DEPARTMENT OF DEFENSE

AUDIT REPORT

SUPPLY SUPPORT OF AVIATION COMPONENTS AWAITING PARTS

No. 91-074

April 30, 1991

Office of the Inspector General

INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
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MEMORANDUM FOR ASSISTANT SECRETARY OF DEFENSE (PRODUCTION AND LOGISTICS)
ASSISTANT SECRETARY OF THE ARMY (FINANCIAL MANAGEMENT)
ASSISTANT SECRETARY OF THE NAVY (FINANCIAL MANAGEMENT)
ASSISTANT SECRETARY OF THE AIR FORCE (FINANCIAL MANAGEMENT AND COMPTROLLER)
DIRECTOR, DEFENSE LOGISTICS AGENCY

SUBJECT: Report on the Audit of Supply Support of Aviation Components Awaiting Parts (Report No. 91-074)

This is our final report on the Audit of Supply Support of Aviation Components Awaiting Parts for your information and use. Air Force comments on a draft report were considered in preparing this final report. We made the audit from October 1989 to September 1990. The audit objectives were to determine if supply support procedures in wholesale and retail supply systems were adequate and complied with, and to evaluate the effectiveness of the systems established to manage aviation components in an awaiting parts status at aviation depots. We also reviewed the internal controls applicable to managing aviation components in an awaiting parts status. As of September 30, 1989, the Military Departments reported that 29,492 components, valued at $758.8 million, were in an awaiting parts status at the 12 aviation repair depots operated by the Military Departments.

Repair parts support procedures and related controls needed to be improved to minimize the time that components spent in an awaiting parts status. The Navy and Air Force had established systems to manage aviation components in an awaiting parts status and related parts requirements. At the time of our audit, significant changes in these systems were in process to improve effectiveness and asset accountability. The Army had not established a similar system although procedures were established in 1989 to identify and report critical repair parts affecting depot maintenance production. The results of the audit are summarized in the following paragraph, and the details and audit recommendations are in Part II of this report.

The shortage of repair parts needed to fix components at aviation repair depots could have been avoided for about half the parts reviewed. The lack of parts availability from the supply

system resulted in lower efficiency in the depot repair operations and components unnecessarily held in unserviceable condition. We recommended that the Military Departments and DLA review procurement lead times for problem items and make appropriate adjustments, and comply with DoD procedures for maintaining adequate stock levels when reassigning inventory management responsibility. We recommended that the Military Departments convey significant increases in depot parts needs to inventory managers. We recommended that the Assistant Secretary of Defense (Production and Logistics) include in the Inventory Reduction Plan initiatives, processes for inventory managers to access local supply centers' and repair depots' retail inventories to fill high priority requisitions for components in an awaiting parts status, when wholesale stocks are not available. We also recommended that the Army establish procedures to separately identify and control components in an awaiting parts status (page 5).

The audit identified internal control weaknesses as defined by Public Law 97-255, Office of Management and Budget Circular A-123 and DoD Directive 5010.28. Controls were either not established or were ineffective to ensure that procurement lead times were correct, significant changes to depot repair needs were conveyed to inventory managers, and stock was available for items involved in reassignment of inventory management responsibilities. Recommendations 1., 2., and 3., if implemented, will correct these conditions. The senior officials responsible for internal controls within your Departments or Agency are being provided a copy of this final report.

This report does not identify any quantifiable monetary benefits; however, other benefits resulting from the audit are identified in Appendix E.

On January 16, 1991, a draft of this report was provided to the Assistant Secretary of Defense (Production and Logistics); the Assistant Secretary of the Army (Financial Management); the Assistant Secretary of the Navy (Financial Management); the Assistant Secretary of the Air Force (Financial Management and Comptroller); and the Director, Defense Logistics Agency. Comments to the draft report were received from the Air Force Deputy Chief of Staff for Logistics and Engineering, on March 6, 1991. The Air Force's comments are summarized below, and the complete text is provided in Appendix D.

Comments from the Assistant Secretary of Defense (Production and Logistics), the Army and the Navy were not received. Therefore, we request that they respond to the final report, indicating concurrence or nonconcurrence with the finding, recommendations, internal control weakness, and potential audit benefits described in this report. The Defense Logistics Agency's comments on the draft report were received after the

comment deadline for the draft report. Therefore, the Defense Logistics Agency's comments will be treated as comments on the final report.

The Air Force Deputy Chief of Staff for Logistics and Engineering concurred with the intent of Recommendation 1. and stated that a review of the current policy and procedures of the requirements computation system is scheduled to determine if a revision is needed. The Deputy Chief of Staff concurred in Recommendations 2. and 3. For Recommendation 2., he stated that a formal procedure would be established for repair depots to notify inventory control points of significant increases in depot repair program needs. For Recommendation 3., the Deputy Chief of Staff stated that, commensurate with the implementation of Defense Management Review Decision 926, the Air Force Logistics Command plans to include a memorandum of agreement directing inventory control points to follow the procedures of DoD Manual 4140.26-M, Chapter 6, when making logistics reassignments.

DoD Directive 7650.3 requires that all audit recommendations be resolved promptly. Therefore, final comments from the Assistant Secretary of Defense (Production and Logistics), the Army, and the Navy should be provided within 60 days of the date of this memorandum. Additional comments from the Air Force are not required.

The courtesies extended to the audit staff are appreciated. A list of the Audit Team Members is in Appendix G. If you have any questions on this audit, please contact Mr. Charles Hoeger or Mr. Pat Golden at (215) 737-3881 (DSN 444-3881). Copies of the final report are being provided to activities listed in Appendix H.

Edward Jones
Deputy Assistant Inspector General
for Auditing

Enclosure
cc:
Secretary of the Army
Secretary of the Navy
Secretary of the Air Force

REPORT ON THE AUDIT OF SUPPLY SUPPORT OF AVIATION COMPONENTS AWAITING PARTS

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Logistics Support
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REPORT ON THE AUDIT OF SUPPLY SUPPORT OF AVIATION COMPONENTS AWAITING PARTS

PART I - INTRODUCTION

Background

Inventory control activities of the Military Departments manage about 276,000 line items, valued at $49.7 billion, of materiel categorized as aviation depot level reparable components. These are assemblies and equipment that are usually expensive. When these items fail while in use and cannot be repaired by a local or intermediate maintenance facility, they are returned to a designated depot maintenance facility and reported to the inventory control activity as unserviceable. When requirements for aviation components exceed serviceable assets, the inventory control activities program the unserviceable components for repair in a Military Department depot maintenance facility or a contractor facility. The cost of repair is usually substantially less than new procurement and, for many items, repair is the predominant source for replenishing the supply system.

Repair of aviation components at an aviation repair depot requires technical skills, tools, equipment, and repair parts. When a repair part is not available to complete the repair process at a Navy or Air Force aviation repair depot, the aviation repair depot requisitions the repair part and physically segregates the reparable component from other components undergoing repair. If the aviation repair depot receives notice that the part will not be available for at least 45 days (Navy) or 90 days (Air Force), regulations require that the reparable component be reported to the inventory control activity and designated as condition code G, item under repair awaiting parts. Army procedures are discussed in Part II.

Aviation components in condition code G should be intensively managed to minimize the amount of time the components go unrepaired and to ensure that appropriate means are taken to obtain the needed repair parts. This requires extensive coordination among the Military Departments' aviation repair depots, the local supply support centers, and the inventory control activities of the Military Departments and the Defense Logistics Agency (DLA). As of September 30, 1989, the number of reparable aviation components classified as condition code G by the Military Departments totaled 29,492 units, valued at about $758.8 million (Appendix A).

Past audit work in areas related to programs for depot maintenance of reparable aviation components indicated that inadequate data and reporting systems and noncompliance with the DoD and Military Departments' established policies have caused problems in managing components in an awaiting parts status.

Poor management of these components resulted in higher incidences of nonmission capable weapon systems, cannibalization of existing equipment, or other uneconomical supply support practices.

Objectives and Scope

The objectives were to determine if supply support procedures in wholesale and retail supply systems were adequate and complied with, and to evaluate the effectiveness of the systems established to manage components in an awaiting parts status. We also evaluated applicable internal controls.

We statistically sampled 246 reparable aviation components, at 5 aviation repair depots, from the universe of 16,013 reparable aviation components reported by the inventory control activities in condition code G. Of the 12 aviation repair depots operated by the Military Departments, we included two depots each from the Navy and Air Force and the one aviation depot operated by the Army. The sites selected and the sampling plan are described in Appendix B.

From the sample of 246 reparable aviation components, we selected 280 outstanding requisitions, initiated primarily during 1988 and 1989, for repair parts needed to fix the components. We limited our sample to a maximum of two requisitions per component. Of the 280 requisitions, we were able to review 238, which involved 200 different parts managed by 8 inventory control points (ICP's) (Appendix C). The remaining 42 requisitions were for parts managed by 8 ICP's that we did not visit. At the ICP's we reviewed stock status reports, requisition history reports, and contractual information; and we interviewed personnel who were responsible for the supply support of the reparable components in our sample. We also reviewed inventory records of DLA managed repair parts that were acquired by the Military Departments and stocked at the Navy and Air Force supply support centers. We also reviewed inventory records of repair parts stocked at the 5 aviation repair depots to determine if parts were available from these sources to repair the 246 components in our sample.

This economy and efficiency audit was made from October 1989 to September 1990 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 listed in Appendix E.

Internal Controls

At the aviation repair depots we evaluated internal controls for monitoring the status of requisitions outstanding for parts needed to fix aviation reparable components and internal controls for reporting aviation reparable components in condition code G to the applicable ICP. As discussed in Part II of this report,

inventory controls were not completely established to ensure that reparable components in an awaiting parts status were controlled and reported and that adequate supply support was provided.

Prior Audit Coverage

The General Accounting Office (GAO) issued Report No. GAO/GGD 88-20, "Depot Maintenance: Problems in Procuring Helicopter Parts Result in Shortages and Added Costs," OSD Case No. 7357, December 17, 1987. The report stated that in FY 1985, labor costs at the Corpus Christi Army Aviation Depot, Corpus Christi, Texas, increased by about 15 percent due partly to repair parts shortages. The Army did not have an effective inventory control system to alert it when repair parts had not been contracted for promptly or when repair parts were not delivered on time. GAO also reported that the Army Aviation Systems Command, St. Louis, Missouri, did not track procurements to make sure parts were available when needed at the Corpus Christi Army Aviation Depot, and that procurement administrative lead times increased from 100 days in 1983 to 400 days in 1986. Because the Army had started tracking procurements and stepped up its quality assurance program, GAO made no recommendations to the Army.

DoD Inspector General Report No. 87-212, "Materiel Classified as Not Ready for Issue," July 31, 1987, cited the Air Force for carrying materiel in condition code G for excessive periods. About 43 percent of the sampled items at Warner Robins Air Logistics Center (ALC), Robins Air Force Base, Georgia, were in condition code G for over 1 year. At the San Antonio ALC, Kelly Air Force Base, Texas, the value of condition code G materiel was understated by $22 million because components awaiting parts were misclassified as condition code M, undergoing repair. The report recommended that condition code M components at the San Antonio ALC be reclassified to condition code G when it is determined that repair cannot be completed due to lack of repair parts. The Air Force advised the DoDIG that corrective action would be taken. The Office of the Assistant Inspector General for Analysis and Followup is monitoring the Air Force actions.

In 1986, GAO initiated a survey of barriers to productivity at Naval Air Rework Facilities (Project 410510). The survey was later terminated to avoid duplicating work done by a contractor and to give the Navy time to implement the contractor's recommendations. The contractor recommended that the Navy improve parts support of the component repair program and improve management of awaiting parts requirements. In a November 14, 1986, letter to the then Assistant Secretary of the Navy (Shipbuilding and Logistics), OSD Case No. 7176, GAO reported that significant productivity losses, increased costs, and large dollar amounts of idle inventory occurred when aircraft engine and component repairs were delayed due to inadequate supply support. Because repair parts were in short supply, the rework facilities resorted to cannibalization, backrobbing

(removing parts from other items in the repair process), workarounds (performing repair steps out of sequence), and in-house manufacture. GAO made no recommendations.

Other Matters of Interest

Two issues addressed in this report relate to topics addressed in DoD's Defense Management Review and the DoD Inventory Reduction Plan. Defense Management Review Decision 926, Inventory Control Point Consolidation Study, approved the transfer of item management responsibility for most consumable items from the Military Departments' inventory control activities to DLA. The transfer is scheduled to begin in FY 1991. In our review of requisitions for components in an awaiting parts status, we found that some prior item transfers had been made without adequate supply support. The DoD Inventory Reduction Plan includes long term actions to improve asset visibility and increase utilization of assets held at the retail level. We noted in this audit that repair parts positioned at aviation repair depots and supply support centers could be used to satisfy requisitions for components in an awaiting parts status and other high priority requirements. Both issues are addressed in Part II.

PART II - FINDING AND RECOMMENDATIONS

Supply Support of Aviation Components Awaiting Parts

FINDING

For about half the repair parts in our sample, shortages of parts needed to fix aviation components inducted into depot repair programs could have been avoided. This condition occurred because procurement lead times on inventory managers' records were understated, anticipated demand changes were not identified to inventory managers, and management responsibilities for line items were transferred among inventory control points (ICP's) without adequate supply levels. In addition, support for aviation components in an awaiting parts status could be improved if processes were developed, in the DoD Inventory Reduction Plan, to provide access to inventories positioned at supporting supply centers and repair depots. Also, the Army had not developed a system to separately report and control aviation components in an awaiting parts status. As a result, the efficiency of aviation depot repair operations was lowered and components in an awaiting parts status were unnecessarily held in unserviceable condition. Our sample of 246 components at the five aviation repair depots included in the audit showed that 138 components (56 percent) were in an unserviceable condition for over 1 year.

DISCUSSION OF DETAILS

Background. Based on forecasted requirements, DoD inventory control activities periodically schedule reparable aviation components for repair, primarily at designated aviation repair depots managed by the Military Departments. Repair requirements for components range from immediate needs in response to high priority back ordered requirements of operating forces to system stock replenishments for anticipated future issues. The inventory control activities managing the reparable components are responsible for ensuring that unserviceable assets are or will be available for scheduled depot maintenance programs. The aviation repair depots are responsible for planning repairs and requisitioning parts needed to accomplish scheduled maintenance. When required spare parts are not available to repair components, supply centers generate high priority requisitions or existing requisitions on ICP's records are modified to reflect a higher priority. Maintenance on the components involved is deferred and the components are suspended from repair.

DoD Manual 4000.25-2-M, "Military Standard Transaction Reporting and Accounting Procedures," provides standard formats and codes for recording inventory management data in DoD and the Military Departments' supply systems. The manual includes procedures for processing inventory managers' changes to the condition codes of components. Condition codes classify materiel in terms of readiness for issue and use or to identify action underway to change the status of materiel. Condition code M is designated

for materiel identified on an inventory control record but which has been turned over to an aviation repair depot for processing. Condition code G is designated for materiel requiring additional parts to complete the end item prior to issue.

Navy procedures for managing components in an awaiting parts status (condition code G) are contained in joint Naval Air Systems Command Instruction 4440.6D and Naval Supply Systems Command Instruction 4440.155D, "Management of Condition Code G Repairable Components." Air Force guidance and procedures are contained in Air Force Supply Manual 67-1, Volume II; Air Force Logistics Command Regulation 65-60, "Processing Unserviceable, Incomplete Assets in Awaiting Parts Status and Condition Code G"; and Air Force Logistics Command Regulation 66-53, "Equipment Maintenance - Maintenance Materiel Control." In response to increasing volumes of components suspended from depot level repair due to shortages of repair parts through FY 1988, the Navy and Air Force have revised or are revising their systems. The Navy's revised procedures, "Automated G Condition Management System" (G-Man), was initially implemented at the Naval Aviation Depot, Jacksonville, Florida, in October 1989. Installation of the system at the other Navy aviation repair depots began in June 1990 and was scheduled for completion by the end of 1990. Proposed revised Air Force procedures, "Processing Unserviceable and Incomplete Assets in Awaiting Parts Status," were established as a test program at the Sacramento Air Logistics Center (ALC) in April 1989. Based on our observations during audit visits at the Naval Aviation Depot, Jacksonville, Florida and the Sacramento ALC, these systems should improve the overall management of components in condition code G.

To minimize the number and duration of components in condition code G, Navy and Air Force procedures focus on tracking the components, physically segregating the components, and promoting more expeditious resolution of parts needs. Each component in condition code G is assigned a control number for identification and mechanized records are established for the ordered parts to match the components being held. To maintain asset integrity and to preclude unwarranted cannibalization, the assets are physically segregated from other components undergoing repair. The Navy and Air Force systems provide that when parts are available, the components are reinducted into the depot repair program, if still required.

Requisitions for Components Awaiting Parts. To determine the adequacy of the supply support that was provided by depot maintenance and inventory management personnel, we evaluated the supply actions taken to obtain 200 parts needed to repair a sample of 246 components. The details of our sample selection are discussed in Part I, Objectives and Scope and in Appendices B and C. There were a variety of reasons why parts were not available. For 104 of the 200 parts, out of stock instances were attributable to events that we classified as not readily

controllable by inventory managers. These included incorrect stock balances, funding constraints that prevented total requirement buys, and missing parts for modification kits required by engineering changes. Of the 104 cases, 29 were attributable to contractor problems where contractors did not meet delivery dates, contractors defaulted, contractors were suspended, or contractors would not bid on the Government offer. In most cases, items needed were from the only known source. In all 29 instances, appropriate contractual actions were taken or in-process to address the late deliveries, terminate delinquent contractors, or obtain new sources of supply.

Procedural improvements could be made to increase parts availability in the remaining 96 (48 percent) of the 200 parts reviewed. We found that personnel had appropriately requisitioned the needed parts, but parts were not readily available because projected procurement lead times in inventory managers' records were significantly lower than actual lead times, sharp increases in demand occurred without prior notice being given to inventory managers, and items were transferred between inventory managers without adequate stock on hand. Details are discussed below.

Long Procurement Lead times. For 45 (23 percent) of the 200 parts reviewed, the projected procurement lead times on the inventory control activities' stock status reports were significantly lower than the actual time it took to procure the parts. Item management responsibility for the 45 parts were 13 Navy, 12 Air Force, 11 DLA, and 9 Army. For the 45 parts, actual procurement lead times exceeded planned lead times on inventory managers' records by an average of 426 days. In 15 cases the administrative lead time was exceeded, in 4 cases the production lead time was exceeded, and in 26 cases, both the administrative and production lead times were exceeded. For example, the planned administrative lead time for national stock number (NSN) 1615-00-739-4574; case assembly, managed by the Army Aviation Systems Command (AVSCOM), St. Louis, Missouri, was 434 days. However, the actual administrative lead time incurred in a procurement awarded in May 1990 was 1,170 days. The delay in awarding the contract was due to additional contractor qualification screening for safety of flight requirements.

Procurement lead times in inventory managers' records affect the timing of replenishment actions and have a significant impact on the amount of stock that must be carried to provide uninterrupted sources of supply. Because of the significant savings that can be achieved if procurement lead times are reduced, DoD has targeted this area for major improvements. Procurement lead time initiatives are included in DoD's Inventory Reduction Plan and the Military Departments were encouraged to reduce administrative lead times and production lead times used in requirements computations. For example, in January 1990, the Naval Supply

Systems Command directed its inventory control activities to reduce production lead times by 15 percent in anticipation of improvements leading to actual lead time reductions.

Reductions in procurement lead times are a viable goal; however, lead times for problem items that are keeping components in an awaiting parts status over 6 months should be reviewed to ensure that they are realistic and that parts are ordered on a timely basis. For the Navy and the Air Force, problem items to be reviewed for possible lead time adjustments, can be identified by using the systems already developed for controlling condition code G components. Problem items in the Army could be identified from the critical item parts shortage lists, which are discussed in a later section of this report.

Unanticipated Changes in Demand. For 40 (20 percent) of the 200 parts reviewed, parts were not available in the supply system because of unanticipated changes in demand. Of the 40 cases, inventory managers were informed of the need for parts in advance in 4 cases but efforts to obtain the parts were stymied due to various inventory management or procurement problems. In 30 cases, responsible inventory managers stated that they were not given advance notice of the extraordinary demand that would be placed on the supply system for aviation depot needs. The extraordinary demands occurred at the Naval Aviation Depots at Jacksonville, Florida; North Island, California; and Pensacola, Florida; the Army Aviation Depot, Corpus Christi, Texas; and the Sacramento ALC, and Warner Robins ALC. We were unable to determine if prior notification was given for six cases. For example, the unanticipated demand for NSN 5970-00-368-8517, insulator bushing, at the Sacramento ALC over a period of 296 days was 2,387 units. Projected normal supply system demand for the same period was 1,101 units. Improved procedures for notifying inventory managers of unusual quantities of parts needed for depot overhaul programs would have aided in reducing parts shortages and reduced the amount of time components spent in an awaiting parts status.

Demand data accumulated in DoD inventory management systems has a significant effect on the amount of investment that will be made in a particular line item of inventory and the positioning of that inventory. Demand forecasts in the ICP's records usually reflect historical usage of stocked line items. Any unusual demands should get special management attention. Depot repair programs can cause unanticipated changes in demand for spare parts when large numbers of components are inducted for repair. In these cases, depot managers should inform inventory managers in advance of the unusual quantities for specific repair parts so that appropriate action can be taken to acquire the repair parts and maintain adequate stock availability.

The DoD Military Standard Reporting and Accounting Procedures Manual, chapter 13, describes special program requirement transactions and provides procedures for forecasting requirements

for items to support special programs or projects that are nonrepetitive and cannot be forecasted based on past demand data. The special program requirement procedure is a planning process to ensure future supply support for nonrepetitive requirements such as one time training exercises or maneuvers, repair or rebuild programs that are nonrecurring or that are seldom or irregularly programmed, and one time alterations or conversions. Requirements for which a Military Department has a recurring demand are excluded from identification as special program requirements. (DoDIG Report No. 90-087, "Report on the Audit of Special Program Requirements for Logistics Support," June 27, 1990, addressed this type of requirement submitted to Defense Logistics Agency inventory managers.)

Transferring Item Management Responsibility. In 11 (5.5 percent) of the 200 parts reviewed, management of the parts needed had been transferred between inventory control activities, and at the times of the transfers there was a zero balance of stock on hand. For example, management of NSN 3120-00-914-8671, sleeve bearing, was transferred from the Navy Aviation Supply Office, Philadelphia, Pennsylvania, to AVSCOM in February 1989 with zero stock on hand, 232 units on back order, and no procurement actions in process. In March 1990 management responsibility was transferred from AVSCOM to the Defense Industrial Supply Center, Philadelphia, Pennsylvania, with zero stock on hand, 2,895 units on back order, and a procurement action in-process to acquire 7,783 units. Based on the contract delivery schedule, the back orders would not have been satisfied until August 1990. This part was assigned to three inventory managers over a 13-month period, and based on the oldest back order on file, the part was in an out of stock position since April 1988.

DoD Manual 4140.26-M, the "Defense Integrated Materiel Management Manual for Consumable Items," chapter 6, provides policy and establishes responsibilities for logistics reassignments. Logistics reassignments, which are the transfers of line item inventory management responsibility from one inventory manager to another, should be done in a manner that ensures uninterrupted supply support of line items during the transition period. The Manual requires that a "full pipeline" of inventory will be transferred from the losing inventory manager to the gaining inventory manager. The pipeline requirement should be satisfied for stocked items by transferring a sufficient quantity of assets, on hand or on order, to satisfy current requirements and meet forecasted demands through a period equal to the procurement lead time plus the safety level quantity and, if applicable, war reserve requirements. The DoD Military Standard Reporting and Accounting Procedures Manual, chapter 11, provides detailed procedures to be followed and actions to be accomplished before and after logistics reassignments. These procedures also emphasize the continued maintenance of adequate stock levels during the transition process.

DoD Defense Management Review Decision 926, Inventory Control Point Consolidation, provides for the phased transfer of item management responsibility for approximately 1 million consumable items from the Military Departments to the Defense Logistics Agency inventory managers. Planned transfers of this magnitude will require strict adherence to DoD transfer policies and procedures to maintain adequate support.

Repair Parts Asset Visibility. Support for aviation components in an awaiting parts status could be improved if processes were developed, in the DoD Inventory Reduction Plan, to provide access to inventories positioned at supporting supply centers and repair depots. Significant quantities of repair parts are held in supporting supply center inventories and in aviation repair depot inventories. Under existing materiel management and reporting systems, much of this materiel is not visible or accessible to fill requirements except for requirements of the local activities. Our audit indicated that these assets could be a significant source for filling repair parts requirements for condition code G components as well as other high priority requirements, when wholesale stocks are not available.

Stocks of DLA managed items are acquired from the DLA wholesale system by the Military Departments and positioned at supply centers to supply the repair depots and other designated customers. This materiel, once positioned in these retail inventories, is not visible to the DLA inventory managers or, on an individual item basis, to the materiel managers of the Military Departments. As of June 30, 1990, the value of aviation repair parts inventories at the supply centers supporting the two Navy and the two Air Force repair depots included in our audit, was about $243 million. To determine if awaiting parts requisitions could be filled by other than the supply support center adjacent to the requiring repair depot, we tested 59 DLA managed items from our requisition sample at the two Navy and the two Air Force depots. The requisitions submitted for these requirements had been back ordered by the DLA inventory managers because wholesale stocks were not available. We determined that 14 of the 59 items could have been obtained from available retail stocks.

Repair parts inventories at aviation repair depots' are also not visible to materiel managers. These assets are normally acquired from the Military Departments and DLA wholesale systems and maintained in the repair depots' industrial fund inventory accounts to support aircraft and component repair and modification programs. As of June 30, 1990, the value of the repair parts inventories at the five aviation repair depots in our audit was about $198 million. Assets available in these inventories, at one or more locations, could have satisfied 12 of the 229 items included in our tests of high priority requisitions for condition code G components.

The DoD Inventory Reduction Plan addresses management improvements to increase materiel support effectiveness, achieve budget savings, and reduce current inventories. The plan targets several long term actions, to be developed beginning in FY 1992, on asset visibility. One of the actions is to develop a conceptual framework for providing interservice, intraservice, and intratheater asset visibility. We believe significant economies and increased effectiveness could be achieved if proposed management improvements included access to the supply center and repair depot retail inventories for high priority requisitions for condition code G components that cannot be satisfied from wholesale stocks. As of June 30, 1990, the value of the supply center inventories of DLA managed aviation repair parts at centers supporting the 11 Navy and Air Force aviation repair depots was about $815 million. The value of repair parts inventories held in the industrial funds of Military Departments aviation repair depots was about $407 million.

Army Management of Components Awaiting Parts. As previously discussed, both the Navy and Air Force have established distinct reporting and tracking systems for managing condition code G components. The focus of these systems is to minimize the time that components are suspended from repair, thus increasing materiel availability, and to maintain the physical integrity of the unserviceable assets by precluding unauthorized cannibalization of parts from components. The Army has not established a separate control system to manage components awaiting parts.

At the Corpus Christi Army Aviation Depot, components scheduled and inducted for repair, but lacking required parts, were generally neither reported in a distinct condition code nor physically segregated. Components inducted but delayed for the lack of repair parts were retained in condition code M and continued to be reported to the inventory manager as anticipated serviceable assets in accordance with established work schedules. As of March 1990, the Corpus Christi Army Aviation Depot reported 18,659 components valued at about $358 million in condition code M. We could not determine the volume or value of components delayed for the lack of parts because the Army did not know the true condition of these components and there was no system for identifying when all parts for a particular component had been received so that the component could be inducted into the repair process.

In lieu of a similar system used by the Navy and Air Force, the Army had an alternative system. Army Materiel Command Regulation 700-80, "Critical Support for Depot Maintenance Programs," November 21, 1989, provides policies and procedures for identifying and reporting shortages of critical maintenance repair parts that will adversely affect depot maintenance production. Repair parts shortages causing a work stoppage, including components undergoing repair, are included in a monthly

list of critical parts shortages for followup purposes. The parts shortages are identified to weapons programs and types of components but, unlike the Navy and Air Force systems used to control condition code G components, the parts shortages are not matched to a specific component requiring the parts. Thus when the parts are received, there is no readily available means of identifying which components require the specific part.

We did identify some components reported as condition code G. However, the Army was not effectively tracking, physically segregating and promoting expeditious repair resolution. Records at the Corpus Christi Army Aviation Depot identified 943 components, comprised of 71 NSN's, with a recorded value of $57.8 million in condition code G. More than half of these components had been stored in condition code G at the depot for over 2 years. Management informed us that the condition code G components did not originate from the repair program. According to AVSCOM personnel, the condition code G components resulted from cannibalization actions directed by the inventory manager. We reviewed 60 components, comprised of 19 NSN's, with a recorded value of $53.1 million. To determine the accuracy of their accountable records, we physically inventoried 19 NSN's and found unreported assets involving 4 NSN's amounting to $10,931,000 and shortages involving 5 NSN's amounting to $1,098,000.

Conclusion.

There will always be instances of components in an awaiting parts status. However, systems should be available to intensively manage the components and minimize the duration of time that the components stay in condition code G. Inventory managers must know the true condition of components undergoing repair to be able to determine when the component will be available for issue. Likewise, repair depot managers must know what parts are needed to complete a component undergoing repair. By improving the accuracy of procurement lead time, identifying significant increases in depot repair needs to inventory managers, following procedures when transferring logistics management responsibility, and by providing asset visibility in supply center and repair depot retail inventories, the number of components in condition code G and the duration of that condition could be reduced.

RECOMMENDATIONS FOR CORRECTIVE ACTIONS

1. We recommend that the Commanders, Army Materiel Command, Naval Supply Systems Command, and Air Force Logistics Command; and the Director, Defense Logistics Agency direct inventory control points to review procurement lead times for problem line items that are keeping components in an awaiting parts status and make appropriate adjustments to ensure that parts are ordered timely.

2. We recommend that the Commanders, Army Materiel Command, Naval Air Systems Command, and Air Force Logistics Command require depots to report significant increases in depot repair program needs to the supporting inventory managers.

3. We recommend that the Commanders, Army Materiel Command, Naval Supply Systems Command, and Air Force Logistics Command; and the Director, Defense Logistics Agency direct inventory control points to follow the procedures of DoD Manual 4140.26-M, Chapter 6 so that adequate stock is available when making logistics reassignments.

4. We recommend that the Assistant Secretary of Defense (Production and Logistics) include in the Inventory Reduction Plan initiatives, processes to access supply center and repair depot retail inventories to fill high priority requisitions for components in an awaiting parts status when wholesale assets are not available.

5. We recommend that the Commander, Army Materiel Command require the Army Aviation System Command to establish procedures for the segregating, reporting, and managing of reparable components inducted into the repair program but delayed because of a lack of repair parts.

MANAGEMENT COMMENTS

Comments on the draft report were not received from the Assistant Secretary of Defense (Production and Logistics), the Army, and the Navy. Additionally, DLA's comments on the draft report were received too late to be included in the final report. However, comments from the Air Force were received and are summarized below.

The Air Force Deputy Chief of Staff for Logistics and Engineering concurred with the intent of Recommendation 1. and stated that historical information relative to procurement lead times for materiel on order is transmitted to the appropriate requirements computation systems and used as the basis for future projections. Although the increased procurement lead time of an item can cause components to remain in an awaiting parts status, this historical data relating to procurement lead times has no bearing on current awaiting parts requirements. The Deputy Chief of Staff also stated that a review of the current policy and processes of the requirements computation system is needed to determine if a revision is needed to accommodate the intent of Recommendation 1. The Air Force established a tentative target date of July 30, 1991, for completion of the review and follow-on actions.

The Deputy Chief of Staff for Logistics and Engineering concurred with Recommendation 2. and stated that a written procedure, for depots to convey significant increases in depot repair program

needs to supporting inventory managers, would be included in the October 1991 revision to the Air Force Supply Manual 67-1, volume III, part 2.

The Deputy Chief of Staff concurred with Recommendation 3. and stated that, commensurate with the implementation of Defense Management Review Decision 926, the Air Force Logistics Command plans to include a memorandum of agreement directing inventory control points to follow the procedures of DoD Manual 4140.26-M, chapter 6, when making logistics reassignments. The Deputy Chief of Staff also stated that fiscal constraints often restrict optimum stockage levels and that sales, compared to fund obligation targets, have not been adequate over the past 2 years. In fiscal years 1990 and 1991, the DoD Comptroller's established targets were 75 and 80 percent. In simple terms, the Air Force has been restricted in buying $0.75 to $0.80 of inventory for $1 of inventory sold. Therefore, the levels of stock on line items reassigned to the Defense Logistics Agency will be commensurate with stockage policy on line items retained by the Air Force.

AUDIT RESPONSE TO MANAGEMENT RESPONSES

The actions planned by the Air Force Deputy Chief of Staff for Logistics and Engineering to review the current policy and process of the requirements computation system, to establish a formalized procedure for repair depots to notify inventory managers of significant increases in depot repair needs, and to direct inventory managers to follow DoD procedures when making logistics reassignments, are responsive.

No further comments are required from the Air Force; however, we request that the Assistant Secretary of Defense (Production and Logistics), the Army, and the Navy provide comments on the final report.

COMPONENTS REPORTED IN CONDITION CODE G, AWAITING PARTS, AT AVIATION REPAIR DEPOTS AS OF SEPTEMBER 30, 1989

Army	Components	Value (Millions)
Corpus Christi *	943	$ 57.8
Total	943	$ 57.8
Navy		
Alameda	3,946	$ 66.8
Jacksonville	2,938	58.5
Norfolk	2,034	43.1
North Island	2,985	92.9
Pensacola	3,284	60.8
Cherry Point	1,831	89.9
Total	17,018	$412.0
Air Force		
Ogden	975	$ 20.0
Oklahoma City	1,765	29.0
Sacramento	4,585	58.0
San Antonio	466	9.0
Warner Robins	3,740	173.0
Total	11,531	$289.0
Total DoD	29,492	$758.8

* The figure for the Army is lower than the Navy and Air Force because at the Corpus Christi Army Aviation Depot, items inducted into the repair program and in an awaiting parts status are normally retained in condition code M, items under repair. There were 18,659 condition code M components, valued at $358 million, at Corpus Christi. An undetermined portion of these represent inducted components in an awaiting parts status.

SAMPLE SELECTION PLAN AND METHODOLOGY

Our site selection plan called for field work at five depot repair facilities. We visited the Corpus Christi Army Aviation Depot, the North Island and Jacksonville Naval Aviation Depots, and the Sacramento and Warner Robins Air Logistics Centers. The Corpus Christi Army Aviation Depot is the only aviation depot repair facility in the Army. The North Island Naval Aviation Depot reported the largest value of condition code G assets in the Navy. The Jacksonville Naval Aviation Depot was the test location for new Navy procedures to manage components awaiting parts. The Sacramento and Warner Robins Air Logistics Centers reported the largest values of condition code G assets in the Air Force. Our sampling plan called for the selection of 40 to 60 components in condition code G at each location. To evaluate supply support, our sampling plan called for selection of no more than two requisitions for each component. The number of components and requisitions selected in our tests are summarized below, by location visited.

	Components Reported in Condition Code G				
Site	Universe	Value (Mil)	Sample Size	Value (Mil)	No. of Requisitions
Corpus Christi	943	$ 57.8	60	$3.4	74 */
Jacksonville	3,057	58.5	40	1.1	49
North Island	3,668	96.4	56	1.0	60
Sacramento	4,158	49.7	40	.5	47
Warner Robins	4,187	176.5	50	2.8	50
Total	16,013	$438.9	246	$8.8	280

*/ Under Army procedures, condition code G components at the Corpus Christi Army Aviation Depot do not include components inducted into repair programs, but lacking parts support. Our requisition sample was selected from the Corpus Christi Army Aviation Depot critical items list identified as work stoppages.

NUMBER OF REQUISITIONS TESTED AT INVENTORY CONTROL POINTS

	Number of Requisitions Tested	National Stock Numbers
Army		
Army Aviation Systems Command	28	28
Navy		
Navy Aviation Supply Office	83	56
Air Force		
Oklahoma City Air Logistics Center	9	9
Sacramento Air Logistics Center	26	22
Warner Robins Air Logistics Center	38	32
Defense Logistics Agency		
Defense Construction Supply Center	14	13
Defense General Supply Center	13	13
Defense Industrial Supply Center	27	27
Total	238	200 *

* We researched 200 of 229 National Stock Numbers at the applicable inventory control points. The 29 items not researched applied to 8 other inventory control points not included in the audit.

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON DC

06 MAR 1991

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

SUBJECT: DoD(IG) Draft Report on the Audit of Supply Support of Aviation Components Awaiting Parts, January 16, 1991, (Project No. 9LD-0050) - INFORMATION MEMORANDUM

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

Comments are provided for recommendations 1, 2, and 3, as requested. We appreciate the opportunity to comment on the report.

HENRY VICCELLIO, JR., Lt Gen, USAF
DCS/Logistics

1 Atch
Management Comments

Draft Report on the Audit of Supply Support of Aviation Components Awaiting Parts, January 16, 1991, (Project No. 9LD-0050)

RECOMMENDATION 1. We recommend that the Commanders, Army Materiel Command, Naval Supply Systems Command, and Air Force Logistics Command; and the Director, Defense Logistics Agency direct inventory control points to review procurement lead times for problem items that are keeping components in an awaiting parts status and make appropriate adjustments to ensure that parts are ordered timely.

MANAGEMENT COMMENTS: Concur with intent. Historical information relative to the procurement lead times for materiel on-order is transmitted to the requirement computation systems depending on the commodities. There are systems in-place to capture the lead times and that information is used as a basis for future projections. Although the increased procurement lead time of an item can cause components to remain in an awaiting part (AWP) status, this historical data/action has no barrier on current backordered items needed to satisfy the existing AWP requirement. This data can only be used for future (the next order) requirements. A review of current policy and the processes of the requirement computation system is needed to determine if a revision or system change is required to accomodate the intent of this recommendation. A tentative target date of July 30, 1991, is established for completion of this review and follow-on actions.

RECOMMENDATION 2. We recommend that the Commanders, Army Materiel Command, Naval Air Systems Command, and Air Force Logistics Command require depots to report significant increases in depot repair program needs to the supporting inventory managers.

MANAGEMENT COMMENTS: Concur. Procedures currently used to notify the supporting inventory managers are verbal and will be documented in Air Force supply manual 67-1, volume III, part two, in the October 1991 revision.

RECOMMENDATION 3. We recommend that the Commanders, Army Materiel Command, Naval Supply Systems Command, and Air Force Logistics Command; and the Director, Defense Logistics Agency direct inventory control points to follow the procedures on DoD Manual 4140.26-M, Chapter 6 so that adequate stock is available when making logistics reassignments.

MANAGEMENT COMMENTS: Concur. Commensurate with implementation of Defense Management Review Decision (DMRD) 926, the Air Force Logistics Command's plan includes a memorandum of agreement (MOA) directing inventory control points to follow the procedures of DoD Manual 4140.26-M, Chapter 6. However, concerning adequate stock

availability, fiscal constraints often restrict optimum stockage. The sales to obligation targets (for the Air Force) over the past two years have not been adequate. FY89 ended at 79 percent; FY90 ended at 75 percent; and, FY91 target is set at 80 percent. These targets are established by the DoD Comptroller. In simple terms, the Air Force has been restricted in buying only 75 to 80 cents of inventory for every dollar of inventory it sells. The levels on items reassigned to the Defense Logistics Agency (DLA) will be commensurate with items retained by the Air Force.

SUMMARY OF POTENTIAL BENEFITS RESULTING FROM AUDIT

Recommendation Reference	Description of Benefits	Amount and/or Type of Benefit
1.	Review procurement lead times of problem items.	No quantifiable monetary benefits. Improved supply support for depot repair programs.
2.	Convey significant increases in repair program parts needs to inventory managers.	No quantifiable monetary benefits. Improved supply support for depot repair programs.
3.	Follow procedures when making logistics reassignments.	No quantifiable monetary benefits. Improved supply support for depot repair programs.
4.	Provide access to parts inventories.	No quantifiable monetary benefits. Improved supply support through asset visibility at aviation depots.
5.	Establish a system to control assets awaiting parts and track parts needed to fix components.	No quantifiable monetary benefits. Improved supply support and inventory management of components awaiting parts.

ACTIVITIES VISITED OR CONTACTED

Office of the Secretary of Defense

Office of the Assistant Secretary of Defense (Production and Logistics), Washington, DC

Department of the Army

Office of the Assistant Secretary of the Army for Installations and Logistics, Washington, DC
Army Materiel Command, Alexandria, VA
Army Depot Systems Command, Chambersburg, PA
Army Aviation Systems Command, St. Louis, MO
Army Materiel Readiness Support Activity, Lexington, KY
Corpus Christi Army Depot, Corpus Christi, TX
XVIII Airborne Corps, Ft. Bragg, NC

Department of the Navy

Commander, Naval Air Forces, Atlantic, Norfolk, VA
Commander, Naval Air Forces, Pacific, San Diego, CA
Naval Supply Systems Command, Washington, DC
Naval Air Systems Command, Washington, DC
Navy Aviation Supply Office, Philadelphia, PA
Naval Ships Parts Control Center, Mechanicsburg, PA
Navy Fleet Materiel Support Office, Mechanicsburg, PA
Naval Supply Center, Jacksonville, FL
Naval Supply Center, San Diego, CA
Naval Air Station North Island, San Diego, CA
Naval Air Station Cecil Field, Jacksonville, FL
Naval Aviation Depot, Jacksonville, FL
Naval Aviation Depot, North Island, San Diego, CA
Headquarters, U.S. Marine Corps, Washington, DC

Department of the Air Force

Office of the Deputy Chief of Staff for Logistics and Engineering, Washington, DC
Air Force Logistics Command, Wright-Patterson Air Force Base, OH
Air Force Logistics Management Center, Gunter Air Force Base, AL
Headquarters, Tactical Air Command, Langley Air Force Base, VA
Headquarters, Strategic Air Command, Offutt Air Force Base, NE
Headquarters, Military Airlift Command, Scott Air Force Base, IL
Warner Robins Air Logistics Center, Robins Air Force Base, GA
Sacramento Air Logistics Center, McClellan Air Force Base, Sacramento, CA
Oklahoma City Air Logistics Center, Tinker Air Force Base, Oklahoma City, OK
McGuire Air Force Base, Wrightstown, NJ
Mather Air Force Base, Sacramento, CA

ACTIVITIES VISITED OR CONTACTED (Continued)

Defense Logistics Agency

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

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FINAL REPORT DISTRIBUTION

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Department of the Army

Secretary of the Army
Assistant Secretary of the Army (Financial Management)
Assistant Secretary of the Army (Installations and Logistics)
Army Inspector General

Department of the Navy

Secretary of the Navy
Assistant Secretary of the Navy (Financial Management)
Comptroller of the Navy

Department of the Air Force

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

Defense Agency

Director, Defense Logistics Agency

Non-DoD Activities

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

Congressional Committees:

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