DEPARTMENT OF DEFENSE

AUDIT REPORT

MANAGEMENT AND ADMINISTRATION OF QUALITY ASSURANCE FOR AIRCRAFT MAINTENANCE CONTRACTS

No. 90-027 December 26, 1989

Office of the Inspector General

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

December 26, 1989

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 the Management and Administration of Quality Assurance for Aircraft Maintenance Contracts (Report No. 90-027)

This is our final report on the Audit of the Management and Administration of Quality Assurance for Aircraft Maintenance Contracts for your information and use. Comments on a draft of this report were considered in preparing the final report. We made this audit from September 1988 through June 1989. The audit objectives were to evaluate the economy and efficiency of the management and administration of quality assurance policies for aircraft maintenance contracts and to evaluate the effectiveness of applicable internal controls. In fiscal year 1988, there were 33 contracts, valued at approximately $479 million, for organizational or intermediate level maintenance services.

Policies and procedures for organizational or intermediate level aircraft maintenance quality assurance needed improvement. The Army aircraft maintenance contract at Fort Rucker had an adequate quality assurance program; however, other Army programs required significant improvements. The Naval Aviation Depot Operations Center and the Air Force Air Training Command had taken actions to improve their quality programs; however, additional actions were needed. The results of the audit are summarized in the following paragraphs, and the details, audit recommendations, and management comments are contained in Part II of this report.

The quality assurance program for aircraft maintenance contracts was not effective. Quality assurance programs were not adequately planned, plans were not implemented, and systematic quality data evaluations were not performed. These conditions contributed to cost growths, failure to obtain the services contracted for, increased risk of flight mishaps, and reduced aircraft availability. We recommended that the Military Departments establish a joint task force to develop a quality assurance inspection program for these contracts, and that they issue policy guidance requiring specific quality assurance provisions on all contracts for organizational or intermediate level aircraft maintenance (page 5).

The Military Departments and the Defense Logistics Agency did not have a system for reporting contractor quality history data on maintenance services. Contractors submitted quality information that was general in nature and not subject to verification. As a result, contractors with poor quality histories were not detected during solicitation evaluations and Government quality assurance inspection plans did not include increased inspections when these contractors were awarded contracts. We recommended that the Deputy Assistant Secretary of Defense (Total Quality Management) clarify the requirement of Department of Defense Directive 4155.1 for a quality data reporting system for service contracts. We also recommended that the Secretaries of the Military Departments and the Director, Defense Logistics Agency, develop and implement a system for reporting contractor quality history using the service systems now used for monitoring in-house maintenance organizations (page 15).

The audit identified internal control weaknesses as defined by Public Law 97-255, Office of Management and Budget Circular A-123, and DoD Directive 5010.38. Controls were not effectively implemented to ensure that the correct contractual provisions were included in contracts for aircraft organizational or intermediate level maintenance. Recommendations A.1. and A.2. in this report, if implemented, will correct the weaknesses. A copy of the final report is being provided to the senior officials responsible for internal controls within each of the Military Departments.

The Director, Defense Logistics Agency, concurred with the audit recommendations, but nonconcurred with the findings. The complete text of the Director's comments is included in Appendix B. We discussed the Director's comments with management on November 15, 1989. We believe that the nonconcurrences resulted from a misunderstanding of the findings. We have clarified the finding paragraph to more clearly state the conditions noted. Subsequent to processing the final report, we received comments from the Military Deputy to Assistant Secretary of Defense (Production and Logistics) and each of the Military Departments. Each of the respondents concurred and planned the appropriate corrective actions. Although we were unable to incorporate the comments in the report, we clarified some issues that were identified in the responses. The management actions taken or planned are responsive to our recommendations. No unresolved issues exist on the audit findings, recommendations, and internal control deficiencies. Accordingly, additional management comments are not required. If you choose to comment on the final report, the comments should be provided within 60 days of the date of the final report.

The courtesies extended to the audit staff are appreciated. If you have any questions on this audit, please contact Mr. Thomas Gimble on (202) 694-6227 (AUTOVON 224-6227) or Mr. Walter R. Loder, Jr., on (202) 694-6224 (AUTOVON 224-6224). A list of the Audit Team Members is in Appendix E. Copies of this report are being provided to the activities listed in Appendix F.

Stephen A. Trodden
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 THE MANAGEMENT AND ADMINISTRATION OF QUALITY ASSURANCE FOR AIRCRAFT MAINTENANCE CONTRACTS

TABLE OF CONTENTS

	Page
TRANSMITTAL MEMORANDUM/EXECUTIVE SUMMARY	1
PART I - INTRODUCTION	1
Background	1
Objective and Scope	1
Internal Controls	2
Prior Audit Coverage	2
PART II - FINDINGS AND RECOMMENDATIONS	5
A. Contract Quality Assurance Provisions and Quality Assurance Inspection Program	5
B. Reporting Nonconforming Contractors and Quality History Data	15
APPENDIX A - Contracts Reviewed	19
APPENDIX B - Defense Logistics Agency Comments	21
APPENDIX C - Report of Potential Monetary and Other Benefits Resulting From Audit	27
APPENDIX D - Activities Visited or Contacted	29
APPENDIX E - Audit Team Members	31
APPENDIX F - Final Report Distribution	33

Prepared by:
Logistics Support Directorate
Project No. 9SA-0002

REPORT ON THE AUDIT OF THE MANAGEMENT AND ADMINISTRATION OF QUALITY ASSURANCE FOR AIRCRAFT MAINTENANCE CONTRACTS

PART I - INTRODUCTION

Background

Organizational level maintenance is the routine maintenance required to keep an aircraft in service on a daily basis. Maintenance includes daily inspections, minor repairs, and periodic inspections. Intermediate level maintenance is the removal and repair of aircraft parts that require more equipment to repair them than is available at the organizational level. The Military Departments have used contractors to perform organizational or intermediate level maintenance services on training and support aircraft for over 20 years. The number of contracts for organizational or intermediate level maintenance is increasing, and we expect this trend to continue because of contracting out studies performed by the Military Departments.

Contracts for organizational or intermediate level maintenance are usually performed at Government locations. The contractor generally provides the management and workforce, and the Government provides the facilities and parts. Normally, when a contractor is changed at a site, the workforce will remain and key management will be the only personnel to change. The new contractor normally retains the workforce at that site because of its experience with the assigned aircraft. The DoD quality assurance program is defined in Department of Defense Directive (DoDD) 4155.1, "Quality Program," August 10, 1978, as "The planned and systematic pattern of all actions needed to provide adequate confidence that satisfactory contractor performance has been achieved." Government quality assurance actions include the preparation of the soliciation and contract, preaward evaluations of contractor quality history and quality program data, systematic inspections during contract performance, and data evaluation. These actions are performed to ensure that contracts include adequate quality provisions and to ensure that the services contracted for conform to the contractual requirements. Quality assurance inspections are the basis for determining the acceptability of services and for determining the amount that the Government will pay for supplies or services.

Objective and Scope

The audit objectives were to evaluate the economy and efficiency of the management and administration of quality assurance

policies for aircraft maintenance contracts. We also evaluated internal controls applicable to contracting for aircraft maintenance services.

We judgmentally selected for review 10 of 33 contracts for organizational or intermediate level aircraft maintenance services. The contracts we reviewed are listed in Appendix A. We reviewed the contract provisions related to quality, solicitation evaluations, and quality assurance inspection plans. We also reviewed documents supporting quality assurance inspections performed from October 1, 1986, through September 30, 1988. The audit was performed from September 1988 through June 1989 at the activities listed in Appendix D. This economy and efficiency audit was made 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.

Internal Controls

The major internal control objective was to ensure that contracts include adequate statements of work and adequate quality assurance provisions. Quality assurance personnel ensure that contractual terms and conditions described in the contract are followed by contractors. The audit identified internal control weaknesses as defined by Public Law 97-255, Office of Management and Budget Circular A-123, and DoD Directive 5010.38. Controls were not effectively implemented by the Military Departments to ensure that adequate quality assurance contractual provisions were included in contracts for aircraft organizational or intermediate level maintenance (Finding A Page 5).

Prior Audit Coverage

The Office of the Assistant Inspector General for Auditing and the General Accounting Office have not issued reports on the subject in the last 5 years. The Naval Audit Service and the Army Audit Agency have issued reports on two contracts for organizational level maintenance services. These reports included comments on the quality assurance programs for these contracts.

The Naval Audit Service issued Report No. S40116, "T-34C/T-44A Maintenance Contract," on February 27, 1987. The audit objective was to review the contract for maintenance services at the Naval Air Station, Milton, Florida. The report covered services for the fiscal year 1986 contract period and was performed from April

through July 1986. The audit concluded that the Navy did not have a quality assurance inspection program in place, and that this resulted in the Government not having assurance that Government property acquired by the contractor and stocked in a ready-for-issue warehouse was available for installation on aircraft. The auditors recommended that the Navy establish a quality assurance inspection program. Management concurred and established a quality assurance inspection program.

The Army Audit Agency issued Report No. SO 87-15, "Aircraft Maintenance Support Services, U.S. Army Aviation Center and Fort Rucker," on June 18, 1987. The audit objective was to review the contract for maintenance services at Fort Rucker. The audit was made from June 1986 to April 1987. The audit concluded that overall, there was little assurance that quality aircraft maintenance support services were provided at minimum cost. The audit also concluded that the quality assurance surveillance plan was not prepared in sufficient detail, time expended performing inspections needed to be better managed, and contract provisions for implementing more stringent quality levels had not been fully implemented. The auditors recommended that the quality assurance inspection plan include greater detail, that time expenditures be more closely monitored, and that contract provisions for more stringent quality levels be enforced. Management concurred with the recommendations and revised the quality assurance program.

PART II - FINDINGS AND RECOMMENDATIONS

A. Contract Quality Assurance Provisions and Quality Assurance Inspection Program

FINDING

Quality assurance (QA) programs for aircraft organizational or intermediate level maintenance contracts were not effective. QA inspections by contract administration offices were not adequately planned, plans were not implemented, and systematic quality history data evaluations were not performed. QA programs were not effective because solicitations and contracts did not include adequate quality provisions such as contractor quality program requirements and quantitative measures of quality or award and incentive fees. Also, the solicitation evaluation review process did not include a review of contractor quality history data, and specific quality assurance inspection procedures for aircraft organizational or intermediate level maintenance contracts had not been developed. The lack of adequate contract quality assurance provisions increased risk of flight mishaps, reduced aircraft availability, caused a failure to obtain the services contracted for, and contributed to contract cost growth.

DISCUSSION OF DETAILS

Background. Department of Defense Directive (DoDD) 4155.1, "Quality Program," August 10, 1978, includes the basic DoD QA program requirements. The DoDD requires that DoD components develop and use joint procedures for uniform implementation of a QA program. The DoDD also states that the Military Departments should ensure that contracts are not awarded to contractors with a history of providing supplies or services that do not meet all contractual requirements and that they should maintain and use contractor quality history data for this purpose. The DoDD encourages the use of contractual means, such as award or incentive fees, for obtaining quality products or services.

The Federal Acquisition Regulation (FAR), part 46, contains the policies and procedures for performing QA functions on Government contracts. The FAR requires that contracts include QA provisions and that the Government perform quality assurance inspections prior to acceptance of the product or services. The determination of contractor quality program requirements is based on criteria established in the FAR. These criteria are based on an evaluation of the technical description, complexity, and application of the item procured.

Defense Logistics Agency Manual (DLAM) 8200.1, "Procurement Quality Assurance," August 30, 1976, a joint Services manual, describes the QA inspection procedures that plant level quality assurance personnel are to use. DLAM 8200.1, Appendix B, "Contract Quality Assurance for Maintenance and Overhaul of Major Items and Components," Annex A, "Aircraft," describes the specific procedures for maintenance and overhaul contracts for aircraft. The DLAM consolidates DoD QA requirements from several sources and includes procedures for all aspects of QA including planning, inspection procedures, corrective actions, and quality data evaluations.

Contractor Quality and Inspection Program Requirements. The FAR, part 46, requires that contractor quality program specifications be included in all contracts for complex, critical, federal/military items, such as aircraft or aircraft engines. The standards described in the FAR require that contractors have inspection systems and quality programs that meet the standards established in MIL-I-45208A (MIL-I), "Inspection Systems Requirements," December 16, 1963, and MIL-Q-9858A (MIL-Q), "Quality Program Requirements," December 16, 1963. MIL-I and MIL-Q implement the DoD policy stated in DoDD 4155.1 for making contractors responsible for quality and for establishing uniform QA program standards for all contractors.

MIL-I and MIL-Q describe the overall standards for contractor quality and inspection programs. They state that the contractor is responsible for developing the specific programs and procedures for meeting these standards. Government QA inspections ensure that contractor policies and procedures meet these standards. The Assistant Secretary of Defense (Installations and Logistics) published DoD handbooks, H-50, "Evaluation of Contractor's Quality Program," April 23, 1965, and H-51, "Evaluation of Contractor's Inspection System," January 3, 1967, for quality assurance inspectors to use when reviewing contractor programs to ensure that those programs comply with the requirements of the MIL-I and MIL-Q.

Eight of the ten contracts reviewed did not include MIL-I and MIL-Q standards, as required by the FAR. The contracts incorrectly included a variety of quality program requirements such as Federal Aviation Administration (FAA) and Military Department in-house quality control directives. FAA procedures are general in nature and were developed for commercial airlines. Military Department directives are written for in-house maintenance organizations and do not implement the requirements of MIL-I and MIL-Q. Therefore, the contractors did not follow uniform DoD quality assurance or inspection system standards.

Examples of inconsistent contractor quality program requirements were demonstrated on three contracts. One contractor had a separate contract with each of the Military Departments at three different locations. An Army contract at Fort Rucker included MIL-I and MIL-Q, as required by the FAR and Defense Federal Acquisition Regulation Supplement (DFARS). A Navy contract at Whiting Field required this contractor to follow FAA quality program standards and MIL-I inspection standards. The Air Force contract at Holloman Air Force Base required the contractor to follow Air Force quality control program requirements. These requirements were developed specifically for Air Force maintenance organizations and did not comply with DoD policy for allowing the contractor the maximum flexibility possible for meeting quality requirements. Each of these three contracts provided organizational or intermediate level maintenance support for training aircraft.

Government Quality Assurance Inspection Procedures. The DLAM 8200.1 describes the methodology for performing quality assurance inspections. The DLAM is a joint Services manual prepared for use by personnel responsible for performing DoD quality assurance inspections. The use of the DLAM is mandatory for all contract administration components unless a waiver is granted at the departmental level. The general procedures of the DLAM were applicable to all contracts; however, the specific procedures for aircraft maintenance contracts were not applicable to aircraft organizational or intermediate level contracts. The Army and Air Force did not implement the general procedures of the DLAM.

Applicability of Procedures. DLAM 8200.1, Appendix B, Annex A, describes quality assurance procedures for maintenance and overhaul contracts for aircraft. The general procedures for planning, documenting, and controlling the inspection program are applicable to all contracts. The specific procedures of Annex A, however, are applicable to contracts for depot level work and not organizational or intermediate level services. For example, Annex A describes procedures for QA review of over and above work (a term used to describe additional work performed on depot level maintenance contracts). The basic depot level maintenance contract statement of work will include certain repairs based on maintenance experience. Contractor inspections of the aircraft will often result in additional repairs (over and above work). Organizational and intermediate level contracts usually will not require that over and above work be performed. If major repairs are needed, the aircraft will be sent to a depot.

DLAM 8200.1 does not describe specific inspection procedures for organizational or intermediate level contracts. For example, the

DLAM does not have a procedure for ensuring that periodic aircraft inspections are adequately performed. Periodic aircraft inspections are performed by maintenance personnel at intervals stated in the applicable technical order. The inspections are an important organizational level maintenance function because failure to adequately perform these inspections can result in flight mishaps and reduced aircraft availability.

Reviews of contractor systems for quality data evaluations and trend analyses are examples of additional Government quality assurance inspections performed at the organizational or intermediate level. Quality data evaluations and trend analyses are important maintenance functions and are included in all aircraft maintenance contract statements of work. These evaluations and trend analyses are important because they are used to spot unsafe conditions that could result in poor aircraft performance or mishaps. The DLAM 8200.1 does not include specific guidance for performing QA inspections of contractor data evaluations and trend analyses. The QA plans we reviewed did not include Government inspections of contractor systems for data evaluations and trend analyses. For example, at Whiting Field, the Navy became aware of the contractor's failure to implement an adequate system only after specific data were requested and the contractor could not provide the data.

The QA inspection procedures in DLAM 8200.1 are based on a single contract performance site, such as a contractor's plant or large Government facility. The procedures do not describe actions required for multiple site contracts, such as collecting QA data. The Army contract for fixed wing aircraft support for the C-12 aircraft was a multiple site contract. The contract provided for the support of 287 aircraft at 106 sites worldwide for all the Military Departments and for depot level maintenance at the contractor's facility in Selma, Mississippi. Navy and Air Force maintenance requirements were separate delivery orders under the basic Army contract. The scope of this contract made it impractical to assign full-time QA representatives at each site; therefore, QA oversight was not provided for the 106 operational sites. It was provided only at the depot level maintenance site, which had one QA representative.

The DLAM should describe specific QA procedures, such as site selection, for QA inspections on multiple site contracts. The DLAM does not require the administrative contracting office or procurement office to develop a joint QA plan with the Military Departments. This plan could have included a requirement for a mobile quality assurance team that would inspect aircraft on a systematic basis with cross-Service reporting of findings.

Implementation. We reviewed three Army contracts (see Appendix A). The Army requires that the provisions set forth in the DLAM 8200.1 be used when performing quality assurance actions on the three contracts. However, Army personnel did not follow the documentation requirements prescribed in DLAM 8200.1 for gathering the quality assurance data for the three contracts. For example, the quality assurance personnel at Fort Rucker used Department of Army Form 2404, "Equipment Inspection and Maintenance Worksheet," to record all QA inspections on that contract. This form was designed to record maintenance actions, not to record results of quality assurance inspections. Therefore, the quality assurance data required by DLAM 8200.1 were not documented.

The Air Force was not implementing the provisions of DLAM 8200.1 on organizational or intermediate level maintenance contracts. We reviewed two Air Force contracts and found that the Air Force did not consider the DLAM 8200.1 the applicable directive for performing quality assurance actions and had not implemented the methodology or system of documentation that the DLAM requires. The Air Force considered organizational or intermediate level maintenance contracts as base level services and required contract administration offices to implement Air Force Regulation (AFR) 70-9, "Base Level Service Contract Administration," August 17, 1988. This Directive provides general QA guidance and does not include specific procedures.

Quantitative Measures of Quality. Contracts for aircraft maintenance should include quantitative quality measures describing contract performance and quality requirements. Quantitative measures express basic indicators of quality as ratios or percentages, such as deferred maintenance to the number of aircraft (indicates the number of deferred maintenance items per aircraft). These measures provide objective, measurable evidence of quality and performance.

The Military Departments use quantitative measures of performance and quality for organic maintenance organizations to develop standards for, and to monitor, in-house organizations. The information systems used to collect data and calculate appropriate standards are well established. The information is routinely collected and reported for in-house maintenance organizations. The Military Departments can include similar measures of performance and quality in aircraft maintenance contracts and use existing systems to monitor contractor quality.

Award and Incentive Fees. Quantitative measures can be used as the basis for determining contract award and incentive fees to encourage contractors to improve the quality of work and

performance. Award and incentive fees are based on the contractor's ability to meet or exceed standards. DoDD 4155.1 encourages the use of award and incentive fees to obtain improved contractor quality. Three of the ten contracts reviewed did not include award or incentive fee provisions.

The Army maintenance services contract at Fort Rucker included award fee provisions based on performance standards, quality assurance inspection results, and supply standards. The Army believes the award fee structure of the Fort Rucker maintenance contract has contributed to an outstanding safety record because the contractor had a direct financial interest in quality. The contractor is awarded an increased fee or reduced fee based on its ability to meet or exceed the criteria established in the contract.

In contrast to the Fort Rucker contract was the Air Force Air Training Command (ATC) contract for maintenance services at the Columbus Air Force Base. This contract was a fixed-price contract without award or incentive fee provisions for performance or quality of maintenance. The contract also did not include quantitative measures of quality or performance. The contractor was unable to provide the services required and the quality of work done was poor. Flight mishaps occurred as a result of poor workmanship by contractor personnel. The Air Force was not able to obtain corrective actions because of poor contract provisions, and as a result, resolicited the contract at the end of the year.

We issued a memorandum to the Air Force ATC in March 1989 recommending changes to the solicitation for the follow-on contract at Columbus Air Force Base. We recommended the use of an award or incentive fee contract, including specific quantitative measures of quality in the contract and the requirement for the contractor to have a quality program that meets the standards described in the FAR. During the audit, the Air Force ATC made our recommended changes on this resolicitation and adopted this policy for subsequent aircraft maintenance contracts.

In 1985, the Navy awarded a contract for T-34/44 aircraft maintenance services. The contract did not include quantitative measures of quality and award or incentive fee provisions and the statement of work was poorly written. Inadequate contract provisions and the lack of an adequate quality assurance program contributed to the significant increase in the contract value during the period of FY 1985 to FY 1989.

This contract will end on September 30, 1990, and the Navy is preparing a solicitation for a follow-on contract to start on October 1, 1990. The draft statement of work and other contract provisions for this solicitation were similar to the current contract. We issued Quick-Reaction Report No. 89-086, "Final Quick-Reaction Report on Solicitation N68520-89-PR-50244 for T-34/44 Aircraft Maintenance Services," June 30, 1989, and recommended changing the draft solicitation and the solicitation evaluation process to include specific quality assurance provisions. The Naval Aviation Depot Operations Center (NADOC), the contracting activity, took corrective action during this audit to include quantitative measures of quality and performance and to include award or incentive fees in solicitations, as we recommended.

Solicitation Data. DoDD 4155.1 requires that contracts not be awarded to contractors with a poor quality history. The implementation of this policy requires that contractors submit adequate, comparable quality history data that the Government can evaluate. Military Department contracting policies and procedures require prospective contractors to submit quality history data for Government evaluation; however, these directives do not describe the specific data required. The data that contractors submitted often consisted of general statements that maintenance had been performed, but did not include quantitative quality data. The Military Departments did not validate the performance data submitted by contractors because the information was general and not verifiable.

The Navy awarded a contract for TA-4J maintenance services, based on performance data submitted by the contractor. The Navy was impressed by the contractor's claimed performance history, other related work experience, corporate involvement in transition support, understanding of management control measurements, and claimed use of performance indicators for overall performance.

The Navy has found that this contractor's management control, measurement of work, and accounting system controls had significant deficiencies, which contributed to cost increases on this contract. Additionally, the contractor's quality assurance program for records management needed significant improvements. If the Navy's Technical and Cost Evaluation Teams had performed evaluations based on verifiable, standard data, these deficiencies would have been disclosed during the solicitation evaluation.

NADOC recently implemented a policy requiring contractors to submit standard, specific quality history data. These data include basic performance data and quality information, such as

the number of customer complaints. Requirements for specific data will allow the Government to determine contractor quality based on comparable data.

Solicitations for aircraft maintenance services should clearly describe the quality history data to be submitted by contractors. These data should include specific quantitative measures based on actual contractor performance. Solicitation evaluation procedures must require independent verification of contractor quality data using Government sources in order to be effective.

Conclusion. Contracts for organizational or intermediate level aircraft maintenance in DoD can be improved by including standard performance measures, providing contractor incentives for good performance, and reviewing past contractor performance on other Government contracts. These improvements should be formalized into DoD policy specifically written for organizational or intermediate level maintenance. The quality assurance inspection procedures for these contracts were not adequate. The DLAM 8200.1 describes inspection procedures for depot level maintenance contracts and not organizational or intermediate level maintenance contracts. The DLAM 8200.1 needs to include specific QA procedures for organizational and intermediate level maintenance contracts.

RECOMMENDATIONS FOR CORRECTIVE ACTION

1. We recommend that the Assistant Secretary of the Army (Installations and Logistics); the Assistant Secretary of the Navy (Shipbuilding and Logistics); the Assistant Secretary of the Air Force (Readiness); and the Director, Defense Logistics Agency, establish a joint task force to develop and publish a chapter or appendix to the Defense Logistics Agency Manual 8200.1, "Procurement Quality Assurance," that describes the methodology for performing quality assurance inspections on organizational or intermediate level aircraft maintenance contracts.

2. We recommend that the Assistant Secretary of the Army (Installations and Logistics), the Assistant Secretary of the Navy (Shipbuilding and Logistics), and the Assistant Secretary of the Air Force (Readiness) issue a policy requiring that solicitations and contracts for aircraft maintenance services:

a. Include standard quantitative measures of quality and performance.

b. Include specific contractual provisions for obtaining contractor conformance, such as award and incentive fee provisions for meeting performance, quality, and cost standards.

c. Require contractors to submit quality history data based on these quantitative measures for review during the solicitation review process.

MANAGEMENT COMMENTS

The Director, Defense Logistics Agency, concurred with the audit recommendations, but did not concur with the finding. The Director estimated corrective actions would be completed by December 1, 1990. The Director stated that the DLA Quality Assurance Representatives were evaluating contracts using the current Defense Logistics Agency Manual 8200.1, "Procurement Quality Assurance," and that the contracts included MIL-Q-9858A or a standard inspection clause.

AUDIT RESPONSE TO MANAGEMENT COMMENTS

The Director's comments on the recommendation are responsive; however, the Director nonconcurred with the audit finding. Based on subsequent discussions with DLA, we believe the nonconcurrence was caused by a misunderstanding of the finding discussion of the Army contract for C-12 aircraft maintenance services. We have clarified our discussion of this contract to more clearly state that there was no quality assurance plan and that systematic quality assurance actions were not performed for the organizational level maintenance services portion of this contract.

B. Reporting Nonconforming Contractors and Quality History Data

FINDING

There was not a uniform system for reporting contractor quality history data on maintenance services contracts. This situation occurred because DoDD 4155.1, "Quality Program," did not clearly state the requirement for a system of reporting quality history data for maintenance services. As a result, there was no method for independently reviewing contractor quality statements during the solicitation evaluation process; in two instances, a contractor was selected to work on two contracts without Government knowledge of the contractor's poor performance on other Government contracts. Also, initial quality assurance plans were not adjusted to increase quality assurance inspections due to poor performance on other contracts.

DISCUSSION OF DETAILS

Maintenance Systems. At the time of the audit, the Military Departments collected maintenance information for base level maintenance organizations. The system used to collect data was different for each Military Department, but the data collected were similar. The data collected provided management information on the quality of the maintenance organizations' performance. For example, the Air Force Air Training Command used a data base that collected maintenance data that were then compared to standards established by the Air Force Air Training Command. This information was collected for in-house and contractor run maintenance organizations. The information in this system was not used to evaluate contractors' responses to solicitations and was not disseminated to other Air Force commands. We believe that the Military Departments' systems could be modified so that they could collect contractor quality history data.

Quality History Reporting. DoDD 4155.1 states that DoD components shall ensure that contracts are not awarded to contractors with a history of providing unsatisfactory products or services. The DoDD requires that quality history data be maintained for this purpose. The DoDD further requires that a product quality deficiency reporting (PQDR) and data feedback system be established and maintained, but does not specifically state that service contracts be included in the feedback system. This PQDR system provides for uniform cross-Service reporting of defective products.

The Military Departments and the Defense Logistics Agency (DLA) have developed a PQDR system, which reports quality history on materials. This system is generally not used to report on maintenance service contracts. One contract, at Fort Rucker, reported contractor deficiencies in this system, but the

information reported was not accurate and was not effectively used. The Military Departments and DLA were not using the PQDR system nor had they developed individual systems for collecting quality history data for contractors performing aircraft maintenance and other services.

Solicitation Evaluations. In the absence of an effective system for collecting and reporting quality history data, contracting officials were forced to rely on data supplied by prospective contractors. Solicitations did not require the submission of standard, specific quality history data, so general information was requested. Consequently, the information that contractors presented did not provide an adequate basis for evaluating quality of performance. Contracting officials could not easily compare information from different contractors and could not verify the information submitted.

In two instances, contracts were awarded to a contractor who had not satisfactorily performed on another Government contract. The contractor's response to the Government's solicitations for the two contracts disclosed that the contractor had worked on prior contracts, but did not indicate any performance problems. In both instances, the solicitation evaluation team awarded the maximum points assigned for quality. Although the contractor may have been awarded the maximum points for other reasons, such as outstanding quality program management, contracting officials were not aware of problems with the quality of the contractor's performance.

Quality Assurance Inspections. As required by DLAM 8200.1, quality assurance inspections should be adjusted based on contractor quality history. The plans we reviewed were not adjusted because quality history data were not available. At one location, when the contract for services was awarded to a new contractor, the contract administration office continued to use the surveillance plan used to evaluate the previous contractor. It did not adjust the plan for the new contractor's poor performance on another Government contract because it was not aware of the contractor's poor performance history.

Conclusion. A system has not been established to accumulate and report historical quality data for service contracts. The Military Departments have data collection systems that report information on in-house maintenance organizations. These systems could be used to collect and report contractor quality history data on organizational or intermediate level maintenance contracts. The data would be valuable in determining the suitability of the contractor for future contracts.

RECOMMENDATIONS FOR CORRECTIVE ACTION

1. We recommend that the Deputy Assistant Secretary of Defense (Total Quality Management) and the Assistant Secretary of Defense (Production and Logistics) change Department of Defense Directive 4155.1, "Quality Program," to clearly state the requirement for a uniform quality data reporting system for service contracts.

2. We recommend that the Assistant Secretary of the Army (Installations and Logistics); the Assistant Secretary of the Navy (Shipbuilding and Logistics); the Assistant Secretary of the Air Force (Readiness); and the Director, Defense Logistics Agency, direct the joint development of a system for collecting aircraft maintenance contractors' quality history and for reporting nonconforming contractors.

MANAGEMENT COMMENTS

The Director, Defense Logistics Agency, concurred with the audit recommendations, but did not concur with the audit finding. The estimated completion date for corrective action is December 1, 1991. The Director stated that DLA did have a system for reporting quality data at the existing facilities under DLA cognizance.

AUDIT RESPONSE TO MANAGEMENT COMMENTS

The Director has agreed to take corrective actions and is responsive to the intent of the recommendation, but has nonconcurred with the finding. DLA did have a system for reporting quality data at <u>each</u> location under DLA's cognizance, as stated in the Director's response. However, our finding discusses a uniform system for cross-Service reporting of quality data similar to the current PQDR system and not the management information system at each contractor location. In subsequent discussions with DLA, we have clarified this condition.

CONTRACTS REVIEWED

Contract Number	Contract Administration	$ Value (in thousands)
N68520-85-D-0033	Chief, Naval Air Training	$217,213
N68520-86-D-0101	Chief, Naval Air Training	98,000
N68520-87-C-0015	Chief, Naval Air Training	60,812
N68520-85-D-9052	DCASR[1]-Los Angeles	9,000
DABT01-88-C-3000	Fort Rucker, Air Logistics Management Division	385,770
DAKF48-87-C-0007	Fort Hood	6,933
DAAJ09-87-D-A003	DCASMA[2]-Birmingham	243,500
F29651-88-C-0007	Holloman Air Force Base	104,393
F41689-88-C-0252	Columbus Air Force Base	53,958
F34601-88-D-0144	Fort Hood	2,941
Total Value		$1,182,520

1/ Defense Contract Administration Services Region

2/ Defense Contract Administration Services Management Area

DEFENSE LOGISTICS AGENCY
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DLA-CI

14 NOV 1989

MEMORANDUM FOR ASSISTANT INSPECTOR GENERAL FOR AUDITING, DEPARTMENT OF DEFENSE

SUBJECT: Draft Report on the Audit of the Management and Administration of Quality Assurance for Aircraft Maintenance Contracts (Project No. 9SA-0002)

In response to your memorandum dated 12 September 1989, enclosed are our comments to the draft report. The enclosed comments have been approved by Mr William J. Cassell, Comptroller, Defense Logistics Agency.

FOR THE DIRECTOR:

Reathea E. Holmes

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REATHEA E. HOLMES
Chief, Internal Review Division
Office of Comptroller

TYPE OF REPORT: AUDIT DATE OF POSITION: 14 NOV 89

PURPOSE OF INPUT: INITIAL POSITION

AUDIT TITLE AND NO.: Management and Administration of Quality Assurance for Aircraft Maintenance Contracts (Project No. 9SA-0002)

FINDING A: Contract Quality Assurance Provisions and Quality Assurance Inspection Program. Quality Assurance (QA) for aircraft organizational or intermediate level maintenance contracts was not effective. QA inspections by contract administration offices were not adequately planned, plans were not implemented, and systematic quality history data evaluations were not performed. QA programs were not effective because solicitations and contracts did not include adequate quality provisions such as contractor quality program requirements and quantitative measures of quality or award and incentive fees. Also, the solicitation evaluation review process did not include a review of contractor quality history data, and specific QA inspection procedures for aircraft organizational and intermediate level maintenance contracts had not been developed. The lack of adequate contract QA provisions contributed to overall increased risk of flight mishaps, reduced aircraft availability, failure to obtain the services contracted for, and contract cost growth of over one hundred million dollars during the past four years.

DLA COMMENTS: Nonconcur with the finding as it pertains to the two facilities audited and which are under the cognizance of DLA. DLA has no comments as it pertains to the finding in the 11 facilities under the cognizance of the Military Services. The two DLA facilities evaluated during the audit did have well defined and effective Government QA programs established. One facility required MIL-Q-9858A and the other a standard inspection clause. The assigned DLA Quality Assurance Representative (QAR) had established an effective Government QA program and was utilizing the quality data evaluation procedures of Defense Logistics Agency Manual 8200.1, "Procurement Quality Assurance," in an effective manner.

MONETARY BENEFITS: None.
DLA COMMENTS:
ESTIMATED REALIZATION DATE:
AMOUNT REALIZED:
DATE BENEFITS REALIZED:

ACTION OFFICER: Col. Paul L. Williams, USAF, DQMSO, (AV)697-6640

DLA APPROVAL: William J. Cassell

FORMAT 2 OF 4

TYPE OF REPORT: AUDIT DATE OF POSITION: 14 NOV 89

PURPOSE OF INPUT: INITIAL POSITION

AUDIT TITLE AND NO.: Management and Administration of Quality Assurance for Aircraft Maintenance Contracts (Project No. 9SA-0002)

RECOMMENDATION A.1.: We recommend that the Assistant Secretary of the Army (Installations and Logistics); the Assistant Secretary of the Navy (Shipbuilding and Logistics); the Assistant Secretary of the Air Force (Readiness), and the Director, Defense Logistics Agency, establish a joint task force to develop and publish a chapter or appendix to the Defense Logistics Agency Manual 8200.1, "Procurement Quality Assurance," that describes the methodology for performing QA inspections on organizational or intermediate level aircraft maintenance contracts.

DLA COMMENTS: Concur. The establishment of a task force to review current methodology and determine if changes in existing policy/guidance as it relates to organizational/maintenance service type contracts could result in improved QA performance. This comment is based upon DLA's lack of knowledge of the policy/guidance used by the Military Services. In the two DLA facilities reviewed by the IG, effective policy/guidance was in place.

DISPOSITION:
(X) Action is ongoing; Final Estimated Completion Date: 1 Dec 90
( ) Action is considered complete.

MONETARY BENEFITS: None.
DLA COMMENTS:
ESTIMATED REALIZATION DATE:
AMOUNT REALIZED:
DATE BENEFITS REALIZED:

ACTION OFFICER: Col. Paul L. Williams, USAF, DQMSO, (AV) 697-6640

DLA APPROVAL: William J. Cassell

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FINDING B: Reporting Nonconforming Contractors and Quality History Data. There is not a uniform system for reporting contractor quality history data on maintenance services contracts. This situation occurred because DoDD 4155.1, 'Quality Program,' did not clearly state the requirement for a system of reporting quality history data for maintenance services. As a result, there is no method for independently reviewing contractor quality statements during the solicitation evaluation process; in two instances a contractor was selected to work on two contracts without Government knowledge of the contractor's poor performance on other Government contracts. Also, initial QA plans were not adjusted to increase QA inspections due to poor performance on other contracts.

DLA COMMENTS: Nonconcur, to the extent that of the thirteen facilities audited, the two DLA facilities under DLA cognizance, do have existing Management Information Systems (MIS) used by the assigned DLA Quality Assurance Representative (QAR) that track the contractor's performance as it relates to the QA program of the Government. Information such as the number of defective (Government) observations observed during product and/or procedures evaluations are recorded along with the total time expended by the Government QAR to obtain corrective actions for deficiencies recorded by the Government. This information along with other quality data is analyzed by the QAR periodically and allows for appropriate adjustments in the contract quality assurance program. The DLA QA performance data on DoD contractors is readily available to the procuring activities upon request. The assigned DLA QAR adjusts the Government's QA program based on a periodic analysis of the data we collect on the contractor's performance as well as our own in-house generated data.

MONETARY BENEFITS: None.
DLA COMMENTS:
ESTIMATED REALIZATION DATE:
AMOUNT REALIZED:
DATE BENEFITS REALIZED:

ACTION OFFICER: Col. Paul L. Williams, USAF, DQMSO, (AV) 697-6640

DLA APPROVAL: William J. Cassell

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RECOMMENDATION NUMBER B.2.: We recommend that the Assistant Secretary of the Army (Installations and Logistics), the Assistant Secretary of the Navy (Shipbuilding and Logistics), the Assistant Secretary of the Air Force (Readiness), and the Director, Defense Logistics Agency, direct the joint development of a system for reporting and collecting aircraft maintenance contractors' quality history and nonconforming contractors.

DLA COMMENTS: Concur. A review of existing/proposed systems for data collection on DoD contractors could lead to establishment of a program which would be available to purchasing offices to assist them in making procurement decisions based on contractors quality history. This comment is based upon our lack of knowledge relating to the systems used by the services. There was a system in place for collecting data in the 2 facilities audited and which are under the cognizance of DLA.

DISPOSITION:
(X) Action is ongoing; Final Estimated Completion Date: 1 Dec 91
( ) Action is considered complete.

MONETARY BENEFITS: None.
DLA COMMENTS:
ESTIMATED REALIZATION DATE:
AMOUNT REALIZED:
DATE BENEFITS REALIZED:

ACTION OFFICER: Col. Paul L. Williams, USAF, DQMSO, (AV) 697-6640

DLA APPROVAL: William J. Cassell

REPORT OF POTENTIAL MONETARY AND OTHER BENEFITS RESULTING FROM AUDIT

Recommendation Reference	Description of Benefits	Amount and/or Type of Benefit
A.1.	Improvement in the methodology for performing quality assurance on Aircraft Maintenance services contracts.	Nonmonetary benefit of performing systematic and uniform reviews of contractor providing similar services.
A.2.	Improvement in solicitations and contracts by including specific quality assurance provisions.	Nonmonetary benefit of issuing contracts with incentives for quality and performance.
B.1. and B.2.	Improvement in policy and procedures will result in the identification of contractors who do not meet contracted requirements.	Nonmonetary benefit of providing higher visibility of contractors who have not performed satisfactorily on prior contracts.

ACTIVITIES VISITED OR CONTACTED

Office of the Secretary of Defense

Assistant Secretary of Defense (Production and Logistics)
Deputy Assistant Secretary of Defense (Total Quality Management)
Deputy Assistant Secretary of Defense (Logistics)

Department of the Army

Aviation Logistics Office, Deputy Chief of Staff for Logistics
Commander, Forces Command
Commander, Training and Doctrine Command

Department of the Navy

Commander, Naval Air Systems Command
Commanding Officer, Naval Aviation Depot Operations Center
Chief, Naval Air Training Command

Department of the Air Force

Director, Contracting and Manufacturing Policy, Office of the Assistant Secretary of the Air Force (Acquisition)
Chief, Maintenance and Acquisition Logistics Policy Division, Deputy Chief of Staff (Logistics and Engineering)

Other Defense Activities

Director, Defense Logistics Agency

AUDIT TEAM MEMBERS

Donald E. Reed, Director, Logistics Support Directorate
Thomas Gimble, Program Director
Walter Loder, Project Manager
Sandra Armstrong, Team Leader
James Beach, Team Leader
Evelyn Walters, Auditor
Fred Rossbach, Auditor
Vickie Nguyen, Auditor
Carla Vines, Auditor
Robert Greer, Auditor

FINAL REPORT DISTRIBUTION

Office of the Secretary of Defense

Deputy Assistant Secretary of Defense (Total Quality Management), Assistant Secretary of Defense (Production and Logistics), Washington, DC
Deputy Assistant Secretary of Defense (Logistics), Assistant Secretary of Defense (Production and Logistics), Washington, DC

Department of the Army

Secretary of the Army
Assistant Secretary of the Army (Financial Management)
Deputy Chief of Staff for Logistics, Washington, DC
Army Aviation Systems Command, St. Louis, MO

Department of the Navy

Secretary of the Navy
Assistant Secretary of the Navy (Financial Management)
Naval Air Systems Command, Washington, DC
Chief, Naval Air Training, Corpus Christi, TX
Naval Air Depot Operations Center, Patuxent, MD

Department of the Air Force

Secretary of the Air Force
Assistant Secretary of the Air Force (Financial Management and Comptroller)
Deputy Chief of Staff (Logistics and Engineering), Washington, DC
Air Force Logistics Command, Wright-Patterson Air Force Base, OH

Defense Logistics Agency

Director, Defense Logistics Agency
Defense Contract Administration Services Region-Atlanta, GA
Defense Contract Administration Services Region-Los Angeles, CA
Defense Contract Administration Services Management Area-Reading, PA

FINAL REPORT DISTRIBUTION (Continued)

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