Audit Report

OFFICE OF THE INSPECTOR GENERAL

REQUIREMENTS FOR CURRENT INVENTORY PURCHASES OF CONSUMABLE ITEMS

Report No. 96-022

November 9, 1995

Department of Defense

Additional Copies

To obtain additional copies of this audit report, contact the Secondary Reports Distribution Unit, Audit Planning and Technical Support Directorate, at (703) 604-8937 (DSN 664-8937) or FAX (703) 604-8932.

Suggestions for Future Audits

To suggest ideas for or to request future audits, contact the Planning and Coordination Branch, Analysis, Planning, and Technical Support Directorate, at (703) 604-8939 (DSN 664-8939) or FAX (703) 604-8932. Ideas and requests can also be mailed to:

Inspector General, Department of Defense
OAIG-AUD (ATTN: APTS Audit Suggestions)
400 Army Navy Drive (Room 801)
Arlington, Virginia 22202-2884

Defense Hotline

To report fraud, waste, or abuse, contact the Defense Hotline by calling (800) 424-9098; by sending an electronic message to Hotline@DODIG.OSD.MIL; or by writing the Defense Hotline, The Pentagon, Washington, D.C. 20301-1900. The identity of each writer and caller is fully protected.

Acronyms

DLA	Defense Logistics Agency
ICP	Inventory Control Point
NSN	National Stock Number

INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
ARLINGTON, VIRGINIA 22202-2884

November 9, 1995

MEMORANDUM FOR DEPUTY UNDER SECRETARY OF DEFENSE FOR LOGISTICS
ASSISTANT SECRETARY OF THE NAVY (FINANCIAL MANAGEMENT AND COMPTROLLER)
ASSISTANT SECRETARY OF THE AIR FORCE (FINANCIAL MANAGEMENT AND COMPTROLLER)
DIRECTOR, DEFENSE LOGISTICS AGENCY
AUDITOR GENERAL, DEPARTMENT OF THE ARMY

SUBJECT: Audit Report on Requirements for Current Inventory Purchases of Consumable Items (Report No. 96-022)

We are providing this report for your review and comments. Management comments on a draft of this report were considered in preparing the final report.

DoD Directive 7650.3 requires that all recommendations and potential monetary benefits be resolved promptly. Therefore, we request the Navy, the Air Force, and Defense Logistics Agency to provide additional comments on Recommendation 1. and the Defense Logistics Agency to provide the planned implementation date for Recommendation 2. and additional comments on Recommendation 3. In addition, we request the Deputy Under Secretary of Defense for Logistics to provide comments on the potential monetary benefits. We request comments by January 12, 1996.

We appreciate the courtesies extended to the audit staff. Questions on the audit should be directed to Mr. James Kornides, Audit Program Director, or Mr. Joel Chaney, Audit Project Manager, in our Columbus Office at (614) 751-1400. See Appendix H for report distribution. The audit team members are listed on the inside back cover.

David K. Steensma

David K. Steensma
Deputy Assistant Inspector General
for Auditing

Office of the Inspector General, DoD

Report No. 96-022 **November 9, 1995**
(Project No. 4LE-0035)

Requirements for Current Inventory Purchases of Consumable Items

Executive Summary

Introduction. Consumable items consist of components or piece parts that using activities usually discard at the end of the components useful life. Consumable items may be refurbished or repaired by an organizational or field level maintenance activity, but are not returned to a maintenance depot for repair. In April 1994, the inventory control points of the Military Departments and the Defense Logistics Agency (DLA) were procuring approximately $1.9 billion in inventory for consumable items.

Audit Objectives. The primary objectives of the audit were to determine whether procurement requirements for consumable items were warranted, and whether controls over the validation of those requirements were adequate. We also reviewed the adequacy of management's implementation of the DoD Internal Management Control Program as it applied to the primary audit objectives. In addition, we reviewed actions taken and planned in response to Inspector General, DoD, Report Nos. 91-037, "Defense Logistics Agency Requirements for Currently Procured Wholesale Inventories," January 30, 1991, and 91-106, "Military Department Requirements for Currently Procured Wholesale Inventories," June 28, 1991.

Audit Results. Inventory managers at the inventory control points of the Military Departments and DLA were prematurely and unnecessarily purchasing consumable items. Also, they did not always make sufficient purchases of some items. As a result, approximately $126.6 million of the consumable item purchases exceeded current stockage requirements. Additionally, the avoidable costs of carrying the excess inventory were $59.6 million. See Part I for details of the finding. Appendix F summarizes the potential benefits of the audit.

Although management initiated corrective actions in response to the prior audit reports, the actions did not significantly improve the quality of inventory manager purchase decisions. See appendix B for details.

Summary of Recommendations. We recommend that the Military Departments and DLA require each inventory control point to establish process action teams to identify alternative procedures and controls for improving the quality of item manager purchase decisions. We recommend that the Navy, the Air Force, and DLA issue guidance on management of additive requirements that emulate the Army Materiel Command's guidance. In addition, we recommend that DLA issue guidance for inventory managers to verify that weapon system information is accurate, as part of the process for verifying procurement requirements.

Management Comments. The Military Departments and DLA generally concurred with the finding. The Army stated that the Army Requirements Business Process Group would serve as the process action team to identify alternative procedures and controls for improving purchase decisions. The Navy, the Air Force, and DLA proposed alternative actions. The Navy proposed implementing additional procedures, controls, and automated tools to enhance inventory manager purchase decisions. The Air Force proposed increasing oversight of inventory manager purchase decisions until an alternative automated system is adopted for the residual consumable items. DLA proposed issuing guidance reinforcing the need for management oversight and control of requirements adjustments and purchase decisions. The Navy, the Air Force, and DLA concurred with the recommendation to monitor the use of additive requirements. However, DLA did not indicate when its guidance would be issued. DLA nonconcurred with our recommendation to issue guidance for inventory managers to verify weapon systems information as part of the process of verifying procurement requirements, and indicated that the Services should be required to provide accurate and up-to-date weapon system information. The Army and Air Force did not comment on the monetary benefits. The Navy indicated that monetary benefits related to the Navy were not separately tabulated and therefore it could not comment. DLA nonconcurred with the monetary benefits, rejecting the statistical projections on which they were based.

Audit Response. The action taken by the Army, to establish a process group, was responsive. Comments from the Navy, the Air Force, and DLA were commendable but did not fully satisfy the intent of the recommendation related to establishing process action teams. Therefore, we request the Navy, the Air Force, and DLA to reconsider their comments regarding the process group and provide additional comments. We request DLA to indicate when its guidance for the management of additive requirements will be issued in response to this report. We request DLA to reconsider its position on issuing guidance for verification of weapon systems information when initiating higher value purchases. We also request the Deputy Under Secretary of Defense for Logistics to comment on the monetary benefits because the benefits transcend the individual DoD Components and are not readily separable. All comments are requested by January 12, 1996.

Table of Contents

Executive Summary i

Part I - Audit Results

Audit Background 2
Audit Objectives 2
Purchases of Consumable Items 3

Part II - Additional Information

Appendix A. Scope and Methodology 20
Scope 20
Statistical Sampling Methodology 20
Management Control Program 23
Appendix B. Management Actions in Response to Prior Audit Reports 24
Appendix C. Summary of Other Audits and Reviews 27
Appendix D. Excessive and Insufficient Purchases 31
Appendix E. Summary of Reductions of Excessive Purchases 32
Appendix F. Summary of Potential Benefits Resulting From Audit 34
Appendix G. Organizations Visited or Contacted 35
Appendix H. Report Distribution 37

Part III - Management Comments

Department of the Army Comments 40
Department of the Navy Comments 44
Department of the Air Force Comments 47
Defense Logistics Agency Comments 49

Part I - Audit Results

Audit Background

The Military Departments and Defense Logistics Agency (DLA) have 18 inventory control points (ICPs) that manage wholesale secondary items in support of military customers. Wholesale secondary items include both depot level reparable items and consumable items. Consumable items are components and piece parts that a using activity normally discards at the end of the components useful life. An organizational or field level maintenance activity may refurbish or repair consumable items, but the items are not returned to a depot maintenance activity for repair.

Defense Management Report Decision 926, "Consolidation of Inventory Control Points," November 1989, recommended that the Military Departments transfer all consumable items they managed to the DLA. In July 1990, the consumable item transfer program was established to transfer management of the consumable items to DLA. The first phase of the program, which involved about 756,000 consumable items, was completed in FY 1994. Planning for the second phase of the transfer, which is expected to include 171,000 items, began in July 1994. This phase is expected to be completed in FY 1998.

In April 1994, the ICPs were in the process of procuring approximately $1.9 billion of stock for 118,600 consumable items. The Military Department ICPs were purchasing inventory of consumable items valued at $1.1 billion, and the DLA ICPs were purchasing inventory valued at $835 million. Based on audit sample results, we estimated that the adjusted universe of April 1994 purchases valued at $100,000 or more was $1.06 billion.

Audit Objectives

The primary objectives of the audit were to determine whether procurement requirements for consumable items were warranted, and whether controls over the validation of those requirements were adequate. We also reviewed the adequacy of management's implementation of the DoD Internal Management Control Program as it applied to the primary audit objectives. In addition, we reviewed actions taken and planned in response to Inspector General, DoD, Report Nos. 91-037, "Defense Logistics Agency Requirements for Currently Procured Wholesale Inventories," January 30, 1991, and 91-106, "Military Department Requirements for Currently Procured Wholesale Inventories," June 28, 1991. See finding for a discussion of the material management control weakness we identified and Appendix A for the audit scope and methodology and the management control program. See Appendix B for a discussion of actions taken or planned in response to Inspector General, DoD, Report Nos. 91-037 and 91-106, and Appendix C for a summary of other audit reports and reviews related to the audit objectives.

Purchases of Consumable Items

Inventory managers at the DoD ICPs were prematurely and unnecessarily purchasing wholesale inventory of consumable items. Also, they did not always make sufficient purchases of some items. The conditions occurred because management controls were ineffective and did not ensure that inventory managers made the most prudent decisions. As a result, we estimated that of the $1.06 billion of consumable items that the ICPs were in the process of purchasing (contracts not yet awarded in April 1994), consumable materiel valued at $126.6 million (11.9 percent) exceeded current requirements. We also estimated that of the $126.6 million of excess consumable materiel purchases, $88.9 million was premature and $37.7 million was unnecessary. We further estimated that the avoidable cost associated with carrying the inventory because of those premature and unnecessary purchases was $59.6 million.

Policy and Guidance for Procuring Consumable Items

The DoD Regulation 4140.1-R, "DoD Materiel Management Regulation," January 1993 provides policy and guidance for requirements determination, defines stockage policy, and prescribes minimum internal management control that govern the procurement of wholesale inventories, including consumable items.

The DoD Manual 4000.25-1-M, "Military Standard Requisitioning and Issue Procedures," May 1987, prescribes policies and procedures for activities (users) to requisition materiel from the wholesale supply system. The manual specifies that military customers must include a demand code in their requisitions to differentiate between recurring and nonrecurring demands for consumable items. Additionally, the Military Departments and DLA have issued manuals and regulations to supplement the DoD guidance.

Evaluation of Active Purchases

As of April 1994, ICPs of the Military Departments and DLA were procuring materiel valued at approximately $1.9 billion for 118,608 consumable line items. We sampled items from a universe that included purchases of replacement stock for 3,089 consumable line items. We limited our review to consumable items involving purchases valued at more than $100,000 for each item. The total value of this universe was $1.1 billion.

While the majority of the materiel ordered was needed to support valid requirements, we estimated that the Military Departments and DLA were

purchasing $126.6 million of inventory in excess of current requirements. We estimated that $88.9 million of that inventory was prematurely purchased and $37.7 million was unnecessary. The criteria used to determine whether the purchase quantity of an item was premature or unnecessary are discussed in Appendix A.

In addition to purchasing items that were not needed, the Military Departments and DLA were not purchasing enough inventory for some items. As a result, shortages will exist that can require ICPs to make emergency purchases (probably at additional cost) or the shortages will result in inadequate customer support and reduced readiness. We could not estimate the magnitude or value of insufficient purchases in the audit universe.

The audit identified excessive and insufficient purchases for 47 of the 240 items we reviewed. Purchases for 32 of the 47 items were part of our sample and were the basis for our audit projections. Purchases for the remaining 15 items were initiated during the audit and accordingly were not part of the audit universe.

We attributed the excessive and insufficient purchases for the 47 items to lack of effective management controls. Controls over forecasting demand, determining additive requirements, developing acquisition lead times, and reevaluating purchase decisions were not adequate and did not preclude excessive purchases. Additionally, controls such as confirming the accuracy of weapon system application data were not adequate to ensure that DLA purchased sufficient inventory. The excessive and insufficient purchases attributed to each weakness are summarized in Appendix D. The inventory managers actions to reduce the excessive purchases are summarized in Appendix E. The following discussion attributes each of the excessive and insufficient purchases identified during the audit to a primary cause.

Forecasting Demand. The ICPs of the Military Departments and DLA forecasted the demands for items to ensure adequate stocks were maintained. However, they did not properly forecast the demands for consumable items because customers miscoded requisitions and because inventory managers did not identify and exclude abnormal demand data or developed and used demand rates that were not representative of demands for the items.

Coding of Customer Requisitions. For nine items in our sample, excessive purchases valued at $5 million occurred because organizations requisitioning materiel from the ICPs assigned erroneous demand codes to their requisitions, and the inventory manager did not question the demand coding or determine the purpose of the customers' requisitions.

Coding of Requisitions for War Reserve Materiel and One-Time Repair. Incorrect assignment of a recurring demand code in requisitions for war reserve material and materiel used in one-time repair programs inflated the demand rate and caused inventory managers to purchase unneeded assets valued at $1.2 million for three of the nine items. For one item, a hand truck, national stock number (NSN) 3920-01-113-0140, the Defense General Supply Center initiated a purchase of 3,152 units, valued at $154,007. The purchase

was based on requisitions from the Defense Personnel Support Center to support the assembly of hospital modules for deployable medical systems. The mobile hospitals were set up as contingency, or war reserve stock, to be deployed as needed depending on world situations. The Defense Personnel Support Center submitted seven requisitions for a total of 4,913 hand trucks, which were erroneously assigned demand code "R" (recurring demand). The requisitions should have been coded demand code "O" indicating that the requisition should not be used in demand forecasts. Assignment of the recurring demand code caused the demand rate to increase and resulted in the inventory manager's unnecessary purchase. When we advised the inventory manager of the nature of the demands, the inventory manager adjusted the demand forecast and reduced the procurement by 3,152 hand trucks, valued at $154,007.

Coding of Requisitions for Modification Programs. For four of the nine items, military customers miscoded demands that supported modification programs, as recurring demands, which caused unneeded purchases of materiel valued at $3.4 million. For example, the Marine Corps Logistics Base, Albany, Georgia, requisitioned a large quantity of space heaters, NSN 4520-01-329-3451, from the Defense Construction Supply Center. The Marine Corps was replacing its space heaters with the new model on a one-for-one change out. The requisitions were assigned demand code "R", but should have been assigned demand code "N", nonrecurring demands. Because the demands were erroneously coded as recurring demands the DLA requirements system overstated procurement requirements for the space heater. The Defense Construction Supply Center was in the process of procuring 15,737 space heaters valued at $5.4 million. When we advised the inventory manager of the overstatement, he reduced the purchase by 4,629 space heaters, valued at $1.5 million.

The inventory manager's calculation of the purchase reduction was not accurate. The inventory manager applied an erroneous annual nonrecurring demand percentage in computing the demand rate. The DLA requirements system computes an annual nonrecurring demand percentage, a measure of stability in nonrecurring demands, because some customers incorrectly code demands. The requirements system then applies the percentage to requisitions coded as nonrecurring demands and increases the recurring demand rate. The inventory manager did not use the DLA formula for the annual nonrecurring demand percentage and thereby overstated the recurring demand rate. The procurement should have been reduced by an additional 1,032 space heaters, valued at $327,144.

Coding of Requisitions for Planned Program Requirements. For two of the nine items, military customers erroneously coded demands for planned programmed requirements as recurring demands, which caused premature purchase of inventory valued at $356,000. The ICPs had previously procured stocks of the item to support the planned program requirement. For example, in March 1993, the Ships Parts Control Center initiated a purchase for 11 restoration kits, NSN 1075-01-230-8045, valued at $189,982, to support planned program requirements for Navy ships. The purchase was increased to 31 restoration kits in November 1994; 12 restoration kits in support of planned program requirements and 19 restoration kits for wholesale inventory.

However, the requirement was overstated by at least eight restoration kits, valued at $138,168. Requisitions for the restoration kit related to the planned program requirements were inappropriately included in the recurring demand rate. In addition, the planned program requirements were not removed from the file when the corresponding requisitions were received. When we advised the inventory manager of the overstatement, the Ships Parts Control Center reduced the purchase by six restoration kits, valued at $103,627.

Nonrepresentative Rates. For nine items in our sample, excessive purchases valued at $6.3 million occurred because the inventory managers did not identify and exclude abnormal demand data or developed and used nonrepresentative demand rates in their forecasts of procurement requirements for the items. The Military Departments and DLA require inventory managers to evaluate the demand history of an item as part of the determination of the procurement requirement. However, inventory managers did not always sufficiently review demand histories to determine whether historic demands were indicative of future requirements.

Abnormal Demand Surges. For six of the nine items, excessive purchases valued at $6 million occurred because inventory managers did not identify abnormal demand surges and adjust demand rates. DoD Regulation 4140.1-R specifies that demand forecasting techniques shall identify and exclude atypical data that might unduly influence requirements forecasts. However, the Military Departments and DLA used automated requirements systems that did not identify potentially abnormal demand surges and did not refer those items to the inventory manager for follow-up and evaluation. Also, inventory managers were not effectively evaluating demand data or demand trends when they initiated purchases. For example, the San Antonio Air Logistics Center initiated a purchase of 2,443 air rings (NSN 2840-01-222-1775) based on demands from a maintenance contractor. In January 1994, the contractor requisitioned the air rings to perform the overhaul of engine stators. However, the contractor requisitioned sufficient air rings to support the estimated usage during the remainder of the contract term. The contractor's requisitions represented their anticipated usage during a 36-month period. The Air Force requirements determination system, however, did not recognize the contractor's requisitions as an abnormal surge in demands. Instead, the requirements determination system computed the annual demand rate using the demand surge. That demand rate was not indicative of future requirements.

The contractor's backordered requisitions for 877 air rings were not valid. The San Antonio Air Logistics Center authorized the contractor to directly acquire the air rings from commercial sources because the Air Force could not fill the requisitions. The backorders should have been canceled when the contractor procured the air rings. When we advised the inventory manager that the demand rate was overstated and the backorders were invalid, the inventory manager reduced the purchase by 1,685 air rings, valued at $2.4 million.

Inventory Manager Developed Demand Rates. For three of the nine items, excessive purchases valued at $314,000 occurred because the inventory managers developed and used demand rates that were not indicative of future requirements. Inventory managers were authorized to develop and use

alternate demand rates when they determined that the system-computed demand rate was erroneous. In some cases, the inventory managers recognized that the demand trend for an item was causing an overstated or understated demand rate and substituted a demand rate based on a simple average.

The demand rates that inventory managers developed were not always appropriate. For example, an inventory manager at the Defense General Supply Center initiated a premature purchase for 15 gyroscopes (NSN 6615-01-008-8241), valued at $65,640, based on an invalid demand rate that the inventory manager developed. When the purchase was initiated, the inventory manager computed a demand rate of 6 per quarter using all demands that were received during the prior 12 months. Those demands, however, included 33 "P" coded demands that were related to a special program requirement from the Anniston Army Depot. The inventory managers inclusion of the "P" coded demands overstated the demand rate for gyroscopes by five units per quarter. The inventory manager did not reduce the purchase when we advised her of the discrepancy. Contract termination would not have been economical.

Determining Additive Requirements. Additive requirements are requirements for consumable items that are not based on historic demands. The requirements are developed and included in a stockage objective to support an overhaul program, foreign military sales agreement, initial weapon system fielding, or other special one-time program.

The ICPs of the Military Departments and DLA were prematurely or unnecessarily purchasing inventory for 11 items in our sample, valued at $4.8 million, because inventory managers did not accurately compute additive requirements, did not update additive requirements when requirements decreased, and entered unsupported requirements to preclude procurement cutbacks.

Computation of Additive Requirements. For 3 of the 11 items, excessive purchases valued at $1 million occurred because inventory managers erroneously computed the additive requirements. For example, an Armament and Chemical Acquisition and Logistics Activity inventory manager used an erroneous depot overhaul factor to compute program requirements for overhaul of the M2 machine gun. The depot overhaul factor measures replacement of components (in this case a gun charger, NSN 1005-00-348-8653) during overhaul of 100 end items. The inventory manager used a replacement rate of 100 gun chargers per 100 M2 machine guns to compute the additive requirement. However, the activity performing the overhaul indicated that the replacement rate was 22 gun chargers per 100 M2 machine gun overhauls. The inventory manager's calculation overstated the additive requirements by 312 gun chargers. When we advised the inventory manager of the discrepancy, the inventory manager reduced the purchase by 400 gun chargers, valued at $246,712.

Updating Additive Requirements. For 6 of the 11 items, excessive purchases valued at $3.6 million occurred because the inventory managers did not reevaluate and reduce the additive requirements when requirements decreased. DoD Regulation 4l40.1-R requires that additive requirements be

reevaluated at least annually. Air Force supplemental guidance requires the inventory manager to maintain documentation of the basis for the additive requirements and to reevaluate the requirement quarterly. However, inventory managers did not always comply with the policy.

For example, a San Antonio Air Logistics Center inventory manager had not revalidated the additive requirements for a flap track (NSN 1560-01-327-9799) used on the C-5 aircraft. The requirements were based on July 1991 estimates related to programmed depot maintenance of the aircraft. At our request, the air logistics center reevaluated requirements for the flap track. The additive requirement was reduced from 12 to 4 flap tracks. Subsequently, the inventory manager reduced the purchase request by eight flap tracks, valued at $104,000.*

Support for Additive Requirements. For 2 of the 11 items, excessive purchases valued at $183,000 occurred because Army inventory managers entered unsupported requirements into the requirements determination system to increase a purchase or to preclude a purchase reduction. Army policy prohibits inventory managers from entering additive requirements in the requirements determination system for the purpose of increasing a buy or offsetting a purchase reduction.

The inventory manager at the Tank-automotive Armaments Command manually computed an additive requirement for 602 fuel nozzles (NSN 4930-01-318-6091), valued at $51,000, and entered the requirement into the requirements determination system to justify not reducing the purchase. The inventory manager stated that the additive requirement was for depot maintenance programs; however, the inventory manager could not provide documentation or rationale to support the requirement. The inventory manager did not attempt to reduce the purchase when we advised the manager of the deficiency because a contract for the purchase was awarded.

Developing Acquisition Lead Times. The ICPs of the Military Departments and DLA developed and used acquisition lead times in determining the stockage objective for consumable items. Forecasting demands and additive requirements during acquisition lead time permits the acquisition of consumable items in advance of the end users needs. However, inventory managers used nonrepresentative acquisition lead times in determining requirements for six consumable items which resulted in premature or unnecessary purchases of inventory valued at $1.9 million.

The DoD Regulation 4140.1-R defines acquisition lead time as a combination of administrative lead time and production lead time; and it provides general guidance for measuring lead time. The regulation requires the Military Departments and DLA to provide methods of calculating realistic administrative

* Our review also identified 23 different types of flap tracks (not part of our sample but part of the same procurement) managed by the San Antonio Air Logistics Center, for which the inventory manager was relying on the outdated information. Based on our review, the inventory manager initiated action to reduce purchases valued at $2.3 million for those 23 items.

and production lead time requirements. The regulation requires DoD Components to maintain a historical file of administrative and production lead times for all secondary item procurements. The historic file can be used to establish or validate the reasonableness of lead times and to ensure that inventory management personnel have a means of identifying unusually long or short lead times. The Military Departments and DLA issued supplemental guidance to define how lead times are determined and to differentiate between representative and nonrepresentative procurement actions. For six of the items in our sample, either the administrative lead time or the production lead time were significantly greater than the average for the ICP, or our initial discussions with inventory managers indicated that the lead times were abnormal.

Administrative Lead Time. For two of the six items, excessive purchases valued at $977,000 occurred primarily because the inventory managers used a nonrepresentative administrative lead time in determining the procurement requirement. For example, a San Antonio Air Logistics Center inventory manager did not follow the Air Force policy for determining administrative lead time related to requirements type contracts. Air Force Material Command Regulation 57-6, "Policy and Procedures for Computing Consumable Type Item Requirements," January 29, 1993, instructs inventory managers to compute requirements using administrative lead time experienced on prior orders under the requirements contract or using 56 days. However, the inventory manager used 246 days to compute requirements for the F100 engine lock plate (NSN 5340-01-092-8232) instead of 56 days. In addition, the item manager did not follow prescribed policy for determining production lead time for the lock plate. The nonrepresentative administrative and production lead times overstated the requirement objective by 4,988 lock plates. After we advised him of the overstatement, the inventory manager canceled a purchase request for 3,200 lock plates, valued at $86,720.

Production Lead Time. For four of the six items, excessive purchases valued at $966,000 occurred primarily because the inventory manager used a nonrepresentative production lead time in computing the procurement requirement. For example, an Aviation Supply Office inventory manager used a production lead time calculated by the requirements determination system that was nonrepresentative. The Navy requirements determination system used statistical smoothing techniques to compute production lead time. However, the smoothing technique did not exclude a contract that experienced abnormal lead time and the inventory managers did not identify and correct the abnormal lead times. In the example, the production lead time for a turbine nozzle (NSN 2840-00-032-2959) was impacted by the historic lead time data for a 1986 contract that experienced 1,031 days of production lead time. Although the lead time for that contract was not representative and should not have been used to forecast future requirements, the statistical smoothing technique did not exclude the contract. Two more recent contracts experienced 220 days and 291 days of production lead time, respectively. The inventory manager should have excluded the abnormal lead time as being nonrepresentative. Using the nonrepresentative lead time overstated the procurement requirement by 222 turbine nozzles, valued at $133,800. The Aviation Supply Office awarded a contract for the purchase. When advised of the discrepancy, the Aviation Supply Office did not cancel the contract.

Reevaluating Purchase Decisions. The automated requirements determination systems used by the Military Departments and DLA periodically compare requirements and asset information and, when appropriate, recommend that the item manager reduce ongoing purchases of consumables items. In many cases, the inventory managers took appropriate action to reduce procurements. Between April and August 1994, inventory managers canceled or reduced purchases for 35 sampled items, valued at $8.8 million, that their automated requirements determination systems identified as excessive. However, inventory managers were prematurely or unnecessarily purchasing inventory for 10 sampled items valued at $2.3 million because inventory managers did not thoroughly review requirements and did not aggressively act on recommended reductions of the purchases by the automated requirements determination system.

Inventory Managers Review of Purchase Reductions. For 6 of the 10 items, excessive purchases valued at $1.4 million occurred because the inventory managers either did not review the purchase reduction recommended by the requirements determination system or performed superficial reviews. The automated requirements determination systems used by the Military Departments and DLA serve as a management control to identify potentially excessive purchases for inventory manager's review. The criteria that the automated systems used to identify potentially excessive purchases varied slightly at each ICP. Generally, the automated system, using the criteria of the ICP, computed a termination level. In effect, the termination level authorized a temporary increase in the stockage quantity, based on a percentage of economic order quantity or a specific period of time. The use of the termination level prevents repetitive buy and termination recommendations because of minor turbulence in requirements. However, the Military Departments and DLA guidance require inventory managers to evaluate item requirements when the automated system refers the potentially excessive purchase for review. DoD Regulation 4140.1-R specifies that during the requirements review process, particular emphasis shall be given to validating requirements data used as a basis for orders exceeding $25,000.

In some cases, inventory managers performed only a superficial review of the requirements when deciding to continue purchases the automated requirements determination system identified as excessive. For example, the Defense Electronic Supply Center initiated a purchase of 100 capacitors (NSN 5910-01-049-1253), valued at $184,401. In July 1994, the requirements determination system recommended that the purchase be reduced to 32 capacitors because demands for the capacitor decreased after the purchase was initiated. The inventory manager reduced the purchase. The ICP awarded a contract for the remaining 32 capacitors in September 1994 even though demands had continued to decline. All the capacitors requisitioned since 1992 were from one activity, and all of the requisitions had been canceled. Accordingly, the demand rate was erroneous and the purchase should have been canceled. The inventory manager was not aware that the requisitions were canceled because the DLA requirements determination system did not always adjust the demand rate when requisitions were canceled. When we informed the inventory manager of the requisition cancellations, the item manager terminated the contract.

Timeliness of Inventory Managers Actions. For 4 of the 10 items, excessive purchases valued at $850,000 occurred because the inventory managers did not take timely action to reduce the purchases. As a result, contracts were awarded that could not be economically terminated. DoD Regulation 4140.1-R specifies that particular emphasis shall be placed on reducing or canceling purchase requests before contract award. The regulation specifies that, when contracts have been awarded, estimated termination costs shall be obtained in a timely manner to establish the cost-effectiveness of the termination. Generally, termination costs should be obtained within 21 days of a request for termination and termination decisions should generally be reached within 30 days of a notification that items under contract should be considered for termination. Inventory managers did not always follow the DoD policy for obtaining termination costs and reaching termination decisions in a timely manner. For example, the requirements determination system of the Army Tank-automotive Armaments Command recommended that the inventory manager cancel a purchase of 447 sprocket wheels (NSN 2520-00-678-8382), valued at $81,515, on September 27, 1994. A contract for the sprocket wheels was awarded on September 23, 1994, 4 days before the system recommended cancellation. The inventory manager did not process the recommended cancellation in a timely manner, and the command did not determine whether contract cancellation was feasible until February 1995, at which time cancellation was not economical.

Confirming Weapon System Information. In addition to purchasing inventory of items that was not needed, the DLA ICPs were not buying enough inventory of some consumable items. Inventory purchases for two of the sampled items were not sufficient to maintain support of high priority weapon systems. The insufficient purchases occurred because DLA inventory managers did not confirm the accuracy of the weapon systems information for the items being purchased.

DLA Weapon System Support Program. The DLA Weapon System Support Program was established to enhance weapon systems readiness and sustainability of the Military Departments by providing enhanced support levels for DLA managed items with weapon system applications. The Military Departments identify secondary items by weapon system essentiality codes and weapon system group codes. DLA uses the Military Departments' weapon system information to assign a weapon system indicator code to each item. Depending on the weapon system indicator code assigned, DLA adjusts supply performance and supply availability goals that impact stockage requirements. The Inspector General, DoD, recently completed a review of the DLA weapon system support program and recommended actions to improve the accuracy of data in the DLA requirements determination system. See Appendix C for further information of Inspector General, DoD, Report No. 95-027, "Defense Logistics Agency's Weapons Systems Support Program," November 9, 1994.

Inaccurate weapon system information resulted in insufficient inventory purchases for two items. The inventory managers should have been purchasing $177,900 of additional materiel to fill inventory requirements. For example, the Defense General Supply Center was not procuring sufficient inventory of a radome (NSN 1560-01-140-3686) used on the F-18 aircraft. The weapon

system indicator code assigned to the item was "N." The code indicated that the item had no weapon system applications in DoD. However, nonavailability of the radome would render the F-18 aircraft inoperable. The item should have had a weapon system indicator code of "F" assigned, which would indicate the item is essential and related to a high priority weapon system.

The Defense General Supply Center used the weapon system indicator code to assign items to selective management category code groupings. The selective management category code was used to determine the percentage of the quarterly forecasted demand rate used in computing requirements. On August 21, 1994, the requirements determination system of the Defense General Supply Center computed a quarterly forecasted demand rate of 10 radomes and recommended the reduction of the sampled procurement. If the correct weapon system indicator code had been assigned, then the quarterly forecasted demand rate would have been 25 radomes. The requirements determination system would have recommended the purchase of an additional 66 radomes, valued at $61,197, instead of the purchase reduction. When advised of the discrepancy, the Aviation Supply Office provided corrected weapon system information to the Defense General Supply Center.

Conclusion

The problems identified in this report were reported to management in previous audit reports (see Appendix B). Additionally, DoD identified the control of inventory and the determination of inventory requirements as high risk areas in the DoD management control program. Recent management actions, however, have not resulted in significant improvements in purchase decisions, even for those purchases that have received greater management attention. Additionally, the traditional management controls that were recommended in the prior audits have not enabled management to identify and correct the underlying causes of the excessive purchases. Accordingly, we believe that the ICPs need to not only issue guidance and provide training, but also need to establish process action teams of their requirements experts to evaluate and identify alternative means of improving purchase decisions.

This audit and prior audits have demonstrated that the DoD ICPs cannot fully rely on the demand coding performed by the military customers. Accordingly, we believe that for higher value purchases (especially those over $100,000) inventory managers should be required to perform some analysis of the demand data so that nonrecurring demands can be excluded from their forecast requirements. To implement a procedure for the analysis of demand data, the Military Departments and DLA will need to establish guidance and develop training for the inventory managers review.

We believe that guidance recently issued by the Army Materiel Command in response to Army Audit Agency Report No. CR 95-203, "Requirements Determination for Secondary Items," January 30, 1995 (see Appendix B) represents a best management practice that the Navy, the Air Force, and DLA

should emulate. The guidance requires improved monitoring of the use of additive requirements, reemphasis of policy, and inclusion of criteria measuring the adequacy of decisions of item managers in their performance ratings.

Management Comments on the Finding and Audit Response

DLA Comments. The DLA disagreed with our assessment of its statistical demand forecasting process. DLA indicated that the high volume of items and demands makes item manager review of every outlier (potentially abnormal demand) impractical if not impossible. The practice of reducing outliers to statistical limits eliminates this problem and has been shown to improve forecast accuracy. Additionally, DLA indicated that the DLA ICPs were using a variety of forecasting methods, not just double smoothing. Finally, DLA stated that customer cancellations and other demand history changes affecting the demand history records of the Standard Automated Materiel Management System will automatically affect the demand file used in statistical demand forecasting and result in a revised forecast.

Audit Response. Less than 2 percent of DLA managed items involved purchases in excess of $100,000. We believe that intensive management of those items is neither impractical nor impossible. DLA should identify and refer potentially abnormal demands for those items to item managers for review.

The statistical demand forecasting process was originally programmed with five demand forecasting models. In a subsequent deployment, DLA added forecasting models. In addition, DLA programmed the process to allow inventory managers the flexibility to determine which forecasting model would be used for individual items or groups of items. However, at the time of our review in the 2nd quarter of FY 1995, the DLA ICPs had restricted demand forecasting to double exponential smoothing. We believe that such restrictions limit the benefits of statistical demand forecasting as an inventory manager tool.

The Standard Automated Materiel Management System and statistical demand forecasting were not programmed to adjust demand forecasts for customer cancellations and other demand history changes unless the transaction occurred during the same quarter that the demand was received. Inventory managers could adjust the summary demand data for the prior quarters, but those adjustments would not generate a revised demand rate. We believe that the capability to revise demand data and reforecast demand rates is needed.

Recommendations, Management Comments, and Audit Response

1. We recommend that the Commanders, Army Materiel Command, Naval Supply System Command, and Air Force Logistics Command and the Director, Defense Logistics Agency require each inventory control point to establish a process action team to identify alternative procedures and controls for improving the quality of inventory manager purchase decisions. At a minimum, areas requiring emphasis should include:

a. verification of requisition demand coding,

b. analysis and evaluation of demand trends,

c. development of acquisition lead times for consumable items, and

d. improvement of controls over reevaluating purchase decisions.

Army Comments. The Army concurred with the recommendation to increase emphasis on the areas highlighted by the audit. The Army indicated that, by October 31, 1995, the Army Materiel Command will issue guidance for the Requirements Business Process Group to implement the recommendation.

Navy Comments. The Navy concurred with developing procedures and controls for improving the quality of inventory manager purchase decisions. The Navy plans to implement an automated tool (inventory manager toolkit) by January 30, 1996, to enhance inventory manager decisionmaking.

Air Force Comments. The Air Force concurred with the intent of the recommendation. The Air Force stated that until the end of FY 1996, when a management system is adopted for residual consumable items; trend analysis, administrative lead time development, and controls over purchase decisions will be special interest items during the Air Force Materiel Command item management reviews or item management workshops.

DLA Comments. The DLA partially concurred with the recommendation. DLA stated that the errors cited in our draft report do occur, but that DLA reviews have not shown those problems to be widespread. Therefore, DLA did not agree with the need to establish a process action team. Instead, DLA indicated that it would issue guidance to the ICPs, reinforcing the need for continued watchfulness and management control of requirements adjustments and related purchase decisions.

Audit Response. Comments from the Army were responsive. However, alternative actions proposed by the Navy, the Air Force, and DLA, while commendable, represent the traditional solutions that have been proposed in response to similar conditions identified during prior audits. Although the proposed actions may improve controls and purchase decisions, we believe the Navy, the Air Force, and DLA need to reevaluate their processes and controls over purchase decisions and identify the best methods for improving the

purchase process for consumable items. We believe that process action teams, such as the team created by the Army, would allow the Navy, the Air Force, and DLA to identify the most efficient and effective method for improving the way purchase decisions are made in DoD. Accordingly, we request that the Navy, the Air Force, and DLA reconsider their position in response to the final report.

2. We recommend that the Commanders, Naval Supply System Command and Air Force Logistics Command and the Director, Defense Logistics Agency issue guidance on management of additive requirements that emulate the recent guidance issued by the Army Materiel Command, which provides for improvement of procedures for monitoring the use of additive requirements and measurement of the adequacy of inventory manager decisions in their performance rating.

Navy Comments. The Navy concurred with the intent to monitor additive requirements and to measure the adequacy of inventory manager decisions in performance ratings. It stated that it measures inventory manager performance based on the amount of inactive inventory and inventory shortages. The Navy further stated that effective inventory manager decisions will minimize both inactive inventory and inventory shortages.

Air Force Comments. The Air Force concurred with issuing guidance on the management of additive requirements. By December 1995 the Air Force will issue updated instructions on the review and validation of additive requirements. The Air Force will review the Army Materiel Command guidance on additive requirements for inclusion in the updated instructions.

DLA Comments. The DLA partially concurred with the recommendation. DLA stated that to single out one type of requirements for centralized monitoring and control was neither practical nor beneficial. However, it agreed to issue guidance regarding the acceptance, recordation, maintenance, and use of additive requirements.

Audit Response. Comments from the Navy, the Air Force, and DLA were responsive. The proposed actions should improve the accuracy of the inventory managers purchase decisions. However, DLA did not indicate when its guidance would be issued. Accordingly, we request DLA to provide its scheduled implementation date in response to the final report.

3. We recommend that the Director, Defense Logistics Agency issue guidance for inventory managers to verify that weapon system information is accurate, as part of the process of verifying procurement requirements.

DLA Comments. The DLA nonconcurred with the recommendation. DLA indicated that requirements were understated because the using Service had failed to provide accurate weapon system information. As a result weapon system support was affected because the reduced reorder point delayed the generation of buy notification to the inventory manager. DLA further stated that the appropriate recommendation is that the Services be required to provide accurate and up-to-date weapon system application and essentiality data.

Audit Response. Inspector General, DoD, Report No. 95-027, "Defense Logistics Agency's Weapons Systems Support Program," November 9, 1994, concluded that the Military Departments and DLA should perform periodic validation and reconciliation of weapons systems application files and that the Military Departments should establish controls to ensure that periodic reviews of weapon systems essentiality codes were performed. While the actions being taken to reconcile weapon systems information and to review the accuracy of the coding are commendable, we believe that DLA cannot unilaterally rely on the correctness of information provided by the Military Departments. When information from a Military Department maintenance activity or requisitioner indicates that an item is essential to its needs, action needs to be taken to determine whether the weapon systems essentiality coding is correct in the DLA files. Instead, DLA inventory managers made significant investment decisions using the incorrect weapon system information. We believe that efforts should be taken to verify the weapon system essentiality coding before higher value purchases (purchases valued at $100,000 or more) are initiated. We request DLA to reconsider its position in response to the final report.

Management Comments on Potential Monetary Benefits and Audit Response.

DLA Comments. The DLA nonconcurred with the estimated monetary benefits. DLA rejected the statistical projection of the monetary benefits as invalid. It believed that the wide range of the projection indicated an inadequate sample size and an excessively high sample variance. However, it accepted its share, $5 million, of the actual purchase reductions shown in Appendix E.

Audit Response. The DLA comments on our estimate of the potential avoidable costs were not valid. The response ignored the reasonable range of estimation for negotiation purposes presented in the report. In addition, the DLA position that the only avoidable costs were the costs in the sample itself, without possibility of extrapolation to the rest of the universe, was not reasonable or logical.

A stratified random sample using probability selection methods to extract data from a designated population is a valid sample and will produce valid results when proper formulas with appropriate weights are used in the analysis. We did that. DLA should not confuse the validity of estimate with the precision of estimate. We believe DLA is really taking issue with the width or degree of precision at the 90 percent confidence level. While it is true that a tighter interval would be preferred, it would also make the audit more costly because the sample size would have to be larger. Our policy is to design valid, usable samples with enough precision of estimate to provide an "order of magnitude" solution. Although the point estimate of avoidable cost for this audit is $59.56 million, we are 90 percent confident that the "true" avoidable cost is between $31.98 million and $87.14 million. Because both ends of this interval are substantial amounts that call for changes in the mechanisms for managing consumable items, we believe the 90 percent confidence interval has sufficient

precision for the task at hand. An increase in sample size would tend to make the resulting interval more precise, not more valid. In situations such as this, when all values in the usable intervals are possible, the parties to the audit are free to negotiate a settlement on any value between $31.98 million and $87.14 million. It is unlikely that values outside this interval represent avoidable cost.

When a valid and usable confidence interval estimate has been calculated from a proper probability sample, that statistical estimate shows the possible extent of the problem. It is illogical to believe that the raw sample data contains the only "problem" records that exist in the universe. Each probabilistically chosen sample item represents multiple items in its stratum or subgroup. If, in a given stratum, we find several "problem" records, there is a known probability that others exist. For this reason, we disagree with using only the avoidable costs found in the sample.

Part II - Additional Information

Appendix A. Scope and Methodology

Scope

We reviewed a sample of 240 consumable items managed by the Military Departments and DLA with active purchases valued at $157.8 million. The sample was a multistage sample with stratification at each stage and elements chosen randomly within each stratum.

We reviewed requirements for the sampled items, as of August 1994, to determine whether requirements warranted continuation of the purchase. Our review included audit tests to evaluate the accuracy of demand rates; the propriety of additive (nondemand based) requirements; and the reasonableness of other factors affecting the requirements forecast, such as acquisition lead time, weapon system application data, and management policies affecting procurement decisions, to include constraints on investment.

Use of Computer-Processed Data. Except to verify the accuracy of purchase request data at the time we obtained the sample universe, and to selectively verify requirements data such as demand coding, additive requirements and acquisition lead time, we made no independent assessment of the reliability of the computer-processed data used in the requirements determination system.

Audit Period, Standards, and Locations. This economy and efficiency audit was conducted from April 1994 through May 1995, in accordance with auditing standards issued by the Comptroller General of the United States as implemented by the Inspector General, DoD, and accordingly included such tests of management controls as considered necessary. We visited or contacted the organizations listed in Appendix G.

Statistical Sampling Methodology

Audit Universe. Procurements in process were recorded in computer files at the ICPs of the Military Departments and DLA. The ICPs extracted data from the files and provided us computer tapes identifying all procurement actions that had been initiated, but for which a contract had not been awarded as of

April 1994. The ICPs of the Military Departments procured both reparable (depot level reparable) and consumable items. Accordingly, we excluded the reparable items from the audit universe.

The data we were provided showed that on April 30, 1994, the ICPs had procurements in process for 118,608 consumable items, valued at approximately $1.9 billion. We limited our review to a sample universe of 3,089 consumable items involving active purchase requests, valued at $1.1 billion. Our analysis of the procurements in process indicated that the 3,089 items, with individual procurements valued at $100,000 or more, represented approximately 3 percent of the items being procured but accounted for approximately 58 percent of the value of the procurements. In addition, the inventory management policies of the Military Departments and DLA generally required greater management intensity for those high value items, assigned more experienced inventory management personnel to those items, and required supervisory approval of the procurements at higher management levels.

Sampling Plan. We used a multistage sampling plan that incorporated stratified sampling methodologies. Our initial sample was 249 items (134 items managed by the Military Departments and 115 items managed by DLA) with purchase requests valued at $175.7 million ($119.4 million by the Military Departments and $56.3 million by DLA). We adjusted the audit sample to reflect corrections of the quantity or unit price assigned to a purchase, to recognize quantity reductions that were in process when we obtained the sample universe, to recognize contracts that were awarded before we obtained the sample universe, and to exclude items that were managed using depot level reparable item management techniques. The adjustments reduced our audit sample to 240 items, involving purchases valued at $157.8 million. We projected the audit sample adjustments to the audit universe, and estimated that the relevant universe included purchases valued at $1.06 billion. The sample results were projected to that final adjusted universe.

The audit tests were designed to evaluate the purchases as of August 1994, and to render an opinion on the reasonableness of the purchase quantities at that time in relation to authorized DoD stockage objectives. The audit estimates have been adjusted downward to fully recognize the reduction of excessive purchases that the ICPs affected on their own after April 1994, but before our audit field work commenced. Those actions reduced excessive purchases by an estimated $72.5 million.

Sample Results. We estimated that purchases for materiel valued at $126.6 million exceeded authorized stockage objectives. Of the $126.6 million, we estimated that $88.9 million was for premature purchases and $37.7 million

was for unnecessary purchases. The following table contains statistical projections from the sample data, using a multistage sampling plan for 90 percent confidence level.

Statistical Projections of Excessive Purchases and Avoidable Inventory Carrying Costs

Statistical Projection	Lower Bound	Point Estimate	Upper Bound
Excessive Purchases:			
Premature purchases[1]	$ 45.55	$ 88.88	$132.21
Unnecessary purchases[1]	12.97	37.74	62.51
Total Excessive Purchases	**$75.10[2]**	**$126.62**	**$178.16[2]**
Avoidable Inventory Carrying Costs:			
Unnecessary purchases	$ 12.97	$ 37.74	$ 62.51
Holding costs for premature purchases[3]	9.69	21.82	33.95
Total Avoidable Costs	**$ 31.98**	**$ 59.56**	**$ 87.14**

[1]We classified procurement of items as premature if the quantity exceeded the stockage objective by more than 6 months of forecast requirements. The value of the premature purchase, however, was the value of materiel in excess of the stockage objective up to 6 years of forecast requirements. We classified procurements for inventory in excess of 6 years of forecast requirements as unnecessary.

[2]Lower and upper 90 percent confidence bounds on sums are not computed by simple addition, but rather by a statistical root mean square calculation per textbook formulas.

[3]We estimated the holding costs for premature purchases by applying the DoD prescribed cost of capital rate of 10 percent plus the storage cost rate of 1 percent to the annual value of inventory prematurely held.

Management Control Program

The DoD Directive 5010.38, "Internal Management Control Program," April 14, 1987, requires every DoD organization to have in place internal controls over its operations and to perform periodic self-evaluations of those management controls. We reviewed both elements of the Military Departments and the DLA management control program.

Scope of Review of Management Controls. Specifically, we reviewed the management control procedures regarding both the initiation and approval of purchase decisions and the approval of decisions to continue purchases when requirements declined. We also reviewed management's self-evaluation program as applicable to the management controls reviewed.

Adequacy of Management Controls. We identified material management control weaknesses as defined by DoD Directive 5010.38. The DoD ICPs had not established effective controls to ensure item managers made prudent purchase decisions, such as controls over forecasting demands, determining additive requirements, developing acquisition lead times, reevaluating purchase decisions, and confirming weapon system information. All recommendations, if implemented, will correct the material weaknesses, with an associated potential monetary benefit of $59.6 million. See Appendix F for a summary of audit benefits. A copy of this report will be provided to the senior official in charge of management controls in the Office of the Secretary of Defense, the Military Departments, and DLA.

Adequacy of Management's Self-Evaluation. The DoD has recognized inventory control as a high risk area. The Military Departments and DLA identified supply operations an assessable unit and correctly identified requirements determination as a high risk area. The Military Departments and DLA conducted the required self-evaluation but did not specifically report the inadequacies of management controls over purchase decisions in their FY 1994 annual statement of assurance. Management could not explain why they did not identify the material weaknesses.

Appendix B. Management Actions in Response to Prior Audit Reports

One objective of our audit was to follow up on actions taken or planned by management in response to two prior audits on the purchase of consumable items.

Report No. 91-037. Inspector General, DoD (IG,DoD), Report No. 91-037, "Defense Logistics Agency Requirements for Currently Procured Wholesale Inventories," was issued on January 30, 1991. The report stated that the DLA prematurely or unnecessarily purchased inventory because inventory managers relied on informal estimates of additive requirements provided by the Military Departments and because supervisory personnel did not effectively review purchase decisions. The report recommended that the Military Departments discontinue submission and DLA discontinue acceptance of informal requirements, and that DLA develop criteria or guidance for supervisory review of purchase decisions. DLA generally concurred with the recommendations and issued guidance.

Audit Comments on Actions Taken. The DLA issued guidance directing inventory managers to discontinue accepting informal requirements; however, our review indicated that inventory managers continued to accept informal requirements. While it may be appropriate to accept some informal requirements, we believe that DLA inventory managers must obtain greater justification for those requirements and must be able to periodically confirm that the requirements are valid.

The DLA issued or reiterated guidance requiring supervisory personnel to review inventory manager purchase decisions, however that action did not significantly improve the quality of inventory manager purchase decisions.

Report No. 91-106. IG, DoD, Report No. 91-106, "Military Department Requirements for Currently Procured Wholesale Inventories for Consumable Items," was issued on June 28, 1991. The report stated that ICPs of the Military Departments prematurely or unnecessarily purchased inventory because inventory managers did not verify atypical demands and abnormal demand patterns, inventory managers did not verify requirements data supporting additive requirements, inventory managers used nonrepresentative acquisition lead times to forecast purchase requirements, and supervisory personnel did not exercise oversight of item manager decisions to continue purchases when requirements declined. The report recommended that the requirements determination systems be modified to analyze demand data to identify and refer potentially abnormal demands and demand trends to item managers for evaluation, guidance be issued for verification of requirements data related to additive requirements, requirements determination systems be modified to analyze acquisition lead times and refer potentially abnormal lead times for inventory manager review, and ICPs establish statistically based quality control programs to monitor the accuracy and reasonableness of item manager purchase decisions. The Office of the Secretary of Defense and the Military Departments

generally concurred with the intent of the recommendations but deferred changes to the requirements determination system until the Corporate Information Management Materiel Management System is developed. The Army and Air Force agreed to provide guidance for inventory managers to analyze demands for items with significant procurements. The Military Departments issued or reiterated guidance for verification of additive requirements and for retention of data supporting those requirements. The Military Departments agreed to reiterate guidance for review of requirements data including acquisition lead times.

Audit Comments on Actions Taken. While the Military Departments issued or reiterated the above guidance, excessive purchases continue to occur for the same reasons. Management actions have not significantly improved the quality of inventory manager purchase decisions.

Other Actions Taken. As a near term initiative for the Corporate Information Management system, DLA modified its requirements determination system to implement a version of the demand forecasting model known as statistical demand forecasting.

Statistical Demand Forecasting. The DLA implemented a modified version of the statistical demand forecasting model that was originally developed by the Navy in the late 1980s. The objectives of the Navy model were to provide the item manager tools that:

o identified the demands that comprised the demand history in sufficient detail for the inventory manager to identify erroneously coded demands and to correct the demand history,

o identified potentially abnormal demand trends and referred those items for inventory manager evaluation, and

o provided the item manager a variety of demand forecasting models and permitted the inventory manager to select the model that was appropriate for the item.

DLA Statistical Demand Forecasting Model. The DLA statistical demand forecasting model did not accomplish the objectives of the Navy model. First, the DLA requirements determination system did not identify all demands that comprised the demand history and did not retain the customer's demand coding. The DLA system maintains summary demand data for each item. Further, the demand data are not always adjusted for canceled requisitions and are not adjusted for customer returns.

Second, while the model can identify abnormal demand trends, the system does not refer those items to inventory managers for evaluation of the demand coding of customer requisitions or the trend in the demand pattern. Rather, the model either reduces the quarterly demand observation to statistical limits or excludes that quarterly demand observation from the demand forecast. Additionally, the statistical demand forecasting model implemented by DLA did not permit the

inventory manager to correct the summary demand observations after the values were updated at the end of each quarter and did not provide a means for the inventory manager to revise (correct) the exponential smoothing values.

Finally, the statistical demand forecasting model, as implemented by the DLA ICPs did not permit the inventory manager to select between alternative demand forecasting models. The DLA ICPs limited the forecasting model to double exponential smoothing.

Conclusion. The statistical demand forecasting model implemented by DLA represents an improvement in DLA demand forecasting. However, significant improvements in the model and in capabilities for retention of demand data are still needed. Excessive purchases occurred because customers assigned inaccurate demand codes to their requisitions and inventory managers developed or used nonrepresentative demand rates. Implementation of a procedure to analyze demand data should not be deferred until the Corporate Information Management system is designed and fielded.

Appendix C. Summary of Other Audits and Reviews

During the past 5 years, the General Accounting Office (GAO); the Office of the IG, DoD; and the audit agencies of the Military Departments issued reports that discussed various elements of requirements determination and controls over purchase decisions. The following report summaries discuss aspects of requirements determination related to consumable items.

General Accounting Office

The GAO Report No. NSIAD 94-130 (OSD Case No. 9632), "Army Inventory: More Effective Review of Proposed Inventory Buys Could Reduce Unneeded Procurements," was issued on June 2, 1994. The report stated that Tank-Armament and Automotive Command was missing opportunities to terminate or reduce planned procurements. GAO made recommendations to improve the policy and instructions concerning the awarding of contracts. The Army issued guidance implementing the GAO recommendations.

The GAO Report No. NSIAD 94-103 (OSD Case No. 9609), "Air Force Logistics: Improved Backorder Validation Procedures Will Save Millions," was issued on April 20, 1994. The report stated that the Air Force continues to have significant amounts of invalid backorders in the wholesale and retail supply systems. GAO also reported that because the Air Force suspended a program for the automatic cancellation of backorders, opportunities to cancel millions of dollars of invalid backorders have been lost. GAO made recommendations to improve the backorder validation and reconciliation program. The DoD generally concurred with the recommendations.

The GAO Report No. NSIAD-94-3 (OSD Case No. 9109-A), "Air Force Logistics: Some Progress But Further Efforts Needed to Terminate Excess Orders," was issued on October 13, 1993. The report stated that the Air Force had taken actions regarding previous recommendations and placed greater oversight on potential terminations, but opportunities for improvements and economies still exist. GAO made recommendations related to Air Force policies and practices. The DoD generally concurred with the recommendations.

Inspector General, DoD

The IG, DoD, issued summary Report No. 95-238, "Administrative Lead Time at DoD Inventory Control Points," on June 15, 1995. The report stated that some ICPs were more efficient than others in awarding contracts for spare parts. The report concluded that DoD ICPs can reduce administrative lead time and improve readiness by sharing with one another their best ideas and practices for reducing lead time and by establishing performance measures. The report recommended that the Commanders of the DoD ICPs implement performance measures for the administrative lead time process, include administrative lead time as an assessable unit in their management control program, and increase the use of automated contracts to reduce administrative lead time. The Military Departments and DLA generally concurred with the recommendations.

The IG, DoD, Report No. 95-165, "Purchases of Consumable Items Transferred to the Defense Logistics Agency," was issued on April 4, 1995. The report stated that purchases of consumable items were not properly recorded in the DLA requirements determination system after management of the items was transferred to DLA; and requirements for the purchase of consumable items were not being adequately reevaluated before award of contracts. The report recommended that the Military Departments and DLA implement specific management controls procedures to ensure that the Military Departments' purchase requests are properly recorded in the DLA requirements system. The report also recommended that the Military Departments discontinue management of items transferred to DLA. In addition, it recommended that the Military Departments and DLA implement procedures to reevaluate requirements for Military Department purchases for more than $25,000, before awarding contracts. The Military Departments and DLA concurred with the finding and recommendations.

The IG, DoD, Report No. 95-027, "Defense Logistics Agency's Weapons Systems Support Program, was issued on November 9, 1994. The report stated that the purpose of the Weapons Systems Support Program was not being fully achieved. The report further stated that about 60 percent of the items managed under the program received no additional support and therefore there was no assurance that the program adequately supported the Military Departments' weapon systems readiness objectives. The report recommended that DLA and the Military Departments establish formal arrangements for periodic validation and reconciliation of weapons systems applications files and conduct a joint study to reduce the number of items to be included in the Weapons Systems Support Program and determine which were to be intensively managed. The report also recommended that the Military Departments establish controls to ensure that periodic reviews of weapons systems essentiality codes were

performed, and that DLA develop a consistent supply support policy for the DLA supply centers. The Military Departments and DLA generally concurred with the recommendations.

The IG, DoD, Report No. 94-071, "The Transfer of the Management of Consumable Items to the Defense Logistics Agency," was issued on March 31, 1994. The report showed that items involved in the transfer from the Military Departments to DLA had not been appropriately coded with weapons systems management codes; and other items had been assigned incorrect weapons systems management codes. The report recommended that DLA establish a tracking system for items identified by the Military Departments as weapons systems essential, that logistics data be recorded on the supply records, and that followup action be taken when weapons systems essentiality data were not submitted. DLA concurred with the recommendations. Actions taken and planned satisfy the intent of the recommendations.

The IG, DoD, Report No. 93-146, "Contract Terminations at DoD Wholesale Inventory Control Activities," was issued on June 30, 1993. The report stated that ICPs did not pursue potential terminations of contracts for significant quantities of materiel that exceeded future requirements. The report recommended the establishment of specific criteria on determining the benefits of terminating unneeded materiel on contract and a corresponding revision in existing termination models. The report also recommended the development of controls over and a system to track the timeliness of termination actions. The Military Departments and DLA generally concurred with the recommendations.

Army Audit Agency

Army Audit Agency Report No. CR 95-203, "Requirements Determination for Secondary Items", was issued on January 23, 1995. The report was a summary of audit reports covering the Army ICPs. The report stated that the Army ICPs did not always use accurate data in computing requirements for secondary items. Specifically, the ICPs did not have adequate support for programmed requirements, extended requirements objective, and program change factors. The Army Materiel Command issued additional policy and guidance to correct the reported deficiencies. The policy informed commands that the Army Materiel Command will monitor the use of additive demands, reemphasized existing policy on extended requirements objectives and program data files, and stated that inventory managers would be rated on the adequacy of their decisions.

Appendix D. Excessive and Insufficient Purchases

Reason for Incorrect Purchase	Sampled Purchase Number	Sampled Purchase Value	Follow-on Purchase Number	Follow-on Purchase Value
Excessive Purchases:				
Improper Demand Forecasting				
Demand coding - war reserve inventory	2	$ 951,176	1	$ 255,697
Demand coding - modification programs	3	779,081	1	2,613,365
Demand coding - planned requirements	-	-	2	355,595
Subtotal	**5**	**1,730,257**	**4**	**3,224,657**
Nonrepresentative Demand Rates				
Abnormal demand surges	5	5,932,069	1	83,144
Inventory manager developed demand rates	3	314,030	-	-
Subtotal	**8**	**$6,246,099**	**1**	**$83,144**
Incorrect Additive Requirements				
Computation of requirements	1	390,750	2	618,557
Updating requirements	4	1,583,750	2	2,024,942
Support for requirements	1	50,743	1	131,821
Subtotal	**6**	**$2,025,243**	**5**	**$2,775,320**
Inaccurate Acquisition Lead Time				
Administrative lead time	1	682,103	1	294,278
Production lead time	2	554,581	2	412,236
Subtotal	**3**	**$1,236,684**	**3**	**$707,034**
Unreasonable Purchase Decisions				
Review of purchase reductions	5	1,264,104	1	148,322
Timeliness of action	3	716,847	1	133,168
Subtotal	**8**	**$1,980,951**	**2**	**$281,490**
Insufficient Purchases:				
Confirming weapon system information	2	(177,900)	-	-
Subtotal	**2**	**($177,900)**	**-**	**-**
Total Excessive and Insufficient Purchases *	**32**	**$13,041,334**	**15**	**$7,071,645**

* Of the 47 excessive and insufficient purchases disclosed by the audit, 32 purchases, valued at $13.0 million were identified through our sample and were used in our statistical estimates. The remaining 15 purchases, valued at $7 million, were identified in follow-on procurement to the items sampled.

Appendix E. Summary of Reductions of Excessive Purchases

Organizations and NSNs	Excessive Purchase Quantity	Excessive Purchase Value	Purchase Reduction Resulting from Audit Quantity	Purchase Reduction Resulting from Audit Value
Armament and Chemical Acquisition and Logistics Activity				
4810010733188	209	$ 401,122	289	$ 414,966[1]
1005003488653	312	192,435	400	246,712[1]
4240013696533	1,523	797,169	-	-
1005010897778	259	131,821	-	-
Tank-automotive Armaments Command				
4930013186091	602	50,743	-	-
2520006788382	447	81,515	-	-
Aviation Supply Office				
1615011439780	83	160,190	-	-
1560012517195	1,663	415,750	-	-
2840000322959	222	133,846	-	-
1615002406465	40	154,338	-	-
1680013157927	116	133,168	-	-
Ships Parts Control Center				
4820013662076	13	1,281,508	-	-
1075012308045	8	138,169	6	103,627[1]
1450001696926	332	21,895	215	13,646
San Antonio Air Logistics Center				
2840012221775	1,685	2,378,276	1,685	2,378,276
2840012221777	1,656	2,796,852	1,656	2,796,852
2840003956915	495	890,181	244	208,078[1]
1560010389880	35	408,331	37	423,650
5340010928232	3,200	86,720	3,200	86,720[1]
3130010345252	90	148,322	42	69,217[1]
1560013279799	8	104,000	8	104,000
6620001069658	205	278,390	-	-
1560013279806	8	104,000	8	104,000
2840010879608	284	455,667	284	455,667

See footnotes at end of appendix.

Organizations and NSNs	Excessive Purchase Quantity	Excessive Purchase Value	Purchase Reduction Resulting from Audit Quantity	Purchase Reduction Resulting from Audit Value
Warner Robins Air Logistics Center				
5905007177798	621	$ 59,411	-	-
1610006287416	336	506,046	-	-
1560010104738	5	34,165	5	$ 34,165[1]
5865011125669	80	195,915	-	-
Defense Construction Supply Center				
4520013293451	6,745	2,138,165	4,629	1,467,393[1]
1650012359946	202	727,200	129	464,400[1]
2510011574078	95	118,750	-	-
4720010958460	84	88,200	-	-
1650011657214	14	129,286	-	-
3020013122584	10	75,500	-	-
Defense Electronic Supply Center				
5910010491253	32	59,008	32	59,008
Defense General Supply Center				
9150010355393	18,527	314,774	-	-
7310007588564	89	255,697	51	146,523[1]
6210002840289	14,295	78,337	-	-
5995012601578	91	217,426	86	205,480[1]
3920011130140	3,152	154,007	3,152	154,007
6615010088241	15	65,640	-	-
1680004508532	38	94,242	12	29,761
Defense Industrial Supply Center				
2840003976507	20,316	532,686	-	-
2835011264059	168	1,965,531	150	1,754,939[1]
2840012149714	185	736,485	185	736,485
Total		**$20,290,879[2]**		**$12,457,572[2]**

[1]Nonsampled purchases, totaling $5,202,220 were reduced or canceled as a result of the audit.

[2]We determined that $20.3 million of purchases were excessive. However, management could reduce only $11.9 million of those purchases because contract termination costs or prior delivery and acceptance of some of the materiel made reductions uneconomical and infeasible.

Appendix F. Summary of Potential Benefits Resulting From Audit

Recommendation Reference	Description of Benefit	Amount and/or Type of Benefit
1. through 3.	Economy and Efficiency and Management Controls. Reducing or avoiding premature and unnecessary purchases by the ICPs by improvements in guidance and training for inventory managers and the identification and development of alternative management controls.	Funds Put to Better Use. About $59.6 million of Defense Business Operation Fund monies invested in wholesale inventories could be used more efficiently by avoiding unnecessary and premature purchase of materiel. The $59.6 million consists of $37.7 million for materiel that would not be needed for more than 6 years (unnecessary buys) and $21.8 million in inventory carrying costs relating to the premature purchase of $88.9 million of inventory. The reduction or cancellation of purchases we reviewed, that were outside the audit sample and for which results are not reflected in the above cost savings, avoided investment of $7.5 million of Defense Business Operation Fund monies in inventory. Those monies were made available for more efficient investment.

Appendix G. Organizations Visited or Contacted

Office of the Secretary of Defense

Office of the Deputy Under Secretary of Defense for Logistics, Washington, DC

Department of the Army

Headquarters, Deputy Chief of Staff (Logistics), Washington, DC
Headquarters, Army Materiel Command, Alexandria, VA
U.S. Army Aviation and Troop Command, St. Louis, MO
U.S. Army Armament and Chemical Acquisition and Logistics Activity, Rock Island, IL
U.S. Army Communications-Electronics Command, Ft. Monmouth, NJ
U.S. Army Missile Command, Redstone Arsenal, AL
U.S. Army Tank-automotive Armaments Command, Warren, MI

Department of the Navy

Headquarters, Naval Supply Systems Command, Washington, DC
Naval Audit Service, Washington, DC
Aviation Supply Office, Philadelphia, PA
Ships Parts Control Center, Mechanicsburg, PA

Department of the Air Force

Air Force Materiel Command, Wright-Patterson Air Force Base, Dayton, OH
Air Force Audit Agency, Wright-Patterson Air Force Base, Dayton, OH
Ogden Air Logistics Center, Ogden, UT
Oklahoma City Air Logistics Center, Tinker Air Force Base, OK
Sacramento Air Logistics Center, Sacramento, CA
San Antonio Air Logistics Center, San Antonio, TX
Warner Robins Air Logistics Center, Robins Air Force Base, Warner Robins, GA

Other Defense Organizations

Headquarters, Defense Logistics Agency, Washington, DC
Defense Construction Supply Center, Columbus, OH
Defense Electronics Supply Center, Dayton, OH
Defense General Supply Center, Richmond, VA
Defense Industrial Supply Center, Philadelphia, PA

Non-Defense Federal Organizations

General Accounting Office, Washington, DC

Appendix H. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition and Technology
  Director, Defense Logistics Studies Information Exchange
Under Secretary of Defense (Comptroller)
  Deputy Chief Financial Officer
  Deputy Comptroller (Program/Budget)
Deputy Under Secretary of Defense for Logistics
Assistant to the Secretary of Defense (Public Affairs)

Department of the Army

Assistant Secretary of the Army (Financial Management and Comptroller)
Auditor General, Department of the Army

Department of the Navy

Assistant Secretary of the Navy (Financial Management and Comptroller)
Auditor General, Department of the Navy

Department of the Air Force

Assistant Secretary of the Air Force (Financial Management and Comptroller)
Auditor General, Air Force Audit Agency

Other Defense Organizations

Director, Defense Contract Audit Agency
Director, Defense Logistics Agency
Director, National Security Agency
  Inspector General, National Security Agency

Non-Defense Federal Organizations and Individuals

Office of Management and Budget
U.S. General Accounting Office, National Security and International Affairs Division
Technical Information Center
Defense and National Aeronautics and Space Administration Management Issues
Military Operations and Capabilities Issues

Chairman and ranking minority member of each of the following congressional committees and subcommittees:

Senate Committee on Appropriations
Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Governmental Affairs
House Committee on Appropriations
House Subcommittee on National Security, Committee on Appropriations
House Committee on Government Reform and Oversight
House Subcommittee on National Security, International Affairs, and Criminal Justice, Committee on Government Reform and Oversight
House Committee on National Security

Part III - Management Comments

Department of the Army Comments

Final Report Reference

DEPARTMENT OF THE ARMY
OFFICE OF THE DEPUTY CHIEF OF STAFF FOR LOGISTICS
500 ARMY PENTAGON
WASHINGTON, DC 20310-0500

DALO-SMP

24 AUG 1995

MEMORANDUM THRU

DEPUTY CHIEF OF STAFF FOR LOGISTICS

~~DIRECTOR OF THE ARMY STAFF~~ GREGORY P. GUILLIE, LTC, GS, ADECC

ASSISTANT SECRETARY OF THE ARMY (INSTALLATIONS, LOGISTICS AND ENVIRONMENT)

Eric A. Orsini
Deputy Assistant Secretary of the Army (Logistics)
OASA (I&L)

FOR INSPECTOR GENERAL, DEPARTMENT OF DEFENSE (AUDITING)

SUBJECT: Audit Report on Requirements for Current Inventory Purchases of Consumable Items (Project No. 4LE-0035) --INFORMATION MEMORANDUM

TAB A Deleted

1. This is in response to USAAA memorandum of 7 July 1995 (Tab A), which asked ODCSLOG to respond to your memorandum of 30 June 1995 (Encl to Tab A). Your memorandum requested that ODCSLOG review the draft audit report and provide comments.

Enclosure to TAB A Deleted

2. HQDA ODCSLOG concurs with the U.S. Army Materiel Command's (AMC) recommendations and actions (Tab B). AMC has already established a Requirements Business Process Group which has purview of all alternatives, procedures and purchase decisions. They will be issued additional guidance to place increased emphasis on the areas highlighted by the auditors by 31 October 1995.

CHARLES S. MAHAN, JR.
Brigadier General, GS
Director of Supply and Maintenance

2 Encls

CF:
VCSA
CDR, AMC
SAIG-PA
SAAG-PMF-E
DALO-ZXA

95 AUG 29 AM 7:33
RECEIVED
U.S. ASST SEC'Y ARMY
I,L&E

FOR OFFICIAL USE ONLY
This marking is canceled when separated from the material bearing a protective marking

OASA(L) #0458

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY MATERIEL COMMAND
5001 EISENHOWER AVENUE, ALEXANDRIA, VA 22333 - 0001

REPLY TO ATTENTION OF

14 August 1995

AMCIR-A (36-2b)

MEMORANDUM FOR MR. JOHN BOURGAULT, ASSOCIATE DIRECTOR, AUDIT FOLLOWUP AND COMPLIANCE DIVISION, U.S. ARMY AUDIT AGENCY, ARLINGTON, VA 22202-0000

SUBJECT: Department of Defense Inspector General Draft Report, Requirements for Current Inventory Purchases of Consumable Items, Project 4LE-0035 (AMC No. D9433-A)

1. We are enclosing our position on subject report IAW AR 36-2.

2. Point of contact for this action is Mr. Robert Kurzer, (703) 274-9025.

3. AMC -- America's Arsenal for the Brave.

BILLY K. SOLOMON
Major General, USA
Chief of Staff

Encls
as

DODIG DRAFT REPORT
Requirements for Current Inventory
Purchases of Consumable Items
PROJECT 4LE-0035

FINDING. Inventory managers at the DOD ICPs were prematurely and unnecessarily purchasing wholesale inventory of consumable items. Also, they did not always make sufficient purchases of some items. The conditions occurred because management controls were ineffective and did not ensure that inventory managers made the most prudent decisions. As a result, we estimated that of the $1.06 billion of consumable items that the ICPs were in the process of purchasing (contracts not yet awarded in April 1994), consumable materiel valued at $126.6 million (11.9 percent) exceeded current requirements. We also estimated that of the $126.6 million of excess consumable materiel purchases, $88.9 million was premature and $37.7 million was unnecessary. We further estimated that the avoidable cost associated with carrying the inventory because of those premature and unnecessary purchases was $59.6 million.

RECOMMENDATIONS AND ACTION TAKEN:

RECOMMENDATION 1. We recommend that the Commanders, Army Materiel Command, Naval Supply System Command, and Air Force Logistics Command and the Director, Defense Logistics Agency require each inventory control point to establish a process action team to identify alternative procedures and controls for improving the quality of inventory manager purchase decisions. At a minimum, areas requiring emphasis should include:

a. verification of requisition demand coding,

b. analysis and evaluation of demand trends,

c. development of acquisition lead times for consumable items, and

d. improvement of controls over reevaluating purchase decisions.

ACTION TAKEN. Concur with recommendation to place increased emphasis on the areas highlighted by the auditors. We will be issuing guidance by 31 October 1995 to the existing Requirements Business Process Group (BPG) for their implementation without starting a new process action team.

All items mentioned are within the purview of the Requirements BPG and the group will be tasked to take the actions that are outside of the standard system. In the area of requisition demand coding, the standard system logic that is used to filter demands out of the average monthly demand computation will be verified and guidance will be issued to ensure that the filtering of nonrecurring demands, i.e., maintenance programs, provisioning requirements, basic issue requirements, set assembly and foreign military sales, are not included in average monthly demands calculated for the item managers. Much of this process is transparent to item managers and the verification of the system logic will occur within the BPG by the functional experts. In the area of acquisition lead times, there is a existing process action team for Administrative Leadtime/Production Leadtime for AMC that is currently conducting a clean-up of the representative/nonrepresentative coding used in the files today. That in addition to a recent change made in the standard system that discontinued the use of averaging 24 months worth of acquisitions for computing leadtimes should ensure the accuracy of the coding. Currently, AMCs item managers are working to reduce the cycle times 50 percent in the procurement process by the year 2000 in consonance with an OSD memorandum. During this effort item managers are scrubbing the data base, working with procurement to speed the process and implementing automation initiatives to aid this effort wherever possible. The AMC took an automated "slice" off the existing leadtimes in Nov 94 and is now working to achieve the "slice" by changing systems and business processes. Currently the system will not allow an update of any secondary item leadtime unless the update is to lower a value in the current file. Once the freeze is lifted we will be automatically computing leadtimes based on the latest representative procurement. This change from the old way of averaging 24 months will ensure AMC can reap the benefits from data scrubs and improvements to business processes.

Department of the Navy Comments

DEPARTMENT OF THE NAVY
OFFICE OF THE ASSISTANT SECRETARY
RESEARCH, DEVELOPMENT AND ACQUISITION
1000 NAVY PENTAGON
WASHINGTON DC 20350-1000

SEP 18 1995

MEMORANDUM FOR THE DEPARTMENT OF DEFENSE ASSISTANT INSPECTOR GENERAL FOR AUDITING

Subj: DRAFT REPORT ON THE AUDIT OF REQUIREMENTS FOR CURRENT INVENTORY PURCHASES OF CONSUMABLE ITEMS (PROJECT NO. 4LE-0035)

Ref: (a) DODIG Memo of 30 June 1995

Encl: DON Response to Draft Audit Report

I am responding to the subject audit report concerning the adequacy of controls over procurement requirements for consumable items. The Department of the Navy response is provided at enclosure (1). We concur with the intent of the recommendations directed to the Navy.

W. C. BOWES
Vice Admiral, U. S. Navy
Principal Deputy

Copy to:
FMO-13
NAVINSGEN

DEPARTMENT OF THE NAVY COMMENTS
ON
DODIG DRAFT AUDIT REPORT OF 30 JUNE 1995
ON
REQUIREMENTS FOR CURRENT INVENTORY PURCHASES OF CONSUMABLE ITEMS
(PROJECT NO. 4LE-0035)

FINDING

Inventory managers (IMs) at the DOD Inventory Control Points (ICPs) were prematurely and unnecessarily purchasing wholesale inventory of consumable items. Also, they did not always make sufficient purchases of some items. The conditions occurred because management controls were ineffective and did not ensure that IMs made the most prudent decisions. As a result, we estimated that of the $1.06 billion of consumable items that the ICPs were in the process of purchasing (contracts not yet awarded in April 1994), consumable materiel valued at $126.6 million (11.9 percent) exceeded current requirements. We also estimated that of the $126.6 million of excess consumable materiel purchases, $88.9 million was premature and $37.7 million was unnecessary. We further estimated that the avoidable cost associated with carrying the inventory because of those premature and unnecessary purchases was $59.6 million.

DON Comment

Partially concur. Navy procurement termination procedures have historically resulted in less than two per cent inactive inventory in purchase requests (PRs). Continuous review of items during the procurement phase allows early detection of items in long supply to initiate termination at least cost. Recently, the percentage at the Navy Ships Parts Control Center (SPCC) increased to five per cent which is completely attributed to the ballast tank valve procured for a ship alteration that was delayed for two years. Since the increase is attributable to just a single item, we do not believe a systemic problem exists requiring procedural changes.

Navy mainframe and mid tier automated systems provide item managers enhanced decision making capability in all stock action decisions. The transaction history file demand analyzer and Statistical Demand Forecasting model provide graphic capability for item managers to review customer demands at the requisition number level. Our mainframe system includes filter limits on various input values including lead time observations.

The Naval Audit Service (NAVAUDSVC) recently completed research to determine whether to conduct an audit on the validity of requirements for unawarded contracts. NAVAUDSVC determined there were not sufficient material weaknesses to warrant transition to an audit.

We cannot address monetary benefits displayed in the audit since Navy dollar values are not specifically tabulated.

RECOMMENDATIONS

1. We recommend that the Commanders, Army Materiel Command, Naval Supply Systems Command (NAVSUP), and Air Force Logistics Command and the Director, Defense Logistics Agency (DLA) require each ICP to establish a process action team to identify alternative procedures and controls for improving the quality of IM purchase decisions. At a minimum, areas requiring emphasis should include:

a. verification of requisition demand coding,

b. analysis and evaluation of demand trends,

c. development of acquisition lead times for consumable items, and

d. improvements of controls over reevaluating purchase decisions.

DON Comment

Concur in developing procedures and controls for improving the quality of IM purchase decisions. Navy developed an automated tool (IM Toolkit) for the IM to enhance stock action decision making. The IM Toolkit along with Statistical Demand Forecasting, Kendall Trend detector, and real time "what if" capability will provide the IM improvements to accommodate the concerns mentioned above. Navy will implement IM Toolkit by 30 January 1996.

2. We recommend that the Commanders, NAVSUP and Air Force Logistics Command and the Director, DLA issue guidance on management of additive requirements that emulate the recent guidance issued by the Army Materiel Command, which provides for improvements of procedures for monitoring the use of additive requirements and measurement of the adequacy of IM decisions in their performance rating.

DON Comment

Concur with the intent to monitor additive requirements and to measure the adequacy of IM decisions in performance ratings. Navy has policy instructions for additive requirements pertaining to both ship and aviation weapon systems. Navy measures IM performance based on the amount of inactive inventory as well as shortages. Effective IM decisions will minimize both inactive inventory and inventory shortages.

Department of the Air Force Comments

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE

28 AUG 1996

MEMORANDUM FOR ASSISTANT INSPECTOR GENERAL FOR AUDITING OFFICE OF THE INSPECTOR GENERAL DEPARTMENT OF DEFENSE

FROM: HQ USAF/LGSP

SUBJECT: DoD (IG) Audit Report on Requirements for Current Inventory Purchases of Consumable Items (Project No. 4LE-0035)

This is in reply to your memorandum requesting the Assistant Secretary of the Air Force (Financial Management and Comptroller) provide Air Force comments on the subject report.

The Air Force concurs with the intent of Recommendation 1, and provides alternative actions.

Based on DMRD 926, the Air Force will transfer approximately 500,000 items to Defense Logistics Agency. Given completion of the Consumable Item Transfer (CIT) in early 1997, the Air Force is looking at several options for managing the residual consumable item workload. The most favorable option being considered is to convert the remaining consumable items to recoverable items. This option would bring consumable items under a failure-based methodology, and the type of problem the audit cites with NSN 2840-01-222-1775PT would not occur. The problems caused by erroneous requisition coding by the customers would also be eliminated. The recoverable computation system (D041) does not recognize requisition history as a basis of requirements forecasting, therefore, the verification of requisition demand coding and the analysis and evaluation of demand trends would not be necessary.

By the end of FY96, AFMC will decide on how to manage the approximate 10,000 residual consumable item workload (coded Inventory Management Code (IMC) D for engineering design critical). Until the above D041 reparable methodology or an alternative management system is adopted for the residual consumable items; trend analysis, administrative lead time development, and controls over purchase decisions will be special interest items during the Item Management Review or the Item Management Workshop.

The Air Force concurs with Recommendation 2 as far as issuing guidance on the management of additive requirements. Additive requirements have been an area of concern for the Air Force for the past few years. Most recent buy guidelines restrict the acquisition of additive requirements to four quarters of requirements. This is effect forces complete re-evaluation of each additive requirement each year. The current consumable item directive for the Air Force, AFMC Regulation 57-6, is converting to an instruction. The draft new instruction

includes updated instructions on additive requirements review and validation. The estimated issue date of the updated instruction is December 95.

Neither the Army Materiel Command guidance nor the precipitating audit is available at HQ AFMC. Therefore, it is not possible at this time to determine if AFMC policy emulates Army policy. The HQ AFMC office of primary responsibility (OPR) will secure a copy of the Army's policy and review it for inclusion in the AFMC Instruction cited above.

Our point of contact is Karen Miller. 695-4895.

ALLEN W. BECKETT
Sr. Analyst, Sup/Fuels Pol Div
Directorate of Supply
DCS/Logistics

Defense Logistics Agency Comments

DEFENSE LOGISTICS AGENCY
HEADQUARTERS
CAMERON STATION
ALEXANDRIA, VIRGINIA 22304-6100

IN REPLY REFER TO DDAI

27 OCT 1995

MEMORANDUM FOR THE ASSISTANT INSPECTOR GENERAL FOR AUDITING
DEPARTMENT OF DEFENSE
(ATTN: Mr. Joel Chaney)

SUBJECT: Draft Audit Report on Requirements for Current Inventory Purchases of Consumable Items (Project No. 4LE-0035)

We have reviewed the subject draft report and are providing the Defense Logistics Agency comments as requested.

If you have any questions please contact Mr. Frank Taylor on DSN 427-6274 or Commercial (703) 767-6274.

JACQUELINE G. BRYANT
Chief, Internal Review

Attachment

SUBJECT: Draft Report on the Audit of Requirements for Current Inventory Purchases of Consumable Items (Project No. 4LE-0035)

FINDING A: **Purchases of Consumable Items.** Inventory managers at the DoD ICPs were prematurely and unnecessarily purchasing wholesale inventory of consumable items. Also, they did not always make sufficient purchases of some items. The conditions occurred because management controls were ineffective and did not ensure that inventory managers made the most prudent decisions. As a result, we estimated that of the $1.06 billion of consumable items that the ICPs were in the process of purchasing (contracts not yet awarded in April 1994), consumable materiel valued at $126.6 million (11.9 percent) exceeded current requirements. We also estimated that of the $126.6 million of excess consumable materiel purchases, $88.9 million was premature and $37.7 million was unnecessary. We further estimated that the avoidable cost associated with carrying the inventory because of those premature and unnecessary purchases was $59.6 million.

DLA COMMENTS: PARTIALLY CONCUR. DLA has completed a series of management review visits to all ICPs. Based on these and past visits, we agree that some of the errors cited in the draft report do occur. Item managers do, on occasion, fail to verify large demands, include inappropriate levels and make improper requirements adjustments when recomputing requirements. However, the DLA reviews, of over 500 items do not show this behavior to be widespread. Furthermore, the rate of occurrance of such errors reduces each year, indicating that management controls are adequate.

We disagree with the draft report's assessment of the Statistical Demand Forecasting (SDF) process. SDF as implemented in DLA provides stability, improved accuracy, and lower inventory investment. The report criticizes DLA's SDF process of either ignoring outlying data points or damping them down to some reasonable threshold, preferring instead the Navy approach of referring outliers to the item manager for review. In fact, the Navy system only refers outliers on the second occurrance, ignoring the first. DLA's high volume of items and demands makes item manager review of every outlier impractical if not impossible. The practice of reducing outliers to statistical limits eliminates this problem and has been shown to improve forecast accuracy. As for forecast method, DLA ICPs are using a variety of forecasting methods, not just double smoothing. In announcing the last deployment of SDF, we issued guidance to the effect that single smoothing has been shown to provide improved supply support for lower overall stock investment, advising ICPs to use single smoothing for at least part of their initial test bed. Also, customer cancellations and other demand history changes affecting the SAMMS demand history records will automatically affect the SDF demand file, resulting in a revised forecast.

INTERNAL MANAGEMENT CONTROL WEAKNESSES: Concur; however the weakness is not considered material for the reasons stated above.

ACTION OFFICER: Michael Pouy, MMSLR, 767-1616
COORDINATION: T. Frank Taylor, DDAI, 767-6274, 27 Sep 95.
PSE APPROVAL: Mr. Jeffrey Jones, Executive Director, Supply Management, 767-2600

DLA APPROVAL:

RAY E. McCOY
Major General, USA
Principal Deputy Director

SUBJECT:Draft Report on the Audit of Requirements for Current Inventory Purchases of Consumable Items (Project No. 4LE-0035)

RECOMMENATION 1: We recommend that the Commanders, Army Materiel Command, Naval Supply System Command, and Air Force Logistics Command and the Director, Defense Logistics Agency require each inventory control point to establish a process action team to identify alternative procedures and controls for improving the quality of inventory manager purchase decisions. At a minimum, areas requiring emphasis should include:

a. verification of requisition demand coding,
b. analysis and evaluation of demand trends,
c. development of acquisition lead times for consumable items, and
d. improvement of controls over reevaluating purchase decisions.

DLA COMMENTS: PARTIALLY CONCUR. As discussed above under Finding A, DLA agrees that such errors occur, but our own reviews have not shown these problems to be widespread. The low (and decreasing) frequency of such errors is evidence that management controls areadequate, and we do not agree with the need for a PAT team to monitor purchase decisions. However, based on findings from the draft report as well as our own reviews, we will agree to issue guidance to the ICPs, reinforcing the need for continued watchfulness and management control of requirements adjustments and related purchase decisions.

MONETARY BENEFITS: $59.56 million, DoD total.

DLA COMMENTS: NONCONCUR. The statistical projection data shown in Appendix A of the draft report shows a 90% confidence level of plus-or-minus 46%. Such a wide range indicates an inadequate sample size and an excessively high sample variance, leading us to reject the statistical projection as invalid. However, we accept without comment the DLA share ($5,017,966) of the observed $12,457,572 purchase reduction value shown in Appendix E for the specific actions reviewed.

ESTIMATED REALIZATION DATE: Accepted benefits already realized, resulting from actions taken by item managers directly as result of the audit.
AMOUNT REALIZED:$5,017,966
DATE BENEFITS REALIZED: COMPLETE

ACTION OFFICER: Michael Pouy, MMSLR, 767-1616
COORDINATION: T. Frank Taylor, DDAI, 767-6274, 27 Sep 95
PSE APPROVAL: Mr. Jeffrey Jones, Executive Director, Supply Management, 767-2600

DLA APPROVAL:

RAY E. McCOY
Major General, USA
Principal Deputy Director

SUBJECT: Draft Report on the Audit of Requirements for Current Inventory Purchases of Consumable Items (Project No. 4LE-0035)

RECOMMENATION 2: We recommend that the Commanders, Naval Supply System Command and Air Force Logistics Command and the Director, Defense Logistics Agency issue guidance on management of additive requirements that emulate the recent guidance issued by the Army Materiel Command, which provides for improvement of procedures for monitoring the use of additive requirements and measurement of the adequacy of inventory manager decisions in their performance rating.

DLA COMMENTS: PARTIALLY CONCUR. DLA will issue guidance regarding the acceptance, recording, maintenance and use of additive requirements. However, the Army guidance cited in the draft report requires a central control point at each ICP to monitor and control the use of additive requirements and the periodic reporting of additive requirements to headquarters. At DLA ICPs, these requirements are naturally included with all other requirements as part of the management review of the overall purchase decision. To single out one type of requirement for centralized control and monitoring is neither practical nor beneficial. Therefore, our guidance will not require centralized monitoring and control.

ACTION OFFICER: Michael Pouy, MMSLR, 767-1616
COORDINATION: T. Frank Taylor, DDAI, 767-6274, 27 Sep 95
PSE APPROVAL: Mr. Jeffrey Jones, Executive Director, Supply Management, 767-2600

DLA APPROVAL:

RAY E. McCOY
Major General, USA
Principal Deputy Director

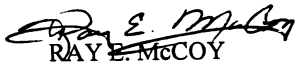
SUBJECT: Draft Report on the Audit of Requirements for Current Inventory Purchases of Consumable Items (Project No. 4LE-0035)

RECOMMENATION 3: We recommend that the Director, Defense Logistics Agency issue guidance for inventory managers to verify that weapon system information is accurate, as part of the process of verifying procurement requirements.

DLA COMMENTS: NONCONCUR. This recommendation is based on the finding that requirements for an item were reduced because the using Service had failed to provide weapon system coding. However, the significant result of those reduced requirements was not the reduced size of the procurement as indicated in the draft report, but the reduced reorder point which delayed the buy notification to the item manager. It is the delayed reorder point breach that has the real effect on weapon system support. One can hardly expect the item manager to be aware that a buy is NOT being generated, nor to delay the processing of a buy while verifying the lack of weapon system coding. The appropriate recommendation here is that the Services be required to provide accurate and up-to-date weapon system application and essentiality data.

ACTION OFFICER: Michael Pouy, MMSLR, 767-1616
COORDINATION: T. Frank Taylor, DDAI, 767-6274, 27 Sep 95
PSE APPROVAL: Mr. Jeffrey Jones, Executive Director, Supply Management, 767-2600

DLA APPROVAL:



RAY E. McCOY
Major General, USA
Principal Deputy Director

Audit Team Members

This report was prepared by the Logistics Support Directorate, Office of the Assistant Inspector General for Auditing, Department of Defense.

Shelton R. Young
James Kornides
Joel K. Chaney
David L. Luce
Ted R. Paulson
Amy J. Frontz
Anthony C. Hans
Michael D. Davis
Scott K. Miller