably predictable demand rate consisting of foreign military sales recurring demands exclusive of CLSSA-programmed demands. The maximum quantity of materiel that may be retained is based upon the OSD-approved FMS economic limit formula and past actual recurring demands.

Foreign Military Sales Reserves. That portion of the quantity of an item greater than the AAO, ERS, and CRS determined to be more economical to retain and sell to foreign countries in support of weapon systems they are authorized to have by the Foreign Assistance Act of 1961, as amended, and the Arms Export Control Act of 1976, as amended, or other related statutes. This materiel supports weapon systems phased out of the U.S. inventory as well as those remaining in the U.S. inventory. To warrant retention as FMS Reserve rather than disposal, an item must have a reasonably predictable demand rate consisting of recurring foreign military sales exclusive of CLSSA-programmed demands or be a part of a qualifying planned or approved definitized support package.

Foreign Military Sales Transitory Reserve. A *subcategory of the FMS Reserve. Materiel is retained in this subcategory based upon a qualifying planned or approved definitized support package related to the sale of excess weapon systems from the U.S. inventory. The maximum quantity of materiel that may be retained is based upon the OSD-approved FMS economic limit formula that uses one-half the annualized consumption rate in the planned or approved case during the interim until the planned increase in demands is reflected in the recurring demand rate.*

~~Potential Security Assistance Materiel. Materiel that supports weapon systems phased out or in process of being phased out, of use by the DoD but temporarily held for programs authorized by the Foreign Assistance Act of 1961, as amended, and the Arms Export Control Act of 1976, as amended, or other related statutes by which DoD provides materiel by grant, credit, or cash sales in furtherance of national policies and objectives.~~

DoD Regulation 7000.14-R

Current Language

Regulation 7000.14-R does not recognize the establishment of a reserve for the retention of stock specifically for FMS. The proposed changes are intended to be consistent with the concept of an FMS Reserve in which assets are held specifically for sale to foreign countries.

Proposed Language

CHAPTER 7

PRICING

0703 CASH SALES OF DEFENSE ARTICLES ISSUED FROM STOCK

070302. Sale Price of Nonexcess Materiel

B. Sale of Defense Business Operations Fund Items

6. FMS Reserve assets will be sold at the current standard price specified by the Defense Business Operations Fund.

070304. Excess Materiel

A. Excess equipment shall be sold in an "as is" condition. Excess defense articles are assets in excess of the approved force acquisition objective and approved force retention stock of all DoD Components (see paragraph 070302 for additional discussion). ***When it is no longer cost-effective to retain assets of an item in the FMS Reserve solely for FMS and, therefore, the acquisition advice code is being revised to "nonstocked" and the assets are to be disposed of, those remaining assets may be treated as excess assets and sold at reduced prices with the recognition that all future support normally will be from procurement.*** The cost of...to the established inventory price and follow:

DoD Manual 4140.17-M

Current Language

Under the current language, many non-CLSSA requisitions are not coded or are coded as nonrecurring As a result, some DoD Component systems do not treat those demands correctly in the requirements determination process. The proposed changes are intended to correct that situation and are consistent with the proposed FMS demand definitions in DoD 4140.1-R

Proposed Language

Chapter 6.

FOREIGN MILITARY SALES (FMS)

AND MILITARY ASSISTANCE PROGRAM (MAP) GRANT AID

6-18 REQUISITION PREPARATION AND SUBMISSION

d. Demand Coding. Service ILCOs will enter the recurring demand code "R" (appendix B8) in cc 44 of all CLSSA-programmed and nonprogrammed requisitions, all non-CLSSA FMS replenishment requisitions, and non-CLSSA FMS special support packages developed in conjunction with the sale of excess weapon system from the U.S. forces' inventory. For all other FMS requisitions (e.g., provisioning and initial issue related to sales of in-production systems) and grant-in-aid, the nonrecurring demand code "N" will be entered in cc 44.

~~d~~ *e.* Quantity Restriction. *[Author's note: text not changed.]*

DoD 4160.21-M

Current Language

The FMS Reserve is established to retain materiel for future non-CLSSA and CLSSA-nonprogrammed sales. The cost of holding and managing that materiel will be recouped assuming future sales are made from the reserve at standard prices. The cost will not be recouped if foreign countries are allowed to bypass the supply system and obtain the same materiel from excess or surplus. The proposed changes are intended to bring the disposal policies into agreement with the changes in retention policies and the establishment of an FMS Reserve.

Proposed Language

CHAPTER XI

REUTILIZATION SCREENING OF EXCESS PERSONAL

PROPERTY

A. GENERAL.

6. DoD policy is to reutilize excess and surplus property to the maximum extent feasible to fill existing needs, and to satisfy needs before initiating new procurement or repair. All DoD activities shall screen available excess assets and review excess asset referrals for those assets which should satisfy valid needs. ***However, foreign countries are ineligible for the screening process for Condition Code A DoD centrally managed assets except for nonstocked items and OCONUS excess.***

9. Upon completion of authorized screening and issue or transfer of any needed property, the remaining property becomes surplus and eligible for donation or disposal by sale or other authorized means. However, surplus property which has not been removed physically by an authorized donee or which has not been reported to a DRMR for sale may be used to satisfy requisitions from DoD activities or Federal civil agencies. Requisitions received after reporting property

to a DRMR shall be processed in accordance with Chapter XIV, Sales, paragraph D. *Foreign countries are ineligible to purchase surplus Condition Code A DoD centrally managed assets except for nonstocked items and OCONUS excess.*

DoD 5105.38-M

Current Language

A number of changes in materiel management policies are reflected in DoD Instruction 4140.60 and DoD 4140.1-R. Additional changes are required to implement the concept of an FMS Reserve to hold assets that otherwise would be stratified as DoD Potential Reutilization Stock and therefore subject to transfer to the Defense Reutilization and Marketing Service. The proposed changes are intended to inform the security assistance community and to bring DoD 5105.38-M into agreement with the new policies and procedure.

Proposed Language

SECTION 202 - FMS

20202 POLICIES

D. Logistics Support

1. DoD considers the support of U.S. origin defense articles to be critical to the success of the SA program. *The following are key aspects of how this support is provided.*

a. Only requirements and assets for CLSSA-programmed foreign military sales are included in the U.S. forces' requirements levels and Economic Retention Stock. Only humanitarian needs of foreign countries are included in the Contingency Retention Stocks.

b. An FMS Reserve is established to retain Condition Code A assets for future FMS support that would otherwise stratify as DoD Potential Reutilization Stock in accordance with DoD materiel management policy. Such assets will be transferred to the FMS Reserve. Past FMS recurring demands, exclusive of CLSSA-programmed demands, and supply support package requirements contained in ongoing or approved definitized cases provide the basis to retain assets in this category. Issues related to the sale of in-production systems, including CLSSA-programmed demands, initial issues, and provisioning issues, and grant-in-aid requisitions are excluded.

c. The FMS Reserve may retain assets for items that are no longer used by U.S. forces but are likely of use to foreign countries.

d. All FMS requisitions other than CLSSA-programmed requisitions are processed against FMS Reserve assets first. If the items are not available in the FMS Reserve, Requisitions will then be processed against serviceable on-hand assets, held for peacetime requirements of U.S. forces and CLSSA programs, that are above the reorder point.

2. Systems in use with U.S. forces will be supported through the ***supply*** ~~normal procurement~~ systems of the MILDEPs (also see Section 802.)

3. When ***production of*** a system is to be phased out ~~of the DoD inventory~~, countries which have acquired the system under FMS will be given the opportunity to determine ***system-peculiar*** support item requirements and to place ~~final~~ orders designed to maintain the capabilities of the system through the remainder of its service life. ***These orders are the last that an FMS customer can be reasonably assured of having filled.*** These orders will be consolidated to ensure the most economical final buys (also see Section 80205).

SECTION 802 - LOGISTICS

80202 SECONDARY ITEM

B. Non-CLSSAs. When a CLSSA has not been established ***or the FMSO IB lead time has not elapsed,*** and the item is not ***supported under SDAF*** ~~a DLA asset~~, the FMS Purchaser is not entitled to the same access to the US logistics systems as US forces. The ICP ***filling*** the requisition will ***first process it against FMS Reserve assets. If assets are not available in this category, the requisition is processed against serviceable on-hand assets, held for peacetime requirement of US forces and CLSSA programs, that*** ~~generally issue on-hand assets only if they~~ are above the required item's reorder point level ~~or PLT~~. Otherwise, the requisition will be placed on backorder until expiration of the PLT, at which time the ICP will process the requisition in accordance with UMMIPS.

80204 SYSTEM SUPPORT BUYOUT (Also See 20202. D)

A. **Initial Action.** When it is determined that ***production of*** a weapon system ***will cease*** ~~is to become obsolete to US forces, and the system is not supported under a CLSSA,~~ the MILDEP responsible for logistics support will:

2. Determine those secondary items that are peculiar to the weapon system.

~~2~~3. Advise purchasers of a proposed system support buyout. This may be done by preparing a list ***of the peculiar secondary*** items ~~or by identifying the systems to be phased out. On system phaseout, the~~ ***Each*** country should be allowed

a minimum of two years to place a final order for spares to support the system for its remaining useful life.

4. The quantity of any item to procure is limited to that amount unavailable in the supply system.

80205 REQUISITION PROCEDURES

B. Initiation. MILSTRIP requisitions may be initiated under implemented LOAs either by Purchaser or IA. IA Requisition Control Offices (RCO) will also verify requisitions prepared by countries and convert requisitions received in other than MILSTRIP format when appropriate. Requisitions for nonstandard items or for services are normally processed in letter format. *ILCOs will code security assistance requisitions as follows:*

1. Foreign Military Sales Recurring Demand. All CLSSA-programmed and nonprogrammed requisitions, all non-CLSSA FMS replenishment requisitions, and special support packages developed in conjunction with the sale of excess weapon systems from the U.S. forces' inventory will be coded with the recurring demand code "R."

2. Foreign Military Sales Nonrecurring Demand. All other security assistance requisitions (e.g., provisioning and initial issue developed in conjunction with the purchase of in-production weapon systems) and grant-in-aid requisitions will be coded with the nonrecurring demand code "N."

SECTION 803 - MANAGEMENT OF EXCESS DEFENSE ARTICLES

80302 GENERAL

C. Assets-Needs. MILDEPs have limited capability to determine if an excess item meets a current SA country requirement. For this reason, matches of country needs and DoD excesses, while those excesses are still held by the MILDEPs, are usually limited to the most significant end items. Other EDA, ~~including most EDA secondary items,~~ *with the exception of DoD centrally managed secondary items,* are transferred to the DRMO nearest the physical location of each item at the time it becomes excess. *DoD centrally managed EDA secondary items with a condition code of "A" are transferred to the FMS Reserve if there is a requirement. Foreign countries are not authorized to purchase Condition Code A EDA secondary items that are DoD centrally managed.*

4. Foreign countries are ineligible to screen DoD centrally managed secondary items except nonstocked items and OCONUS excess.

APPENDIX C

Detailed Analyses

This appendix contains more detailed analyses supplementing and supporting material presented in chapters 1 and 2.

DoD Component Retention Policies

The basic elements of each of the DoD Component's retention policies and practices are summarized in the following paragraphs.

Army

The Army's current retention practices apply equally to reparable and consumable items.

- CLSSA-programmed demands and recurring grant-in-aid demands are used to compute an ERS retention limit for an item.
- The maximum ERS retention limit is 7 years beyond the requirement objective (RO) or the remaining life of the weapon system whichever is shorter.
- Assets may be retained in the CRS under any of three conditions:
  - Foreign military contingency such as a system support buyout.
  - If the non-CLSSA recurring demands exceeds the CLSSA-programmed demands, the difference between the two may be retained but prior to placing assets in the CRS, a cost analysis must ensure that the cost to hold those assets is less than the cost to reprocure them.
  - If foreign countries have annotated specific items on a list of DoD potential reutilization assets, those annotated assets may be retained for a maximum of 2 years. Assets are placed in a unique purpose code and the limit reduced as assets are issued. (This procedure is not yet in operation but is in process of being implemented.)

Navy

The Navy assumes the computed economic limit is an item's maximum limit. After an item's maximum economic limit is computed, its AAO requirement is subtracted to determine the ERS limit. In August 1992, the Navy reduced

its retention period for critical consumable and reparable items from 20 years to 8 years.

- CLSSA-programmed demands with an "I", "R", or "S" in the demand field are included in the ERS computation for consumables and reparables.

- The ERS for consumable items is based on an 8-year exponentially smoothed demand forecast minus the AAO quantity.

- Three separate methodologies with varying demand and asset basis are employed in computing the ERS for reparables. The method yielding the largest amount after subtracting the AAO is selected. The current caps for the different methodologies are 8 years and 2 years, with a minimum quantity of five assets.

- CRS limits may be established when a weapon system is being phased out of the inventory and a system support package is planned by a foreign country. Secondary items with a potential FMS application may be retained for a maximum of 2 years.

Air Force

The Air Force uses two different methods to compute reparable and consumable item retention levels for foreign countries.

- The ERS limit for consumable items includes CLSSA-programmed demands with a demand code of recurring or "blank." A variable holding period of 1 to 15 years is used to compute the ERS limit.

- The ERS retention limit for a reparable item currently includes a quantity equal to the total CLSSA FMSO IA investment in that item. The U.S. forces limit is equal to 18.5 years of demand or the remaining life of the weapon system, whichever is less. However, in day-to-day operations, 18.5 years is used.

- A CRS retention limit is permitted for consumable items.

- A reparable item's FMS CRS retention limit consists of two components. First, the weighted average of the last 4 years worth of all CLSSA, non-CLSSA and grant-in-aid demands is computed. That value is then multiplied by an 18.5-year holding period and the item's total CLSSA FMSO IA quantity investment is subtracted to compute the CRS retention limit. Second, for a contingency such as system support package, a quantity of assets may also be retained.

- A CRS limit for insurance and NSO items is based on a small fixed-quantity of assets.

Defense Logistics Agency

Normally, only CLSSA and U.S. demands are authorized for inclusion in the ERS. However, DLA includes non-CLSSA demands in the computation of its total ERS because inventory investment similar to that under CLSSA has been funded by the Special Defense Acquisition Fund (SDAF). The SDAF was authorized by the Arms Export Control Act (AECA) as a revolving fund to finance acquisition of defense materiel (e.g., weapon systems and secondary items) in anticipation of foreign sales. However, the SDAF program is scheduled to be phased out of existence and the non-CLSSA demands will no longer be eligible for inclusion in the ERS under current policy.

- The ERS limit is the sum of two components computed separately. The total ERS limit of an item is its last 12 months of demands times a 10- year holding period.
- All recurring and nonrecurring CLSSA, non-CLSSA, and grant-in-aid demands are used to compute the foreign military portion of the total ERS retention limit for an item.
- For those items with low annual demands (e.g., two or three) a 10-year numeric stocking objective is computed.
- DLA does not compute a CRS for an item. At the request of a Service, DLA will retain materiel in the CRS. The Service must identify the national stock numbers (NSNs) and the quantities to be retained.

MATCHING FMS AND DISPOSALS

We matched the 98,436 NSNs with disposals actions by the four sample ICPs against the non-CLSSA and CLSSA-nonprogrammed requisitions for the same period. Table C-1 shows that the value of 198,946 non-CLSSA and CLSSA non-programed requisitions in the sample is approximately $521.9 million. Some 7,509, or 3.8 percent, of the total requisitions, with a value of slightly more than $21.7 million were for the 3,916 NSNs that had disposal actions for Condition Code A assets.

Table C-1 indicates the commonalty between the assets being transferred to DRMS and those being requisitioned by foreign countries either as non-CLSSA or CLSSA-nonprogrammed requirements. However, they do not quantify the potential sales over time.

Table C-1.
Sample FMS Non-CLSSA and CLSSA-Nonprogrammed Requisitions

Requisition status	Number of requisitions	Percent	Value (millions)	Percent
Total	198,946	100	521.9	100.0
With disposals	7,509	3.8	21.7	4.2

We next computed the number of years of non-CLSSA and CLSSA-nonprogrammed FMS that could have been supported by the assets transferred to DRMS had the Condition Code A assets been retained in the wholesale system. That computation entailed dividing the net disposal quantity by the average annual sales quantity for each item. The computations assume that the demands remain at their current levels. The results are reflected in Table C-2.

Table C-2.
Sample Non-CLSSA and CLSSA-Nonprogrammed FMS Requisitions Matched with Disposals (thousands of dollars)

Years of assets	Number of NSNs	Value of sales				Years of assets	Number of NSNs	Value of sales			
		Value for period ($)	Percent	Cumulative value	Cum percent			Value for period ($)	Percent	Cumulative value ($)	Cum percent
>1	461	1,485	1	1,485	1	11	67	1,596	1.1	42,450	28.1
1	296	2,077	1.4	3,562	2.4	12	79	2,206	1.5	44,655	29.5
2	253	3,787	2.5	7,349	4.9	13	46	2,209	1.3	46,684	30.9
3	172	3,627	2.4	10,975	7.3	14	57	1,572	1	48,256	31.9
4	159	3,689	2.4	14,665	9.7	15	62	1,891	1.3	50,147	33.2
5	139	2,670	1.8	17,335	11.5	16	48	709	0.5	50,857	33.6
6	109	2,189	1.4	19,524	12.9	17	39	880	0.6	51,737	34.2
7	101	3,412	2.3	22,936	15.2	18	28	509	0.3	52,246	34.6
8	93	2,086	1.4	25,022	16.5	19	43	1,302	0.9	53,547	35.4
9	78	12,583	8.3	37,604	24.9	20	54	1,071	0.7	54,619	36.1
10	77	3,249	2.1	40,853	27	>20	1,455	96,573	63.9	151,192	100
						Total	3,916	151,192	100	151,192	100

Approximately 35 percent of the NSNs and 64 percent of the dollar value of the matching issuable DoD excess would support non-CLSSA and CLSSA-nonprogrammed FMS for more than 20 years at the current rate of demand.

EQL METHODOLOGY

Because the FMS Reserve consists only of assets that were excess of the retention limits of U.S. forces, an economic quantity limit (EQL) for the FMS Reserve does not need to consider the cost of reprocurement, a major cost consideration in not retaining stock. Also, since disposals average a net return rate of about two cents on the dollar, the cost of not retaining stock in this case is insignificant in comparison to the cost of holding stock unless there is a high probability that it will be demanded. Therefore, an EQL for the FMS Reserve should focus on the probability of a demand for retained units of stock and the risk of an economic loss to the United States if such demand fails to materialize.

Because of the small FMS demand base (about 10 percent of the U.S. forces demand) and the wide range of demand variances, the methodology should be based on the demand variance of the individual item.

Under the FMS Reserve concept (whereby the FMS customer pays for all costs), our concern is if a unit of stock is held, will it be sold? Mathematically, assuming future demand patterns are similar to the current ones, we can represent this concern as follows:

Pr (X,Y) >= probability target
where
Pr (X,Y) > the probability that X years of assets will be sold in Y years.

If we assume that demand is normally distributed (for those items with less than 30 expected demands over the OSD-established sales period, the Poisson distribution could be used), then the probability, *Pr(X,Y)*, can be redefined in terms of the standardized normal variable Z, which is given by:

$$Z = (XD-YD)/Std = (D/Std)\ (X-Y),$$

X = retention period in years,
Y = period during which all assets should be sold (selling period),
D = annual item recurring non-CLSSA and CLSSA-nonprogrammed demand, and
Std = standard deviation of those demands

Note that X times *D*, or *XD*, represents the expected demand for the retention period while Y times D, or YD, is the expected demand for the sales period. Using this approach, we are simply computing the probability that demand is at some level above the mean or expected level.

We propose that DoD use the mathematical relationship outlined above to set retention limits for the FMS Reserve. Ideally, we would recommend that DoD compute D/Std (mean to standard deviation ratio) using an item's individual requisitions. However, DoD Components forecast periodically not continually. Therefore, we estimated the actual ratio with the ratio of forecasted period

demand over forecasted period standard deviation. Specifically, we computed the mean absolute deviation (MAD) and the average quarterly forecast (AQF) for the 410,294 NSNs having non-CLSSA and CLSSA-nonprogrammed requisitions (over 1.4 million) for the 2-year period of FY92 and FY93. The mean to standard deviation ratios ranged from 0.4 to 9.4.

Table C-3 demonstrates how this mathematical relationship affects the number of years of assets to be retained based on a given probability target and selling period using five items that have the same annual demand rate but different demand variability. (Note: the smaller the demand/standard deviation ratio, the greater an item's demand variability.)

Table C-3.
FMS Reserve Economic Limit Model Demonstration

Item	Target probability	Sales period (years)	Demand/Std ratio	Retention quantity (years)
1	99%	13	1.8	12
2	99%	13	1.3	11
3	99%	13	0.7	10
4	99%	13	0.5	9
5	99%	13	0.4	8

The retention period ranges from 8 to a maximum of 12 years, but in all cases, we see a 99 percent probability that at the end of the sales period all the assets will be sold if the current demand patterns continue. However, when the annual demand quantity is 1 or less, the maximum retention is not measured in years but is a quantity of 1.

The FMS EQL should be used on an item-by-item basis, with DoD establishing a uniform maximum sales period and a target probability that the quantity of assets held will be sold during the sales period if the demand pattern continues. Thus, the computed retention period of an item will be a function of its demand history and demand variability as captured in its standard deviation.

Through these three factors — the item demand to standard deviation ratio, the desired probability target, and the selling period — DoD can control the quantity of assets retained in FMS Reserve.

Item Simulation Data and Assumptions

To examine the costs and proceeds associated with retaining assets for future sales over a period of time, we selected an item for simulation. We simulated the costs and proceeds to retain DoD excess assets exclusively for non-CLSSA and CLSSA-nonprogrammed FMS (Case 1) over a 13-year period and

compared the results with those of transferring the assets to DRMS immediately. To test the sensitivity of the results to a major decline in demands, we also simulated retaining the same amount assets with a 50 percent, an 80 percent, and a 90 percent decrease in demands. The results for each case are compared with the return that would be received if the assets were disposed of immediately (disposal). In each case, we recomputed the EQL every 2 years. Our other assumptions were as follows:

- For Reserve Case 1, we assumed that a 99 percent probability that all assets would be sold within a 13-year period is required. Based on the demand history for the selected item and assuming the current demand rate continues, that resulted in limiting the assets to be retained to a quantity equal to 9 years of demand.

- For Reserve Cases 2, 3, and 4, we reduced the sales to 50, 20, and 10 percent, respectively, of Case 1.

- We used a depot operating cost rate of 2 percent of the materiel acquisition unit cost (normally a rate of 1 percent is used) and $25 per issue transaction (we assumed an average requisition quantity of four). We also assumed an ICP operating cost rate of 3 percent (99 percent of the stocked items are used by U.S. forces, and only the incremental costs of the reserve were included) and an inventory loss rate of 1 percent.

- We did not include reprocurement cost because the assets to be retained are above U.S. forces retention levels and in the event of future procurement, the entire costs are borne by the foreign country. An obsolescence rate was not included because the assets are to be sold to foreign countries that tend to retain weapons systems much longer than do U.S. forces. In fact many of the weapon systems being sold are obsolete from a U.S. perspective.

- We assumed that the net proceeds from disposal (proceeds from sale minus cost to dispose) are 5 percent of the standard price value (that percentage is about double the current average return rate).

- We used an inflation rate of 2 percent and a 7 percent factor for the value of money. All expenses and proceeds are in "then year" dollars.

- We accrued expenses related to a group of assets to the time of sale or disposal rather than reflecting them in the year of actual disbursement.

- The specific values we used for the item are

  - initial material acquisition unit cost (MAUC) is $530 and initial standard price is $689,

  - average annual demand equals 92 units and the beginning inventory is 828 units (9 years of inventory with a 99 percent probability of sale

within 13 years based on the item's mean to standard deviation ratio of 0.63754), and

- beginning inventory MAUC value is $438,840 and standard price value is $570,492.

See Figure 2-1 for the simulation results. The cumulative cash flow in "then year" dollars over the 13-year period are based on recomputing the limits biannually (the proposed policy provides for annual recomputation which would increase the net revenues).