

# **Audit**



# **Report**

OFFICE OF THE INSPECTOR GENERAL

**AIR FORCE REQUIREMENTS FOR CURRENTLY PROCURED  
WHOLESALE INVENTORIES OF REPARABLE ITEMS**

Report Number 92-118

June 30, 1992

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**Department of Defense**

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The following acronyms are used in this report.

AFLC.....	Air Force Logistics Command
AFM.....	Air Force Manual
ALC.....	air logistics center
GAO.....	General Accounting Office
ICP.....	inventory control point
ISSL.....	initial spares support list
NSN.....	National Stock Number
SBSS.....	Standard Base Supply System
SPRAM.....	special purpose recoverable authorized maintenance
TISS.....	Tactical Electronic Warfare System Intermediate Support System
TRU.....	test replacement unit



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DEPARTMENT OF DEFENSE  
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June 30, 1992

MEMORANDUM FOR ASSISTANT SECRETARY OF DEFENSE (PRODUCTION AND  
LOGISTICS)  
ASSISTANT SECRETARY OF THE AIR FORCE (FINANCIAL  
MANAGEMENT AND COMPTROLLER)

SUBJECT: Audit Report on the Air Force Requirements for  
Currently Procured Wholesale Inventories of Reparable  
Items (Report No. 92-118)

We are providing this final report for your information and use. It addresses the purchase of reparable items by the Air Force's air logistics centers. This is the first of three reports we plan to issue on purchases of reparable items. Separate reports will be issued to each Military Department. Comments from the Air Force on a draft of this report were considered in preparing this final report.

A draft of this report was provided to the addressees for comments on March 20, 1992. Additional comments are requested from the Air Force. See Part II of the report for specific requirements for the additional comments. DoD Directive 7650.3 requires that all recommendations be resolved promptly. All comments should be provided by August 31, 1992. Monetary benefits are subject to resolution in accordance with DoD Directive 7650.3 in the event of nonconcurrence or failure to comment.

The courtesies extended to the audit staff are appreciated. If you have any questions concerning this audit, please contact Mr. James Helfrich, Program Director, or Mr. Joel Chaney, Project Manager, in our Columbus office, at (614) 692-4141 (DSN 850-4141). The planned distribution of this report is listed in Appendix G.

A handwritten signature in cursive script, reading "E. Jones", is positioned above the typed name.

Edward R. Jones  
Deputy Assistant Inspector General  
for Auditing

Enclosure

cc: Secretary of the Air Force

Office of the Inspector General, DoD

AUDIT REPORT NO. 92-118  
(Project No. OLE-0078.02)

June 30, 1992

**AIR FORCE REQUIREMENTS FOR CURRENTLY PROCURED  
WHOLESALE INVENTORIES OF REPARABLE ITEMS**

**EXECUTIVE SUMMARY**

**Introduction.** In October 1990, the Air Force's five air logistics centers were in the process of procuring approximately \$1.1 billion of stock for 3,022 reparable line items. These purchases were initiated after item managers and supervisory personnel reviewed requirements computations generated by the Air Force's automated requirements determination system.

**Objectives.** The audit objectives were to determine whether quantities of reparable items being purchased were warranted by anticipated requirements and whether internal controls over the determination of those procurement requirements were effective.

**Audit Results.** Of the \$326.7 million of purchases reviewed, the air logistics centers were prematurely or unnecessarily purchasing approximately \$93.8 million (29 percent) of reparable assets. The demand rates used in the requirements computations were inaccurate, and the Air Force Logistics Command data systems did not retain a demand history that could be used to verify or correct the demand rates. Purchase requests valued at \$27.2 million were curtailed by the two air logistics centers while the audit was in progress. Of the \$27.2 million in purchase reductions, \$10.6 million was initiated by the air logistics centers, and the remaining \$16.6 million was curtailed in response to our audit.

**Internal Controls.** Internal controls were not effective to ensure that the air logistics centers were purchasing only those quantities of items needed to satisfy requirements. See Finding A for details on these material weaknesses and Part I for a description of the controls assessed.

**Potential Benefits of Audit.** We identified potential monetary benefits of \$10.3 million, which represents the estimated value of unnecessary purchases (see Appendix D).

**Summary of Recommendations.** We recommended that policy and implementing guidance for computing additive requirements be revised or supplemented, internal controls of purchase decisions be strengthened, and an automated system be established to retain a 2-year demand history.

**Management Comments.** The Air Force Deputy Chief of Staff for Logistics, Director of Supply, concurred with the recommendations to revise stockage policy for special purpose recoverable authorized maintenance items and to issue guidance for recomputing initial spares support list requirements. Planned actions are responsive to the recommendations. The Air Force partially concurred with the recommendations to direct the air logistics centers to implement the Air Force Logistics Command policy, establishing an independent quality review team and to periodically evaluate the performance of item managers and supervisory personnel responsible for verification of procurement requirements. The Air Force nonconcurred with the recommendation to establish an automated system to retain a 2-year history of demand transactions supporting the demand rate used by the D041 system to forecast requirements. The Air Force did not agree with the amount of, or the basis for, our estimate of potential monetary benefits. We adjusted the amount and provided additional comments on our statistical sampling plan.

We request that the Air Force reconsider its position and provide additional information as specified in the Status of Recommendations Chart in Part II of the report. Comments are to be provided within 60 days of the date of this report. The responsiveness of the Air Force's comments is discussed in Part II of this report, and the complete text of the comments is included in Part IV.

## TABLE OF CONTENTS

	<u>Page</u>
TRANSMITTAL	1
EXECUTIVE SUMMARY	i
PART I - INTRODUCTION	1
Background	1
Objectives	1
Scope	1
Internal Controls	2
Prior Audits and Other Reviews	2
Other Matters of Interest	3
PART II - FINDINGS AND RECOMMENDATIONS	5
A. Premature and Unnecessary Purchases of Reparable Item Inventories	5
B. Inadequate Demand Rates and History	17
PART III - ADDITIONAL INFORMATION	21
APPENDIX A - Statistical Sampling Plan and Results	23
APPENDIX B - Summary of Items Sampled Involving Excessive Purchases	25
APPENDIX C - Underlying Causes of Excessive Purchases	27
APPENDIX D - Summary of Potential Benefits Resulting from Audit	31
APPENDIX E - Prior Audit Coverage	33
APPENDIX F - Activities Visited or Contacted	35
APPENDIX G - Report Distribution	37
PART IV - MANAGEMENT COMMENTS	39
Department of the Air Force Comments	41

This report was prepared by the Logistics Support Directorate, Office of the Assistant Inspector General for Auditing, DoD. Copies of the report can be obtained from the information officer, Audit Planning and Technical Support Directorate, (703) 614-6303 (DSN 224-6303).

## PART I - INTRODUCTION

### Background

The Air Force has five major inventory control points (ICPs), located at the Air Force's five air logistics centers (ALCs). These ALCs manage wholesale secondary items in support of military customers. Secondary items include both consumable items and depot-level reparable items. Depot-level reparable items are items that are returned to a depot-level repair activity when repair of the failed item exceeds field-level maintenance capabilities, and items that are repaired by a depot-level activity as part of the overhaul of a higher assembly or end item.

In October 1990, the ALCs were in the process of procuring approximately \$1.1 billion of stock for 3,022 reparable line items. The procurement process at the ALCs generally begins when the automated requirements computation system determines that the assets on hand and due in for an item have dropped to or below the item's stockage objective. The automated system recommends the purchase of a quantity of materiel sufficient to refill the item's stockage objective. The inventory manager reviews the requirements computation and other relevant data to verify the accuracy of the computation and, when appropriate, initiates a purchase request. The purchase request, approved by supervisory personnel, serves as the authorization for the ALCs to buy the materiel.

### Objectives

The objectives of the audit were to determine whether quantities of reparable items being purchased by the Air Force's ALCs (wholesale ICPs) were warranted by anticipated requirements and whether internal management controls over the determination of those procurement requirements were effective.

### Scope

We obtained data on active purchases from each of the Air Force's five ALCs in October 1990. At that time, the ALCs had initiated procurements valued at approximately \$1.1 billion for 3,022 reparable line items. Our initial analysis indicated that 920 line items, which involved procurements valued at over \$100,000 for each reparable item, accounted for 95 percent of the value of procurements in process. From the universe of 920 line items, we initially selected a sample of 123 line items, with purchases valued at \$433.8 million, that were initiated by the Ogden and San Antonio ALCs.

Analysis of the 123 sample items indicated that 59 did not meet the criteria of our review. We excluded those 59 items from further review because either the purchases were not actually in

process at our sample cutoff date (for example, purchase requests were canceled or contracts were awarded) or the purchases related to items that were procured with appropriated monies but managed using consumable item management techniques, instead of reparable item management techniques. Our final audit sample of 64 items involved purchases valued at \$102.4 million at the two ALCs. We estimated that the Air Force sample universe, after adjustments, was 531 line items with purchases valued at \$326.7 million. The audit sampling plan and results are discussed in Appendix A.

We examined requirements' documents to evaluate the basis for the procurement decisions; and we evaluated requirements data that were effective at the time of audit to determine whether requirements supported continuation of the procurement. To determine whether the requirements forecasts were reasonable, we reviewed the accuracy of organizational and intermediate demand rates, the propriety of nondemand based (additive) requirements, and the accuracy of on-hand asset and due-in asset balances. In addition, we selectively reviewed other requirements data and factors that affected the requirements forecast, such as administrative and production lead times, past and future program data, condemnation rates, and repair cycle times.

This economy and efficiency audit was made from August 1990 through November 1991 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 internal controls as were considered necessary. Activities visited or contacted during the audit are shown in Appendix F.

### Internal Controls

The audit identified material internal control weaknesses as defined by Public Law 97-255, Office of Management and Budget Circular A-123, and DoD Directive 5010.38. Controls were not effective to ensure that unnecessary investments in wholesale reparable inventories did not occur. Recommendations A.2.b. and A.3. in this report, if implemented, will correct the weaknesses. Monetary benefits associated with these specific recommendations could not be separately identified. Potential monetary benefits of about \$10.3 million are identified in Appendix D. A copy of the final report will be provided to the senior official responsible for internal controls within the Air Force.

### Related Audits and Other Reviews

As part of Project No. OLE-0078, we plan to issue three reports on the purchases of reparable items. Besides this report on the Air Force, we plan to issue separate reports to the Army and the Navy. In addition, we issued a quick-reaction report as follows:



The Inspector General, Department of Defense, issued Report No. 92-007, "Quick-Reaction Report on Inaccurate Determination of Initial Spares Support List Requirements," on October 18, 1991. We reported that item managers at the San Antonio ALC did not comply with Air Force policy for computing initial spares support list (ISSL) requirements, and that supervisory review of item manager purchase decisions did not disclose the inappropriate estimate of requirements. We recommended that the Commander, San Antonio ALC, suspend purchases related to the cited ISSLs until requirements were recomputed; initiate purchase request amendments and, when appropriate, contract terminations based on the requirements recomputation; provide specific training to item managers on the computation of ISSLs; and emphasize supervisory review of those requirements. The Air Force concurred with the finding and recommendations and initiated actions to implement the recommendations.

During the last 5 years, the Office of the Inspector General, DoD; the General Accounting Office (GAO); and the Air Force Audit Agency completed audits related to specific aspects of logistics management functions. Appendix E summarizes the principal audits that addressed management processes and controls over the acquisition of wholesale inventories or addressed the development of requirements data that affected managers' decisions for the acquisition of materiel.

#### Other Matters of Interest

During the audit, we discussed our conclusions on excessive purchases with item managers and officials at the ICPs. As a result of our discussions, the ICPs initiated actions to curtail or reduce purchases valued at approximately \$16.6 million.

Appendix B identifies the items involving purchase requests that we classified as excessive and actions that were initiated to curtail those purchases. Purchase requests valued at \$27.2 million were curtailed by the two ALCs. Of the \$27.2 million, \$10.6 million related to purchase reductions self-initiated by the ICPs, and the remaining \$16.6 million was curtailed in response to audit. Appendix C identifies the underlying causes of the excessive purchases.

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## PART II - FINDINGS AND RECOMMENDATIONS

### A. PREMATURE AND UNNECESSARY PURCHASES OF REPARABLE ITEM INVENTORIES

The Air Force's ALCs prematurely or unnecessarily initiated purchase requests to acquire wholesale inventory of reparable items and did not promptly curtail in-process purchases in response to indicated reductions in future requirements. These conditions occurred because the Air Force's policies and implementing instructions did not minimize investment in wholesale inventory as intended by DoD policy, item managers and equipment specialists did not comply with Air Force Logistics Command's (AFLC) guidance for verification of requirements data, and supervisory personnel did not effectively oversee item managers' decisions to initiate or continue the purchases of materiel. As a result, of the \$326.7 million of materiel that the ICPs were purchasing (contracts not yet awarded in October 1990), we estimated that materiel valued at \$93.8 million (29 percent) exceeded requirements. The \$93.8 million included \$14.7 million of premature purchases and \$79.1 million of unnecessary purchases.

### DISCUSSION OF DETAILS

#### Background

The Air Force ALCs' ability to maximize operational readiness or supply availability while minimizing inventory investment is dependent on their ability to accurately forecast when procurement actions should be initiated and how much materiel should be procured. The ALCs used the Recoverable Consumption Item Requirements Computation System (D041 System) to facilitate those determinations. The D041 System computes spare parts requirements (both wholesale and retail) for customers worldwide and applies all available assets against those requirements. Requirements are computed quarterly, using data effective as of the last day of the quarter.

During the quarterly requirements cycle, the D041 System receives data from other AFLC data systems. The D041 System uses the data to develop demand rates and depot maintenance replacement rates by relating historic usage of the item to historic program data (such as aircraft flying hours). The historic demand and replacement rates are applied to future program data to forecast organizational and intermediate level demands and depot usage. Similarly, the D041 System develops condemnation rates based on historic repair experience of the depot repair activities. When applied to forecast demand and usage of the item, the condemnation rate provides an estimate of assets needed to replace attrited items.

DoD Instruction 4140.55, "Procurement Lead Times for Secondary Items," December 9, 1985, establishes policy and prescribes uniform guidelines for defining and developing procurement lead times used in the determination of requirements. Procurement lead time is comprised of administrative lead time and production lead time. Administrative lead time begins when an item's wholesale asset level drops to or below the reorder point and ends on the date the contractual instrument is executed. The production lead time begins when administrative lead time is completed and ends when storage activities confirm receipt of significant deliveries.

DoD Directive 4140.59, "Determination of Requirements for Secondary Items After the Demand Development Period," June 13, 1988, establishes DoD stockage policies for wholesale level inventories and prescribes procedures for determining a stockage objective quantity. For demand based reparable items, the stockage objective quantity equals the sum of the safety level, production lead time, administrative lead time, and procurement cycle. The stockage objective also includes any protectable war reserve stocks and planned program requirements. The Directive provides that demand based items may be procured when assets on hand and on order are equal to or less than the safety level, lead time, and applicable protectable war reserve and planned program requirements.

AFLC Regulation 57-4, "Recoverable Consumption Item Requirements System (D041)," December 1, 1987, establishes supply management policies for varying management intensity based on the dollar value of demand and on item essentiality. The Regulation provides guidance for assigning and changing the management intensity factor for each item. That factor establishes the frequency and timing of an item's requirements determination process (quarterly, semiannually, or annually).

AFLC Regulation 57-4 also provides guidance on implementing various DoD and Air Force policies. It details the item manager's and the equipment specialist's requirement to verify requirements data and the item manager's computation of nondemand based (additive) requirements. It also provides guidance requiring each ALC to establish an independent quality review team to assist functional, staff, and management personnel in determining compliance with policies and procedures, ensuring the credibility of the D041 System, and identifying training deficiencies. Prior to July 1990, the AFLC guidance required the quality review team to review all individual purchase requests valued over \$1 million and to review a sample of at least 100 other items per quarter involving buy, repair, termination, and excess actions. In July 1990, however, the AFLC authorized the ALCs to adjust the scope of mandatory quality reviews based on the ALCs' implementation of AFLC Regulation 57-19.

AFLC Regulation 57-19, "Air Logistics Centers (ALC) Requirements Reviews and Signature Levels," August 10, 1984, provides guidance for supervisory approval of purchase decisions. The Regulation specified the management level at which a purchase decision would be approved, based on the value of the purchase. However, in July 1990, AFLC authorized each ALC the flexibility to establish approval levels. AFLC's intent was to provide the ALC a method of approving higher value purchases at lower management levels as trends in quality improvement warranted.

On December 13, 1989, the Assistant Secretary of Defense (Production and Logistics) issued a memorandum, "Contract Terminations of Secondary Items No Longer Needed." This memorandum specified:

It is DoD policy to reduce or cancel orders (purchase requests) prior to contract award and to consider reducing or terminating contracts after award when changes in mission, consumption factors, etc., make all or a part of the material ordered unneeded. The ICP's should establish procedures to manage, monitor, and audit termination actions within the activity. The procedures should provide for appropriate records to ensure accountability of termination decisions and the coordination of termination actions across functions. Termination decisions should be reached and implemented in a timely manner.

Before issuance of the DoD policy, AFLC Regulation 57-4 established policy for the continued surveillance of quantities being procured to ensure that when requirements decreased, unnecessary purchases would be prevented. The D041 System was programmed to generate a notice to the item manager recommending the reduction of the purchase request quantity when the procurement requirement decreased significantly. The Air Force's guidance required item managers to verify data used in the requirement computation to ensure that the D041 System's computed reduction was accurate and, when economically justified, to initiate an amendment to the purchase request. Air Force guidance also required supervisory approval of the item manager's decision to either continue or reduce the purchase request quantity.

#### Evaluation of Active Purchases

As of October 1990, we estimated that the Air Force ALCs were procuring 531 line items managed as reparable items which involved procurements valued at \$100,000 or more. Procurements in process (contracts not awarded) for the 531 line items were valued at \$326.7 million. The majority of the materiel being purchased was needed to support valid requirements. However, we

estimated that excessive quantities of materiel, valued at \$93.8 million, were being procured for 203 line items. We also estimated that of the \$93.8 million in excessive purchases, \$14.7 million was premature and \$79.1 million was unnecessary. Our estimates were based on the evaluation of active purchase requests for 64 sampled line items with purchases in process valued at \$102.4 million. (The criteria used to determine whether the purchase quantity of an item was premature or unnecessary are discussed in Appendix A.)

Materiel was being prematurely or unnecessarily purchased for 26 of 64 sampled line items, and these results were used in our statistical projections. Also, excessive purchases were in process for four other items that we reviewed. However, audit results related to the four items were not used in our statistical projections because the purchases were not part of the projectable audit universe. Either the purchases were reviewed as part of the audit survey or the excessive quantity was related to an additional purchase of a sampled line item initiated on or after October 19, 1990.

Reasons for premature and unnecessary purchases. We attributed the premature and unnecessary purchases for the 30 line items to ineffective stockage policy, inadequate guidance for computing additive requirements, and inadequate oversight of item managers' requirements determination decisions. Each is discussed below.

Ineffective stockage policy. Materiel was being unnecessarily procured for 2 of the 30 excessive items because Air Force policy and implementing instructions for some special purpose recoverable authorized maintenance (SPRAM) items did not limit stockage requirements for test replacement units (TRUs) to the quantities needed in support of peacetime operations and deployment requirements.

Air Force Manual (AFM) 67-1, "USAF Supply Manual," August 24, 1989, contains policy and implementing guidance for authorizing and providing SPRAM items to field-level maintenance activities. AFM 67-1 defines SPRAM items as items used by maintenance activities to detect or isolate a fault, to calibrate or align equipment, and to duplicate an active system installed in on-line equipment. TRUs, a specific category of SPRAM items, are used to repair maintenance test stations (field-level maintenance test equipment). TRUs are positioned with the maintenance activity rather than the base supply activity. SPRAM items, such as TRUs, are usually identified during the provisioning of new weapon systems. AFM 67-1 also authorizes the identification of SPRAM requirements after the provisioning process for existing weapon systems. AFLC Regulation 57-27, "Initial Requirements Determination," May 12, 1986, provides guidance for determining which new items qualify for stockage and for computing initial spares requirements. AFLC Regulation 57-4 provides guidance for

determining requirements for existing items after the demand development period. However, neither regulation provides instructions for determining SPRAM quantities.

Our audit indicated that guidance is also needed for the determination of TRU requirements and for management of those items because the lack of guidance is resulting in inefficient asset use and excessive stock levels.

For example, the San Antonio ALC was purchasing materiel valued at \$18.8 million to support TRU requirements for 16 items related to the F-15 Tactical Electronic Warfare System Intermediate Support System (TISS). Our sample included two of those items with purchases in process valued at \$8.6 million. Of the \$8.6 million, \$1.9 million was excessive. The purchases were based primarily on requirements negotiated with the Tactical Air Command to provide one of each TRU item in support of an F-15 TISS system. The plans, at the time of our audit, were to field 32 F-15 TISS systems at 15 Air Force and Air National Guard bases, at 2 ALCs, and at a training activity. Headquarters, Tactical Air Command, indicated that AFM 67-1 permits stockage of one of each TRU item for each F-15 TISS system because the spare TRU items ensure continuous operation of the system and because the maintenance activities are deployable during wartime.

Stockage of one of each TRU item for each F-15 TISS is not consistent with DoD and Air Force policies on assuming reasonable risk in inventory decisions and in minimizing investments in inventory. For example, the D041 System forecasted failure of four measurement assemblies (National Stock Number [NSN] 4920-01-294-6212) per year after all of the 32 F-15 TISS systems are fielded. However, the D041 System did not compute a base stockage level for the measurement assembly, because 90 percent of the failures can be repaired at base level by replacement of failed components. Further, we do not believe that one of each TRU item is required for each F-15 TISS system.

We recognize that the risk of failure may warrant stocking assets to support independently deployable units because system downtime could affect aircraft availability in wartime. However, we believe that the most demanding deployment plan would not require the purchase of 32 measurement assemblies. In addition, the extremely low failure rate for the assembly may not warrant any TRUs for deployment, especially when assets for repair of the assembly are included in a deployment kit or are provided as initial spares.

We concluded that the Air Force should limit the stockage of TRUs to the quantity needed to sustain operations of independently deployable units and to maintain normal peacetime requirements. Such stockage policy would minimize the TRUs purchased, but it would require more intensive management of the distribution of the spare assets. In the event of mobilization, the item manager

would redistribute assets to the deploying units and intensively manage the distribution of the remaining spares to support nondeployed systems. Adoption of this stockage criteria would require the Air Force to revise the SPRAM policy for TRUs so that the wholesale inventory manager could retain control over the distribution of the TRUs.

**Inadequate guidance for computing additive requirements.** The San Antonio and Ogden ALCs were unnecessarily purchasing 5 of the 30 excessive items to support ISSL requirements. The ALCs did not recompute ISSL requirements on an item-by-item basis after the initial demand development period.

The ISSL is an established list of spares and repair parts required to support the activation of new or modified weapon systems and equipment at base level. Typically, ISSLs are developed during the provisioning process so that the spare and repair parts are available for requisitioning by activating units. ISSLs are revised as the system configuration is modified so that the spare and repair parts available to the activating bases match the system configuration being fielded.

DoD Directive 4140.59 states that after completion of the demand development period, actual demand data shall be used for inventory management decisions. The Directive specifies that the demand development period ends not later than 2 years after the date of preliminary operational capability is attained.

AFM 67-1 requires that ISSLs be updated annually, based on actual usage data, starting 2 years after the first base activation date. The updating process defined in AFM 67-1 is designed to recalculate requirements for all items on the ISSL. The updating process, however, is cumbersome and complex. The process involves obtaining and consolidating program and usage data from selected bases.

Neither AFM 67-1 nor AFLC 57-4 provide adequate guidance for the recomputation of ISSL requirements on an item-by-item basis after the demand development period, or require item managers to perform such a computation before initiating a purchase. Rather than obtaining and consolidating program and usage data from selected bases, the ISSL should be updated using the worldwide demand and usage data accumulated by AFLC automated systems for computing requirements.

Due, in part, to the existing cumbersome process, item managers continued to use the original ISSL requirements to compute assets needed to support future fieldings. The ALCs and using commands did not perform the ISSL updates. For example, the F-16 C/D ISSL had not been updated, although the aircraft were initially fielded in 1985.

We recomputed (that is, updated) the ISSL requirement for the five items in our sample using historic worldwide demand and



usage data and the formula for base stockage levels in AFLC Regulation 57-4. Based on that computation, we concluded that ISSL requirements were significantly overstated and that the related purchases were unnecessary. For example, in April 1990, an item manager at the Ogden ALC initiated a purchase for 19 modular low-power radio frequency assemblies (radio assemblies) valued at \$4,961,552. In computing the purchase requirement, the item manager continued to use the ISSL increments developed during initial provisioning of the F-16 C/D aircraft, even though the demand development period for the radio assemblies had expired. The actual usage data for the radio assemblies did not justify continued use of the provisioning based ISSL increments. The usage data supported an ISSL quantity of one radio assembly per base rather than the minimum of three per base authorized by the ISSL. The excessive ISSL requirement caused requirements for the radio assemblies to be overstated by 100 assets (estimated value of \$26,113,432). The purchase of 19 radio assemblies was unnecessary. During the audit, the ALC curtailed the purchase.

**Inadequate oversight of requirements determination.** The Ogden and San Antonio ALCs were prematurely and unnecessarily purchasing 23 of the 30 items primarily because management oversight of item manager purchase decisions was not adequate. Additionally, internal controls over the approval process had been discontinued.

AFLC Regulations 57-19 and 57-4 prescribe processes intended to provide management controls over purchase decisions and internal controls over the ALCs' purchase approval process. AFLC Regulation 57-19 requires supervisory review and approval of individual purchase decisions based on the value of the purchase. For example, before July 1990, a purchase valued at \$1 million or more was to be reviewed by four supervisory levels, including a Division Chief, and systems analysts in the Financial Management Directorate.

Supervisory reviews of item managers' purchase decisions were not adequate. The supervisory reviews did not disclose that the purchases were excessive. Additionally, the supervisory reviews did not discern that item managers or equipment specialists had not complied with AFLC guidance for verification of requirements data used to compute purchase requirements. Further, the supervisory reviews did not disclose that item managers had not complied with AFLC guidance for computing additive requirements and that item managers did not promptly reduce the quantity being purchased although requirements decreased. Appendix C identifies the items with excessive purchases and the underlying causes of the excessive purchases. We concluded that the ALCs need to reemphasize item manager and supervisory responsibilities for verification of requirements and to strengthen the supervisory review and approval process.

In addition to the management controls exercised by supervisory review, AFLC Regulation 57-4 requires each ALC to establish an independent quality review team. The quality review team was intended to function as an internal control over the purchase approval process. Prior to July 1990, the quality review team was required to review all purchase decisions valued at \$1 million or more and to review a sample of other items for which the D041 System recommended purchase, termination, repair, or excess actions. AFLC's objectives for the program were to measure compliance with policies and procedures, to ensure the credibility of the D041 System, and to identify training deficiencies.

At the time of our audit, neither the Ogden ALC nor the San Antonio ALC had an independent quality review program. Personnel at the Ogden ALC indicated that the program was discontinued in FY 1988 or FY 1989 because of staffing reductions. Personnel at the San Antonio ALC indicated that the program was discontinued but could not identify when it was discontinued. We concluded that the ALCs need to implement the independent quality review function to monitor the overall quality of both the item managers' purchase decisions and the purchase approval process.

In July 1990, AFLC policy was changed to allow the ALCs greater flexibility in establishing programs for supervisory review and approval of purchase decisions. The programs implemented by the Ogden and San Antonio ALCs authorized item managers and first line supervisors to approve higher dollar value purchases. Although we did not sample purchases initiated after the ALCs revised their programs, we believe that conclusions based on our review are pertinent. First, we concluded that upper level management's reviews did not materially improve the quality of the purchase decision (that is, avoid purchase of excessive quantities). Second, we concluded that an independent review function was needed to measure the quality of purchase decisions and to monitor improvements resulting from strengthening internal controls.

RECOMMENDATIONS FOR CORRECTIVE ACTION, MANAGEMENT COMMENTS, AND  
AUDIT RESPONSE

1. We recommend that the Air Force Deputy Chief of Staff for Logistics revise policy for special purpose recoverable authorized maintenance items. The policy should limit stockage requirements for test replacement units to the quantities needed to support peacetime operations and deployment requirements for independently deployable units and provide for wholesale inventory manager control over the distribution of those assets.

Management comments. The Air Force concurred with the intent of the recommendation and proposed an alternative stockage policy. The Air Force indicated that guidance in AFM 67-1 will be revised by August 31, 1992, to clearly state SPRAM test station spares are not a component part of the test station,

rather they are to be used only in the repair of the test station and the items being checked by the test station. SPRAM will not be authorized as additive or insurance spares for the test station itself.

Audit response. The Air Force's comments are responsive. The stockage policy proposed by the Air Force satisfies the intent of the recommendation because it limits stockage of spares for each test station when a base has more than one test station. Additional comments are not required.

2. We recommend that the Commander, Air Force Logistics Command:

a. Issue guidance for recomputing initial spares support list requirements for individual items after the demand development period. The guidance should direct item managers to use the worldwide usage data accumulated by Air Force Logistics Command data systems during the demand development period.

Management comments. The Air Force concurred with Recommendation 2.a., and identified actions being taken by the Air Force Logistics Command in response to Air Force Audit Agency Audit Report No. 91061023, "Initial Spares Requirements Included in Recoverable Item Computations," April 29, 1992. The Air Force Logistics Command will exclude the ISSL requirement from the D041 System requirement computation. The D041 System will compute the base stock level, including a variable safety level, using the worldwide usage data.

Audit response. The actions being taken by the Air Force satisfy the intent of the recommendation. Additional comments are not required.

b. Direct the air logistics centers to implement Air Force Logistics Command Regulation 57-4, which requires an independent quality review team and to provide periodic reports on the results of the purchase determination and approval process reviews.

Management comments. The Air Force partially concurred with Recommendation 2.b. The Air Force agreed that quality review teams are beneficial in finding problem areas, providing guidance, reporting progress or deficiencies to management, and identifying additional training needs. The Air Force indicated that, in line with the total quality management philosophy, establishment of internal reviews, approval levels and other process validations as well as performance measures are now the prerogative of the ALC commander and the product directors. The Air Force stated that AFLC Regulation 57-4 will be revised to reflect this philosophy by October 30, 1992.

Audit response. We consider the Air Force's comments on Recommendation 2.b. to be nonresponsive. Although the Air Force confirmed the benefit of the quality review program as an

internal control over purchase decisions, it indicated that the control over the quality review program was being delegated to the ALC commanders and did not provide information to indicate that the ALC commanders would establish a quality review program that would implement the recommendation. We are requesting that the Air Force provide additional information on the ALCs' quality review programs in response to the final report to demonstrate that the ALCs' programs implement the intent of the quality review program in AFLC Regulation 57-4.

3. We recommend that the Commander, Ogden Air Logistics Center and the Commander, San Antonio Air Logistics Center, direct specific, periodic evaluations of item manager and supervisory performance to ensure that verifications of requirements and purchase quantities are carried out effectively.

Management comments. The Air Force partially concurred with the recommendation and indicated that, in line with the response to Recommendation 2., the extent of supervisory reviews and the evaluation of supervisors' and item managers' work performance is at the discretion of the ALC commander and the product directors. The Air Force issued guidance directing item managers and contracting officers to validate requirements before contract award. The Air Force will solicit individual responses from the Ogden and San Antonio ALCs regarding their compliance with that guidance direction and provide more specific information by June 30, 1992.

Audit response. We consider the Air Force's comments to Recommendation 3. to be partially responsive. The recommendation was directed to the commanders of the Ogden and San Antonio ALCs; however, the Air Force did not provide information on the performance evaluation programs implemented by those ALCs. In response to the final report, we request that the Air Force provide additional information on the ALCs' evaluation of item manager and supervisory performance related to verification of procurement requirements.

#### Other Management Comments

Potential monetary benefits. The Air Force partially concurred with the reported potential monetary benefits. The Air Force agreed there are potential monetary benefits accruing from the excessive purchases identified in the report but it could not determine the appropriate amounts. The Air Force disagreed that the items footnoted as 3/ in Appendix B of the report would be included in the savings computation, since those items were previously identified in IG, DoD, Report No. 92-007, "Quick-Reaction Report on Inaccurate Determination of Initial Spares Support List Requirements," October 18, 1991, and therefore appear to be duplicated in this report. In addition, the Air Force indicated that the use of data from this audit as a statistical sample for projected monetary benefits is questionable, because the assumption that all requirements will

be erroneous at a similar rate to the items in the audit disregards the causes of errors, versus the percentage of items to which those causes apply.

**Audit response.** We agree with the Air Force on the items previously identified in audit Report No. 92-007, and we have excluded the value of those unnecessary purchases from our savings computation in this final report. We have also reduced our savings to reflect actions taken by the Air Force in response to Air Force Audit Agency Report No. 91061023.

We do not agree with the Air Force's opinion that the sample results cannot be used to project monetary benefits. The audit sample was stratified in accordance with a number of related characteristics in the population and, after appropriate statistical weightings, the results represent an unbiased estimation of the population characteristics. This was not a simple random sample which might have been subject to the problems alluded to in the Air Force response. Our statistical sample was designed to determine the reasonableness of procurements in process and to project the results of our sample to the universe we sampled. We did not devise our sample to determine the magnitude of each type of error that might be found or to estimate the value in the universe for each type of error. The Air Force response contains no data and we have no reason to believe that the sample of purchases we selected were not representative of the purchases in the universe. Accordingly, we request that the Air Force recognize our adjustment to monetary benefits and reconsider its position in response to this final report.

**Internal control weaknesses.** The Air Force nonconcurred that it had internal control weaknesses that warranted reporting as a material weakness in the DoD Internal Management Control Program. The Air Force commented on its efforts in total quality management, the DoD Inventory Reduction Program, the ALC Requirements Interface Process Improvement Program, and the Process Action Team's review of the requirements determination process as evidence that it had internal controls to avoid unnecessary investments in inventory.

**Audit response.** We believe the weaknesses are material, but it is a management decision whether or not an internal control weakness is to be reported under the DoD Internal Management Control Program. We agree with the Air Force that it has some control and oversight over inventory investments via the programs and processes mentioned in its response. However, our audit identified the need for some other and different controls that should be implemented to further minimize inventory investments and we ask that the Air Force recognize and comment on the matter in response to this final report.

# STATUS OF RECOMMENDATIONS

<u>Number</u>	<u>Addressee</u>	<u>Response Should Cover:</u>			<u>Related Issues</u> <sup>1/</sup>
		<u>Concur/ Nonconcur</u>	<u>Proposed Action</u>	<u>Completion Date</u>	
1.	AF/DCSLOG <sup>2/</sup>				M
2.	AFLC	X	X	X	M, IC
3.	OOALC <sup>3/</sup> SAALC <sup>4/</sup>	X	X	X	M, IC

<sup>1/</sup> M = monetary benefits; IC = material internal control weakness

<sup>2/</sup> AF/DCSLOG = Air Force Deputy Chief of Staff for Logistics

<sup>3/</sup> OOALC = Ogden Air Logistics Center

<sup>4/</sup> SAALC = San Antonio Air Logistics Center

## **B. INADEQUATE DEMAND RATES AND HISTORY**

Demand rates that ALCs used in requirements computations were inaccurate, and the demand history files at the ALCs were inadequate. The inaccurate demand rates occurred because organizational and intermediate demand transactions, used to develop the demand rates, were not reported by the bases, lost during transmission to the ALCs, or improperly accumulated by AFLC data systems. In addition, AFLC data systems did not provide for an automated history file of demand transactions comprising the demand rate. As a result, item managers and equipment specialists at the ALCs could not verify demand data supporting the worldwide organizational and intermediate demand rates or analyze demand trends, as required by AFLC guidance. Further, the lack of a demand history precluded an analysis of the demand base to determine the causes of erroneous demand rates.

### **DISCUSSION OF DETAIL**

#### **Background**

The D041 System uses a demand rate based on report usage during the prior 24 months to forecast requirements for reparable items. This usage data, organizational and intermediate demand transactions, are initially recorded in the Standard Base Supply System (SBSS). DoD supply systems generally recognize demands when the materiel is requisitioned and issued to an organizational or intermediate maintenance activity. However, the SBSS does not recognize demands until the assets that were removed and replaced are turned in to the base supply activity in unserviceable condition (not repaired this station), in serviceable condition (repaired this station), or in condemned condition (base condemnation). The asset turn-in transaction (the organizational and intermediate demand transaction) includes a maintenance-action-taken code that defines the reason the asset could not be repaired at base level or the nature of the repair performed.

The organizational and intermediate demand transactions are reported daily to the managing ALC by Air Force base SBSS systems. Upon receipt at the ALC, the SBSS demand transactions are edited (transactions that fail the edit are returned to the submitting base for correction and reinput) and reformatted into a transaction that is routed to the History Accumulation Subsystem (D143F). Neither the SBSS demand transaction nor the maintenance-action-taken code is retained. The D143F accumulates the reformatted demand transactions and summarizes demands for each item during the quarter by reporting base supply activity. The reformatted demand transaction is not retained.

The summary demand data are reported to the equipment specialists at the end of each quarter. The equipment specialist uses the summary demand data to evaluate the worldwide organizational and intermediate demand rates, to identify positive and adverse trends in the rates, and to develop or adjust rates used in the requirements computation, when appropriate.

#### Evaluation of Demand Data

We attempted to evaluate the reasonableness of organizational and intermediate demand rates used in the requirements computation for 16 of the 64 sampled items. The ALCs were purchasing \$36.1 million of materiel for the 16 items. We visited 13 Air Force and Air National Guard bases to review their recorded demand transactions and to compare the bases' demand transactions with the ALCs' summary demand data used to forecast requirements. We could not evaluate the reasonableness of the activities' demands used to compute requirements as of September 30, 1990, because AFLC data systems did not retain a history of detailed demand transactions that were used to compute the demand rate. Additionally, the 13 bases did not retain automated or printed transaction histories for the 2-year demand period. Further, AFLC's summary demand data from January 1 to June 30, 1990, were based on averages during the prior 8 quarters rather than the specific demand transactions reported during those 2 quarters. In other words, there was not an audit trail from the summary demand data to the actual demand transactions at either the ALCs or the bases.

As a result of these deficiencies, we limited our analysis to demand transactions recorded in the SBSS from July 1, 1990, to March 31, 1991. The demand transactions from the 13 bases did not agree with the ALCs' summary demand data for 11 of the 16 items we reviewed. Our analysis indicated that the ALCs summary demand data for the 13 bases were understated for 8 items (by 7 to 21 percent) and overstated for 3 items (by 10 to 150 percent).

For example, demands from the 13 bases for an engine fan duct (NSN 2840-01-081-9085) were overstated by two demands (approximately 28 percent) for the period July 1, 1990, to March 31, 1991. The unit price of the engine fan duct is \$95,397. We could not determine the effect of the overstated demands on the requirements objective for the item because the Air Force did not require or maintain detailed demand transaction history data covering the 2-year demand period that was used in the D041 requirements computation.

Without complete, detailed demand data for the 2-year demand base period, equipment specialists could not validate organizational and intermediate demand rates. Equipment specialists made adjustments to summary demand data for 5 of the 11 items. However, the reports available to the specialists to make



adjustments did not include all the demand transactions needed to validate the organizational and intermediate demand rates. Their adjustments only partially offset the erroneous demand rates that were in the D041 computations.

At the time of the audit, AFLC, in coordination with the Air Force Logistics Management Center, Gunter Air Force Base, Alabama, initiated a review, "Analysis of Retail-Wholesale Data Interfaces," of transaction reporting and data system interfaces to determine why demand data were lost or erroneously accumulated. Accordingly, we are not recommending such a review. However, we concluded that an automated 2-year history of demand data is needed to provide an audit trail and to provide data to the equipment specialist for validation of demand rates used to compute requirements and to evaluate the reasons for demand trends.

RECOMMENDATION FOR CORRECTIVE ACTIONS, MANAGEMENT COMMENTS AND  
AUDIT RESPONSE

We recommend that the Commander, Air Force Logistics Command, establish an automated system for the air logistics centers to retain a 2-year detailed history of organizational and intermediate demand transactions that comprise the summary demand rates.

Management comments. The Air Force nonconcurred with the recommendation. The Air Force indicated that the demand history in the Stock Control and Distribution System (D035) is sufficient for the equipment specialist's verification of demand rates. The Air Force believed that emphasis should be on improving the accuracy of the data in the D041 system and did not believe that the expense of a new or revised system to substantiate summary demand data was warranted.

Audit response. We disagree with the Air Force's opinion on the D035 system. The D035 system does not include all demand transactions comprising the organizational and intermediate demand rate used in the D041 system.

The summary demand data in the D041 system are not supported by a detailed demand data base in the Air Force automated system, cannot be verified or analyzed by Air Force equipment specialists, and are not supported by an audit trail. We can appreciate the Air Force's concern with the accuracy of D041 data, but without a detailed 2-year demand history, the summary data will still not be substantiated or subject to evaluation either for accuracy or for appropriateness of particular demands in influencing purchase decisions.

We recognize that DoD is moving toward the institution of standard systems but we do not consider this a reason not to recommend the maintenance of a detailed demand data base. Our audits of logistics requirements systems of the other DoD

Components have led us to the conclusion that a detailed demand data base is an absolute necessity so long as historical demands are the primary driver of DoD's inventory investment decisions. Therefore, we request that the Air Force reconsider its position in response to the final report.

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**PART III - ADDITIONAL INFORMATION**

- APPENDIX A - Statistical Sampling Plan and Results
- APPENDIX B - Summary of Items Sampled Involving Excessive Purchases
- APPENDIX C - Underlying Causes of Excessive Purchases
- APPENDIX D - Summary of Potential Benefits Resulting from Audit
- APPENDIX E - Prior Audit Coverage
- APPENDIX F - Activities Visited or Contacted
- APPENDIX G - Report Distribution

## APPENDIX A. STATISTICAL SAMPLING PLAN AND RESULTS

Procurements in process were recorded in computer files at the Air Force's ALCs. Headquarters, AFLC, extracted data from the ALC 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 October 19, 1990. At that time, the ALCs procured reparable items with appropriated monies. Therefore, we extracted procurement actions for national stock numbered items funded by the procurement appropriations. As of October 19, 1990, the Air Force ALCs had procurements in process for 3,022 reparable items, valued at \$1.1 billion.

We limited our review to a sample universe of 920 line items involving active purchase requests, valued at \$1 billion. Our analysis of the procurements in process indicated that the 920 line items, with individual procurements valued at \$100,000 or more, represented approximately 30 percent of the items being procured but accounted for approximately 95 percent of the value of the procurements. In addition, the Air Force's inventory management policies generally required greater management intensity for those higher value items, assigned more experienced inventory management personnel to those items, and required supervisory approval of the procurements at higher management levels.

We used a multistage sampling plan that incorporated stratified sampling methodologies. Our initial sample was 123 line items, with purchase requests valued at \$433.8 million, that were initiated by the Ogden and San Antonio ALCs. The sample was drawn from a universe of 920 line items with purchases in process, valued at \$1 billion. We adjusted the sample universe to 531 line items involving purchases valued at \$326.7 million, 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 October 19, 1990; and to exclude items that were procured with appropriated funds but managed using consumable item management techniques. Adjustments to our initial sample of 123 line items resulted in a final audit sample of 64 line items involving purchases valued at \$102.4 million. The sample results were projected with a 95-percent confidence level and a sampling precision of  $\pm 15$  percent for dollars.

We estimated that materiel purchases valued at \$93.8 million, exceeded authorized stockage objectives. Of the \$93.8 million, we estimated that \$14.7 million was for premature purchases and \$79.1 million was for unnecessary purchases. We classified procurement of items as premature if the quantity exceeded the

**APPENDIX A. STATISTICAL SAMPLING PLAN AND RESULTS (cont'd)**

stockage objective by more than 12 months of forecasted requirements. The value of the premature purchase, however, was the value of materiel in excess of the stockage objective up to 5 years of forecasted requirements. We classified procurements in excess of 5 years of forecasted requirements as unnecessary.

The audit tests were designed to evaluate active purchases and to render an opinion on the reasonableness of the quantities being procured at that time in relation to stockage policies and objectives. The estimates in this report have been adjusted downward to recognize the reduction of excessive purchases by the ALCs, based on requirements data as of September 30, 1990. The ALCs' actions resulted primarily from funding reductions and force structure changes that reduced forecasted requirements. These ALC actions reduced the audit projection of excessive purchases by about \$15.3 million.

The items reviewed and excessive purchases used in the statistical projections are summarized below for each inventory control point.

**Summary of Items Reviewed and Excessive Purchases  
by Inventory Control Point**

<u>Inventory Control Point</u>	<u>Items Reviewed</u>		<u>Excessive Purchases</u>	
	<u>Number of Items</u>	<u>Extended Value (\$ million)</u>	<u>Number of Items</u>	<u>Extended Value (\$ million)</u>
Ogden ALC	27	\$ 35.944	8	\$10.406
San Antonio ALC	<u>37</u>	<u>66.456</u>	<u>18</u>	<u>20.868</u>
Total	<u>64*</u>	<u>\$102.400</u>	<u>26</u>	<u>\$31.274</u>

\* For 5 of the 64 items, excessive purchases valued at \$5.5 million were not used in the audit projections of premature and unnecessary purchases because the inventory control points curtailed the purchases during our review.

# **APPENDIX B. SUMMARY OF ITEMS SAMPLED INVOLVING EXCESSIVE PURCHASES**

National Stock Number	Excessive Purchase		Purchase Reductions		In Response to Audit	Value
	Quantity	Value	ICP Self-Initiated Quantity	Quantity		
1270-01-233-0011	19	\$ 4,961,552	19	0	\$	0
1630-01-290-6821	465	581,050 1/				
1630-01-298-6838	149	1,571,315				
2620-00-575-8893	1,806	1,106,807 2/				
1630-01-225-1893	24	193,175		24		193,175
5895-NC-E32-2891	69	1,877,487	82			
1620-01-253-1350	163	514,271 2/				
5998-01-315-2441	14	58,758	14	107		409,630
6610-01-308-1859	27	579,403				
Ogden Total		\$11,443,818			\$ 7,249,994	\$ 602,805
4920-01-299-2054	3	\$ 1,157,247 1/				
2835-01-154-3533	106	2,787,259		106		\$2,787,259
5999-01-234-8798	59	3,328,554 3/		59		3,328,554
4920-01-294-6212	3	710,411 2/				
4920-01-095-9515	10	866,453		8		693,162
5998-01-204-1675	63	2,565,620 3/		63		2,565,620
6685-01-157-1518	44	1,847,021 4/				
5999-01-254-3366	100	1,030,000		100		1,030,000
6685-01-233-0927	30	881,054	24	6		176,211
4920-01-298-4021	14	1,896,017 2/3/		14		1,896,017
6685-01-221-3841	55	2,355,407				
4920-01-273-3105	14	1,330,235 2/3/		14		1,330,235
6625-01-311-3586	14	1,053,297 2/3/		14		1,053,297
2835-00-612-9420	109	1,035,112				
4920-01-080-8215	8	761,322	6			
4920-01-132-3636	61	1,967,398	61			
5998-01-171-3074	29	480,024 3/		29		480,024
4920-01-200-2495	64	154,778 3/		64		154,778
4920-01-171-3070	39	240,908 3/		39		240,908
2840-00-021-8168	156	189,713 1/	120			
5998-01-081-6389	30	201,780 2/		30		201,780
San Antonio Total		\$26,839,610			\$ 3,389,166	\$15,937,845
Grand Total		\$38,283,428			\$10,639,160	\$16,540,650

APPENDIX B. SUMMARY OF ITEMS SAMPLED INVOLVING EXCESSIVE PURCHASES (cont'd)

- 1/ Purchase initiated on or after October 1, 1990
- 2/ The excessive quantity includes both purchase quantity included in the audit sample and purchase quantity initiated on or after October 1, 1990.
- 3/ San Antonio ALC reduced or canceled the purchase in response to IG, DoD Report, No. 92-007, "Quick-Reaction Report on Inaccurate Determination of Initial Spares Support List Requirements."
- 4/ Purchase selected for review during audit survey.



APPENDIX C. UNDERLYING CAUSES OF EXCESSIVE PURCHASES

<u>National Stock Number</u>	<u>Cause(s) of Requirement Overstatement</u>
<u>Ogden Air Logistics Center</u>	
1270-01-233-0011	ISSL requirements were not updated after demand development period.
1630-01-290-6821	Erroneous program data were used in computation.
1630-01-298-6838	Erroneous program data were used in computation.
2620-00-575-8893	Purchase was not reduced when requirements decreased.
1630-01-225-1893	Erroneous repair additive was used in computation.
5895-NC-E32-2891	Erroneous maintenance factor (not repaired this station rate) was used in computation.
1620-01-253-1350	1. Erroneous repair additive was used in computation. 2. Applicable assets were understated in computation.
5998-01-315-2441	Purchase was not reduced when requirements decreased.
6610-01-308-1859	ISSL requirements were not updated after demand development period.

APPENDIX C. UNDERLYING CAUSES OF EXCESSIVE PURCHASES (cont'd)

<u>National Stock Number</u>	<u>Cause(s) of Requirement Overstatement</u>
<u>San Antonio Air Logistics Center</u>	
4920-01-299-2054	SPRAM requirements were overstated.
2835-01-154-3533	Erroneous condemnation rate was used in computation.
5999-01-234-8798	1. Erroneously Computed ISSL requirement. 2. Applicable assets were understated.
4920-01-294-6212	SPRAM requirements were overstated.
4920-01-095-9515	Applicable assets were understated.
5998-01-204-1675	1. Erroneously computed ISSL requirement. 2. Applicable assets were understated.
6685-01-157-1518	1. ISSL requirements were not updated after demand development period. 2. Depot repair cycle was overstated.
5999-01-254-3366 computation.	Erroneous condemnation rate was used in
6685-01-233-0927	Purchase was not reduced when requirements decreased.
4920-01-298-4021	Erroneously computed ISSL requirement.
6685-01-221-3841	1. ISSL requirements were not updated after the demand development period. 2. Depot repair cycle was overstated.

APPENDIX C. UNDERLYING CAUSES OF EXCESSIVE PURCHASES (cont'd)

<u>National Stock Number</u>	<u>Cause(s) of Requirement Overstatement</u>
<u>San Antonio Air Logistics Center</u>	
4920-01-273-3105	Erroneously computed ISSL requirement.
6625-01-311-3586	Erroneously computed ISSL requirement.
2835-00-612-9420	Purchase was not reduced when requirements decreased.
4920-01-080-8215	Purchase was not reduced when requirements decreased.
4920-01-132-3636	1. ISSL requirements were not updated after the demand development period. 2. Applicable assets were understated.
5998-01-171-3074	Erroneously computed ISSL requirement.
4920-01-200-2495	1. Erroneously computed ISSL requirement. 2. Applicable assets were understated.
4920-01-171-3070	Erroneously computed ISSL requirement.
2840-00-021-8168	Erroneous production lead time was used in computation.
5998-01-081-6389	Purchase was not reduced when requirements decreased.

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**APPENDIX D. SUMMARY OF POTENTIAL BENEFITS RESULTING FROM AUDIT**

<u>Recommendation Reference</u>	<u>Description of Benefits</u>	<u>Amount and/or Type of Benefit</u>
A.1. through A.3.	<u>Economy and Efficiency.</u> Premature or unnecessary purchases of wholesale inventory by the Air Force ALCs can be avoided.	<u>Funds Put to Better Use.</u> \$10.3 million of appropriated funds for Aircraft Procurement (57x3010), Missile Procurement (57x3020), and Other Procurement (57x3070). <sup>1/</sup> This consists of \$9.8 million <sup>2/</sup> pertaining to the sample universe and \$500,000 related to the purchase of sampled items that were not part of the sample universe.
B.	<u>Economy and Efficiency.</u> Accurately accumulate demand data that the Air Force used in forecasting requirements.	<u>Nonmonetary.</u>

<sup>1/</sup> Reparable items will eventually be procured with Air Force Stock Fund monies and the costs will ultimately be borne by the Air Force O&M Appropriation at the using activities.

<sup>2/</sup> The potential monetary benefits do not include an estimate for avoiding holding costs related to the premature purchases because those costs were not readily determinable. The \$9.8 million represents the value of unnecessary purchases of \$79.1 million, adjusted for costs that would be incurred to repair unserviceable assets. In addition, the \$9.8 million excludes the projected monetary benefits related to items reported in Inspector General, Department of Defense Report No. 92-007. Further, we reduced our savings by \$50.3 million to reflect action taken by the Air Force management in response to Air Force Audit Agency Report No. 91061023.

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## APPENDIX E. PRIOR AUDIT COVERAGE

Inspector General, DoD, Report No. 90-010. "Summary Report on the Audits of Contract Terminations," November 21, 1989, summarized the results and status of actions the Military Departments took to implement the recommendations for the following three audits on contract terminations: Report No. 89-063, "Contract Terminations at Army Inventory Control Points," March 29, 1989; Report No. 88-153, "Contract Terminations at the Navy Aviation Supply Office," May 23, 1988; and GAO Report No. GAO/NSIAD-87-141 (OSD Case No. 7242), "Military Procurement: Air Force Should Terminate More Contracts for On-Order Excess Spare Parts," August 12, 1987. Report No. 90-010 concluded that the Military Departments' inventory control points made uneconomical termination decisions. The main reason for the uneconomical decisions was the lack of policies and procedures on how to make decisions. The report recommended that the DoD establish specific policies and procedures related to contract terminations. On December 13, 1989, the Assistant Secretary of Defense (Production and Logistics) issued guidance for termination of contracts when secondary items are no longer needed.

GAO Report No. NSIAD-91-176. "Defense Inventory: Shortcomings in Requirements Determination Processes," (OSD Case No. 8645) May 1991, summarized deficiencies in DoD's inventory requirements determination processes for secondary items that were identified in 97 reports issued by the GAO; the Office of the Inspector General, DoD; Army Audit Agency; Naval Audit Service; and Air Force Audit Agency during the last 6 years. GAO reported that DoD and the Military Departments generally agreed with the findings and recommendations contained in the 97 reports and have taken many actions to remedy the deficiencies.

GAO reported that DoD developed and implemented an inventory reduction plan that management officials believe addresses the problems in the requirements determination processes. The plan is producing good initial results.

Inspector General, DoD, Report No. 88-020. "Report on the Audit of Minimum Economic Order Quantities," October 8, 1987, reported that Military Department policies to implement minimum annual economic order quantity instead of normal economic order quantities was not cost-effective. The cost to carry the increased inventory was approximately \$150 million. The report recommended limiting the use of minimum procurement cycles. On June 27, 1989, the Assistant Secretary of Defense (Production and Logistics) issued guidance that reestablished the policy of using economic order quantities methods.

## APPENDIX E. PRIOR AUDIT COVERAGE (cont'd)

Inspector General, DoD, Report No. 92-001. "Demand Data for Secondary Items," October 8, 1991, reported that controls over the classification and recording of demand data were inadequate, that the classification of demands as recurring or nonrecurring was inaccurate, and that the Military Departments and Defense Logistics Agency were inconsistent in their use of demand and return data to forecast requirements. We recommended that procedures and controls be established or revised to ensure that demand data are properly classified and reported and that the Assistant Secretary of Defense (Production and Logistics) provide additional guidance on the use of nonrecurring demand data and requisition or cancelation requests in forecasting requirements.

Air Force Audit Agency Report No. 410-0-1. "Review of Administrative Leadtimes in the EOQ [Economic Order Quantity] Buy Computation (D062) System, Kelly Air Force Base, Texas," October 1989, reported that the administrative lead times were in excess of normal or realistic administrative processing time. The Air Force Audit Agency recommended that the Director of Materiel Management establish guidelines for item managers to evaluate the reasonableness of administrative lead times. The San Antonio Air Logistics Center issued the guidelines in September 1989.

Air Force Audit Agency Report No. 91061023. "Initial Spares Requirements Included in Recoverable Item Computations," April 29, 1992, reported that the D041 System incorrectly computed requirements for items included in initial spares support lists. The procedures used to compile and enter data into the D041 System caused initial spares adjusted stock levels to duplicate requirements computed by the D041 System. In addition, item managers retained initial spares adjusted stock levels in requirements computations beyond established expiration dates. The Air Force Audit Agency recommended that the Air Force revise policy directing the inclusion of initial spares support list requirements in the D041 System adjusted stock levels. The Air Force concurred and indicated that guidance instructing the ALCs to exclude initial spares support list requirements from adjusted stock levels was issued on May 1, 1992.



## APPENDIX F. ACTIVITIES VISITED OR CONTACTED

### Office of the Secretary of Defense

Assistant Secretary of Defense (Production and Logistics),  
Supply Management Policy, Washington, DC

### Department of the Air Force

Headquarters, Deputy Chief of Staff (Logistics and  
Engineering), Washington, DC  
Headquarters, Air Force Logistics Command, Dayton, OH  
Air Force Audit Agency, Dayton, OH  
Air Force Audit Agency, Kelly Air Force Base, TX  
San Antonio Air Logistics Center, Kelly Air Force Base, TX  
Ogden Air Logistics Center, Hill Air Force Base, UT  
Oklahoma City Air Logistics Center, Tinker Air Force Base, OK  
Sacramento Air Logistics Center, McClellan Air Force Base, CA  
Warner Robins Air Logistics Center, Robins Air Force Base, GA  
Headquarters, Tactical Air Command, Langley Air Force Base, VA  
Headquarters, Strategic Air Command, Offutt Air Force Base, NE  
Hill Air Force Base, UT  
Wright Patterson Air Force Base, OH  
Edwards Air Force Base, CA  
Eglin Air Force Base, FL  
Shaw Air Force Base, SC  
MacDill Air Force Base, FL  
Tyndall Air Force Base, FL  
McConnell Air Force Base, Wichita, KS  
Moody Air Force Base, GA  
Nellis Air Force Base, NV  
Luke Air Force Base, AZ  
Rickenbacker Air National Guard, OH  
Dannelly Air National Guard, AL  
Loring Air Force Base, ME  
Air Force Logistics Management Center, Gunter Air Force Base, AL  
Air Force Standard Systems Center, Gunter Air Force Base, AL

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APPENDIX G. REPORT DISTRIBUTION

Office of the Secretary of Defense

Assistant Secretary of Defense (Production and Logistics)

Department of the Air Force

Secretary of the Air Force

Assistant Secretary of the Air Force (Financial Management and  
Comptroller)

Office of Management and Budget  
U.S. General Accounting Office,  
NSIAD Technical Information Center  
NSIAD Logistics

Chairman and Ranking Minority Member of the following  
Congressional Committees:

Senate Subcommittee on Defense, Committee on Appropriations  
Senate Committee on Armed Services  
Senate Committee on Governmental Affairs  
House Committee on Appropriations  
House Subcommittee on Defense, Committee on Appropriations  
House Committee on Armed Services  
House Committee on Government Operations  
House Subcommittee on Legislation and National Security,  
Committee on Government Operations

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**PART IV - MANAGEMENT COMMENTS**

Department of the Air Force Comments

**MANAGEMENT COMMENTS: DEPARTMENT OF THE AIR FORCE**



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS UNITED STATES AIR FORCE  
WASHINGTON, D.C. 20330

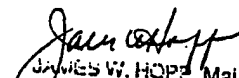
22 MAY 1992

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

SUBJECT: DoD(IG) Draft Audit Report on the Air Force  
Requirements for Currently Procured Wholesale  
Inventories of Reparable Items, (Project No.  
OLE-0078.02), March 20, 1992 - INFORMATION MEMORANDUM

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

We have reviewed the report and have provided our comments  
on the attached. We appreciate the opportunity to comment on the  
draft report.

  
JAMES W. HOPP, Maj Gen, USAF  
Director of Supply  
DCS/Logistics

1 Atch  
Management Comments

cc: SAF/FMPF

**MANAGEMENT COMMENTS: DEPARTMENT OF THE AIR FORCE (con't)**

**DRAFT REPORT OF AUDIT, AIR FORCE REQUIREMENTS FOR CURRENTLY  
CURRENTLY PROCURED WHOLESALE INVENTORIES OF REPARABLE ITEMS  
(PROJECT OLE-0078)**

**RECOMMENDATION 1.** Recommend that the Air Force Deputy Chief of Staff for Logistics revise policy for special purpose recoverable authorized maintenance items. The policy should limit stockage requirements for test replacement units to the quantities needed to support peacetime operations and deployment requirements for independently deployable units and provide for wholesale inventory manager control over the distribution of those assets.

**MANAGEMENT COMMENTS:** Concur (with Comments). SPRAM items, as defined in AFM 67-1, Vol I, Part One, Chap 11, para 486 are used by maintenance personnel to detect or isolate a fault, calibrate or align equipment, or duplicate an active system installed in on-line equipment. Test replacement units (TRUs), a subset of SPRAM, perform a critical function in the fault isolation and repair of test stations such as the F-15 Tactical Electronics Warfare System Intermediate Support System (TISS). As stated in the audit, TRUs are procured to support peacetime and deployment requirements. The examples cited in the audit (measurement assemblies, NSN 4920-01-294-6212) test twenty-two critical line replacement units or shop replacement units. If they fail, the TISS cannot perform self-diagnostic checks to isolate failed internal parts. Additionally, the majority of SPRAM items procured for the F-15 TISS are precision measurement equipment (PME) TRUs which require repair and calibration in a laboratory if they fail on-site calibration. Standard turn-around times in the lab have been six days, if repair is minimal and parts are available. These factors were key in the determination of the SPRAM quantities.

Of concern is the possible use of SPRAM test station spares as insurance items by field activities. We will revise the guidance in AFM 67-1 by 31 August 1992 to clearly state SPRAM test station spares are not a component part of the test station, rather they are to be used only in the repair of the test station and the items being checked by the test station. SPRAM will not be authorized as additive or insurance spares for the test station itself.

Under Defense Management Report Decision 904 (Stock Funding of Depot Level Reparables), the purchase and repair of reparable spares will be financed with stock funds. Since maintenance activities will be required to pay for spares with their own O&M funds, this is anticipated to discipline base level personnel in their purchase of assets such as SPRAM. The item manager has and will continue to maintain visibility over all SPRAM assets in Recoverable Assembly Management Process (RAMP) System (D035C) validate the requirements annually.



**MANAGEMENT COMMENTS: DEPARTMENT OF THE AIR FORCE** (con't)

**RECOMMENDATION 2.a.** Recommend that the Commander, Air Force Logistics Command issue guidance for recomputing initial spares support list requirements for individual items after the demand development period. The guidance should direct item managers to use the worldwide usage data accumulated by Air Force Logistics Command data systems during the demand development period.

**MANAGEMENT COMMENTS:** Concur. In response to a recent Air Force Audit Agency Report (91061023), we agreed to discontinue including ISSLs as special levels in the recoverable item computation (D041) and to use the D041 computed ISSL quantities based on actual item usage. Additionally, we issued direction to HQ AFLC to discontinue the practice that permitted the adjustment of computed ISSL quantities to allow a quantity of at least one per user. Those corrective actions, coupled with the existing procedures in AFM 67-1, Volume I, Part One, Chapter 12 and AFM 171-300 directing the use of mission change data in updating ISSLs, are considered appropriate to achieve the intent of this recommendation.

**RECOMMENDATION 2.b.** Recommend that the Commander, Air Force Logistics Command direct the air logistics centers to implement the Air Force Logistics Command Regulation 57-4, that requires an independent quality review team and provide periodic reports on the results of the purchase determination and approval process reviews.

**MANAGEMENT COMMENTS:** Partially Concur. We agree that quality review teams are beneficial in finding problem areas, providing guidance, reporting progress and/or deficiencies to management, and identifying additional training needs. While independent quality reviews are still centralized at some air logistics centers (ALC); others have delegated quality assurance to the individual product directorates in line with the total quality management philosophy. Under this concept the centers have the responsibility for managing their own functions and resources and instilling quality assurance at the lowest levels. By building quality into the processes, the need for external reviews is minimized. Any establishment of internal reviews, approval levels and other process validations as well as performance measures are now the prerogative of the ALC commander and the product directors. AFLCM 57-4 is being revised to reflect this philosophy. Estimated completion date is 30 October 1992.

As a matter of information, HQ AFLC periodically establishes process action teams to review critical procedures and processes and is in fact currently reviewing the overall requirements determination process.

**MANAGEMENT COMMENTS: DEPARTMENT OF THE AIR FORCE (con't)**

**RECOMMENDATION 3:** Recommend that the Commander, Ogden Air Logistics Center and the Commander, San Antonio Air Logistics Center direct specific, periodic evaluations of item manager and supervisory performance to ensure that verifications of requirements and purchase quantities are carried out effectively.

**MANAGEMENT COMMENTS:** Partially Concur. As a part of Project Pacer Trim, HQ AFLC issued letter guidance directing item managers and contracting officers to validate requirements prior to contract awards. We will solicit individual responses from Ogden and San Antonio Air Logistics Centers regarding their compliance with that direction and provide more specific information by 30 June 1992. In line with the response to Recommendation 2 above, the extent of supervisor reviews and the evaluation of supervisors and item managers work performance is at the discretion of the ALC commander and the product directors.

**RECOMMENDATION 4:** Recommend that the Commander, Air Force Logistics Command establish an automated system for the air logistics centers to retain a 2-year detailed history of organizational and intermediate demand transactions that comprise the summary demand rates.

**MANAGEMENT COMMENTS:** Nonconcur. The D041 system uses item failures over a moving two year period to determine demand rates. These transactions are passed quarterly to D041 through the stock balance and consumption system (D104) and are validated quarterly by the equipment specialist. For the purpose of validating the usage data, the demand history in the stock control and distribution system (D035) is considered sufficient. D035 maintains 6 months of Air Force user demands, 52 weeks of other Service demands, and 99 weeks of foreign military sales demands. We believe the emphasis should be on improving the accuracy of data passed to D041, rather than on retention of additional data. HQ AFLC has established a Requirements Interface Process Improvement Team (RIPIT) to analyze and recommend resolutions to system interface problems which will ultimately improve the requirements determination process.

The DoD is moving toward the institution of standard systems approved by the newly established Joint Logistics Systems Center. Under this concept, any changes to existing systems or development of new systems would require evaluation within business case rules. However, we do not believe there is evidence to warrant the expense of a new system or a system change of the magnitude recommended by this audit.

**MANAGEMENT COMMENTS: DEPARTMENT OF THE AIR FORCE** (con't)

**POTENTIAL MONETARY BENEFITS: (Funds Put to Better Use - \$68.7M)**

Partially concur. We agree there are potential monetary benefits accruing from the excessive purchases identified in this audit but are unable to determine the appropriate amounts at this time. We do not agree that the items footnoted as 3/ in Appendix B of the audit should be included in the savings computation since these items were previously identified in the IG's Report No. 92-007, and therefore appear to be duplicated in this report. Furthermore, the use of data from this audit as a statistical sample for projected monetary benefits is questionable, because the assumption that all requirements will be erroneous at a similar rate to the items in the audit disregards the causes of errors, versus the percentage of items to which those causes apply. For example, although some percent of the SAALC errors were due to ISSL requirements, not all SAALC items computing buy requirements contain ISSLs. Unless the prororation of projected savings uses the appropriate percent of error against the separate populations of items that contain ISSLs, SPRAM, condemnations, etc, we cannot agree with the methodology used, but only with the actual errors identified.

**INTERNAL CONTROL WEAKNESSES:** Nonconcur. In the judgment of Air Force management, the discrepancies identified do not constitute internal control weaknesses that warrant reporting as a material weakness in the DoD Internal Management Control Program. We believe the following ongoing efforts testify to the Air Force's commitment to improvement and are evidence that internal controls already exist:

- The total quality management concept adopted by AFLC directs quality assurance to the lowest levels, thus instilling quality into the processes.
- Project Pacer Trim is the Air Force's implementation of the DoD Inventory Reduction Program. Over 75 milestones focus on improvements to the requirements process. One of the key elements is validation of buy quantities prior to contract award.
- AFLC has assigned full time resources to the Requirements Interface Process Improvement Team (RIPIT) to identify and resolve data interface problems.
- AFLC's ongoing Process Action Team is performing an extensive review of the requirements determination process.

**LIST OF AUDIT TEAM MEMBERS**

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Christopher R. Pheiffer, Auditor  
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## INTERNET DOCUMENT INFORMATION FORM

**A . Report Title:** Air Force Requirements for Currently Procured Wholesale Inventories of Repairable Items

**B. DATE Report Downloaded From the Internet:** 05/25/99

**C. Report's Point of Contact: (Name, Organization, Address, Office Symbol, & Ph #):** OAIG-AUD (ATTN: AFTS Audit Suggestions)  
Inspector General, Department of Defense  
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**D. Currently Applicable Classification Level:** Unclassified

**E. Distribution Statement A:** Approved for Public Release

**F. The foregoing information was compiled and provided by:**  
DTIC-OCA, Initials: \_\_VM\_\_ Preparation Date 05/25/99

The foregoing information should exactly correspond to the Title, Report Number, and the Date on the accompanying report document. If there are mismatches, or other questions, contact the above OCA Representative for resolution.