

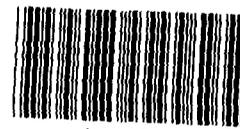
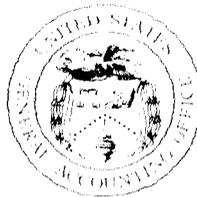
GAO

Report to the Chairman, Subcommittee
on Readiness, Committee on Armed
Services, House of Representatives

May 1991

DEFENSE
INVENTORY

Shortcomings in
Requirements
Determination
Processes



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**National Security and
International Affairs Division**

B-243396

May 10, 1991

The Honorable Earl Hutto
Chairman, Subcommittee on Readiness
Committee on Armed Services
House of Representatives

Dear Mr. Chairman:

In March 1990, we issued a report¹ and provided testimony addressing the Department of Defense's (DOD) continuing inventory management problems and the potential for reducing DOD's budget request for inventory. Since then, you asked us to summarize deficiencies in DOD's inventory requirements determination processes for secondary items.²

Background

DOD's secondary items inventory more than doubled in value, from \$43.4 billion to \$101.9 billion, between 1980 and 1990. This growth can be attributed to several factors, including the introduction of new weapons systems, modernization of current systems, and increased support levels overall.

Overstated inventory requirements is another factor that can cause too much inventory to be maintained. This, in turn, can set in motion a series of unnecessary expenditures for more storage space, transportation, and personnel. In addition, excess quantities generated must be eventually purged from the system, usually at a severe financial loss. Understated requirements can result in item shortages and reduced readiness of the units needing the material. Either way, the requirements determination process has not achieved its primary objective of providing the needed parts to the right location in the most timely and cost-efficient manner possible.

Results in Brief

Over the past 6 years, 97 reports issued by our office, the DOD Office of the Inspector General (OIG), Army Audit Agency, Naval Audit Service, and Air Force Audit Agency have been replete with examples of specific problems in the requirements determination processes. Our analysis of

¹Defense Inventory: Top Management Attention Is Crucial (GAO/NSIAD-90-145, Mar. 26, 1990).

²Secondary items are defined as minor end items; replacement, spare, and repair components; and personnel support and consumable items. Examples include aircraft and ship components; medical and construction supplies; and food, clothing, and fuel.

these reports highlights the following serious problem areas in DOD's inventory requirements determination:

- inaccurate or unsupported data in the system that cause misstated inventory requirements,
- management overrides of computational models,
- inadequate consideration of an item's essentiality when ordering spare parts,
- item managers' failure to cancel unnecessary or excess on-order material, and
- ineffective management controls.

DOD and the services generally agreed with the findings and recommendations contained in the 97 reports and have taken many specific actions in response to those reports. However, deficiencies summarized in a September 1984 DOD/OIG report are similar to those identified in the audit reports issued over the past 6 years. On a broader scale, DOD developed and began implementation of an Inventory Reduction Plan within the past year that management officials believe addresses the overall inventory requirements determination process and its associated problems. DOD reports that the plan is producing some good initial results. However, the challenge will be to guard against the familiar problem of good plans being undermined in implementation/

Extent of Audit Coverage

The prior 97 reports dealt with one or more of the three requirements determination areas—initial provisioning, replenishment, and war reserves. As shown in table 1, replenishment received the greatest amount of audit coverage, with 67 of the 97 reports addressing this area, followed by initial provisioning with 23 and war reserves with 21 reports.

Table 1: Selected Audit Reports Related to the DOD Inventory Requirements Determination Processes

Requirements determination area/ organization	GAO	DOD/OIG	Army Audit Agency	Air Force Audit Agency	Naval Audit Service	Total
Initial provisioning						
Army	0	0	9	0	0	9
Air Force	1	0	0	8	0	9
Navy	2	1	0	0	0	3
DLA	0	0	0	0	0	0
DOD/interservice	0	2	0	0	0	2
Subtotal	3	3	9	8	0	23
Replenishment						
Army	6	1	2	0	0	9
Air Force	14	0	0	22	0	36
Navy	4	0	0	0	5	9
DLA	2	2	0	0	0	4
DOD/interservice	2	7	0	0	0	9
Subtotal	28	10	2	22	5	67
War reserves						
Army	0	0	0	0	0	0
Air Force	3	0	0	13	0	16
Navy	0	0	0	0	1	1
DLA	2	1	0	0	0	3
DOD/interservice	0	1	0	0	0	1
Subtotal	5	2	0	13	1	21
Total reports*	36	15	11	43	6	111
Net reports	32	14	11	34	6	97

*Some reports address more than one requirements determination area.

Some of the previously discussed problems are considered serious because they were identified in many of the 97 reports. Others are considered serious because (1) they were found in all of the services or all three areas of the requirements determination process, or (2) they were reported as problems by all of the audit groups or are long-standing problems. The following sections provide examples of the serious problems.

Inaccurate or Unsupported Data

Inaccurate or unsupported data in the system is the most common cause of the misstated inventory requirements. This problem was identified 78 times in the 97 reports, and in all three areas of the requirements determination process. For example, in August 1990, the Air Force Audit Agency reported³ that spare engine requirements were based on inaccurate engine removal rates, resulting in overstated engine requirements valued at \$156.8 million.

Management Override of Computational Models

Management override of computational models used to determine inventory requirements, in and of itself, is not necessarily bad if there is a good reason for doing so. However, many of the audits found that manual intervention was taking place too often without sufficient reason in all three areas of the requirements determination process. For example, the Army Audit Agency reported in 1988⁴ that commodity command personnel incorrectly used manually calculated requirements that were neither consistent nor documented, rather than using the required computational models for an estimated \$155 million of provisioning requirements for six weapons systems.

Inadequate Consideration of Item Essentiality

DOD's failure to adequately consider item essentiality when ordering spare parts has resulted in over-expenditures and was reported by all of the audit agencies. For example, a May 1990 Air Force Audit Agency report⁵ showed that war reserve requirements were overstated by \$19.7 million because inadequate guidance and training was provided regarding the importance of using accurate essentiality codes when computing war reserve requirements.

³Requirements for F100-PW and F100-GE Spare Engines and Modules (Air Force Audit Agency Project 9126118, Aug. 17, 1990).

⁴Audit of Initial Provisioning—Acquisition and Requirements Determination (Army Audit Agency, NE 88-206, Feb. 22, 1988).

⁵Accuracy of Selected Data Used in Aircraft Wartime Spares Requirements (Air Force Audit Agency Project 9126116, May 3, 1990).

Failure to Cancel Excess Material on Order

Failure to cancel unnecessary or excess on-order materials is a long-standing problem that we have been reporting on at least since 1974. More recently, in March 1990 we reported⁶ how the Defense Logistics Agency (DLA) item managers avoided making termination recommendations to contracting officers. At one supply center, contracts were not considered for termination if they fell below \$25,000, a threshold that excluded 98.5 percent of the center's contracts. Item managers were increasing requirements to avoid recommending terminations. Lax or nonexistent supervision allowed questionable decisions not to recommend terminations to go unreversed.

Ineffective Management Controls

The inventory requirements determination problems that have contributed to excess inventory growth have continued because of fundamental shortcomings in DOD's management control systems. All the audit agencies have reported it as a problem. For example, in August 1988⁷ the Army Audit Agency reported that the Army Materiel Command needed to exercise greater control over the initial provisioning process to ensure that new systems were fully supported at the least possible cost. According to the report, the commodity commands frequently requested more funds and acquired and fielded more items than needed to support new systems.

In January 1990, the Comptroller General identified DOD's inventory management as an area of particular risk for mismanagement, fraud, and abuse. DOD's fiscal year 1989 Financial Integrity Act report stated that systemic weaknesses caused excess inventory growth, unnecessary procurements, and ineffective use of some assets. The 97 reports we reviewed focus on the wholesale inventory level, but retail inventory level requirements determination also needs attention. In November 1990, we reported that incorrect programming of computer software used by the Army to determine repair parts stockage levels on its divisions' authorized stockage lists resulted in the authorized levels being overstated by 10 days of supply (as much as \$110 million).⁸

⁶Defense Inventory: Defense Logistics Agency's Excess Materiel on Order (GAO/NSIAD-90-105, Mar. 6, 1990).

⁷Initial Provisioning—Management of the Initial Provisioning Process (Army Audit Agency, NE 88-213, Aug. 22, 1988).

⁸Army Logistics: Authorized Levels of Repair Parts at the Divisions Are Overstated (GAO/NSIAD-91-58, Nov. 20, 1990).

DOD Has Made Efforts to Address Inventory Problems

Over the past year, DOD has made progress in addressing its inventory requirements determination problems. DOD and the services promised corrective actions in response to the numerous specific recommendations contained in the 97 reports and generally followed through on those promises. For example, they have revised policies and procedures in some areas, such as promoting the purchase of economic order quantities and reducing procurement lead times through the use of contract options.

In 1989, DOD also began to demonstrate top management commitment to addressing its inventory management problems, including requirements determination. The Defense Management Report initiatives, with a total estimated savings of about \$70 billion, target inventory management. Also, in May 1990, DOD initiated an Inventory Reduction Plan to meet the challenges of resizing its inventories while maintaining the gains in readiness resulting from the defense strategy of the 1980s.

DOD's March 1991 progress report on implementation of the Inventory Reduction Plan describes favorable results regarding its efforts to address overall inventory management problems. For example, DOD reports that it revalued inventory and took other actions, so that from fiscal years 1989 to 1990 the

- total inventory value of secondary items decreased from \$109.5 billion to \$101.9 billion,
- investment to cover procurement lead time decreased from \$21.5 billion to \$19 billion, and
- safety level inventory value declined from \$6.3 billion to \$5.4 billion.

In addition, the Air Force reports canceling nearly \$500 million in procurement actions since April 1990, including \$259 million of aircraft spares terminated from contracts.

We have not confirmed the above reductions but have ongoing work to analyze reported inventory. We believe that such reductions would reflect improvements in DOD's inventory management, including requirements determination. As DOD acknowledges, further improvements are needed. For example, the overall DOD excess-on-order material statistic remains at about 10 percent. However, in general, the reported inventory statistics indicate that DOD's efforts to reduce inventory are taking DLA and the services in the right direction.

We believe that DOD needs to transform the logistics culture to ensure that the customer's needs are satisfied more economically and efficiently. It also needs to instill a vigilance into the system so that logistics managers, supervisors, and staff ensure that appropriate policies, procedures, and models are followed. Top management must continue its commitment to improve inventory requirements determination. It must monitor implementation of the strategy to ensure that the promise of planned improvements is turned into reality.

Some attributes of a high quality requirements determination process would be (1) a data base with accurate and reasonably current information and a system to ensure the continuing accuracy and currency of the data, (2) overrides of computational models only when necessary, and (3) management control systems that identify requirements determination problems and monitor corrective actions to ensure problems are fixed.

Perhaps the most important ingredient in resolving DOD's inventory requirements determination problems is the continued commitment of top management to a comprehensive strategy for improving the processes. Not only does top management need to continue its commitment, but it also must engender a similar commitment in logistics personnel who will have to implement the strategy. It must also monitor implementation of the strategy to ensure that corrective actions have remedied the shortcomings. In the absence of management vigilance and a broad-based commitment to a comprehensive strategy, the fundamental and long-standing shortcomings in DOD's inventory requirements determination processes will not likely be corrected.

Agency Comments

DOD acknowledged the facts in our report, generally agreed with our conclusions, and noted that it is addressing inventory management deficiencies through its Inventory Reduction Plan.

We have incorporated DOD's oral comments where appropriate based on our initial report draft. A copy of DOD's written response is included as appendix V.

Appendix I provides a discussion of the requirements determination processes and related problems. Appendix II sets forth a matrix of prior findings, corrective actions, and monetary benefits. Appendix III lists

summaries of the 97 selected reports that we reviewed, and appendix IV lists the reports by audit agency.

The observations made in this report are based on prior audit reports, which contain a number of specific findings and recommendations. The purpose of this report is to emphasize the seriousness of the problems. No separate audit work was done for this report.

Unless you publicly announce its contents earlier, we plan no further distribution of this report until 2 days from its issue date. At that time, we will send copies to the Chairmen, Senate Committee on Governmental Affairs, House Committee on Government Operations, and House and Senate Committees on Appropriations and on Armed Services; the Secretaries of Defense and the Army, the Navy, and the Air Force; the Director, Defense Logistics Agency; and the Director, Office of Management and Budget. Copies will be made available to others upon request.

This report was prepared under the direction of Donna M. Heivilin, Director, Logistics Issues, who may be reached on (202) 275-8412 if you or your staff have any questions. Other major contributors to this report are listed in appendix VI.

Sincerely yours,



Frank C. Conahan
Assistant Comptroller General

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Abbreviations

DLA	Defense Logistics Agency
DOD	Department of Defense
GAO	General Accounting Office
OIG	Office of the Inspector General

Discussion of DOD's Inventory Requirements Determination Processes and Related Problems

This appendix describes the Department of Defense's (DOD) inventory requirements determination processes and presents specific examples of reported deficiencies. Appendix III provides summaries of all 97 reports issued by our office, DOD, and the military services.

DOD categorizes secondary items into initial provisioning stock, peacetime operating stock or replenishment, and war reserves. Requirements determination processes differ for each category, and the Defense Logistics Agency (DLA) and military services have developed their own programs for these processes. Inventory management of secondary items, including requirements determination and procurement, is performed by 20 Inventory Control Points within DOD: 6 in the Army, 5 in the Air Force, 2 in the Navy, 1 in the Marine Corps, and 6 in DLA.

DOD inventory requirements determination begins with initial provisioning, which is the process of identifying and acquiring the spares and repair parts necessary to support a principal item, such as a tank, ship, or aircraft, during its initial period of service (usually 2 years). After secondary items are established in the DOD supply system, replenishment programs are used to determine the type and amount of items needed to support current and planned peacetime operations. War reserve stocks are acquired and positioned to meet contingency requirements.

Initial Provisioning

Initial provisioning is designed to ensure the availability of spare stocks for new principal items at the operating organizations and maintenance and supply activities until a requisitioning history develops. DOD determines initial provisioning requirements based on contractor estimates, engineering judgments, and past experience with similar systems. At the end of this initial period, the normal replenishment process begins.

We reviewed 23 reports that address requirements determination elements within the initial provisioning process. Some examples of the recurring problems identified in the reports follow.

**Inadequate or Delinquent
Provisioning Technical
Data Provided by
Contractors**

The military services need technical documentation and information provided by contractors to identify needed items, the quantities of items to be acquired, and where the items should be stocked.

In May 1988,¹ the Army Audit Agency reviewed four end-item provisioning programs at the U.S. Army Communications-Electronics Command. This review revealed that contractors were not delivering key provisioning data on time and delivered data that were often incomplete or inaccurate. Another Army Audit Agency report, issued in August 1988,² showed that about \$59.8 million was paid to contractors to develop technical provisioning data. Since the Army commodity command personnel were not knowledgeable about the analysis process and their reviews of the contractors' data were limited in scope and inadequately documented, the Army accepted contractor data that could not be used as intended in provisioning new weapons systems.

**Inaccurate or Unsupported
Data Within Data Base
Used to Compute
Provisioning Requirements**

In February 1988,³ Army auditors reported that requirements for initial provisioning support items totaling about \$239 million for nine weapon systems reviewed at three commodity commands were not adequately supported. We reported in February 1990 that the Air Force maintains \$63.8 billion in inventories of supplies and spare parts, but the systems used to provide accountability over these inventories do not provide reliable data supporting either the quantities or their value.⁴ In its June 1986 audit⁵ of selected F-16C/D, B-1B, and C-5B spares, the Air Force Audit Agency found that Air Logistics Center personnel used inaccurate pipeline factors to compute provisioning requirements resulting in misstatements of \$71.1 million.

¹Initial Provisioning—Planning and Management of the Provisioning Process, U.S. Army Communications—Electronics Command, Fort Monmouth, NJ (Army Audit Agency, NE 88-211, May 24, 1988).

²Initial Provisioning—Management of the Initial Provisioning Process (Army Audit Agency, NE 88-213, Aug. 22, 1988).

³Audit of Initial Provisioning—Acquisition and Requirements Determination (Army Audit Agency, NE 88-206, Feb. 22, 1988).

⁴Financial Audit: Air Force Does Not Effectively Account for Billions of Dollars of Resources (GAO/AFMD-90-23, Feb. 23, 1990).

⁵Provisioning Requirements Computations (Air Force Audit Agency Project 5126114A, June 3, 1986).

**Required Models for
Computing Initial
Provisioning Requirements
Not Used or Used
Improperly**

In the Air Force Audit Agency's June 1986 report, ineffective application of an optimization model for computing provisioning requirements led to a \$1.7 million overstatement of requirements for the F-16C/D. In its February 22, 1988, report,⁶ the Army Audit Agency concluded that one commodity command's failure to use accurate logistics data in computational models had led to the significant overstatement or understatement of resulting requirements. In the same report, Army auditors revealed that the computational models were not used by two other commodity commands as required to calculate an estimated \$155 million of provisioning requirements for six weapon systems. Instead, commodity command personnel computed the requirements using manual methods that were not documented and were not consistent among the commodity commands.

**Inappropriate
Procurement Transactions**

In a March 1989 report⁷ on the Navy's AV-8B aircraft program, we noted that despite DOD guidance which states that initial provisioning should be provided in a cost-effective manner, the AV-8B section head adopted a minimum buy policy that authorized purchases for every type of spare regardless of the outcome of the requirements formula. Additionally, we found that in some cases the Aviation Supply Office did not consider the current inventory or prior orders when placing subsequent orders and increased spare parts orders due to contractor-imposed minimum order requirements. We found that actions taken on 16 of the 38 items reviewed, valued at \$203,000, were questionable. Of the 16 questionable actions, 11 involved the policy to override calculated requirements in order to buy a set minimum.

Several Army Audit Agency audits revealed that unpriced contractual instruments (unpriced delivery orders and undefinitized contract modifications) were used excessively and repetitively to acquire provisioned items. According to the Army Audit Agency, when unpriced instruments are issued, the government accepts more risk than necessary and may pay higher prices. Army policy strictly limits the use of unpriced contractual instruments. In a May 1987 audit⁸ on the Army Helicopter Improvement Program, Army auditors found that 66 of 153 delivery

⁶ Audit of Initial Provisioning—Acquisition and Requirements Determination (Army Audit Agency, NE 88-206, Feb. 22, 1988).

⁷ Navy Supply: Questionable Decisions Increased Initial Spares Cost for AV-8B Aircraft (GAO/NSIAD-89-103, Mar. 2, 1989).

⁸ Initial Provisioning—Army Helicopter Improvement Program (OH-58D) U.S. Army Aviation Systems Command, St. Louis, MO (Army Audit Agency, MW 87-201, May 6, 1987).

orders and contract modifications reviewed were unpriced when issued. Another June 1987 Army audit⁹ on the U.S. Army Communications-Electronics Command revealed that 83 percent of orders for the support items of four new systems were issued unpriced.

Replenishment

Replenishment stock requirements are based either on historical usage rates or on other factors such as estimated use rates. In determining replenishment inventory needs, three factors are considered: economic order quantity, procurement lead time level, and safety levels. Economic order quantity is the amount of inventory needed to meet demand between successive replenishment orders and is equal to the replenishment quantity when assets reach the reorder level. Ideally, it is the quantity that results in the lowest total cost for ordering and holding stock. The procurement lead time level is the amount needed to meet normal demand during the time required to order and receive delivery of stock. The safety level is the amount needed to meet fluctuations in demand and procurement lead time.

DOD's requirements determination processes for replenishment received the most extensive audit coverage by us and DOD audit agencies—67 reports in all. A September 1986 Logistics Management Institute report¹⁰ on procurement lead time concluded the following:

- The basic procurement lead time forecasts that drive the DOD requirements determination process must be realistic if the interface between inventory control and procurement is to be workable.
- DOD procurement lead times for spare parts must be reduced to decrease material support costs, improve forecast accuracy, and enhance system flexibility.
- Driven by work load constraints, data problems, and functional biases, DOD managers fail to accord procurement lead time the importance and management attention it deserves.

Examples of the recurring problems are presented in the following paragraphs.

⁹Initial Provisioning—Acquisition and Requirements Determination - U.S. Army Communications-Electronics Command, Fort Monmouth, NJ (Army Audit Agency, NE 87-203, June 26, 1987).

¹⁰Procurement Lead time: The Forgotten Factor (Logistics Management Institute, ML515/SAP, Sept. 1986).

**Inadequate or Inaccurate
Manual Reviews**

In November 1989, the Naval Audit Service reported that the Marine Corps Logistics Base, Albany, Georgia, did not validate the accuracy of data used to compute replacement stock requirements and did not perform follow-up reviews as often as required by Marine Corps directives. The auditors reviewed \$238 million in replacement stocks and found deficits and excesses valued at about \$48.6 million.¹¹ In addition, in March 1990, we reported that DLA's supply centers had not adequately implemented DLA policy guidance for effective item manager review of the computer generated excess on-order reports and supervisory review of item managers' actions concerning the reports. Moreover, DLA officials had not adequately followed up at the supply centers to verify that the policy had been implemented properly. From a universe valued at \$683.1 million, we estimated that \$326.5 million was excess material; however, item managers only recommended \$49.9 million for contract termination.¹²

**Inaccurate or Unsupported
Data Within the Data Base
Used to Compute
Replenishment
Requirements**

Our March 1990 report points out that erroneous information in the Army's Aviation Systems Command data base caused the requirements system to compute incorrect requirements levels for 6 of the 45 items reviewed. As of September 30, 1988, the Aviation Systems Command reported about \$26 million of unrequired inventory for these six items.¹³ In March 1989, the Army Audit Agency reported that item managers put \$119.7 million of unsupported, manually generated requirements and \$21.3 million of unsupported, extended requirements objectives into the automated supply system.¹⁴

¹¹Requirements Determination for Operating Stocks and Spares Acquisition Value Enhancement Program at Marine Corps Logistics Base, Albany, GA (Naval Audit Service 004-S-90, Nov. 16, 1989).

¹²Defense Inventory: Defense Logistics Agency's Excess Materiel on Order (GAO/NSIAD-90-105, Mar. 6, 1990).

¹³Army Inventory: Growth in Inventories That Exceed Requirements (GAO/NSIAD-90-68, Mar. 22, 1990)

¹⁴Secondary Item Supply Management, U.S. Army Missile Command, Redstone Arsenal, AL (Army Audit Agency, SO 89-9, Mar. 17, 1989).

Inaccurate Replenishment Requirements Generated by Program Models

In February 1989, the Naval Audit Service reported that the Navy's Aviation Supply Office did not adequately control computer processing of Maintenance and Material Management data needed to validate planned program requirements for various Aviation Supply Office and DOD initiatives totaling about \$600 million.¹⁵ Also, in December 1988, the Army Audit Agency reported frequent inaccuracies in the program factors used by the Army's Armament, Munitions, and Chemical Command to compute requirements objectives for secondary items. Item managers changed, without supporting documentation, some information provided by the commodity command responsible for managing the end item. These changes caused requirements objectives to be overstated by about \$170,000 for the three items audited.¹⁶

Overstated Safety Levels

In August 1990, we reported that after the Air Force implemented its new aircraft availability model for computing safety level requirements for aircraft spare parts, safety level requirements increased by about \$482 million. This occurred despite a \$4 billion decrease in the Air Force's future projected parts usage, which should have decreased safety level requirements.¹⁷ Also, in September 1985, we reported that safety level requirements for a total of 48,399 items at the Army's six major subordinate commands exceeded the requirements for procurement lead time by about \$76 million. The safety level requirements that we studied varied significantly from one month to another and in some cases provided up to 99 months of supply for spare parts.¹⁸

In January 1988, we also reported that the Navy's Aviation Supply Office had increased safety level requirements by an estimated \$80.6 million for certain items by lowering the acceptable level of risk of running out of stock for these items. They also provided safety level requirements of \$11.1 million for some items, even though aircraft could perform their missions without them.¹⁹

¹⁵Selected Planned Program Requirements for Aviation Material (Naval Audit Service 033-N-89, Feb. 24, 1989).

¹⁶Requirements Determination and Execution System, U.S. Army Armament, Munitions and Chemical Command, Rock Island, IL (Army Audit Agency, MW 89-7, Dec. 30, 1988).

¹⁷Air Force Logistics: Increased Costs for Spare Parts Safety Levels Are Not Justified (GAO/NSIAD-90-148, Aug. 23, 1990).

¹⁸The Army's Safety Level Requirements for Secondary Items May Be Inaccurate and Excessive (GAO/NSIAD-85-160, Sept. 30, 1985).

¹⁹Navy Supply: Economic Order Quantity and Item Essentiality Need More Consideration (GAO/NSIAD-88-64, Jan. 6, 1988).

Unreasonable and Inaccurate Demand Data Used to Compute Replenishment Requirements

In a January 1987 report, we cited Air Force studies that showed dollar values of on-hand and on-order aircraft spares were overstated by 45.7 percent and 69.7 percent, respectively, due to data input errors to the requirements cycle.²⁰ Also, in March 1990, DOD/OIG reported that the Army's Aviation Systems Command initiated procurements for excessive quantities of spare and repair parts for the Target Acquisition Designation Sight/Pilot Night Vision Sensor System, primarily because reliable supply management data were lost when item management of these spare and repair parts was transferred to the Army's Aviation Systems Command. The requirements computations supporting those procurements were based on unreasonable estimated maintenance factors.²¹

War Reserves

War reserves are items acquired in peacetime to ensure the availability of adequate stocks to support military requirements during wartime. War reserves consist of stocks categorized as prepositioned war reserve material and other war reserve material. The prepositioned war reserve is the higher priority and is that portion of the total war reserve requirement that approved defense plans dictate be reserved and positioned, prior to hostilities, at or near the point of planned use.

The other war reserve material is intended to provide pipeline and follow-on support until replenishment can be obtained from the industrial base. The development of war reserve requirements includes considerations of essentiality,²² wartime consumption rates, pipeline and wartime maintenance plans, and applications of existing and planned assets from industrial preparedness planning.

We identified 21 audit reports covering the war reserve component of the inventory requirements determination process. We also reviewed a 1989 study by the Logistics Management Institute²³ that found Air Force policy for determining wartime spares requirements to be confusing,

²⁰ Air Force Budget: Potential for Reducing Requirements and Funding for Aircraft Spares (GAO/NSIAD-87-48BR, Jan. 13, 1987).

²¹ Quick-Reaction Report on Requirements for Wholesale Inventories to Support the Target Acquisition Designation Sight/Pilot Night Vision Sensor System (DOD/OIG 90-050, Mar. 23, 1990).

²² Identifying and measuring the relative merit of maintaining stock of one item over another is ordinarily referred to as determining the essentiality of an item. It involves coding items into various categories, ranging from those that have no impact on the mission capability of a weapon system to those that could cause total loss of mission capability.

²³ War Reserve Materiel Policy Issues (Logistics Management Institute, AF902B1, Nov. 1989).

incomplete, and inconsistent because of complicated terminology that is widely misunderstood and the lack of dialogue between policymakers and those responsible for implementing policy.

**Inaccurate or Inconsistent
Data Used to Compute War
Reserve Requirements**

In May 1990, the Air Force Audit Agency reported that data used in the war reserve requirements computation for the F-15, F-16, and B-52 aircraft spare parts were inaccurate and led to \$19.7 million in overstated requirements.²⁴ Another Air Force audit,²⁵ in September 1985, revealed that invalid wartime failure rates based on outdated information were used to compute requirements in the "other war reserve" material requirements system. The use of these invalid wartime failure rates resulted in a \$119.3 million net overstatement of purchase requests and contract quantities.

In June 1990, the Naval Audit Service reported that the Marine Corps Logistics Base, Albany, Georgia, entered erroneous data in its software system, which caused an accumulation of excess war reserve stock valued at approximately \$5.2 million that could have been returned to the integrated material manager for potential credit.²⁶

²⁴Accuracy of Selected Data Used in Aircraft Wartime Spares Requirements (Air Force Audit Agency Project 9126116, May 3, 1990).

²⁵Review of Wartime Failure Rates and Peacetime Requirements Used in Other War Reserve Materiel Computations (Air Force Audit Agency Project 5126116, Sept. 19, 1985).

²⁶Pre-Positioned War Reserve Stock (Naval Audit Service 048-S-90, June 29, 1990).

Matrix of Prior Findings, Recommendations, Corrective Actions, and Monetary Benefits

Management officials agreed with many, but not all, of the report findings and recommendations that we reviewed. Status of corrective actions reflects information contained in the recommendation follow-up systems maintained by DOD, the military services, and us. In some cases, insufficient follow-up documentation made it impossible to determine the status of corrective actions or the value of monetary benefits associated with an audit. "In-process" corrective actions are those actions that were scheduled for completion after the end of our analysis period. Table II.1 summarizes the information obtained from the follow-up systems.

Table II.1: Recommendations and Subsequent Corrective Actions

Dollars in millions

Service	Number of findings ^a	Number of recommendations	Number of corrective actions ^b	Status of corrective actions			Potential monetary benefits
				Open	Closed	In-process	
Air Force	110	103	92	21	69	2	\$14,444.7
Army	64	162	109	0	90	19	377.5
DLA	16	22	13	0	11	2	375.7
Navy	32	66	63	0	51	12	412.0
DOD/interservice	25	51	72	27	41	4	80.0
Totals	247	404	349	48	262	39	\$15,689.9

^aSome findings are addressed by more than one recommendation.

^bSome corrective actions address more than one recommendation.

Overall, the results indicate that the services have taken or are taking actions to address many of the specific findings. However, when the DOD Office of the Inspector General (OIG) issued a similar report in 1984, the services generally agreed with the report's findings and recommendations and indicated that they were taking, or had already taken, appropriate actions to address them. Unfortunately, many of the same problems that management said it was taking steps to correct in 1984 are clearly still problems more than 6 years later. The preponderance of recurring problems raises questions about the effectiveness of corrective actions contained in the prior DOD Office of the Inspector General report.

Summaries of Audit Reports Related to DOD's Inventory Requirements Determination Processes

This appendix briefly describes the 97 audit reports we reviewed in the areas of initial provisioning, replenishment, and war reserves. Some reports address more than one area, but the summaries appear under one category or the other, with appropriate cross-references. In addition, this appendix begins with two report summaries on DOD that are more general in nature—the first report concerns inventory management, and the second involves the overall inventory requirements determination process.

Defense Inventory: Top Management Attention Is Crucial (GAO/NSIAD-90-145, Mar. 26, 1990)

A summary of more than 100 reports that we had issued over the past 20 years demonstrated that serious, recurring problems continue to affect DOD's ability to effectively manage many aspects of its inventories. Its inventory remains highly susceptible to mismanagement, fraud, and abuse. Some of the conditions we reported make it especially susceptible to such problems. For example:

- DOD's inventory grew by 138 percent in the 1980s, while unrequired inventory¹ increased by 233 percent.
- Duplication of stock has occurred due to multiple inventory levels.
- Inventory records are inaccurate.
- The services are buying spare parts before they are needed and are not canceling orders for unneeded items.

Department of Defense Requirements Determination Processes for Spares and Repair Parts (DOD/OIG 84-133, Sept. 21, 1984)

The DOD Office of the Inspector General reviewed 53 audit reports issued primarily between 1980 and 1983 by DOD and service audit agencies and GAO. Based on its review, DOD/OIG identified deficiencies in all three categories of secondary items. It also reported that a recurring problem was the use of inadequate or inaccurate data in the requirements determination processes and the lack of effective management and control systems to address these conditions. In addition, a substantial amount of time and effort was spent on manually validating and revising the data maintained in automated systems, which often compounded the problems.

¹Unrequired inventory is inventory not needed to meet current needs and war reserve requirements.

DOD/OIG determined that 110 of the findings and 260 of the recommendations contained in the 53 reports were related to the requirements determinations areas. On the basis of its review of audit follow-up systems and on-site visits, DOD/OIG found that (1) management had taken appropriate action on 33 of the 110 findings encompassing 73 of 260 recommendations, (2) corrective actions were in process for another 29 findings and 55 recommendations, (3) corrective actions were ineffective or only partially implemented for 24 findings and 71 recommendations, and (4) corrective action status could not be determined for the remaining findings and recommendations primarily due to a lack of follow-up documentation.

Initial Provisioning

Air Force

Initial Spares Requirements for Selected Communications-Electronics Equipment (Air Force Audit Agency Project 9126119, Sept. 28, 1990)

Initial spares requirements were not accurately computed for communications-electronics equipment items reviewed. The methodologies used to compute initial spares requirements were not adequate, and the average and peak month factors were not accurate. Conversely, the initial spares budget preparation process was reasonable and adequate. Two offices determined the initial spares budget using the percent of end item cost method (an acceptable budget preparation approach). The other program office used a model (also an acceptable approach) to compute budget requirements.

Followup Audit—Provisioning Requirements Computations (Air Force Audit Agency Project 9126124, Mar. 19, 1990)

Management had not taken effective action to encourage the use of specific models to compute initial provisioning requirements. Directives did not require the use of a certain model; however, to optimize the spares mix for a more effective and efficient resource allocation, a specific model was recommended for use when computing initial provisioning requirements. However, Air Force managers had taken appropriate and effective action in response to previous audit findings in the provisioning area.

Procurement and Provisioning Actions Within the Advanced Medium Range Air-to-Air Missile (Air Force Audit Agency Project 8036320, Feb. 27, 1990)

Management of the provisioning action was adequate. Specifically, the analysis of available requirements data showed that spares computations for the rail missile launcher power supplies were satisfactory. However, management of the three procurement actions reviewed was not completely adequate. The report identified reasons for the procurement inadequacy.

Procurement: Spare Parts and Support Equipment for Air Force C-5 Transport Aircraft (GAO/NSIAD-88-57BR, May 23, 1988)

See report summary under Replenishment.

Followup Audit—Provisioning Requirements for the B-1B Defensive Avionics System (AN/ALQ-161) (Air Force Audit Agency Project 7126120, Feb. 3, 1988)

Air Force management had initiated appropriate action in response to a prior Air Force audit report on provisioning requirements for the B-1B defense avionics system. Warner Robins Air Logistics Center personnel developed failure rates that were supportable and adequately documented. Additionally, spares buy requirements were appropriately adjusted in the December 1986 final requirement computations by using the supported rates.

Followup Audit—Budgeting, Buying, and Computing Requirements for Initial Spares Support Lists (Air Force Audit Agency Project 6126114, Aug. 21, 1986)

Management actions corrected the cited problems. Specifically, (1) accurate initial spares support lists (initial support) activation schedules were used by F-16 and F-15 item managers, (2) policies had been established to require the use of accurate pipeline times and stable flying hour programs when computing (initial support) requirements, (3) T-37 aircraft item requirements tested were accurately computed, and (4) F-16 and F-15 initial spares support lists were either in the process or scheduled to be updated using new methodology.

Provisioning Requirements Computations (Air Force Audit Agency
Project 5126114A, June 3, 1986)

Spares provisioning requirements were misstated due to computation methodology, maintenance factors, and coordination problems. Two significantly different provisioning methodologies and inaccurate failure rate and pipeline factors were used in many instances to compute provisioning requirements. Additionally, major command special level requirements were not always identified in a timely manner during provisioning.

Followup Audit—Support of New Engine and Module Requirements
From Existing Inventories (Air Force Audit Agency Project 5106217,
Apr. 18, 1986)

In response to recommendations in a prior Air Force audit report, Air Force Logistics Command headquarters (1) convened an Engine Review Organization to review the removal rate factors used for TF39 engines in the requirements computation, (2) recomputed TF39 engine/module requirements using different removal rate factors, (3) delayed actions to buy TF39 engines until the recomputation was done, (4) used the correct flying hour program in module requirements computations, and (5) conducted an inventory of modules on hand and on order and delayed module buys.

Although these actions improved the accuracy of TF39 engine and module requirements, 4 of the 11 removal rate factors were not supported by actual use of either the TF39-1A engine or the TF39-1C engine. As a result, 15 of the remaining 25 TF39-1C engines and related support equipment items were not needed. The 15 engines and related support equipment were valued at approximately \$81.4 million. Also, San Antonio Air Logistics Center personnel continued to use 1981 factors to project future TF39-1C spare module buy requirements. As a result, the mix and quantity of modules scheduled to be purchased by the Air Force may not have been the ones needed to support future mission requirements.

Support of New Engine Requirements From Existing Engine Inventories
(Air Force Audit Agency Project 4106218, Nov. 6, 1984)

The Air Force was planning to purchase (1) 61 new TF33-PW-100A engines, even though 26 TF33-P-7A spare engines were available for remanufacture to a TF33-PW-100A configuration at a savings of

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\$1.7 million per engine; (2) 25 new TF39-GE-1C spare engines, even though the unscheduled engine removal rate factor used to determine the number of engines needed was much higher than it should have been based on the engine manufacturer's test data or actual Air Force flying hour experience; and (3) 136 new TF56-A-15 engines, even though Air Force Logistics Command computations indicated an excess of TF56-A-15 engines by the time of the purchases. Elimination of the unneeded engine purchases could make an additional \$170 million available for reallocation to valid Air Force engine spare requirements.

Army

Initial Provisioning—Management of the Initial Provisioning Process
(Army Audit Agency, NE 88-213, Aug. 22, 1988)

The Army's provisioning process generally ensured that support items were available before or concurrently with newly fielded weapon systems. However, the Army Materiel Command needed to better ensure that the support occurred at the least possible cost. Commodity commands frequently requested more funds and fielded more items than they needed. Controls were needed to ensure that commodity commands followed established procedures for (1) computing budget estimates and support item requirements, (2) determining the range and quantities of items to be fielded, (3) acquiring logistics data and items, (4) describing the items by their essential characteristics, (5) forecasting replenishment requirements, and (6) conducting post-provisioning reviews.

Initial Provisioning—Planning and Management of the Provisioning Process, U.S. Army Communications-Electronics Command, Fort Monmouth, NJ (Army Audit Agency, NE 88-211, May 24, 1988)

Significant improvement was needed in planning and managing the provisioning process for new items. Key provisioning tasks and events were not adequately planned, and logistics support analysis data was not available when needed. Budget estimates for provisioning were not adequately supported. Improvements were needed to ensure the availability of secondary items, the accuracy of data recorded in the Commodity Command Standard System, and the adequacy of item descriptions in the Federal Catalog System. The estimated potential monetary benefits resulting from this audit totaled \$13.7 million.

Audit of Initial Provisioning—Acquisition and Requirements Determination (Army Audit Agency, NE 88-206, Feb. 22, 1988)

The Army's process for determining requirements and acquiring initial provisioning support items needed significant improvements. Requirements for provisioned items were not developed properly and were not supported. Methods used to acquire provisioned items and to review contractors' price estimates were not sufficient to ensure that reasonable prices were paid.

Initial Provisioning—Acquisition and Requirements Determination, U.S. Army Communications-Electronics Command, Fort Monmouth, NJ (Army Audit Agency, NE 87-203, June 26, 1987)

Initial provisioning requirements were not adequately supported. Approved Army requirements computational models were not used or were used ineffectively to compute requirements. The methods used to procure provisioned items often were not justified. Unpriced orders were used repetitively to acquire provisioning support items without justification. Contractors' prices for provisioning items were not sufficiently reviewed before the estimates were used in the acquisition and budgeting process.

Initial Provisioning—U.S. Army Aviation Systems Command, St. Louis, MO (Army Audit Agency, MW 87-202, June 14, 1987)

Initial provisioning functions were properly planned and coordinated but were not always effectively accomplished during the aviation weapon system acquisition process. Budget requirements for initial provisioning support items were not adequately supported. Also, budget estimates were computed manually instead of using the required automated computation model, and the data used in the computations were not always accurate. Full item descriptions were needed to ensure that duplicate items were not stocked under different national stock numbers.

Initial Provisioning—Army Helicopter Improvement Program (OH-58D), U.S. Army Aviation Systems Command, St. Louis, MO (Army Audit Agency, MW 87-201, May 6, 1987)

Logistics support analysis data for the OH-58D helicopter were neither accurate nor acquired in a timely manner and thus could not be used to identify provisioning requirements. Accuracy requirements set forth in

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the contracts used to purchase logistic support analysis data were not met, and therefore, computed provisioning requirements could not be relied upon. In addition, spare parts selected for provisioning with newly fielded OH-58D helicopters may not be adequate to sustain required operational readiness rates. Provisioning spare parts and other support for the OH-58D were too often obtained using unpriced rather than fixed-price contracts.

Initial Provisioning—U.S. Army Tank-Automotive Command, Warren, MI (Army Audit Agency, EC 87-200, May 7, 1987)

Requirements for provisioning items were computed using inconsistent and generally unsupported methods rather than the required automated computational model. Also, the requirements for initial provisioning and replenishment items did not consider parts under warranty replaced by contractors. The Army Stock Fund portion of the budget was manually computed based on a percentage of the total system cost, which was the least preferred method. Provisioning data obtained through logistics support analysis were accurate for most items, but certain codes assigned to special tools and kits were not appropriate. The introduction of new support items into the inventory was properly accomplished, but subsequent efforts to upgrade the identification of these items could have been more effective.

Initial Provisioning—Black Hawk Helicopter (UH-60A), U.S. Army Aviation Systems Command, St. Louis, MO (Army Audit Agency, MW 87-200, Apr. 13, 1987)

Initial provisioning items were generally available to support newly fielded Black Hawk helicopters. Items selected for provisioning were more than adequate to maintain newly fielded Black Hawk helicopters, but the amount of spare parts could have been reduced without affecting unit readiness. Firm fixed-price contracts were generally used to obtain provisioning items and other support for the Black Hawk helicopter.

Initial Provisioning—4th Infantry Division (Mechanized) and Fort Carson, Fort Carson, CO (Army Audit Agency, SW 87-200, Jan. 16, 1987)

Newly fielded end items were generally placed into service in a timely manner and with the minimum essential support items needed to sustain operations. However, several areas in the provisioning process needed

strengthening: new equipment and sustainment training, repair parts management, warranty repairs, and postfielding assessments.

Navy

Defense Inventory: Growth in Ship and Submarine Parts (GAO/NSIAD-90-111, Mar. 6, 1990)

The Navy's inventory of ship and submarine parts increased from \$2.7 billion in 1980 to \$9.3 billion in 1988, or 244 percent. In 1988, 40 percent (\$3.7 billion) of the Navy's inventory of ship and submarine parts was unrequired. Sampled stocks showed that the major causes for the unrequired inventory were requirements that did not materialize, deactivation of older ships, and replacement and phasing out of equipment. In addition, unrequired inventory could have been minimized by ensuring that items being replaced or phased out were not unnecessarily purchased or repaired. The Navy was spending an estimated \$24 million annually to store and manage 140,000 items that could never be used.

Navy Supply: Questionable Decisions Increased Initial Spares Costs for AV-8B Aircraft (GAO/NSIAD-89-103, Mar. 2, 1989)

Although DOD guidance states that initial provisioning should be provided through a cost-effective approach, the Navy's Aviation Supply Office did not follow this guidance when placing orders for AV-8B spares for three principal reasons. First, it provided formulas for calculating initial requirements that followed the DOD guidance, but the AV-8B section adopted a minimum buy policy that authorized purchases for every type of spare regardless of the outcome of the requirements formula. Second, in some cases the AV-8B section did not consider prior orders when placing subsequent orders. Third, the Navy's Aviation Supply Office increased spare parts orders due to contractor-imposed minimum order requirements. Internal controls were not in place to focus the attention of Navy managers on these matters.

Initial Spare Parts Procurements for Selected Major Systems (DOD/OIG 84-053, Mar. 7, 1984)

For the six weapons systems reviewed, DOD/OIG reported that the Army and Air Force procured spare parts through the Federal Supply System when appropriate. For two of the three Navy systems reviewed, however, initial spare parts were being purchased from the weapon systems manufacturer even though the parts were available in the Federal Supply System. DOD regulations require that initial requirements for

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items having National Stock Numbers be filled with stocks already in the supply system or through normal replenishment procedures.

DOD/Interservice

Secondary Item Weapon System Management (DOD/OIG 88-171, June 16, 1988)

On June 26, 1985, the Secretary of Defense approved the Secondary Item Weapon System Management Concept for managing secondary items on a weapon system basis, rather than on a commodity basis, and directed the services and DLA to develop plans for its implementation. However, the actions and plans of DLA and the services were inadequate to effectively implement the 13 capabilities of the new concept. Among other things, the services had not fully developed a capability to identify and display requirement segments (e.g., safety level, administrative lead time, procurement lead time, and economic order quantity) by weapon system for items. Also, the services had not fully developed multi-echelon models that optimize stockage for peculiar and common initial and replenishment spares and repair parts.

Requirements Forecasts on Supply Support Requests (DOD/OIG 88-140, Apr. 27, 1988)

Forecasted requirements on supply support requests were often not well-founded or adequately documented, causing unreasonable investments in wholesale inventory. Adequate documentation of forecasted requirements was lacking, and ensuing actions precluded DOD/OIG from performing a detailed historical analysis. DLA's investments were generally consistent with the forecasted requirements, but wholesale stock purchases were not always initiated on a timely basis. Procedures and controls need to be implemented to correct causes for significant variances between forecasted and actual demands.

Replenishment

Air Force

Strategic Missiles: Logistics Support for Advanced Cruise Missile Based on Outdated Plans (GAO/NSIAD-90-178, Sept. 13, 1990)

The Air Force did not revise Advanced Cruise Missile logistics plans when major program changes occurred. Setbacks in the missile's development and production resulted in significant program restructuring. Although the Air Force updated its program plans, it did not have procedures to implement these changes effectively for functional areas such as logistics and facilities. As a result, the Air Force expended resources prematurely to acquire spares, maintenance and repair capability, and facilities.

Logistics and support costs could have increased because of marginal system reliability and design and quality problems such as fuel leaks and accessibility to subsystems. Air Force managers were working to overcome these problems. The Air Force had identified potential reductions in the number of missiles to be bought. Depending on the number, logistics and support cost savings between \$74 million and \$991 million were possible if logistics plans were promptly updated.

Followup Audit—Management of Aviation Fuel Peacetime Requirements and Inventories (Air Force Audit Agency Project 0126120, Aug. 30, 1990)

Revisions made to Air Force Manual 67-1 in response to recommendations in a prior audit were not effective. As a result, misstatements of the 12-month issue projection and deviation quantities continued to occur and affected requirements computations.

Air Force Logistics: Increased Costs for Spare Parts Safety Levels Are Not Justified (GAO/NSIAD-90-148, Aug. 23, 1990)

The Air Force needed to (1) reassess the costs resulting from the use of the aircraft availability model and (2) establish safety level requirements based on operational needs. When the Air Force implemented the aircraft availability model in June 1988, it set aircraft availability goals at the highest predicted levels that could have been achieved without exceeding costs under the prior model. However, a largely unexplained increase of about \$482 million in safety level requirements occurred

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after the aircraft availability model was implemented. Such an increase in requirements generally resulted in future procurements of parts and increased repair requirements.

Because the Air Force had reached desired levels of mission capability, substantial savings were available if requirements were based on operational needs. Air Force computations showed that safety level requirements in fiscal year 1991 could have been reduced by \$590 million if the model was reprogrammed with the average aircraft availability goal achieved under the prior model rather than the higher average aircraft availability goal chosen under the new model. Such a reduction in requirements would have reduced budgeted procurement and repair costs by about \$170 million.

In addition, the Air Force needed to ensure that unneeded procurements to fill requirements under the prior model were canceled. When the new model was implemented, the Air Logistics Centers continued to purchase spare parts using March 1988 computations under the prior model. After the Air Force found that an estimated \$747 million in unrequired parts were on order, the logistics centers were directed to cancel unneeded procurements. However, these actions were not taken. In response to a draft of this report, DOD commented that the logistics centers, using revised procedures and stricter controls, subsequently terminated unneeded buys.

Requirements for F100-PW and F100-GE Spare Engines and Modules
(Air Force Audit Agency Project 9126118, Aug. 17, 1990)

Spare engine requirements were based on inaccurate combined engine removal rates. As a result, engine requirements were overstated by 53 engines valued at \$156.8 million. These engines could have been canceled or sold to foreign military sales customers. Spare engine and module procurements for the F100-PW and F110-GE alternate fighter and increased performance engines were initiated at the proper times.

Followup Audit—Inactive Aircraft Retention Factors Used in Spare
Engine Computations (Air Force Audit Agency Project 0126122, July 23,
1990)

Instead of reclaiming \$41.6 million worth of engines for spare parts, the Air Force Logistics Command provided entire airframes and associated spare engines worth \$160.5 million for foreign military sales, drone program use, interservice use, and federal agencies' use. Air Force actions

taken to compute the number of spare engines needed to support inactive aircraft and to include excess installed engines as available resources in spare engine computations were only partially effective. However, management efforts associated with (1) developing the number of aircraft planned for possible reactivation and (2) issuing instructions to air logistics centers to review and reduce parts requirements were generally satisfactory.

Replenishment Spares Procurement Lead Times and Delivery Schedules
(Air Force Audit Agency Project 9126115, Apr. 30, 1990)

Air Logistics Center personnel used inaccurate procurement lead times in requirements computations and established unrealistic delivery dates in purchase requests and contracts, resulting in receipt of items significantly earlier or later than needed. However, the Air Force Logistics Command's requirements computations applied procurement lead times correctly.

Financial Audit: Air Force Does Not Effectively Account for Billions of
Dollars of Resources (GAO/AFMD-90-23, Feb. 23, 1990)

Air Force managers were accountable for \$275 billion in weapons systems, inventories, and other assets. However, the Air Force's financial management systems and internal controls were not sufficient to provide adequate and reliable financial information for effective management of the Air Force's diverse and complex operations.

The Air Force maintains a reported \$63.8 billion in inventories of supplies and spare parts, eight times the inventories reported by General Motors. However, the systems used to provide accountability over these inventories do not provide reliable data supporting either their quantities or value.

The Air Force's long-standing problems in controlling its inventories have not been resolved. Records of quantities on hand at air logistics centers, which reflected about \$40 billion in inventory items, were often inaccurate. Record-keeping deficiencies contributed to \$10 billion of unrequired inventory. In addition, over 50 percent of the dollar value of investment-item inventory needed repair, overhaul, or extensive maintenance to become serviceable, yet such items were valued the same as usable items.

**Air Force Budget: Potential for Reducing Funding for Aircraft Spares
(GAO/NSIAD-90-18, Nov. 28, 1989)**

Potential budget reductions and/or rescissions of \$743.1 million in the Air Force's fiscal year 1990 funding request for aircraft spares were identified. Reasons for the potential reductions and/or rescissions included premature and unauthorized buy requirements, terminations of procurements of excess material on order, reduced budgeted buy requirements for initial spares, reduced requirements for and upgrades of engine cores, a reduction in additive requirements, and a decrease in computed buy requirements for aircraft replenishment spares.

**Review of Vehicle Replacement Requirement Computations in the
Equipment Item Requirements Computation System (DO39) (Air Force
Audit Agency Project 9226116, Oct. 6, 1989)**

The Equipment Item Requirements Computation System did not accurately compute vehicle replacement requirements. Specifically, the system misstated requirements by \$231 million (overstatements of \$200 million and understatements of \$31 million) because the computation did not include the vehicle's condition and did not properly establish the buy point for computed requirements.

**Air Force Budget: Potential Reductions to Aircraft Procurement Budgets
(GAO/NSIAD-90-15, Oct. 5, 1989)**

About \$817 million in potential reductions from the Air Force's aircraft procurement budgets was identified for fiscal years 1987 through 1990, including \$39 million for aircraft spare parts because requirements were miscalculated. These potential reductions primarily resulted from our suggestion to delay the AC-130U program funding until tests showed that the AC-130U was ready for production. Serious problems with the contractor's efforts to integrate modification kits into the aircraft, and other known deficiencies had not been resolved.

**Followup Audit—Forecasting Life-Limited Item Requirements for Jet
Engines (Air Force Audit Agency Project 9126117, Aug. 25, 1989)**

The Air Force Logistics Command had developed a standard method for determining life-limited item requirements, but equipment specialists were not using it. As a result, requirements for 4 of 12 items reviewed were not accurate. Air Force Logistics Command headquarters directed the San Antonio and Oklahoma City Air Logistics Centers to implement

the standard method. Air logistics center officials stated their equipment specialists would use the procedures and adjust requirements accordingly. Interim policy guidance was issued to include life-limited item requirements in war reserve material computations and to update applicable regulations.

Military Logistics: Air Force's Management of Backordered Aircraft Items Needs Improvement (GAO/NSIAD-89-82, June 2, 1989)

The Air Force had significant amounts of invalid backorders that were not being detected and canceled by periodic validation checks. In addition, the Air Force's requirements for aircraft spare parts were overstated because (1) available depot supply level assets were not used to offset requirements for aircraft items procured with stock funds, (2) depot maintenance backorders were included twice in requirement computations for aircraft items procured with appropriated funds, and (3) requirements for stock-funded aircraft items were sometimes based on erroneous backorder data.

The Air Force's process for ensuring compatibility between wholesale and retail level backorder records continued to experience problems. As a result, the Air Force was missing opportunities to cancel invalid backorders.

Accuracy of Depot Repair Cycle Flow Time Used to Compute Repair and Buy Requirements for Exchangeable Assets (Air Force Audit Agency Project 8106210, Feb. 27, 1989)

Depot repair cycle flow times used to compute repair and buy requirements for exchangeable assets were generally overstated and contributed to an estimated \$15 million in overstated repair and buy requirements. Directives and policies used to manage depot repair cycle flow times needed to be clarified. Shop flow day standards needed to be more accurately computed, documented, reviewed, and processed. The standards for the "Supply to Maintenance Days" and "Serviceable Turn-in Time" segments of the depot repair cycle needed to be updated to more closely approximate average actual flow times.

Followup Audit—Management and Requirements Determination for System 463L Air Cargo Pallets and Nets (Air Force Audit Agency Project 9225215, Feb. 16, 1989)

Air Force management had revised procedures in response to prior audit reports. However, Air Force major command and other DOD component pallet and net monitors had not fully implemented the revised procedures. Consequently, Air Force auditors could not fully evaluate the effectiveness of 8 of the 11 recommendations. Actions taken at the Worldwide 463L Pallet and Net Conference, however, demonstrated that management officials are enforcing compliance with the revised procedures. Management officials had taken commendable actions to implement other recommendations, realizing a savings of \$2.8 million.

F108 Spare Engine Requirements (Air Force Audit Agency Project 8126115, Jan. 13, 1989)

Although flying hours were accurate and action had been taken to reduce programmed requirements, F108 spare engine requirements were still overstated. Specifically, spare engine computations used the highest mature level forecasted engine removal rates rather than current expected removal rates. Consequently, additional engines programmed for purchase and those already on hand and on order exceeded current requirements by 58 engines valued at \$168.2 million.

Peacetime Conventional Munitions Requirements Forecast (Air Force Audit Agency Project 7136511, Dec. 12, 1988)

The peacetime conventional munitions requirements forecast process did not provide accurate munitions requirements projections. Although no deficiencies were noted with major command allowances, forecasted munitions requirements were inaccurate. Specifically, unit munitions custodians submitted inaccurate forecast data to the munitions accountability supply office personnel, and they incorrectly changed the unit submission, resulting in further inaccuracies.

Procurement: Spare Parts and Support Equipment for Air Force C-5 Transport Aircraft (GAO/NSIAD-88-57BR, May 23, 1988)

Inappropriate procurement practices by the San Antonio Air Logistics Center may have resulted in the Air Force paying between \$13 and \$19 million more than necessary for C-5B spare parts. The additional costs were incurred because the Center purchased initial spare parts and

war reserve spare parts indirectly through the prime contractor, rather than directly from the parts vendors. This action was contrary to Air Force policy. Additionally, one air logistics center may have purchased war reserve spares for the C-5B aircraft earlier than necessary. A continuing need exists for the Air Force to focus management attention on its spare parts procurement practices.

Followup Audit—Spares Support for the F-16C/D Aircraft (Air Force Audit Agency Project 7126122, May 3, 1988)

Air Force Logistics Command headquarters and Ogden Air Logistics Center management initiated appropriate actions in response to the prior report's recommendations. Specifically, Ogden personnel had complied with the Air Force funding constraint in computing provisioning requirements for the items sampled, and Ogden personnel used estimated failure rates that corresponded to approved reliability growth rate charts to compute spares requirements.

Depot-Level Maintenance Factors Used in Computing Spares Requirements (Air Force Audit Agency Project 6126116, Mar. 28, 1988)

The depot-level maintenance factors used by the Air Force did not accurately reflect past usage data, primarily because adjustments were made without adequate supporting documentation and justification. As a result, \$59.1 million of computed buy requirements were not adequately supported and could have been overstated.

Air Force Budget: Potential for Reducing Requirements and Funding for Aircraft Spares (GAO/NSIAD-88-90BR, Feb. 18, 1988)

The Air Force's fiscal year 1988 updated procurement requirements for aircraft replenishment spares were \$1.6 billion less than the budgeted requirements on which its funding request was based. Additionally, the Air Force was experiencing substantial shortfalls in obligating prior years' funding appropriated for the procurement of aircraft replenishment spares.

Inactive Aircraft Retention Factors Used in Spare Engine Computations (Air Force Audit Agency Project 7126111, Nov. 3, 1987)

Spare engine requirements for inactive aircraft were overstated because the requirements were computed by using aircraft reactivation rates

instead of engine retention factors. In addition, installed engines on aircraft programmed to be deactivated and excess to future needs were not considered as available resources. As a result, the opportunity was not being realized to satisfy current and future spare parts requirements valued at about \$50 million through the reclamation of both excess spare and installed engines.

Military Procurement: Air Force Should Terminate More Contracts for On-Order Excess Spare Parts (GAO/NSIAD-87-141, Aug. 12, 1987)

The Air Force actually terminated less than 3 percent of the excess on-order parts reviewed. The Air Force should have terminated about 24 percent of the on-order excess, resulting in savings of approximately \$12 million to \$36 million depending on whether the items would be reprocured. The requirements system responsible for generating on-order termination lists contained inaccurate information and was unreliable.

Forecasting Life-Limited Item Requirements for Jet Engines (Air Force Audit Agency Project 6126117, June 4, 1987)

Two air logistics centers were using different methods—the additive and the factor methods—to adjust system-computed requirements for life-limited items. The additive method did not include a variable safety level, which caused requirements to be understated by \$2.6 million. Also, equipment specialists did not consider base pipeline time, which understated requirements by about \$.8 million.

The variable safety level and pipeline computational problems existed because air logistics center directives did not establish a methodology to compute variable safety levels or provide guidance concerning what pipelines should be considered for computing life-limited item requirements. In addition, at one air logistics center, war reserve material requirements for four items were understated by \$5.4 million because equipment specialists did not consider life-limited item forecasted demands when computing requirements. This occurred because Air Force guidance did not address the application of these forecasted life-limited item demands in wartime requirements computations.

Air Force Budget: Potential for Reducing Requirements and Funding for Aircraft Spares (GAO/NSIAD-87-48BR, Jan. 13, 1987)

Potential budget reductions of \$587 million for aircraft spares were available because of deferral of requirements for aircraft war reserves and replenishment spares, elimination of excessive administrative lead time requirements, and terminations of on-order aircraft spare excesses. Also, low obligation rates of prior years' funds requested for the purchase of aircraft replenishment spares can make it difficult to fully obligate current year funds.

Military Logistics: Improvements Needed in Managing Air Force Special Stock Levels (GAO/NSIAD-87-34, Dec. 23, 1986)

The Air Force's special stock level requirements for recoverable aircraft and missile spare parts stock requirements valued at \$110 million showed that they were overstated by \$27.9 million due to procedural deficiencies and item manager errors. Also, \$48 million in adjusted base stock levels was not included in the system used by the centers to allocate base stocks and may not have been included in base stock records. Conversely, the allocation systems included \$1.3 million in adjusted base stock levels that had not been approved or entered in the system used to make either buy or repair decisions. These discrepancies would have, if not corrected, resulted in unneeded buys and repairs or improper stock allocations to bases.

Review of the Support for the Fiscal Year 1985 Spares Budget Requirements in AFLC (Air Force Audit Agency Project 5126123, Nov. 14, 1986)

Air Force policies and procedures were generally followed. However, the Air Force Logistics Command's June 1985 message, which encouraged air logistics centers to meet initiation and obligation rate goals, may have caused the requirements not to be closely scrutinized. Additional guidance was needed to improve the documentation of requirements and to strengthen the execution of future Air Force spares budgets. Management reduced unsupported spares buy requirements by \$96 million but still needed to validate spares requirements for an additional \$81.2 million due to overstated variable safety levels, unadjusted purchase requests for decreased spares requirements, and various local discrepancies. Wartime factors for electronic countermeasure systems were not supported by operational data from the using commands, and as a result, such requirements could not be accurately estimated. Also,

spares requirements for one system were overstated by \$376.7 million. This was because estimated failure rates were used instead of accumulating operational or available contractor test data that indicated the actual system failure rate was significantly lower than the estimated rate.

Military Logistics: Buying Spares Too Early Increases Air Force Costs and Budget Outlays (GAO/NSIAD-86-149, Aug. 1, 1986)

Two of the Air Force's five air logistics centers regularly bought recoverable spares up to 14 months earlier than necessary. As a result, for contracts awarded during 1984, the two centers prematurely invested about \$374.5 million in spare parts inventories, thus increasing their inventory holding costs by about \$52.2 million. About \$125.4 million of the total amount invested prematurely represented purchases made more than 1 year too early. Requests for appropriations to fund these purchases could have been deferred for 1 year if the centers had planned to buy spares at the appropriate times.

Determining DOD Requirements for System 463L Air Cargo Pallets and Nets (Air Force Audit Agency Project 5085510, June 9, 1986)

The Air Force recognized the need for increased visibility and management oversight of 463L pallets and nets. However, improvements were needed throughout DOD to ensure pallet and net authorizations were valid, requirements were the minimum quantity needed for peacetime and wartime missions, requirements for personal equipment were determined throughout the services, and inventories were properly accounted for and stored.

Followup Audit—Support of New Engine and Module Requirements From Existing Inventories (Air Force Audit Agency Project 5106217, Apr. 18, 1986)

See report summary under Initial Provisioning.

Followup Audit—Requirements Computations for Spare Parts Affected by Modification Programs (Air Force Audit Agency Project 5126129, Jan. 16, 1986)

The Air Force Logistics Command amended one of its regulations (57-4) to require that Air Logistics Center Requirements Branch reviews include modification program items. The Command also directed that

equipment specialists estimate the number of serviceable assets that will be received as a result of modifications and that these assets be maintained as due-in assets. Management responded to the recommendations in the prior report.

Followup Audit—Safety, Special, and Additive Stock Levels Used in Recoverable Spares Requirements Computations (Air Force Audit Agency Project 5126128, Dec. 11, 1985)

The Air Force Logistics Command implemented a prior audit recommendation. Specifically, the Command revised the D041 system programs to eliminate the special stock level constraints and to make special stock levels independent of the safety level computation in the D041 system. Review of 47 sample items confirmed that safety stock levels were appropriately adjusted in the final computations.

Review of Wartime Failure Rates and Peacetime Requirements Used in Other War Reserve Materiel Computations (Air Force Audit Agency Project 5126116, Sept. 19, 1985)

The Air Force's other war reserve material requirements computation system was using invalid wartime failure rates based on an outdated data base to compute requirements. As a result of corrective action taken by the Air Force Logistics Command, the purchase request and contract quantities decreased for 22 line items (\$125.4 million) and increased for 6 line items (\$6.1 million). Also, the interim other war reserve material model erroneously used a fixed safety level rather than a variable safety level to compute the peacetime operating stock offset to the war requirement.

Fluctuations in the Variable Safety Level Requirements for Recoverable Items (Air Force Audit Agency Project 4126125, Feb. 17, 1985)

The Air Force Logistics Command had corrected a programming error in the variable safety level computation and took action to cancel/terminate acquisitions.

The Air Force Can Improve Its Forecasts of Aircraft Spare Parts Requirements (GAO/NSIAD-85-2, Nov. 19, 1984)

Two air logistics centers overstated their need for some parts for aircraft being phased down or phased out. Based on a sample, a \$31.1 million overstatement was projected. At the same time, the centers

understated their parts requirements for aircraft with expected increases in flying hours and for new aircraft entering the inventory by a projected \$28.8 million.

Thus, with its existing forecast methodology the Air Force could spend millions of dollars to buy parts before they were needed or that could never be needed, while not purchasing millions of dollars worth of needed parts.

Support of New Engine Requirements From Existing Engine Inventories
(Air Force Audit Agency Project 4106218, Nov. 6, 1984)

See report summary under Initial Provisioning.

Excessive Air Force Inventories Result From Duplicative Spare Parts
Requirements (GAO/NSIAD-85-7, Oct. 25, 1984)

Programming logic used to compute total Air Force consumable spare parts requirements resulted in some depot maintenance requirements being double-counted. As of March 31, 1983, the Air Force was investing \$119 million in unnecessary inventory because of this duplication and about \$21.5 million annually in maintaining this inventory.

Army

Quick-Reaction Report on Requirements for Wholesale Inventories to
Support the Target Acquisition Designation Sight/Pilot Night Vision
Sensor System (DOD/OIG 90-050, Mar. 23, 1990)

Requirements for three Target Acquisition Designation Sight/Pilot Night Vision Sensor System spare and repair parts had been computed using estimated recovery rates that were not based on use data. The Army's Aviation Systems Command bought too many spare and repair parts for the two systems, primarily because reliable data were lost when management of the parts was transferred to the Command. The requirements computations supporting those procurements were based on unreasonable estimated maintenance factors. The Command did not effectively monitor the assets held by the contractor. Therefore, quantities in excess of reasonable operating levels were not identified and used to satisfy forecasted requirements.

**Army Inventory: Growth in Inventories That Exceed Requirements
(GAO/NSIAD-90-68, Mar. 22, 1990)**

As of September 30, 1988, unrequired inventory represented \$2.6 billion, or 22 percent, of the Army's total inventory. That is a growth of 168 percent compared to 96 percent growth for the overall inventories since 1983. The largest growth, in terms of dollars, in unrequired inventory occurred at the Aviation Systems Command, one of the six Army buying commands.

More timely and aggressive actions by item management officials could have reduced the procurement of unneeded items. In some cases, information was available to show that the items were not needed before the procurement contracts were awarded. In other cases, such information became available shortly after the contract award. However, the Army had not developed a systematic approach for evaluating when unneeded purchases should have been canceled, reduced, or allowed to proceed. Also, inaccurate data in the requirements data base contributed to the growth of unrequired inventory.

**Army Inventory: A Single Supply System Would Enhance Inventory
Management and Readiness (GAO/NSIAD-90-53, Jan. 25, 1990)**

The 13 retail-level activities had over \$184 million worth of excess spare and repair parts that had not been reported to the wholesale level. These units had \$33 million of shortages, of which \$8.4 million was for items that were excess at other locations. At the same time, managers at the three Army buying commands we reviewed were in the process of procuring \$66.9 million for items that were excess at the retail level.

The alternatives the Army was pursuing to solve many of the problems did not provide for complete integration between the wholesale and retail supply levels. Thus, these improvements did not fully address the problems. Retail-level activities were not complying with Army regulations that require that excess items be reported and returned to the wholesale-level supply system. Therefore, the Secretary of the Army should establish a single supply system that would provide the inventory supply system manager with systemwide asset visibility and the authority to redistribute excesses from locations where they are most needed.

Secondary Item Supply Management, U.S. Army Missile Command, Redstone Arsenal, AL (Army Audit Agency, SO 89-9, Mar. 17, 1989)

The Army Missile Command's emphasis on meeting customer requirements needed to be balanced by a greater concern for the efficient use of resources. Item managers put into the automated supply system invalid requirements consisting of \$119.7 million of unsupported manually generated requirements and \$21.3 million of unsupported extended requirements objectives. Also, incorrect density data on major items supported were used to compute requirements for secondary items.

Military Logistics: Buying Army Spares Too Soon Creates Excess Stocks and Increases Costs (GAO/NSIAD-89-196, Aug. 28, 1989)

The two Army buying commands we visited regularly initiated item purchases earlier than they should have and also purchased quantities exceeding authorized requirements. Purchasing spares and repair parts prematurely or excess to requirements resulted in unnecessary inventory investment, which would cause higher inventory holding costs unless requirements increased. These problems occurred, in part, because the two commands had misinterpreted Army guidance on obligating procurement funds.

Also, the Army Materiel Command should have strengthened its internal control practices to ensure that buying commands (1) complied with established guidance for canceling or reducing excessive on-order quantities of material, (2) adequately documented item management and procurement decisions, and (3) followed existing regulations on the approval of procurement actions based on dollar-value thresholds.

Requirements Determination and Execution System, U.S. Army Armament, Munitions and Chemical Command, Rock Island, IL (Army Audit Agency, MW 89-7, Dec. 30, 1988)

The Requirements Determination and Execution System was not being used as effectively as possible to manage secondary items. Item managers felt it was better to have too much stock on hand rather than risk not being able to satisfy customer demands. As a result, they frequently did not respond appropriately to automated supply control study recommendations to reduce or cancel planned purchases. Also, the effective

use of the Requirements System was significantly hindered by inaccurate information in the national stock number master data record. Automated material management limits and lead time freeze codes were not used appropriately to compute requirements.

Inventory Management: Army Needs to Reduce Retail Level Excesses
(GAO/NSIAD-87-197, Sept. 2, 1987)

Item managers at the national inventory control points were often unaware that items were excess at certain locations and in short supply at others. This occurred primarily because item managers at the retail level did not report all excess items. Consequently, situations developed where excess items at the retail level were also being procured by the national inventory control points. If the item managers had complete and accurate information on excess retail level items, the items could have been redistributed to locations where they were needed. Thus, procurements could have been delayed or reduced.

The Army's Safety Level Requirements for Secondary Items May Be Inaccurate and Excessive (GAO/NSIAD-85-160, Sept. 30, 1985)

At the Army Materiel Command's six major subordinate commands, safety level requirements for 48,399 secondary items (spares and repair parts) exceeded procurement lead time requirements for a number of items valued at \$76 million. DOD requires that safety levels be at least equal to the procurement lead time requirements. However, the economic order quantity/variable safety level formula used to compute requirements for stock produced quantities that were erratic could be excessive, and did not materially improve supply support.

The Army's Use of Serviceable Returns in Requirements Computations
(GAO/NSIAD-85-59, Apr. 9, 1985)

The volume of serviceable returns for three Army activities reviewed was up by 11.7 percent in fiscal year 1984, as compared with fiscal year 1983, and the dollar value of these returns increased from \$34.6 million to \$69.8 million. Nearly 50 percent of the reported serviceable material was accepted by the wholesale supply activities. Although these returns were recorded as assets on hand, they received limited consideration in forecasting requirements. Consequently, unnecessary procurement and rework costs could have resulted.

Defense Logistics Agency

Defense Inventory: Defense Logistics Agency Needs to Better Manage Procurement Leadtimes (GAO/NSIAD-90-124, May 2, 1990)

DLA had not implemented adequate controls to manage and minimize procurement lead times as directed by DOD. Sampled items at two supply centers had lead times that were either overstated or understated, thus increasing the risk of buying too much or too little stock. Specifically, DLA had not

- conducted required supply management reviews to ensure that lead times were accurately forecasted and management actions were taken to minimize lead time,
- set standards for the various stages of the buying process or developed complete and accurate information so that nonrepresentative procurement actions could have been identified and eliminated from the data base used to forecast procurement lead times, or
- used realistic delivery dates to forecast lead times.

Although DLA had taken measures to reduce the time needed to award contracts, it had not tried to reduce production and delivery times by obtaining the best delivery dates from contractors. Production and delivery times account for 60 percent of total procurement lead time.

Defense Inventory: Defense Logistics Agency's Excess Materiel on Order (GAO/NSIAD-90-105, Mar. 6, 1990)

For most excess material on order, DLA item managers were unnecessarily avoiding making termination recommendations to contracting officers. For example, at the Construction Supply Center, contracts below \$25,000 were not considered for termination. This relatively high threshold excluded 98.5 percent of the center's contracts. Item managers were also incorrectly recomputing requirements or arbitrarily increasing requirements to avoid recommending terminations. Because of lax or nonexistent supervision, questionable decisions not to recommend terminations were not reversed.

Even when items were recommended for termination, contracts were not terminated if the contracting officer was informed by the contractor that the contract could not be terminated without cost to the U.S. government. In these cases, item managers made decisions to accept unneeded items without performing a required cost benefit analysis. Unless item managers received estimates of termination costs, they did

not have a reliable data base to determine if acquisition of excess items was in the government's best interest.

Inventory Management of Clothing and Textile Materiel (DOD/OIG 86-061, Jan. 31, 1986)

Fixed procurement cycles and safety levels were used to develop requirement levels for clothing and textile items, although DOD and DLA guidance specifies variable safety levels and procurement cycles. Requirements forecasts for recruit clothing items were understated and overstated. More effective implementation of procedures to manage phase-out stocks of clothing items being replaced by the DOD components could have reduced losses from disposal of replaced items by about \$96.3 million.

Materiel Management of Numeric Stockage Objective Items by the Defense Logistics Agency (DOD/OIG 85-057, Dec. 24, 1984)

Numeric stockage objective items are spare parts with minimal issue requirements that are not managed under normal demand replenishment techniques. DLA was buying and stocking spare parts as numeric stockage items that did not warrant stockage. These items were not coded as weapon systems items or were coded as not essential to weapon systems and had insufficient demands to justify stockage. Procurements of these items could have been reduced by \$75.4 million and holding costs could have been reduced by \$16.4 million if items had been managed on a nonstocked basis. Additional savings were probable for some portion of the estimated \$67.7 million of procurements made for low-demand, weapon systems-coded items whose essentiality the supply centers did not know.

Navy

New and Replacement Material Handling Equipment and Intermediate Size Container Requirements of the Fleet Marine Forces (Naval Audit Service 053-W-90, June 20, 1990)

The Marine Corps needed to perform better analyses of material-handling equipment and container requirements and develop better supporting data for quantities needed. Requirements for container handlers, forklifts, cranes, and intermediate size containers were not supported and exceeded the Fleet Marine Forces needs. Also, there was little assurance that the mix of material-handling equipment and containers to be procured was the most effective or efficient.

Navy Supply: Procurement Leadtime Forecasting Needs Improvement
(GAO/NSIAD-90-78, May 18, 1990)

The Navy's Aviation Supply Office could improve determinations of procurement lead time requirements for aviation parts. Administrative lead time requirements were not always based on actual experience. At one point, the Aviation Supply Office had arbitrarily increased the administrative lead times for all items by 9 months. In calculating production lead time requirements, the supply office did not consider some actual experienced lead times even when these lead times were more realistic. It also did not routinely obtain contractor estimates of lead times or compare them with actual performance.

A random sample of 21 items showed either overstated or understated requirements. The overstatements totaled \$2.2 million and the understatements totaled \$839,000. With 162,000 items having lead time requirements of over \$2 billion, the potential for significant efficiencies and dollar savings is great.

Defense Inventory: Growth in Ship and Submarine Parts (GAO/NSIAD-90-111, Mar. 6, 1990)

See report summary listed under Initial Provisioning.

Management of the Fleet Marine Forces Maintenance Floats (Naval Audit Service 017-W-90, Feb. 7, 1990)

The maintenance floats achieved the desired results: repairable assets were available for direct exchange and satisfied at least 80 percent of customers' initial demands locally. However, the Force Service Support Groups' maintenance floats had \$58.1 million of assets that exceeded requirements, of which \$39.7 million exceeded authorized retention quantities. Internal controls were inadequate and did not prevent or detect material errors or irregularities and did not ensure compliance with asset management and allowance determinations directives. Allowances for identical repairable assets at the Force Service Support Groups were widely divergent.

Requirements Determination for Operating Stocks and Spares Acquisition Value Enhancement Program at Marine Corps Logistics Base, Albany, GA (Naval Audit Service 004-S-90, Nov. 16, 1989)

The Marine Corps Logistics Base did not validate the accuracy of the data used in replacement stock requirements computations or perform the follow-up reviews as often as required by Marine Corps directives. Marine Corps field units that reduced requirements for initial issue Lightweight Camouflage Screening System equipment did not coordinate the reduction with the Commandant, Marine Corps. Also, the Marine Corps had not complied with existing internal controls, and some internal controls were deficient.

Selected Planned Program Requirements for Non-Aviation Material (Naval Audit Service 048-N-89, May 1, 1989)

The Navy's Ship Parts Control Center did not effectively utilize and manage a portion of the \$240.6 million in funded Planned Program Requirements recorded under the 40 project codes in its review. This resulted in overstated requirements, which caused inflated budgets and, in some instances, unnecessary procurements of spare parts. The Navy's Ship Parts Control Center established some Planned Program Requirements to meet competitive and small disadvantaged business purchasing goals set by the Naval Supply Systems Command, although the requirements exceeded customers' needs. This caused invalid Planned Program requirements leading to inflated requirements, generating unneeded buys, and violating responsible financial and inventory management procedures. The audit claimed \$37 million in potential one-time cost avoidances if these practices were discontinued.

Selected Planned Program Requirements for Aviation Material (Naval Audit Service 033-N-89, Feb. 24, 1989)

The Navy's Aviation Supply Office did not effectively manage a portion of the \$915.9 million in funded Planned Program Requirements. This resulted in \$55.3 million in overstated requirements and \$4 million in understated requirements. Some Planned Program Requirements were misclassified as supply system requirements, although they were already included in customers' allowance quantities. Also, the Aviation Supply Office did not accurately recompute Planned Program Requirements to satisfy planned changes in operations and customer inventory levels. The Aviation Supply Office had not provided current guidance or sufficient management emphasis for managing Planned Program

Requirements. In addition, the computer processing of Maintenance and Material Management data needed to validate Planned Program Requirements for various initiatives was inadequately controlled.

Navy Supply: Economic Order Quantity and Item Essentiality Need More Consideration (GAO/NSIAD-88-64, Jan. 6, 1988)

Navy policy required that when the economic order quantity was calculated to be less than 1 year, a year's supply of material had to be ordered. About 50 percent of the reviewed stock items had economic order quantities under a year. The Navy could have reduced the potential for increasing its stocks beyond current needs and minimized the costs of ordering and holding inventory by purchasing the economic order quantity rather than a 1-year supply. Navy policies on acceptable risk of running out of stock and on mission essentiality enabled almost every inventory item to have a safety level of stock. The Navy could have reduced the potential for increasing its stocks beyond current needs by revising these policies.

In fiscal year 1986 the Aviation Supply Office ordered \$133.7 million in material that exceeded the economic order quantity. This material resulted in an additional cost of \$10.5 million because the increased holding costs of the larger inventories more than offset the decrease in ordering costs and the implied cost of shortages.

The Navy's inventory of stock exceeding requirements by a 24- or 30-month supply had shown a dramatic increase in recent years and was expected to rise to \$14 billion in fiscal year 1988. Also, the policy of ordering a year's supply of material rather than the economic order quantity (when less than 1 year) increased the risk of overbuying material with a potential for increasing stocks beyond current needs.

The Navy Can Increase Cancellation of Procurements for Unneeded Material (GAO/NSIAD-85-55, Mar. 22, 1985)

The Navy's procedures and practices for canceling could have been used to reduce unnecessary procurement and inventory investment costs. Four main reasons why cancellations were not higher were (1) the inventory control points had established high dollar review thresholds, (2) the inventory control points had applied protection levels to provide an added buffer against running out of stock, (3) inventory managers did not always act on cancellation notices in a timely manner, and

(4) management and supervisory attention over the cancellation process was limited.

DOD/Interservice

Special Program Requirements for Logistic Support (DOD/OIG 90-087, June 27, 1990)

Special Program Requirements is a term used to identify unusual, non-repetitive requirements that the services expect to materialize. They are used to plan future supply support from DOD wholesale inventory management activities. The services had submitted Special Program Requirements requests to DLA that were inappropriate or were for excessive and unsubstantiated quantities. Furthermore, they subsequently submitted requisitions that could not be readily related to the Special Program Requirements for which the supply support had been planned.

The services lacked internal controls to ensure that Special Program Requirements were submitted for appropriate purposes and reasonable quantities and that the ensuing requisitions contained the proper demand code. In addition, the services and DLA had not established internal controls to adequately account for Special Program Requirements investments and transactions, monitored the effectiveness of Special Program Requirements as a logistics planning method, and initiated corrective action, as necessary.

Defense Inventory: Growth in Air Force and Navy Unrequired Aircraft Parts (GAO/NSIAD-90-100, Mar. 6, 1990)

DOD's inventory of aircraft parts grew from \$17.3 billion in 1980 to \$53.6 billion in 1988. The inventory of unrequired aircraft parts increased at a faster rate than required stocks. Procurement management practices were a major contributor to growth in unrequired stock. Also, some DOD and Air Force initiatives to improve their reports could reduce visibility over unrequired stock and, consequently, mask the need for management attention. Required stocks held to meet other than current-year requirements grew significantly and were more likely to become obsolete or experience declining demand before they were needed.

The reduced oversight and growth in years of required stock suggested that unrequired stocks could continue to grow. Also, holding more years of stock resulted in larger required inventories without a stated policy to increase requirements.

Validation of Requirements for Unfilled Materiel Orders (DOD/OIG 89-046, Jan. 18, 1989)

DOD components did not comply with Military Standard Requisitioning and Issue Procedures to select items for validation, report program results, and cancel unneeded on-order material. As a result, the components applied unique exclusions to material obligations meeting the DOD criteria for validation. Validation requests included equipment allowance and war reserve requirements, established by higher commands, that requisitioners could not validate. More specific criteria were needed for selecting items to validate and to report accurate program accomplishments. More controls were needed to ensure unneeded material orders were canceled and validations of need at retail activities were properly implemented. Program results were inaccurate and overstated achievements. The requisitions were inaccurately reported as valid requirements.

Secondary Item Weapon System Management (DOD/OIG 88-171, June 16, 1988)

See report summary under Initial Provisioning.

Uniform Materiel Movement and Issue Priority System (DOD/OIG 88-118, Apr. 1, 1988)

The Uniform Materiel Movement and Issue Priority System provided an appropriate basis to rank the services' requirements. However, the system was not effective because requisitioning activities were not complying with DOD issue priority procedures, and the services did not perform adequate oversight of priority assignment. DOD requisitioners routinely assigned a higher priority than authorized to material requirements submitted to wholesale inventory control activities. A number of recent audits by the service audit agencies and our audits have confirmed this.

DOD Inventory Management: Revised Policies Needed (GAO/NSIAD-88-75, Jan. 14, 1988)

Numerous reports have addressed serious inventory management deficiencies, such as inaccurate inventory records, poor physical inventory controls, and inadequate controls and accountability over government property furnished to contractors. DOD was supposed to have evaluated how the services and DLA managed inventories in their custody, yet

lacked accurate data to do this. If DOD is to tackle the problem of inventory accuracy, it must go beyond what it has been doing or trying to do for several years—refining current policies and procedures and attempting to monitor compliance.

Because of causative research problems, DOD lacked the data needed to assess where the basic problems were. There was too much emphasis on making adjustments that were then reviewed to determine whether the adjustments could be reversed. In this case, the goal was apparently to report higher inventory accuracy rates. Additionally, the services sometimes did not correct their inventory records when discrepancies were discovered. Item managers need accurate information to make day-to-day management decisions.

Minimum Economic Order Quantities (DOD/OIG 88-020, Oct. 8, 1987)

The services and DLA implemented minimum annual economic order quantity policies in lieu of normal economic order quantities to combat overpricing for small quantity buys and reduce the number of procurement actions required. Although the initiative to extend the procurement cycle had merit, it was so broadly applied that the costs exceeded the benefits. If it had been more narrowly applied, substantial cost savings could have been achieved. Those items where quantity price breaks could have been obtained had not been identified.

Materiel Classified as Not Ready for Issue (DOD/OIG 87-212, July 31, 1987)

Each of the inventory control points had established procedures to give greater attention to the management of not-ready-for-issue material. While these procedures were steps in the right direction, problems still existed. There was a lack of procedures for and inconsistencies in considering not-ready-for-issue material in the computation of procurement requirements. Also, this material was not being reviewed, processed, and removed from not-ready-for-issue condition on a timely basis. These conditions occurred because: (1) there was not a DOD policy on considering these assets in requirements computations, (2) time standards had not been established for review and classification, and (3) review efforts at inventory control activities were not prioritized to concentrate on items under procurement and in critical supply.

Controls Over Accuracy of Data in DOD Wholesale Logistics Systems
(DOD/OIG 87-186, July 7, 1987)

The services had not established effective controls to ensure that accurate data were used when making decisions to buy, repair, return, and dispose of wholesale assets, and the Navy had only partially complied with the recommendations in our previous report.² Although the Office of the Secretary of Defense had issued guidance to the services to improve internal controls over automated logistics operations, including a requirement to evaluate the accuracy of data in the systems, components had not effectively implemented the guidance. The controls that did exist were primarily to determine the validity of data rather than its accuracy. Five inventory control points and five system design agencies visited had not implemented adequate quality control programs that included standards for data accuracy, tests of critical data, identification of causes of common errors, and actions to correct deficiencies.

War Reserves

Air Force

Military Airlift: Peacetime Use of War Reserve Spares Reduces Wartime Capabilities (GAO/NSIAD-90-186, June 25, 1990)

Shortages of serviceable peacetime operating spares to support the Air Force's C-5 and C-141 flying hour programs have led the Air Force to rely on war reserve spares to support peacetime operations. As a result, the level of war reserve spares had decreased to the point at which the C-5 and C-141 might not be able to sustain their wartime utilization rates if the spares were not fully replaced when used. In addition, the level of war reserve spares to support the C-5 and C-141 aircraft was not fully disclosed because capability assessment reports to the Joint Chiefs of Staff were incomplete and incorrect. Changes in Eastern Europe should increase contingency warning times and lessen the potential adverse impact of shortages.

²Navy Logistics Data Base Problems Need Increased Management Attention (GAO/NSIAD-83-48, Aug. 19, 1983).

Accuracy of Selected Data Used in Aircraft Wartime Spares Requirements (Air Force Audit Agency Project 9126116, May 3, 1990)

The data used in the computation of F-15, F-16, and B-52 war reserve requirements were not accurate; consequently, these requirements were overstated by \$19.7 million. This occurred because the Air Force Logistics Command did not provide adequate guidance and training relating to the importance of accurate codes when computing war reserve requirements, and the system for computing these requirements did not provide an automated exception listing to identify items requiring further review or correction. Additionally, F-16C navigation system requirements were understated by \$1 million because there was no requirement for the air logistics centers to establish work unit codes on new weapon systems before computing war reserve requirements.

Prepositioned War Reserve Materiel Subsistence Requirements (Air Force Audit Agency Project 9275112, Apr. 24, 1990)

Management of prepositioned war reserve subsistence was not effective. Discrepancies requiring management attention were identified in the following areas:

- Subsistence requirements for overseas commands and self-sustaining units were not accurately computed, resulting in overstatements totaling \$1.85 million.
- Subsistence replacement quantities (for rotation) were not accurately computed. Computations for stateside bases exceeded the amounts needed by \$202,000. Conversely, replacement quantities for European bases were understated, causing subsistence stocks to be depleted by more than 40,000 cases below the funded levels.
- Commissaries ordered over 12,000 cases of additional, unneeded subsistence items after rotation stocks had already been depleted. Some of the items were ordered for resale in commissaries at half price. Overall, this practice adversely affected the Air Force's ability to rotate subsistence stocks.

Followup Audit—Forecasting Life-Limited Item Requirements for Jet Engine (Air Force Audit Agency Project 9126117, Aug. 25, 1989)

See report summary listed under Replenishment.

Memorandum 051-9-3, Survey of Prepositioned War Reserve Materiel Subsistence Requirements (Air Force Audit Agency Project 9275112, June 22, 1989)

Prepositioned war reserve material subsistence requirements computed by the Air Force in 1988 were not indicative of actual need. The requirements for main operating bases with existing dining halls were computed in the same manner as the requirements for bare base locations having no or limited cooking facilities. Also, computational errors were made that were not detected due to a lack of oversight.

Followup Audit—Management and Requirements Determination for System 463L Air Cargo Pallets and Nets (Air Force Audit Agency Project 9225215, Feb. 16, 1989)

See report summary listed under Replenishment.

Selected Aspects of War Readiness Spares Kit/Base Level Self-Sufficiency Requirements (Air Force Audit Agency Project 7126116, Dec. 23, 1988)

Policies and procedures used to tailor war readiness spares kit and base level self-sufficiency spares requirements to specific bases and locations were not adequate. Major commands did not adequately consider the use of all available peacetime operating stocks to offset part or all of the base level self-sufficiency requirements.

Followup Audit—Review of the Support for the Fiscal Year 1985 Spares Budget Requirements in Air Force Logistics Command (Air Force Audit Agency Project 8126122, Dec. 13, 1988)

Air Force management had initiated appropriate actions for using commands to validate the electronic countermeasure factors prior to acquisition of wartime spares, and the Air Force Deputy Chief of Staff, Logistics and Engineering, removed limitations for out-of-cycle element changes. Actions taken corrected previously cited conditions. The acquisition of such spares was deferred while the electronic countermeasure factors were validated by major commands. In addition, the major commands were using actual electronic countermeasure usage data for factor development. Also, directives were revised to allow for out-of-cycle data element changes. Furthermore, the system used to compute war reserve requirements has on-line file maintenance that

allows updating of war reserve requirements computational data elements as desired.

Procurement: Spare Parts and Support Equipment for Air Force C-5 Transport Aircraft (GAO/NSIAD-88-57BR, May 23, 1988)

See report summary listed under Replenishment.

Followup Audit—Spares Support for the F-16C/D Aircraft (Air Force Audit Agency Project 7126122, May 3, 1988)

See report summary listed under Replenishment.

Forecasting Life-Limited Item Requirements for Jet Engines (Air Force Audit Agency Project 6126117, June 4, 1987)

See report summary listed under Replenishment.

Followup Audit—Review of Wartime Failure Rates and Peacetime Requirements Used in Other War Reserve Materiel Computations (Air Force Audit Agency Project 6126120, Jan. 23, 1987)

The original audit disclosed misstatements of other war reserve material requirements due to the use of invalid computational data. Management responded by incorporating the requirements computation into the Recoverable Consumption Item Requirements System. While this incorporation corrected some of the invalid data, other war reserve material computations remained in error because the computational logic that determined failure rates erroneously increased authorized quantities.

Air Force Budget: Potential for Reducing Requirements and Funding for Aircraft Spares (GAO/NSIAD-87-48BR, Jan. 13, 1987)

See report summary listed under Replenishment.

Review of the Support for the Fiscal Year 1985 Spares Budget Requirements in Air Force Logistics Command (Air Force Audit Agency Project 5126123, Nov. 14, 1986)

See report summary listed under Replenishment.

Determining DOD Requirements for System 463L Air Cargo Pallets and
Nets (Air Force Audit Agency Project 5085510, June 9, 1986)

See report summary listed under Replenishment.

Review of Wartime Failure Rates and Peacetime Requirements Used in
Other War Reserve Materiel Computations (Air Force Audit Agency Pro-
ject 5126116, Sept. 19, 1985)

See report summary listed under Replenishment.

Defense Logistics Agency

Report on the Survey of Mobilization Materiel Requirements for Defense
Logistics Agency Managed Items (DOD/OIG 89-029, Nov. 8, 1988)

Overall, the military services' procedures and controls for item selection for the war reserve program were generally adequate and conformed to DOD criteria. However, the services may have erroneously omitted from the war reserve requirement 2 of 50 items. The reviewed items were selected from a DLA-prepared list of items applicable to the most critical weapon systems as defined by the Joint Chiefs of Staff. The items selected were not part of war reserve requirements as of December 1987.

Management Review: Follow-up on the Management Review of the
Defense Logistics Agency (GAO/NSIAD-88-107, Mar. 28, 1988)

In response to a 1986 GAO report, DOD had completed or had actions underway to address problems within the areas of planning, including war mobilization planning, program controls, organization, and operations.

However, additional management action would have enhanced the steps that had been taken. The areas in most need of additional attention were strategic and war mobilization planning and management controls over activities such as contract administration and inventory receipt and storage.

Management Review: Progress and Challenges at the Defense Logistics
Agency (GAO/NSIAD-86-64, Apr. 7, 1986)

Five areas where DLA's planning processes could have been improved were strategic planning, mobilization for war, automated information

**Appendix III
Summaries of Audit Reports Related to
DOD's Inventory Requirements
Determination Processes**

resources, staff needs, and budget formulation. Program management problems existed in the areas of contract administration, inventory management, automatic data processing costs, and audit follow-up. Also, DLA's plans for carrying out its mission in wartime and during other contingencies had not been completed at major field activities. Establishing an appropriate organizational structure and controls to manage automatic data processing and the internal audit function was important. A number of improvements should have been made in DLA's direction of operations in such areas as supply support for weapons systems and productivity programs.

Navy

Pre-Positioned War Reserve Stock (Naval Audit Service 048-S-90,
June 29, 1990)

Improved management actions were necessary regarding prepositioned war reserve stock (war reserves). Activities responsible for inventory control of stocks having requirements stock did not exercise sufficient physical and accountable control over stocks in their possession. Excess integrated managed consumable material was not applied against war reserve deficiencies as required by Marine Corps directives. The Marine Corps Logistics Base in Albany, Georgia, developed data exchange software to show management responsibility for other than Marine Corps war reserve stock but installed erroneous item manager designators in the software. The data exchange software incorrectly identified the base as the integrated material manager, which caused the base to accumulate excess war reserve stock. The base did not always validate war reserve financial obligations: when such requirements established in the annual acquisition plan were deleted, pending procurements of the war reserves were not canceled in significant cases. About \$3.7 million of invalid funding commitments could have been canceled and used for other purposes.

DOD/Interservice

Secondary Item War Reserves (DOD/OIG 88-092, Mar. 1, 1988)

Policies and procedures for managing war reserves were inadequate to ensure that lower priority other war reserve stocks were used to fill higher priority shortages in the prepositioned war reserve stocks. In addition, procedures and internal controls were inadequate at DLA to ensure proper stratification of other war reserve stocks that exceeded requirements or to ensure that procurements in process were reduced or canceled when requirements were reduced.

List of 97 Reports Reviewed by Audit Agency

General Accounting Office Reports (32)

Report number	Date	Title
Air Force		
NSIAD-90-186	6/25/90	Military Airlift: Peacetime Use of War Reserve Spares Reduces Wartime Capabilities
NSIAD-90-178	9/13/90	Strategic Missiles: Logistics Support for Advanced Cruise Missiles Based on Outdated Plans
NSIAD-90-148	8/23/90	Air Force Logistics: Increased Costs for Spare Parts Safety Levels Are Not Justified
AFMD-90-23	2/23/90	Financial Audit: Air Force Does Not Effectively Account for Billions of Dollars of Resources
NSIAD-90-18	11/28/90	Air Force Budget: Potential for Reducing Funding for Aircraft Spares
NSIAD-90-15	10/05/89	Air Force Budget: Potential Reductions to Aircraft Procurement Budgets
NSIAD-89-82	6/02/89	Military Logistics: Air Force's Management of Backordered Aircraft Items Needs Improvement
NSIAD-88-90BR	2/18/88	Air Force Budget: Potential for Reducing Requirements and Funding for Aircraft Spares
NSIAD-88-57BR	5/23/88	Procurement: Spare Parts and Support Equipment for Air Force C-5 Transport Aircraft
NSIAD-87-141	8/12/87	Military Procurement: Air Force Should Terminate More Contracts for On-Order Excess Spare Parts
NSIAD-87-48BR	1/13/87	Air Force Budget: Potential for Reducing Requirements and Funding for Aircraft Spares
NSIAD-87-34	12/23/86	Military Logistics: Improvements Needed in Managing Air Force Special Stock Levels
NSIAD-86-149	8/01/86	Military Logistics: Buying Spares Too Early Increases Air Force Costs and Budget Outlays
NSIAD-85-7	10/25/84	Excessive Air Force Inventories Result From Duplicative Spare Parts Requirements
NSIAD-85-2	11/19/84	The Air Force Can Improve Its Forecasts of Aircraft Spare Parts Requirements
Army		
NSIAD-90-68	3/22/90	Army Inventory: Growth in Inventories That Exceed Requirements
NSIAD-90-53	1/25/90	Army Inventory: A Single Supply System Would Enhance Inventory Management and Readiness
NSIAD-89-196	8/28/89	Military Logistics: Buying Army Spares Too Soon Creates Excess Stocks and Increases Costs

(continued)

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List of 97 Reports Reviewed by Audit Agency

Report number	Date	Title
NSIAD-87-197	9/02/87	Inventory Management: Army Needs to Reduce Retail Level Excesses
NSIAD-85-160	9/30/85	The Army's Safety Level Requirements for Secondary Items May Be Inaccurate and Excessive
NSIAD-85-59	4/09/85	The Army's Use of Serviceable Returns in Requirements Computations
Navy		
NSIAD-90-111	3/06/90	Defense Inventory: Growth in Ship and Submarine Parts
NSIAD-90-78	5/18/90	Navy Supply: Procurement Leadtime Forecasting Needs Improvement
NSIAD-89-103	3/02/89	Navy Supply: Questionable Decisions Increased Initial Spares Costs for AV-8B Aircraft
NSIAD-88-64	1/06/88	Navy Supply: Economic Order Quantity and Item Essentiality Need More Consideration
NSIAD-85-55	3/22/85	The Navy Can Increase Cancellations of Procurements for Unneeded Material
Defense Logistics Agency		
NSIAD-90-124	5/02/90	Defense Inventory: Defense Logistics Agency Needs to Better Manage Procurement Leadtime
NSIAD-90-105	3/06/90	Defense Inventory: Defense Logistics Agency's Excess Materiel on Order
NSIAD-88-107	3/28/88	Management Review: Follow-Up on the Management Review of the Defense Logistics Agency
NSIAD-86-64	4/07/86	Management Review: Progress and Challenges at the Defense Logistics Agency
DOD/Interservice		
NSIAD-90-100	3/16/90	Defense Inventory: Growth in Air Force and Navy Unrequired Aircraft Parts
NSIAD-88-75	1/14/88	DOD Inventory Management: Revised Policies Needed

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Army Audit Agency Reports (11)

Report number	Date	Title
SO 89-9	3/17/89	Secondary Item Supply Management, U.S. Army Missile Command, Redstone Arsenal, AL
MW 89-7	12/30/88	Requirements Determination and Execution System, U.S. Army Armament, Munitions and Chemical Command, Rock Island, IL
NE 88-213	8/22/88	Initial Provisioning—Management of the Initial Provisioning Process
NE 88-211	5/24/88	Initial Provisioning—Planning and Management of the Provisioning Process, U.S. Army Communications-Electronics Command, Fort Monmouth, NJ
NE 88-206	2/22/88	Audit of Initial Provisioning—Acquisition and Requirements Determination
NE 87-203	6/26/87	Initial Provisioning—Acquisition and Requirements Determination, U.S. Army Communications-Electronics Command, Fort Monmouth, NJ
MW 87-202	6/19/87	Initial Provisioning—U.S. Army Aviation Systems Command, St. Louis, MO
MW 87-201	5/06/87	Initial Provisioning—Army Helicopter Improvement Program (OH-58D), U.S. Army Aviation Systems Command, St. Louis, MO
EC 87-200	5/07/87	Initial Provisioning—U.S. Army Tank-Automotive Command, Warren, MI
MW 87-200	4/13/87	Initial Provisioning—Black Hawk Helicopter (UH-60A), U.S. Army Aviation Systems Command, St. Louis, MO
SW 87-200	1/16/87	Initial Provisioning—4th Infantry Division (Mechanized) and Fort Carson, Fort Carson, CO

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Naval Audit Service Reports (6)

Report number	Date	Title
053-W-90	6/20/90	New and Replacement Material Handling Equipment and Intermediate Size Container Requirements of the Fleet Marine Forces
048-S-90	6/29/90	Pre-Positioned War Reserve Stock
017-W-90	2/07/90	Management of the Fleet Marine Forces Maintenance Floats
004-S-90	11/16/89	Requirements Determination for Operating Stocks and Spares Acquisition Value Enhancement Program at Marine Corps Logistics Base, Albany, GA
048-N-89	5/01/89	Selected Planned Program Requirements for Non-Aviation Material
033-N-89	2/24/89	Selected Planned Program Requirements for Aviation Material

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Air Force Audit Agency Reports (34)

Report number	Date	Title
9126119	9/28/90	Initial Spares Requirements for Selected Communications-Electronics Equipment
0126120	8/30/90	Followup Audit—Management of Aviation Fuel Peacetime Requirements and Inventories
9126118	8/17/90	Requirements for F100-PW and F110-GE Spare Engines and Modules
0126122	7/23/90	Followup Audit—Inactive Aircraft Retention Factors Used in Spare Engine Computations
9126116	5/03/90	Accuracy of Selected Data Used in Aircraft Wartime Spares Requirements
9126115	4/30/90	Replenishment Spares Procurement Lead Times and Delivery Schedules
9275112	4/24/90	Prepositioned War Reserve Materiel (WRM) Subsistence Requirements
9126124	3/19/90	Followup Audit—Provisioning Requirements Computations
8036320	2/27/90	Procurement and Provisioning Actions Within the Advanced Medium Air-to-Air Missile
9226116	10/06/89	Review of Vehicle Replacement Requirement Computations in the Equipment Item Requirements Computation System (D039)
9126117	8/25/89	Followup Audit—Forecasting Life-Limited Item Requirements for Jet Engines
9275112	6/22/89	Survey of Pre-Positioned War Reserve Materiel Subsistence Requirements
8106210	2/27/89	Accuracy of Depot Repair Cycle Flow Times Used to Compute Repair and Buy Requirements for Exchangeable Assets
9225215	2/16/89	Followup Audit—Management and Requirements Determination for System 463L Air Cargo Pallets and Nets
8126115	1/13/89	F108 Spare Engine Requirements
7126116	12/23/88	Selected Aspects of War Readiness Spares Kit/Base Level Self-Sufficiency Spares (WRSK/BLSS) Requirements
8126122	12/13/88	Followup Audit—Review of the Support for the Fiscal Year 1985 Spares Budget Requirements in AFLC
7136511	12/12/88	Peacetime Conventional Munitions Requirements Forecast
7126122	11/07/88	War Reserve Materiel for Strategic Airlift Aircraft
6126116	3/28/88	Depot-Level Maintenance Factors Used in Computing Spares Requirements

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Report number	Date	Title
7126120	2/03/88	Followup Audit—Provisioning Requirements for the B-1B Defensive Avionics System (AN/ALQ-161)
7126111	11/03/87	Inactive Aircraft Retention Factors Used in Spare Engine Computations
6126117	6/04/87	Forecasting Life-Limited Item Requirements for Jet Engines
6126120	1/23/87	Followup Audit—Review of Wartime Failure Rates and Peacetime Requirements Use in Other War Reserve Materiel Computations
5126123	11/14/86	Review of the Support for the Fiscal Year 1985 Spares Budget Requirements in AFLC
6126114	8/21/86	Followup Audit—Budgeting, Buying, and Computing Requirements for Initial Spares Support Lists
5085510	6/09/86	Determining DOD Requirements for System 463L Air Cargo Pallets and Nets
5126114A	6/03/86	Provisioning Requirements Computations
5106217	4/18/86	Followup Audit—Support of New Engine and Module Requirements From Existing Inventories
5126129	1/16/86	Followup Audit—Requirements Computations for Spare Parts Affected by Modification Programs
5126128	12/11/85	Followup Audit—Safety, Special, and Additive Stock Levels Used in Recoverable Spares Requirements Computations
5126116	9/19/85	Review of Wartime Failure Rates and Peacetime Requirements Used in Other War Reserve Materiel Computations
4126125	2/17/85	Fluctuations in the Variable Safety Level Requirements for Recoverable Items
4106218	11/06/84	Support of New Engine Requirements From Existing Engine Inventories

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DOD Office of the Inspector General
Reports (14)

Report number	Date	Title
90-087	6/27/90	Special Program Requirements for Logistic Support
90-050	3/23/90	Quick-Reaction Report on Requirements for Wholesale Inventories to Support the Target Acquisition Designation Sight/Pilot Night Vision Sensor System
89-046	1/18/89	Validation of Requirements for Unfilled Materiel Orders
89-029	11/08/88	Report on the Survey of Mobilization Materiel Requirements for Defense Logistics Agency Managed Items
88-171	6/16/88	Secondary Item Weapon System Management
88-140	4/27/88	Requirements Forecasts on Supply Support Requests
88-118	4/01/88	Uniform Materiel Movement and Issue Priority System
88-092	3/01/88	Secondary Item War Reserves
88-020	10/08/87	Minimum Economic Order Quantities
87-212	7/31/87	Materiel Classified as Not Ready for Issue
87-186	7/07/87	Controls Over Accuracy of Data in DOD Wholesale Logistics Systems
86-061	1/31/86	Inventory Management of Clothing and Textile Materiel
85-057	12/24/84	Materiel Management of Numeric Stockage Objective Items by the Defense Logistics Agency
84-053	3/07/84	Initial Spare Parts Procurements for Selected Major Systems

Comments From the Department of Defense



PRODUCTION AND
LOGISTICS
(L/SD)

ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, DC 20301-8000

April 3, 1991

Mr. Frank C. Conahan
Assistant Comptroller General
National Security and International
Affairs Division
U.S. General Accounting Office
Washington, DC 20548

Dear Mr. Conahan:

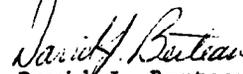
This is the Department of Defense (DoD) response to the General Accounting Office (GAO) Draft Report entitled, "DEFENSE INVENTORY: Comprehensive Strategy Needed to Improve Requirements Determination," Dated March 25, 1991 (GAO Code 398056, OSD Case 8645). The DoD is pleased that the GAO draft report recognizes the Department's substantial initiatives and achievements in improving inventory management during the last year. In May 1990, the Department initiated the DoD Inventory Reduction Plan, specifically for the purpose of providing the comprehensive, integrated inventory management strategy that the GAO indicates is required. That Plan targets the root causes of the inventory management deficiencies summarized in the GAO report.

By almost every measure, the Department initiatives during the last year have succeeded in reversing negative inventory management trends. Total inventory, inactive inventory, authorized requirements levels, and spares budgets all decreased. More significantly, the Department achieved these successes while also enabling the nation's military forces to defeat the fourth largest army in the world. The draft report does not mention Operations Desert Shield/Desert Storm, or that the military commander attributed outstanding logistics support to helping win the war.

The GAO draft report concludes that the most important ingredient to resolving DoD inventory management problems is the continued commitment of top management to the Department's comprehensive strategy. The DoD Inventory Reduction Plan Progress Report, issued in March 1991, is evidence that the Department is monitoring implementation of its strategy and is serious about following through on its commitment to improve DoD inventory management.

The Department appreciates the GAO willingness to consider DoD comments on the draft report. The revisions made to the initial draft, based on the Department's oral comments, considerably improved the accuracy of the report. However, the Department is concerned that sufficient time was not provided to develop a detailed response. As the experience with this report shows, the interests of both the GAO and the Department are best served when potential errors and omissions are corrected prior to the release of a final report.

Sincerely,



David J. Berteau
Principal Deputy Assistant
Secretary of Defense
(Production & Logistics)

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