Audit Report

OFFICE OF THE INSPECTOR GENERAL

DEFENSE CONTRACT MANAGEMENT COMMAND MANAGEMENT OF QUALITY ASSURANCE RESOURCES

Report No. 95-166

April 11, 1995

Department of Defense

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Acronyms

DCMAO	Defense Contract Management Area Operations
DCMC	Defense Contract Management Command
DCMD	Defense Contract Management District
DLA	Defense Logistics Agency
DLAM	Defense Logistics Agency Manual
DPRO	Defense Plant Representative Office
FAR	Federal Acquisition Regulation
IQUE	In-Plant Quality Evaluation
PROCAS	Process Oriented Contract Administration Services

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

April 11, 1995

MEMORANDUM FOR DIRECTOR, DEFENSE LOGISTICS AGENCY

SUBJECT: Report on the Defense Contract Management Command Management of Quality Assurance Resources (Report No. 95-166)

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

DoD Directive 7650.3 requires that all recommendations be resolved promptly. We request that the Defense Logistics Agency provide additional comments on the revised recommendations by June 12, 1995. See the table at the end of each finding for the specific requirements for comments.

Questions on this audit should be directed to Mr. Salvatore D. Guli, Audit Program Director, at (703) 604-9500 (DSN 664-9500) or Mr. C. J. Richardson, Audit Project Manager, at (703) 604-9582 (DSN 664-9582). Copies of this report will be distributed to the organizations listed in Appendix H. The audit team members are listed inside the back cover.

David K. Steensma

David K. Steensma
Deputy Assistant Inspector General
for Auditing

Office of the Inspector General, DoD

Report No. 95-166 **April 11, 1995**
(Project No. 3CF-0071)

Defense Contract Management Command Management of Quality Assurance Resources

Executive Summary

Introduction. The Defense Contract Management Command (the Command) personnel involved in quality assurance oversight represent nearly 35 percent of the Command's contract administration workforce. As of October 1994, the Command employed 5,567 quality assurance specialists, at a cost of $295.2 million. Since 1991, the Command has reduced the number of quality assurance specialists about 22 percent from the 1991 total of 7,125. Since 1990, the Command has attempted to convert to process-oriented quality assurance through the In-Plant Quality Evaluation program, and more recently in 1994, by implementing the Process Oriented Contract Administration Services program. Process Oriented Contract Administration Services methodology and teaming concepts are not consistent with, and present problems for, the traditional methods the Command uses to determine personnel levels. Resourcing quality assurance personnel needs is a problem made more difficult by the cultural organizational changes presented by the new program.

Objectives. Our primary audit objectives were to evaluate the Command's policies and procedures for managing quality assurance resources and the bases for determining appropriate personnel levels. Additionally, we were to evaluate compliance with previous audit recommendations and applicable internal controls. We eliminated the announced audit objective to evaluate the success of programs for training quality assurance personnel because of time constraints.

Audit Results. The Command did not effectively manage quality assurance specialists to adequately implement the In-Plant Quality Evaluation program. After 4 years, quality assurance specialists performed detail examinations of only 5 percent of the 1,818 manufacturing processes identified at 13 audit sites. The audit did not attempt to identify nonconforming products from the 13 audit sites. However, the Command lacked the evaluation and supervisory processes needed to establish accountability for implementing quality assurance actions under the In-Plant Quality Evaluation and the Process Oriented Contract Administration Services programs. Further, the Command cannot ensure that the products accepted were produced under reliable processes that would consistently produce a conforming product without detailed examination of the manufacturing processes (Finding A).

The Command did not establish an effective method to determine the number of quality assurance personnel needed to accomplish the contract quality assurance program. As a result, the Command did not have an adequate basis for estimating the staffing required for quality assurance in a process-oriented quality assurance environment (Finding B).

Internal Controls. Internal controls were not adequate to hold Command management and staff accountable for effective implementation of the In-Plant Quality Evaluation program. Also, internal controls were not adequate for documenting workload activities as a basis for staffing levels to provide adequate quality assurance surveillance of DoD contracts. We consider those internal control weaknesses to be material. In addition, the Command had an insufficient basis for reporting that quality assurance was a low-risk area under the DoD Internal Management Control Program. See Part I for the internal controls reviewed and Part II for details of the weaknesses.

Potential Benefits of Audit. Implementation of the recommendations will result in better management control and more efficient use of quality assurance resources. We are unable to quantify the monetary benefits that could be realized by improving controls because the benefit of better quality weapons and equipment is undeterminable. Appendix F lists the potential benefits resulting from the audit.

Summary of Recommendations. We recommend that the Defense Logistics Agency (DLA) establish a system of accountability and measurement over implementation of process-oriented quality assurance. We further recommend that DLA establish standard performance plans for quality assurance specialists and supervisors to hold them responsible for fully implementing specific process-oriented quality assurance functions. In addition, we recommend that quality assurance specialists document the estimated work required to perform process-oriented quality assurance on each contract assigned, and that the Command districts use those work estimates as the basis for future budget requests.

Management Comments. DLA concurred with recommendations to define critical manufacturing processes and to develop quality assurance manpower estimates and corresponding budget estimates based on documented quality assurance workload. DLA did not concur with the recommendations to establish a system of accountability for quality assurance specialists and their supervisors to fully implement process oriented quality assurance. Also, DLA did not concur with recommendations designed to measure performance or to base estimated workload on actual quality assurance tasks.

Audit Response. We consider the DLA comments to be partially responsive. However, we believe that if DLA establishes new quality assurance programs, it should hold quality assurance specialists and their supervisors accountable for implementing the programs. DLA needs to measure the implementation and the results of the new process-oriented quality assurance programs. As a result of DLA comments, we revised seven recommendations. We deleted specific workload-estimating reporting requirements and added a requirement to establish a system for informing the Commander, Defense Contract Management Command, of the specific contracts that quality assurance specialists either would not be able to or were not able to support with an adequate level of quality assurance. We request that DLA provide additional comments to the final report by June 12, 1995.

Table of Contents

Executive Summary i

Part I - Introduction

Background 2
Objectives 3
Scope and Methodology 3
Internal Controls 4
Prior Audits and Other Reviews 5
Other Matters of Interest 6

Part II - Findings and Recommendations

Finding A. Managing the Quality Assurance Workforce 8
Finding B. Quality Assurance Staffing 24

Part III - Additional Information

Appendix A. Glossary of Terms 34
Appendix B. Processes Identified and Proofed 36
Appendix C. Quality Assurance Workload Review 39
Appendix D. Summary of Prior Audits and Other Reviews 41
Appendix E. Defense Contract Management District Staffing Methodologies and Cost Information Systems 43
Appendix F. Summary of Potential Benefits Resulting From Audit 47
Appendix G. Organizations Visited Or Contacted 50
Appendix H. Report Distribution 51

Part IV - Management Comments

Defense Logistics Agency Comments 54

Part I - Introduction

Background

The Federal Acquisition Regulation (FAR) part 46, "Quality Assurance," provides policies to ensure that supplies acquired through Government contracts conform to the contract's quality requirements. The responsibility for quality is divided between the contractor and the Government. The contractor is responsible for controlling the quality of supplies during production and offering to the Government for acceptance only those supplies that conform to contract requirements. Government agencies are responsible for ensuring that supplies offered by contractors meet contract requirements.

Quality Assurance Management in DoD. The Defense Contract Management Command (DCMC), a subordinate command of the Defense Logistics Agency (DLA), provides contract quality assurance oversight as part of the contract administration function for DoD contracts. Organizationally, DCMC manages contract administration in three Defense contract management districts (DCMDs) to support DoD organizations in the continental United States. Contract administration is principally conducted at Defense contract management area operations (DCMAOs) for a number of medium-to-small size contractors and at Defense plant representative offices (DPROs) for the largest Defense contractors.

A major portion of the contract administration function is related to quality assurance. DCMC provides quality assurance for supplies accepted at the source (the contractor's plant) through the oversight efforts of quality assurance specialists. Quality Assurance Specialist are organizationally assigned to DPRO residencies at the site of large contractors, to the DCMAO residencies at the sites of smaller contractors, or as non-resident Quality Assurance Specialist for contractors who have only a few DoD contracts requiring acceptance at the source of supply.

Quality Assurance through Defect Detection. Before 1990, Quality Assurance Specialist performed in-plant quality assurance functions, largely by detecting and rejecting nonconformances produced by contractors. Primary policy was contained in Defense Logistic Agency Manual 8200.1, "Defense In-Plant Quality Assurance," August 30, 1976. Quality Assurance Specialist concentrated on using procedural reviews and audits and product inspection to detect and avoid the acceptance of nonconforming material. Before 1990, each Military Departments' plant representative offices performed quality assurance in a manner unique to the Military Department and in accordance with Military Department regulations and policies.

Consolidation of Contract Administrative Services. In July 1989, the Secretary of Defense consolidated all contract administrative services under the direction of DCMC. Following the consolidation of the Military Department's plant representative offices and Defense contract administration services regions, DLA initiated a process-oriented approach to quality assurance through the In-Plant Quality Evaluation program (IQUE). In 1992, DCMC developed

the concept of including IQUE in all parts of contract administration through the Process Oriented Contract Administration Services program (PROCAS). PROCAS was initiated in all of the DPROs by 1994. Under IQUE, DCMC primarily relies on the contractor's quality control system for ensuring that supplies meet contract requirements.

Quality Assurance Resources. As of October 1994, DCMC employed 6,829 people assigned to the three continental United States DCMDs to perform the quality assurance mission. Of the 6,829 people assigned, 5,567 were quality assurance specialist. In FY 1993, quality assurance specialists performed quality assurance functions at contractor sites for 190,383 contracts, valued at $103.5 billion. The cost of the 6,829 quality assurance personnel was $415 million.

Glossary of Terms. Appendix A describes the terms associated with process-oriented quality assurance such as process, critical process, process proofing, reproofing processes, product audits, product quality deficiency investigations and nonconforming materials review.

Objectives

The primary audit objectives were to evaluate DCMC policies and procedures for managing quality assurance resources and the bases for determining appropriate personnel levels. Additionally, we evaluated compliance with previous audit recommendations and applicable internal controls. We eliminated the announced objective to evaluate the success of programs for training quality assurance personnel because of time constraints.

Scope and Methodology

We reviewed DCMC implementation of process-oriented quality assurance applied to contracts closed during FYs 1993 and 1994. We reviewed the documentation supporting the quality assurance process evaluations for 27 programs at 9 quality assurance residencies within 6 DCMAOs and 4 DPROs, within the 3 DCMDs: Northeast, West, and South (Appendix B).

We reviewed the workload documentation methods of quality assurance requirements, as they relate to staffing levels, for 104 contracts, valued at $10.8 billion, assigned to 10 quality assurance residencies in 6 DCMAOs and 3 DPROs (Appendix C). Appendix G lists the organizations visited or contacted.

Source of Audit Information. We did not rely on computer-processed data or use statistical sampling procedures to achieve the audit objectives. We obtained our audit information primarily from examination of DCMC policies, procedures, and management reports; from review of contract quality assurance requirements; from analysis of contractor processes identified and proofed since 1989; and from interviews with quality assurance personnel throughout DCMC.

Audit Period and Standards. This program audit was conducted from September 13, 1993, through August 19, 1994, in accordance with auditing standards issued by the Comptroller General of the United States as implemented by the Inspector General, DoD. Accordingly, the audit included tests of internal controls considered necessary.

Internal Controls

Internal Controls Reviewed. We evaluated the internal controls for assuring that DCMC appropriately managed quality assurance resources and used definite, measurable methods for determining appropriate quality assurance staffing levels. We evaluated the internal controls for the implementation of IQUE and PROCAS as they apply to quality assurance actions.

From 1989 to 1992, DLA reported nonconforming material in the DoD Supply System as a material weakness as part of the Federal Managers' Financial Integrity Act Annual Statement of Assurance in accordance with DoD Directive 5010.38, "Internal Management Control Program," April 14, 1987. One of the corrective actions was to implement IQUE. The DLA Internal Management Control Plan for FYs 1993 through 1997 included instructions for DCMDs to perform process risk assessments for each assessable unit, including IQUE.

Adequacy of Internal Controls. We reviewed the DCMC implementation of the DoD Internal Management Control Program. The audit identified material internal control weaknesses as defined by DoD Directive 5010.38. DCMC did not have effective internal controls for the management of quality assurance specialists, the appropriate level of quality assurance resourcing, and accountability for implementing quality assurance actions under IQUE and PROCAS. DCMC lacked methods for evaluating and measuring the implementation of IQUE and PROCAS as related to quality assurance actions. The DCMDs did not adequately assess the success of IQUE and PROCAS. The assessments did not evaluate progress in the effort toward the identification and proofing of critical processes.

The overall lack of oversight, responsibility, and accountability for DCMC Quality Assurance Specialist' implementation of IQUE and PROCAS and the DCMC lack of a valid basis for funding and determining the staffing needed for quality assurance requirements constituted material internal control weaknesses. Recommendations A.2, A.3., A.4., A.5., B.2., B.3., B.4., B.6. and B.7. in Part II of the report, if implemented, will improve DLA implementation of

process oriented quality assurance. We could not determine the potential monetary benefits that will result from implementing the recommendations because the benefits will result from future actions to improve the DCMC management of quality assurance resources. Appendix F summarizes the potential benefits of the audit. A copy of the report will be provided to the senior official responsible for internal controls in DLA.

Prior Audits and Other Reviews

This report is the seventh in a series of reports published since 1990 by the Inspector General, DoD, regarding quality assurance in DoD. The three most recent and relevant reports are summarized below, and Appendix D provides summaries for the other four published reports.

Inspector General, DoD, Report No. 95-044, "Statistical Process Control at McDonnell Douglas Helicopter Systems," November 28, 1994. The report states that McDonnell Douglas Helicopter has not fully implemented a contractually required statistical process control system at its Mesa, Arizona, facility. The resident DPRO did not provide continuous oversight over the implementation of the statistical processing control system. As a result, DoD expended at least $4.4 million in statistical process control system funds on the AH-64 Apache attack helicopter contracts without fully gaining the benefits derived from the statistical process control system. The report recommended that DCMC issue written internal control objectives and verification techniques to substantiate the inclusion and administration of contractually required statistical process control systems. DLA concurred with the recommendation and took action to specifically focus on McDonnell Douglas Helicopter's statistical process control implementation process.

Inspector General, DoD, Report No. 94-INS-12, "Inspection of the Defense Contract Management Command", September 29, 1994. The inspection report objective was to assess the implementation of the Defense Management Review Decision 916, published in 1989, to consolidate contract administration services under DLA. Although DLA had made significant progress in achieving the goals of Defense Management Review Decision 916, improvements were needed in three areas: manpower management, program support, and property oversight. DCMC does not have a consistent process to review and project staffing requirements based upon quantitative and qualitative workload measurement techniques. The inspection report recommended that the Commander, DCMC, establish consistent manpower requirements analysis methodologies so that comparable functions in various parts of DCMC are subjected to the same analysis. DCMC concurred with the recommendation and noted it was developing a workload forecast model to project its workload and a staffing assistance model to quantify the relationship between workload indicators and staffing requirements. The estimated completion date is September 30, 1995.

Inspector General, DoD, Report No. 94-079, "DoD Component Implementing Action Plans for Improving the Quality of Spare Parts," April 12, 1994. The report states that the initial action plans the DoD Components prepared in 1990 were short-term measures designed to address long-standing problems. While DoD Components continued to develop initiatives to improve the quality of spare and repair parts, implementing action plans were not effectively used for managing quality programs. The DoD Component action plans did not include the bases for holding management officials accountable for achieving quality program results. As a result, DoD Components did not have performance measures, milestones, and feedback mechanisms to measure the effectiveness of the quality program. The report states that DCMC routinely describes improvements in its methods for obtaining improved quality from contractors. However, the DLA Action Plan does not incorporate plans for measuring the progress of DoD contractors in achieving continuous improvement. The report recommended that DLA measure the extent to which each DoD contractor's quality control processes are reviewed and validated. DLA nonconcurred with the recommendation, stating that the recommended activity-based measure will not significantly contribute to improved quality. PROCAS will increase DCMC effectiveness in reducing nonconformances. One measure of effectiveness related to PROCAS is to determine whether DCMC is selecting processes for improvement that have the most impact on the quality of the product. This process identification and selection is done in the risk-assessment process conducted at each contract administration office. Another measure of effectiveness is the process performance, product quality levels, or both at each facility.

The DLA response was accepted on the basis that Inspector General, DoD, Report No. 95-166, "Defense Contract Management Command's Management of Quality Assurance Resources," would evaluate the effect of PROCAS and process performance on quality assurance effectiveness.

Other Matters of Interest

Corrective Actions Taken. DCMAO Clearwater, Florida, in response to the audit, initiated several actions to improve the implementation of IQUE. DCMAO Clearwater issued a letter to all quality assurance personnel identifying the need to improve the documentation supporting product audits, process proofings and reproofings, and corrective action measures taken with the contractor. The management at DCMAO Clearwater emphasized clear, complete, and concise recording of all activities and tasked quality assurance supervisors to provide assistance and guidance to quality assurance personnel to achieve these results. The DCMAO Clearwater also established a format to inform its customers of plans to reproof processes. The DCMAO Clearwater early response to problems identified during the audit represented timely, positive steps toward improving the overall management of quality assurance resources.

Part II - Findings and Recommendations

Finding A. Managing the Quality Assurance Workforce

DCMC did not effectively manage the quality assurance workforce. Quality assurance specialists and supervisors at all of the 13 audit sites did not effectively implement the In-Plant Quality Evaluation or the Process-Oriented Contract Administration Services programs (IQUE and PROCAS). Specifically, these conditions occurred because:

o DCMC did not adequately prioritize the need to identify critical manufacturing processes for IQUE and PROCAS;

o DCMC did not hold quality assurance specialists accountable for implementing either IQUE or PROCAS;

o DCMC did not hold supervisors responsible for reviewing and evaluating the identification of, and proofing of, processes;

o DCMC did not effectively follow-up on a 1992 action plan to improve the IQUE program; and

o DCMC did not report realistic assessments of the risk associated with IQUE in its Internal Management Control Plan.

Consequently, neither IQUE nor PROCAS provided adequate assurance that the products the Government accepted were produced under a reliable process that would consistently produce a conforming product. (The audit did not attempt to determine if the suppliers at the 13 audit sites produced nonconforming products.) In addition, quality assurance specialists did not take advantage of process-oriented quality assurance to establish a basis for substituting process proofing and product audits for more labor-intensive and expensive mandatory inspections.

Background

FAR part 46 states that the contract administration office shall develop and apply efficient procedures for performing Government contract quality assurance actions. FAR part 46 also requires that the contract administration office maintain suitable records reflecting the nature of Government contract quality assurance actions and decisions regarding the acceptability of the products, the processes, and the requirements, as well as suitable records of action taken to correct defects.

DLA Quality Assurance Guidance. DLA Manuals (DLAM) 8200.5, "In-Plant Quality Evaluation (IQUE)," September 8, 1992, and 8000.5, "One Book," part II, chapter 2, "Process Oriented Contract Administration Services

(PROCAS)" April 3, 1995, contain the day-to-day policies and procedures for DCMC personnel responsible for administering Government contract quality assurance and accepting products from suppliers.

DCMC provides quality assurance specialists guidance in DLAMs 8200.5 and 8000.5 on how to proof the adequacy of a contractor's processes. Quality assurance specialists review and assess the process to determine whether the contractor adequately employs the following factors: people, methods, environment, equipment, and materials to achieve desired outcomes. Specifically, quality assurance specialists analyze applicable contractor quality controls used to keep manufacturing processes within stated tolerance limits. quality assurance specialists are supposed to prepare flowcharts that describe involved processes and document each of the contractor process factors. If significant changes occur to the process factors, then the quality assurance specialist should reproof the process.

Continuous Improvement Through IQUE and PROCAS. The focus of IQUE is to improve quality by continuously improving the contractor production processes through thorough ongoing review and documentation instead of attempting to detect nonconformances in completed products. Proofing contractor processes allows for early identification of problems and provides a level of confidence for items manufactured at contractor plants.

PROCAS expands on the IQUE philosophy by applying IQUE to all contract administration functions and by providing a cross-functional team approach to contract administration. The cross-functional team approach is designed to increase communication and cooperation between DCMC, military customers, industry contractors, and the Defense Contract Audit Agency. For those contractors who decide not to participate in PROCAS, quality assurance specialists will implement PROCAS and IQUE to the maximum extent possible, including the use of process proofing.

DCMC stated in DLAMs 8200.5 and in 8000.5 that quality assurance specialists operating under both IQUE and PROCAS would identify contractor-established processes and assess the processes and the resulting outcome to determine whether products consistently conform to contract technical requirements.

Quality Assurance Program Management

DCMC did not effectively manage its quality assurance workforce to ensure adequate implementation of IQUE and PROCAS. DCMC quality assurance specialists at all 13 audit sites were not effectively using methods for identifying and proofing contractor manufacturing processes. Quality assurance specialists responsible for quality assurance identified a total of 1,818 processes for the 27 programs reviewed. The quality assurance specialist approach to process identification was inconsistent. Some quality assurance specialists identified detailed processes within general areas. For example, the quality assurance specialists for 3 of the 27 programs (Titan missile, Delta rocket and Simplex

underwater cable) identified a total of 875 processes. Conversely, the quality assurance specialists for the remaining 24 programs identified a total of only 1,001 processes. Some of the quality assurance specialists responsible for the 24 programs identified only the broad manufacturing processes and did not attempt to identify more specific processes, even though some of the specific processes may have been critical.

The quality assurance specialists determined that 33 percent, 598 of the 1,818 processes, were critical processes. The weapon system programs included in our review should have a high percentage of critical processes. Quality assurance specialist did not make proofing of critical processes a priority either. Of the 598 critical manufacturing processes identified, quality assurance specialists only proofed 85 critical manufacturing processes.

Quality assurance specialist supervisors did not effectively manage the quality assurance specialist workforce. Supervisors did not evaluate, monitor, and track quality assurance specialist work to ensure that IQUE and PROCAS requirements were adequately satisfied. Further, staff assistance from DCMC and the DCMDs did not generate documented, independent assessments of IQUE implementation, and the DCMC Internal Management Control Program did not provide realistic assessments of the risk associated with the quality assurance function.

Ineffective management of the quality assurance specialist workforce, coupled with the fact that quality assurance specialists and quality assurance specialist supervisors were not held accountable for identifying and proofing processes, provided less than reasonable assurance that contractor manufacturing processes could consistently produce conforming products.

Identifying and Proofing Critical Manufacturing Processes

DCMC did not have an effective system for making sure that critical processes were identified. In addition, when critical processes were identified, quality assurance specialists did not place a high priority on proofing the critical processes.

Identifying Critical Manufacturing Processes. DCMC did not adequately prioritize the need to identify critical manufacturing processes. Of 1,818 manufacturing processes related to major acquisition programs, 598 processes (33 percent) were identified as critical manufacturing processes. Manufacturing processes related to fabrication and assembly of major system end items usually involve a high number of critical processes based on the consequences of mission failure. The quality assurance specialist and the quality assurance specialist supervisor should make the identification of critical processes a documented priority teamwork product. As evidenced by the low percentage of critical processes identified, quality assurance specialists at 9 of the 13 audit sites did not make the identification of critical processes a priority. The quality assurance specialists at 4 of the audit sites identified 101 of

108 (94 percent) manufacturing processes as critical. Quality assurance specialists at the 9 remaining sites identified only 29 percent of manufacturing processes as critical.

The identification of critical manufacturing processes was extremely varied and reflected confusion as to what a critical manufacturing process was. The following are examples.

o Quality assurance specialists at Aerojet in Sacramento, California, determined that all of the 324 manufacturing processes for the Titan missile were critical. At the same location, quality assurance specialists for the Delta rocket identified only 20 of 232 processes as critical. We compared the critical processes of the Titan to the Delta manufacturing processes and determined that 58 processes were similarly named and that apparently the local criteria for identifying critical manufacturing processes was applied differently by the quality assurance specialists.

o Quality assurance specialists for the Patriot missile guidance system and ground units at DPRO Raytheon in Andover, Massachusetts, determined that 40 of 47 manufacturing processes were critical. However, the quality assurance specialists for the Patriot missile warhead, tail, fins, and final assembly at Martin Marietta in Orlando, Florida, did not identify any of 19 manufacturing processes as critical. The quality assurance specialists at Martin Marietta were in error, and the quality assurance specialist supervisor acknowledged that at least part of the 19 manufacturing processes related to the warhead and final assembly were critical.

Proofing Critical Manufacturing Processes. Quality assurance specialists for the 27 programs identified a total of 598 critical manufacturing processes but only proofed 85 of the critical processes. We concluded that identifying a process as critical had little influence on whether quality assurance specialists would prioritize the proofing of a critical process. Quality assurance specialist showed uncertainty about what constituted a critical process because the term critical process was not defined. DCMC had not adequately emphasized the priority of identifying and proofing critical manufacturing processes. DLA needs to emphasize the importance of critical manufacturing processes and needs to develop guidance that clearly defines a critical manufacturing process.

Holding Quality Assurance Specialists Accountable

DCMC delegated the responsibility for implementation of IQUE to the quality assurance specialist working with the contractor. However, the delegation did not provide for a system of accountability through the chain of command and did not hold quality assurance specialists accountable for performing quality assurance. DCMC needs to establish a system of accountability that holds quality assurance specialists responsible for identifying complete universes of processes, fully documenting process proofings and reproofings of contractor

process inputs, and reporting progress through the Quality Assurance Management Information System. The system of accountability needs to be reflected in quality assurance specialist performance standards.

Identifying Manufacturing Processes. Quality assurance specialists at the 13 audit sites did not always adequately identify all of the manufacturing processes. Quality assurance specialists were confused and inconsistent when they did identify manufacturing processes. Although DCMC instituted IQUE in 1990, quality assurance specialists still struggled to define a process in 1994. The DLA "One Book" chapter on PROCAS describes processes as a series of tasks leading to a common objective and satisfying a requirement, such as producing an estimate or making an item. The practices used for identifying processes at all 13 audit sites did not include a documented teamwork approach involving the quality assurance specialist, the quality assurance specialist supervisor, and an IQUE/PROCAS coordinator. The following examples of process identification illustrate the confusion that exists in DCMC.

o The uncertainty of what constituted a manufacturing process at the DPRO McDonnell Douglas in St. Louis, Missouri, led quality assurance specialists to initially identify 2,007 manufacturing processes applicable to Defense contracts. In 1993 and 1994, quality assurance specialists continually reduced the number of manufacturing processes identified as they modified their interpretation of the term process and reduced the number identified to 1,108 manufacturing processes as of June 1994.

o Quality assurance specialists did not identify any manufacturing processes at Allied Signal in Baltimore, Maryland, for the manufacture of Patriot missile fuses and at UNISYS in Clearwater, Florida, for the manufacture of memory processors and other computer parts for use on the Trident submarine. Therefore, we concluded that IQUE was never implemented and quality assurance was still based on defect identification during product inspections.

o Quality assurance specialists identified 319 processes for the manufacture of underwater cable at Simplex in Newington, New Hampshire. The 319 processes were actually part of Simplex's standard practice and inspection manual for the manufacture of the underwater cable. The quality assurance specialists had not identified a system of key processes to address as priority actions.

o Quality assurance specialists at General Electric in Lynn, Massachusetts, initially identified about 5,000 processes to the auditor but later during the audit changed their minds and only identified 41 processes for the F404 and the T700 engines. The 41 processes covered broad generic areas such as welding. The uncertainty at the General Electric plant reflected confusion as to what constituted a process.

o At Aerojet, the quality assurance specialists provided a list of 232 processes for the Delta rocket that included descriptions of manufacturing processes described simply as cleaning (21 processes), inspection (21 processes), deburring (12 processes), and X-ray (8 processes). The quality

assurance specialists provided no other supporting descriptions for those 62 processes. The unsupported list of 232 processes demonstrated an incomplete implementation of IQUE for the Delta rocket.

Appropriate Level of Proofing Processes. Quality assurance specialists at one audit site did not demonstrate that they understood the manufacturing operations they were assigned and did not identify the appropriate level to proof processes to ensure that DoD can rely on a manufacturing process. At DPRO Raytheon, two quality assurance specialists assigned to the missile transmitter of the Patriot missile program identified nine overall manufacturing processes. The quality assurance specialists maintained they had proofed the overall processes for the subsystem assembly of the missile transmitter, documenting the proofing with a flowchart and a one-page review sheet of the process inputs. However, the quality assurance specialists could not explain the transmitter subsystem assembly process for the missile transmitter. The quality assurance specialists requested the contractor to demonstrate the assembly process. While explaining the process, the contractor identified an additional 20 subprocesses related to the subsystem assembly, one of which was identified as a critical process. Because they were not fully knowledgeable about the manufacturing process, the quality assurance specialists did not identify any of the 20 subprocesses as candidates for process proofing and did not proof the 20 subprocesses.

Documentation For Proofed Manufacturing Processes. Documenting an evaluation of a manufacturing process is basic and fundamental to process-oriented quality assurance. Of 1,818 manufacturing processes, quality assurance specialists adequately prepared flowcharts and documented proofed processes for only 99 processes (5 percent). The remaining 1,777 (95 percent) manufacturing processes lacked the documentation of flowcharts and descriptions of process inputs necessary to demonstrate how products were made. The documentation, if any at all, was inadequate and could rarely be used by other quality assurance specialists to determine how the contractor process was supposed to function. For example, a quality assurance specialist at Litton Laser in Apopka, Florida, identified and reportedly proofed 8 manufacturing processes related to the Low-Altitude Navigation Targeting Infra-Red for Night or LANTIRN program. A checklist of process inputs and the date of the proofing was the only documentation available. We reviewed the proofing documentation with the quality assurance division and branch chiefs and they determined that the level of documentation was insufficient.

At 2 of the 13 audit sites, we found good examples of professionally documented processes by quality assurance specialists. At McDonnell Douglas, the documentation for support processes for the F/A-18, the AV-8B Harrier II, and T-45 aircraft were professionally prepared and documented. In the second example, quality assurance specialists at General Electric did a thorough job of documenting a few manufacturing processes common to both the F404 and the T700 engines. Unfortunately, the overall documentation of the manufacturing processes at both McDonnell Douglas and General Electric was incomplete.

Overall, the documentation supporting the proofing of manufacturing processes for 27 programs was inadequate to determine what actions the quality assurance specialist performed to ensure or prove that manufacturing processes functioned correctly. The quality assurance specialists for 15 of the 27 programs did not provide any documentation to demonstrate when and how the manufacturing processes were proofed. The quality assurance specialists for the remaining 12 programs could only provide partial documentation for the proofing of all of the identified manufacturing processes. Appendix B provides a summary of the manufacturing process identified and proofed for all 27 programs.

Reproofing Manufacturing Processes. Appendix B shows that, from 1989 through 1992, only 52 processes were proofed for the 27 programs. Only 5 of the 52 processes were subsequently reproofed, even though each contractor had significant changes in the process inputs. We concluded that reproofing of processes was not a priority for quality assurance specialists, even though significant changes had occurred at Defense contractor plants. For example, at Aerojet, the entire manufacturing operation for the Delta rocket was moved to a single-cell environment during 1994. The move resulted in new equipment, new operators, and a new environment; however, the quality assurance specialists had no plans to reproof the processes.

Reporting Requirements. The DCMC reporting requirements did not require quality assurance specialists to report the number of processes and critical processes identified, proofed, and reproofed either to their supervisors or to the DCMDs. DLA set up the Quality Assurance Management Information Systems data base to monitor the workload volume of field-level activities. Quality assurance specialists report on 19 activity indicators, including material review board decisions, corrective action requests, and product audits through the Quality Assurance Management Information Systems. DCMC did not include process identification and proofing as a reportable activity indicator. DCMC needs to hold quality assurance specialists responsible for reporting processes and critical processes identified, proofed, and reproofed through the Quality Assurance Management Information Systems.

Performance Standards. DCMC did not have performance criteria to consistently hold quality assurance specialists accountable for the performance of process proofings. Quality assurance specialists position descriptions and performance plans were not consistent throughout DCMC with regard to implementation of IQUE and, more specifically, the proofing of contractor's processes.

According to DLA Regulation 1414.2, "Civilian Personnel Position Classification and Appeals Administration," March 9, 1992, position descriptions will reflect actual work performed and be certified for accuracy by supervisors. However, DLA did not provide the necessary standards and guidelines for consistent and accurate descriptions of the work that was needed to effectively implement IQUE. The Office of Civilian Personnel, DLA, was responsible for providing standards and guidelines through agency job guidelines to ensure that the major duties of a job are adequately described in local positions.

An agency job guideline is a position description of typical work performed in a given occupation at a given grade level using Office of Personnel Management classification criteria applicable to that agency position. DLA did not update agency job guidelines, including responsibility for implementation of IQUE or for PROCAS. DLA eventually chose to cancel the Agency Job Guidelines for the quality assurance specialist 1910 job series in March 1993, leaving each DCMD personnel office responsible for developing individual position descriptions for each quality assurance specialist.

The position descriptions and performance plans for the quality assurance specialist 1910 job series from each of the DCMDs contain varying descriptions of IQUE responsibilities at the GS-9 and GS-11 level. Performance standards at the DCMDs ranged from a general standard to implement IQUE to specific critical job element standards requiring the proofing of contractor processes. GS-12 supervisory standards contained only general wording regarding the implementation of IQUE policies and procedures. Although performance plans generally contain wording regarding IQUE implementation, the low number of processes identified and identified as critical and the lack of documentation supporting processes proofed and reproofed is firm evidence that performance plans are not designed to hold quality assurance specialists accountable for accomplishing fundamental IQUE tasks.

Holding Supervisors Responsible

DLAM 8200.5 provided quality assurance specialists wide latitude in applying IQUE. The rationale was that quality assurance specialist supervisors and higher DCMC management should not stifle initiative through direction or control of quality assurance specialist activities. Supervisors were to act as leaders, coaches, and mentors for the quality assurance specialists. We confirmed that quality assurance specialist supervisors generally interpreted DLAM 8200.5 to mean that supervisory oversight and evaluation of quality assurance specialist implementation of IQUE was not the supervisor's job.

DCMC did not hold quality assurance specialist supervisors responsible for reviewing and evaluating the identification and proofing of processes. As a result, 19 of 26 quality assurance specialist supervisors interviewed did not oversee, evaluate, monitor, or track process proofings as a measure of the effectiveness of quality assurance specialist implementation of IQUE. None of the supervisors interviewed treated process proofing as a priority for the implementation of IQUE or PROCAS. DCMC needs to hold supervisors accountable for reviewing and evaluating process-oriented quality assurance and for the accuracy of the quality assurance specialist-generated information reported through the Quality Assurance Management Information Systems.

Follow-up on IQUE Reviews

DCMC Evaluation. In 1992, DCMC authorized a number of staff assistance visits to evaluate the progress of IQUE. One initiative, "IQUE Tomorrow," was chartered to obtain feedback from quality assurance specialists on the implementation of IQUE. Small teams of 2 or 3 DoD and DCMC quality experts visited a total of 288 manufacturing facilities, including DPROs and quality assurance residencies in DCMAOs, and interviewed more than 1,000 quality assurance specialists from February 3 through July 24, 1992.

The "IQUE Tomorrow" visits resulted in the "Defense Logistic Agency IQUE Tomorrow Report and Action Plan" (the IQUE Tomorrow Action Plan), September 1992. One of the improvement opportunities identified in the IQUE Tomorrow Action Plan for followup was the need for more demonstrated techniques of process proofings and data collection and analysis. We determined that very little progress had been made to develop more demonstrated techniques of process proofings as of July 1, 1994, for the 27 programs.

In addition, subsequent staff assistance visits did not result in specific evaluations and recommendations for compulsory action to complete the IQUE improvements described in the IQUE Tomorrow Action Plan. The preparers of the IQUE Tomorrow Action Plan concluded that the DCMDs were making good-faith efforts to implement IQUE and the implementation was generally proceeding at a satisfactory rate in most facilities. Our audit did not confirm those conclusions. We asked to review the workpapers supporting the IQUE Tomorrow Action Plan, and we were told that DCMC did not have workpapers to support the report. DCMC needs to document the measurement of its efforts to review contractor quality control processes.

Validating the Progress Made to Proof Contractor Quality Control Processes. The success of PROCAS on quality assurance functions is based on the complete proofing of contractors' quality control processes. Validating contractors' quality control processes would allow for more efficient use of quality assurance resources by identifying and targeting problem areas and should result in lower inspection requirements and, ultimately, in fewer quality assurance specialists in contractor plants. Reducing the number of quality assurance specialists at Defense contractor plants when warranted is a worthy goal. Unfortunately, DCMC does not have an objective measurement to determine the extent to which contractors' processes are valid.

Inspector General, DoD, Report No. 94-079 recommended that DLA revise the "Action Plan for Continuously Improving the Quality of Spare and Repair Parts," May 1990, by adding an initiative to measure the extent to which each DoD contractor's quality control processes are reviewed and validated. DLA nonconcurred with the recommendation, stating that PROCAS was replacing IQUE to facilitate communications among contract administration participants. Our audit shows that PROCAS alone will have little effect on how well

individual quality assurance specialists perform their jobs. DCMC needs to determine the extent of actual quality assurance specialist reviews and validation of contractor quality control processes.

Realistic Risk Assessments Through Performance Measurement

Internal Management Control Program. From 1989 to 1992, DLA reported nonconforming material in the DoD Supply System as a material weakness as part of its annual statement of assurance in accordance with DoD Directive 5010.38. One of the corrective actions was to implement IQUE to include prime contractor control of subcontractor material. In 1993, DLA reported that the material weakness was corrected. However, IQUE was never adequately implemented.

The 1993 overall quality assurance risk assessment prepared by the three DCMDs concluded that the risk of receiving poor quality products through IQUE was low. The basis for that conclusion was the perceived success of IQUE in the DCMAOs and DPROs. However, DLA did not have sufficient basis for concluding that the IQUE program was a success because IQUE was not evaluated or measured in terms of process proofings or other process-oriented quality assurance indicators during 1993 or in prior years.

In our opinion, insufficient basis exists for assigning a low risk to the quality function when DCMC has not made an adequate assessment of such risks based on thorough IQUE evaluations of contractor processes. In addition, DCMC needs to evaluate process-oriented quality assurance in accordance with criteria that measure the execution of IQUE and PROCAS in terms of the extent that each DoD supplier's quality-related processes are reviewed and validated.

Performance Measurement. Public Law 103-62, "Government Performance and Results Act of 1993," August 3, 1993 (the Act), was enacted to improve the efficiency and effectiveness of Federal programs by requiring systems that set performance goals and measure results in quantifiable forms. The Act emphasizes the accountability of Federal agencies for systematically achieving program results. DoD specifically identified DLA to lead a pilot project for compliance with the Act's performance measurement reporting requirements in FYs 1994, 1995, and 1996. As part of the annual reporting, DLA was required to present specific measures and targets as outcome indicators for each program activity. The indicators were intended to permit a future assessment of program results against the intended purpose of each program.

The DLA FY 1995 Performance Plan indicator for quality assurance was "product audits that result in requests for corrective action." We believe that DCMC chose this indicator for the DLA Performance Plan because data on product audits were available as reportable entities in the existing Quality Assurance Management Information System. Unfortunately, product audits do not establish a meaningful performance measure or establish a target for

successful implementation of the PROCAS initiative as described in DLA directives. More meaningful performance measures would address the number of critical processes identified, realistic goals for completion of proofing processes, and the number of process proofings performed. DCMC does not have goals for documenting process-oriented quality assurance through process proofings or for measuring the effort of quality assurance personnel responsible for performing quality assurance. DCMC does not have a system of accountability for achieving effective process-oriented quality assurance.

Employing Process-Oriented Quality Assurance. Quality assurance specialists did not effectively employ process-oriented quality assurance to establish a basis for substituting process proofing and product audits for mandatory inspections. Mandatory inspections are detailed inspections of product conformance to product specifications. These inspections are laborious and time consuming and are intended to identify any possible latent defects. Buying commands or program offices often impose mandatory inspections on contract quality assurance for mission critical items and for munitions. Buying commands are frequently unwilling to use IQUE process-oriented quality assurance, even for items that never or rarely experience manufacturing failures. Unfortunately, quality assurance specialists at some locations have not implemented IQUE, thus, the buying commands could not see the advantages of using a combination of process proofing and product audits instead of mandatory inspections. The following are examples for which quality assurance specialists at DCMC quality assurance residencies did not implement IQUE because all of the quality assurance work involved mandatory inspections.

o UNISYS in Clearwater, Florida, manufactures computer parts for the Trident missile. The buying command imposed 100-percent mandatory inspection on every part manufactured by UNISYS. The quality assurance specialist assigned to the Trident program requested relief from the buying command in providing 100-percent mandatory inspection and instead suggested labor-saving IQUE quality assurance coverage of Trident missile parts. The buying command rejected the request. We examined the implementation of IQUE at UNISYS and determined that the quality assurance specialist had not proofed the manufacturing processes and implemented IQUE. DCMC quality assurance personnel needed to proof the UNISYS manufacturing processes for the Trident before asking the Navy to rely on the contractor's quality system to provide conforming products.

o A similar situation existed at Honeywell in Clearwater, Florida. The Navy requested 100-percent mandatory inspection on parts manufactured for MK-6 guidance system used in the Trident missile. From September 1991 through April 1994, the quality assurance specialist performed 358 mandatory inspections on parts manufactured for the MK-6 program. Of the 358 inspections, 357 (99.8 percent) passed inspection with no defects discovered. The quality assurance specialist stated that he was not proofing processes for the MK-6 program because he was too busy performing 100-percent mandatory inspections as the Navy requested. If the DCMAO Clearwater had devoted resources to proof processes for the MK-6 program, the quality assurance specialist would have established a basis for requesting that the

Navy reconsider its request for 100-percent mandatory inspections and for asking the Navy to accept quality assurance based on process proofing and product audits.

Conclusion

DCMC has not managed the quality assurance workforce effectively to implement the primary quality assurance program, IQUE. Quality assurance specialists have not adequately documented their work to provide a record of contractors' ability to manufacture products through reliable processes. DCMC is facing a changing environment without the benefit of a well-documented record of the reliability of Defense suppliers and the degree of risk associated with each supplier. DCMC needs to institute an effective quality assurance program that includes effective performance measurement and accountability for effective performance.

Management Comments on the Finding and Audit Response

DLA Comments. DLA nonconcurred with Finding A, stating that the Inspector General, DoD, did not provide sufficient evidence for the finding that DCMC did not effectively manage quality assurance specialists, and that the IQUE and PROCAS methodologies were not effectively managed at the 13 audit sites. DLA disagreed with the Inspector General, DoD, position relating to the level of documentation that should be maintained. In addition, the Inspector General, DoD, offered no evidence concerning defective product accepted at the 13 audit sites to support statements that DCMC quality assurance is inadequate. DLA also stated that the improvement scenario offered in the report recommendations were ill founded, because of the "critical process" concept applied by the audit teams and the auditors' misinterpretation of what constituted sufficient and proper process proofing documentation.

Audit Response. The DLA refusal to recognize the material internal control problems that exist in the system for product quality assurance is the basis for the ineffective management of quality assurance specialists. The problem of nonconforming products accepted into the Defense supply system is well documented in prior audit reports. An example of the continuing serious problem with nonconforming products was demonstrated in the February 1995 debarments of two Defense contractors that supplied defective aerospace, automotive and missile components, and spare parts. The defective products entering the Defense supply system adversely effects the utility of military end items, impacts readiness, and continues to demonstrate the ineffectiveness of DLA quality assurance efforts.

We agree with the DCMC concept to emphasize critical processes over noncritical processes. We do not agree that using the critical process concept

makes our report recommendations ill founded. The criteria used in the audit for adequate documentation of process proofing was less stringent than the level of documentation that DCMC included in the "One Book" after we completed our audit. If the "One Book" criteria had been available during the audit, the number of process proofings in Appendix B that were adequately documented would decline from 99 to 0. We stopped the audit after 13 sites, because none of the 13 sites were adequately documenting the IQUE process proofing concept. During the audit, we had previously identified at least 10 other sites in the Western District that likely would have reflected a comparable lack of documentation. However, we had sufficient evidence to demonstrate that quality assurance specialists were not effectively managed after 13 sites, so we concluded the audit.

Recommendations, Management Comments, and Audit Response

Revised Recommendations. Based on management comments, we revised Recommendations 2., 3., 4., and 5. to connect the recommendations to Public Law 103-62, "Government Performance and Results Act of 1993," and to afford DLA the opportunity to describe how it plans to comply with the public law by 1997 as it applies with our recommendations.

We recommend that the Director, Defense Logistics Agency:

1. Define in Defense Logistics Agency Manual 8000.5, "One Book," (draft) October 1994, the term "critical manufacturing process" so that the meaning and intent of the term is clear.

DLA Comments. DLA concurred and stated that the following definition would be included in the "One Book." A process is critical if it significantly affects the cost, schedule, or technical performance of the product.

2. Establish performance indicators to measure the performance of quality assurance specialists for:

a. Identifying a complete universe of processes and subprocesses to a level of detail that satisfactorily describes the contractor's sequence of processes for producing conforming products in accordance with each contract assigned.

b. Identifying critical processes and documenting why the process is critical.

c. Fully documenting process proofings of contractor process inputs including equipment, materials, people, methods, and environmental controls, and either flowcharting extensive or complex processes or, for simple processes, listing the sequence of applicable operations.

d. Fully documenting process reproofings and the changes in contractor processes every 2 years. If the contractor processes do not change, document the fact that no changes had occurred.

e. Reporting through the Quality Assurance Management Information System processes and critical processes identified, proofed, and reproofed.

DLA Comments. DLA nonconcurred with the draft report recommendations regarding the need to identify the universe of processes or to require a proofing of processes every 2 years. However, DCMC recognized the need for adequate documentation of process proofing and the need to reproof processes. Furthermore, DCMC described its flexible system of management that allows for effectively responding to significant events and that provides the DCMAOs the flexibility to structure effective programs. DLA further stated that the "One Book" requires DCMC PROCAS teams to document process proofing, including the techniques used, the process inputs and outputs proofed, where the proofing was performed, who performed the proofing, proofing results, and actions taken based on proofing results.

Audit Response. After 4 years of IQUE, DCMC quality assurance specialists could not demonstrate that quality controls were in place because they had not adequately documented process proofings. Understanding the universes of processes will enable quality assurance specialists to identify the critical processes that require immediate attention. The "One Book" requirements for documentation that were instituted after we conducted our audit, more than satisfy the professional documentation standards that we had in mind. If we had applied those standards to the 1,818 processes we reviewed for the 27 programs identified in Appendix B, the number of processes proofed would decline from 99 to 0. DCMC needs an effective system for executing the innovative quality assurance programs that it has developed. We have revised the recommendations, accordingly. Therefore, we request that DLA reconsider its position and provide additional comments to the final report describing how it intends to measure the performance of quality assurance specialists for the documentation of proofing critical processes.

3. Establish performance indicators to measure the performance of the supervisors of quality assurance specialists responsible for reviewing and evaluating:

a. The adequacy of the universes of processes identified.

b. The adequacy of documentation supporting processes proofed and reproofed.

c. The accuracy of the information reported by quality assurance specialists through the Quality Assurance Management Information System.

DLA Comments. DLA nonconcurred with the draft recommendations for establishing a system of accountability to make supervisors responsible for reviewing and evaluating the work of quality assurance specialists. DLA stated that it did not believe identifying the universe of processes was always necessary and DCMC supervisors were already responsible for guiding, supporting, and managing the work of their employees.

Audit Response. DCMC needs an effective system for executing the innovative quality assurance programs that it has developed. As stated in the finding, 19 of 26 supervisors did not oversee, evaluate, and review the adequacy of process proofings. The lack of supervisory review and evaluation is a primary cause for the lack of effective management. We request that DLA reconsider its position and provide additional comments describing how it intends to measure the performance of its quality assurance specialist supervisors for the review and evaluation of the documentation of critical process proofings.

4. Establish performance indicators to measure the extent to which each DoD contractor's quality control processes are reviewed and validated, consistent with Recommendation B.5.b. in Inspector General, DoD, Report No. 94-079, "DoD Components Implementing Action Plans for Improving the Quality of Spare Parts," April 12, 1994.

DLA Comments. DLA nonconcurred with revising the DLA Action Plan for Continuously Improving the Quality of Spare Parts, stating that it did not believe that merely counting tasks was a good measure of performance. DLA did not believe it was always necessary to count the processes in the universe. Therefore, it was inappropriate to use that universe as a baseline against which process review and validation efforts are measured. Furthermore, the DLA evolving assessment methodology focuses on local responsibility and accountability, using the process outlined in the "One Book." The process evaluates the effectiveness of the local approach, deployment, and results, rather than just compliance with mandated documentation requirements.

Audit Response. This recommendation was previously made in Inspector General, DoD, Report No. 94-079. DLA nonconcurred with the recommendation in that report, stating that PROCAS would remedy the problem by facilitating the communications between contract administration participants. We accepted the DLA remedy at that time because we were reviewing implementation of PROCAS in this audit. DCMC needs an effective system for measuring execution of the innovative quality assurance programs that it has developed. We have revised the recommendation and request that DLA describe how it plans to measure the performance of its quality assurance specialists for reviewing and validating contractor quality control processes. We request that DLA reconsider its position and provide additional comments to the final report.

5. Establish in the Internal Management Control Program:

a. Requirements to establish management controls to minimize the risks associated with process oriented quality assurance.

b. Quality assurance as a high risk area until quality assurance implementation is documented according to the criteria established in the Defense Logistics Agency Manual 8000.5 "One Book."

DLA Comments. DLA nonconcurred with the draft recommendation to establish a requirement in the Internal Management Control Program to evaluate process oriented quality assurance in accordance with criteria that measures the extent that each DoD suppliers quality controls are reviewed. DLA stated that merely counting the tasks was not a good measure of performance. DLA did not believe it was always necessary to count the processes in the universe. Therefore, it was inappropriate to use that universe as a baseline against which process review and validation efforts are measured. Further, the DLA evolving assessment methodology focuses on local responsibility and accountability, using the process outlined in the "One Book." The process evaluates the effectiveness of the local approach, deployment, and results, rather than just compliance with mandated documentation requirements.

Audit Response. The recommendations in the report were designed to obtain specific measurable action from the quality assurance workforce and the DCMC managers. DLA apparently does not desire to measure how the workforce implements quality assurance programs. We believe that DLA needs to incorporate the review and measurement of quality assurance as part of the management control program and assess the risks related to changing the quality assurance program. DLA has delegated assessments of the quality assurance program to local levels. This finding shows that the local levels did not implement the DLA quality assurance program. DLA does not regard not implementing the quality assurance program at the local DCMC levels as a problem. We have revised the recommendation. We request that DLA reconsider its position and provide additional comments to the final report.

Management Comments Required. See Table 2. at the end of Finding B. for a summary of management comments required.

Finding B. Quality Assurance Staffing

DCMC did not know how many quality assurance specialists were needed to perform the quality assurance mission because DCMC does not have an effective method for determining quality assurance staffing levels. Specifically, DCMC does not analyze the actual work required to perform process-oriented quality assurance required for IQUE and PROCAS. In addition, DCMC routinely adjusts the previous years' staffing levels downward relying primarily on normal attrition to fit reduced funding. As a result, DCMC did not have an adequate basis for justifying annual funding requests for quality assurance staffing required to perform the quality assurance mission and for determining the actual imbalances in quality assurance staffing levels.

Quality Assurance Staffing

Since 1991, DCMC has streamlined the DCMDs and, since October 1991, the number of DCMC quality assurance specialists decreased from 7,125 to 5,567 (20 percent) as of October 1994. During 1994, DCMC reduced the number of DCMDs from five to three. Also, during 1994, DCMC reduced the number of quality assurance specialists from 6,183 to 5,567. As of October 1994, DCMC employed 5, 567 quality assurance specialists, at a cost of $295.2 million as shown in the following table.

Table 1. DCMD Quality Assurance Specialist Staffing and Labor Costs
(as of October 1994)

DCMD	Number of Quality Assurance Specialists	Labor Costs
Northeast	2,304	$127,158,860
West	2,082	103,662,788
South	1,181	64,445,882
Total	5,567	$295,267,530

The number of quality assurance specialists is expected to decrease by about 4 percent in 1995 (5,344 quality assurance specialists) and 1996 (5,131 quality assurance specialists).

DCMC used historical costs related to two elements, quality assurance and mandatory inspections, as reported through the DLA Unit Cost System to

determine the staffing levels for quality assurance. The cost of quality assurance primarily represents the cost of the quality assurance specialists' time spent on all quality assurance activities other than mandatory inspections. The cost of mandatory inspections primarily represents the cost of the time spent on the inspections of critical items and other items called for in quality assurance letters of instruction from contracting officers and from program managers. A description of the DLA Unit Cost System is in Appendix E.

Analyzing and Documenting Quality Assurance Workload Requirements

DCMC does not know whether they have too few or too many quality assurance specialists to accomplish the quality assurance mission. DCMC did not analyze the quality assurance workload to determine what part of the quality assurance mission was not effectively accomplished.

DCMC quality assurance personnel did not document workload for accomplishing the basic quality assurance tasks for any of the 104 contracts we reviewed. The contracts, valued at $10.8 billion, involved 27 weapon system and support programs and were managed by 65 quality assurance specialists assigned to 6 DCMAOs and 3 DPROs. A detailed description is in Appendix C.

Documenting quality assurance workload requirements should begin with an analysis of the quality assurance tasks required for each contract. Quality assurance specialists reviewed their assigned contracts to identify the military specification requirements listed in the contracts. However, quality assurance specialists did not analyze the actual quality assurance work needed to provide reasonable assurance that only conforming products were accepted.

DCMC lacked quality assurance workload planning at successive levels of administration: from the DCMDs to the DCMAOs, to the quality assurance residencies at contractor facilities, to the supervisors of quality assurance specialists for the 27 programs. The Government quality assurance personnel did not adequately review the contracts to determine the work required to proof and revalidate contractor processes, to perform mandatory inspections, to perform quality audits, to investigate Product Quality Deficiency Reports, to review minor nonconforming material presented by contractors for acceptance, and to perform the delegated quality assurance related to subcontracts.

Planning for Process-Oriented Quality Assurance. The quality assurance supervisors, representatives, and specialists responsible for all 104 contracts lacked documentation to establish a basis for determining the number of quality assurance specialists needed to identify, proof, and revalidate applicable contractor processes. The primary workload tasks of a quality assurance specialist are the examination of processes as part of IQUE and PROCAS. DLA Manual 8200.5 provided guidance for quality assurance specialists to "proof" contractor manufacturing processes through stages to assess how

effectively and accurately the contractor incorporates personnel, materials, methods, equipment, and environment to satisfy contract requirements and produce conforming products. However, as stated in Finding A, quality assurance specialists did not identify contractor processes and did not adequately document the proofing of contractor processes. Quality assurance specialists frequently performed product audits (examinations of process outcomes) after the contractor tested products to gain assurance of consistent performance. Quality assurance specialists did not document the estimated number of product audits that were needed for current contracts.

DCMC should require quality assurance specialists to document estimated quality assurance workload on the Quality Assurance Management Information Systems, and supervisors should review and certify the quality assurance specialist workload estimates reported on the Quality Assurance Management Information Systems.

Planning for Mandatory Inspections. The cost of mandatory inspections are reported through the DLA Unit Cost System, but the DCMAOs and the DPROs do not evaluate the projected mandatory inspection workload for staffing planning purposes. The DLA Unit Cost System is described in Appendix E.

Of the 104 contracts, 37 contracts, valued at $9 billion, included requirements for mandatory inspections. Quality assurance personnel did not document the basis for determining the quality assurance resources needed to identify, plan and schedule, and perform mandatory inspections.

Quality assurance specialists should have an active, documented workload plan that lists IQUE projects that the quality assurance specialists are continually working. However, quality assurance specialists at 6 of 13 audit sites told us that they often waited for contractors to notify them of mandatory inspections. None of the quality assurance specialists interviewed were attempting to identify processes, to proof processes, or to perform product audits while they waited for the contractor to notify them that they were needed for a mandatory inspection.

Planning for Other Quality Assurance Work. In addition to process-oriented quality assurance tasks, quality assurance specialists are often assigned additional work such as conducting material reviews and investigating Product Quality Deficiency Reports. Depending on the contractor quality controls, a quality assurance specialist may have a significant amount of work assigned in material reviews and investigations. Planning for other work such as material reviews and investigations of Product Quality Deficiency Reports needs to be documented based on historical experience.

Planning for Subcontractor Quality Assurance. Quality assurance specialists at four quality assurance residencies, one each at DCMAOs Clearwater and Orlando and two at DCMAO Baltimore, were not given information on subcontract awards in a timely manner. If DCMD quality assurance specialist supervisors do not know about pending work, then they will not be able to plan for appropriate numbers of quality assurance specialists. Quality assurance specialists were not always aware of the existence of subcontracts until

subcontractor personnel notified them that the subcontractor was ready for the quality assurance specialist to perform a mandatory Government inspection or to accept a product. Quality assurance specialists were unaware of the subcontractor quality assurance work because the assignment of quality assurance work from the contract administration office supporting the prime contractor to the contract administration office supporting the subcontractor does not always work efficiently.

Reduced Funding Levels and Attrition

DCMC decreased the overall funding for every DCMD during 1992 and 1993; therefore, personnel reductions were necessary. The reductions in quality assurance specialists were obtained from the actual attrition that occurred within the DCMDs. The number of quality assurance specialists needed to complete process proofings and product audits, the principal tasks associated with process-oriented quality assurance, was not a primary consideration in the funding decisions. DCMC should use documented workload estimates of process-oriented quality assurance tasks as the basis for budget requests. DCMC provided DCMD commanders the authority for determining staffing at DPROs and DCMAOs. The DCMD commanders used past staffing levels as their guide and made downward adjustments of quality assurance staffing to align with the reduced funding that was provided to the DCMDs from DCMC.

The following are examples of staffing through reduced funding.

Aerojet. In May 1992, DCMD West performed a resource review at Aerojet. The review team recommended that staffing remain at the 13 quality assurance specialist positions on board through the third and fourth quarters of FY 1992. The review team recommendation was based on the need to refocus quality assurance work and implement IQUE. For FY 1993, the resource review team recommended reducing the 13 quality assurance specialist positions to 9 to reflect the anticipated progress in implementing IQUE. After April 1993, the staff was reduced to 9; however, IQUE was not implemented. Of 722 contractor processes identified, the 13 quality assurance specialists only proofed 21 processes by April 1994. The quality assurance specialists still had 701 processes to proof. In addition, the Aerojet residency chief assigned two of the remaining nine quality assurance specialists to work on other contract administration duties instead of quality assurance, leaving only seven quality assurance specialists to perform quality assurance work at the Aerojet residency. The Aerojet residency chief did not analyze the work required, and he reported to DCMD West that he did not know what his staffing should be.

McDonnell Douglas. DCMC demonstrated a practice of staffing according to attrition at the DPRO McDonnell Douglas. McDonnell Douglas consolidated manufacturing operations and transferred workload into the McDonnell Douglas, St. Louis, Missouri, facility. The transfer resulted in additional quality assurance work for the DPRO McDonnell Douglas. However, the additional work did not result in the stabilization of quality

assurance staffing for the DPRO McDonnell Douglas. In 1992, the DPRO employed 87 quality assurance specialists; in 1993, the number of quality assurance specialists declined to 79, and then to 71 in 1994. DCMC did not allow DPRO McDonnell Douglas to replace 16 quality assurance persons who were lost to attrition during 1992 through 1994 even though the number of contracts remained about the same at McDonnell Douglas.

DCMD Staffing Methodologies. The DCMD commanders developed their own methodologies for determining the appropriate staffing level for each DCMAO and DPRO. Essentially, the DCMDs based staffing on perceived workload in the form of anticipated contracts assigned to each DPRO and DCMAO and other factors such as criticality of the anticipated work. In addition, the DCMD commanders conducted staffing reviews at some of the DPROs and DCMAOs each year. The nature of these reviews varied in each district.

o DCMD West conducted Command Oversight, Assistance, and Resource Reviews.

o DCMD South developed a program entitled "METRICS 2000" for the resource budgeting of DCMAOs.

o DCMD Northeast conducted Corporate Business Reviews.

A description of the methodologies each DCMD developed is in Appendix E. The DCMD staffing methodologies were inadequate because the methodologies were based on historical information and routinely included the previous year's staffing levels as a valid baseline and adjusted the baseline numbers downward. Staffing estimates were not based on a detailed analysis of personnel needed to accomplish mission-essential work. DCMC needs to use a standard methodology to determine the number of quality assurance specialists required to perform documented estimates of workload.

For example, as the number and dollar value of contracts declined for Defense contracts in the DCMD West region, DCMD West management determined that 103 quality assurance personnel were surplus. However, the 103 quality assurance specialists continued on in their assignments because DCMC did not choose to eliminate their positions with a reduction in force. DCMC recognized a reduction in force could adversely effect quality assurance specialists on priority programs, and the surplus quality assurance specialists needed time to find another job. The method for determining surplus quality assurance personnel was not defined, but we determined that the method used was not based on an analysis of process-oriented quality assurance workload requirements.

Congressional Concerns with DCMC Staffing. Members of the House Committee on Appropriations were concerned that DCMC lacked a basis for determining staffing necessary for the DCMC civilian contract administrative workforce. In June 1994, the U.S. House of Representatives, in Report No. 103-562, "Report of the Committee on Appropriations, for the DoD Appropriations Bill, 1995," June 27, 1994, expressed concerns about the

DCMC FY 1995 budget. Committee members agreed that periodic surveys must be conducted to determine the appropriate staffing for contract administrative functions within DCMC. DCMC lacked an adequate basis for determining staffing of contract administrative functions, and the corresponding budget request, led the House Committee on Appropriations to recommend a $400 million reduction from the DCMC FY 1995 budget. On September 29, 1994, the U.S. House of Representatives issued Report No. 103-747, a conference report on appropriations for FY 1995, and agreed to revise its original $400 million reduction down to $36.5 million, as recommended by the U.S. Senate. In doing so, the House Committee on Appropriations stated that the $400 million reduction would adversely affect DCMC operations.

Conclusion

DCMC managers could not determine the size of the quality assurance staff needed to effectively perform contract quality assurance. DPROs and quality assurance residencies lacked standard workload requirements to establish the basis for resource requirements.

The types and amounts of quality assurance actions for all assigned contracts would provide a more accurate basis for the amount of funds expended for quality assurance in DCMC. DCMC quality assurance personnel did not review, analyze, document, or determine the quality assurance actions necessary for assigned contracts. Additionally, the implementation of IQUE and PROCAS did not have a high priority for the quality assurance personnel in our audit. Other than imposed mandatory inspections, quality assurance specialists have a wide latitude in determining their quality assurance priorities, including the implementation of IQUE and PROCAS. Based on Finding A, quality assurance work, such as identifying and proofing of contractor processes, was generally not performed. After reviewing the quality assurance workload at DPROs and DCMAOs, DCMC should determine whether it has enough quality assurance specialists to fully perform the quality assurance mission. DCMC needs to perform a workload analysis and an assessment of manpower needs to adequately baseline its quality assurance specialist staffing requirements and to enable DCMC to inform its customers when DCMC cannot adequately ensure that DCMC is accepting a conforming product.

Recommendations, Management Comments, and Audit Response

Revised Recommendation. We revised draft Recommendations 2., 3., and 7. We deleted the requirement in draft Recommendations 2. and 3. to report workload estimates through the Quality Assurance Management Information System because DLA cancelled its 4-year development of the In-Plant Quality

Assurance Records System. We added a requirement to draft Recommendation 7. to establish a system for informing the Commander, DCMC, of the specific contracts that quality assurance specialists either would not be able to or were not able to support with an adequate level of quality assurance.

We recommend that the Director, Defense Logistics Agency:

1. Establish a goal for developing quality assurance manpower estimates based on assessed workload by FY 1996.

DLA Comments. DLA concurred with the recommendation, stating that manpower estimates will be a part of the DCMC manpower management program.

2. Require that quality assurance specialists document the estimated quality assurance workload tasks required for each contract and the time needed to proof applicable processes, fully perform mandatory inspections, product audits, material reviews, investigations of Product Quality Deficiency Report and subcontract quality assurance.

DLA Comments. DLA nonconcurred with the specifics of draft Recommendation 2. to document the estimated workload related to material reviews and Product Quality Deficiency Reports. DLA stated that it was unrealistic to expect finite manpower estimates for such activities as material reviews and investigations of Product Quality Deficiency Reports before contract performance. DLA concurred that the need for estimated manpower should be documented at each contractor location. DCMC intends to maintain management visibility through a manpower management program that is scheduled for completion December 31, 1995.

Audit Response. Our recommendation is basic to workload planning and staffing. The workload associated with material reviews and Product Quality Deficiency Reports is usually a small part of the quality assurance workload and can easily be estimated based on recent history at a contractor's plant. The real problem is associated with the actual workload estimates based on current contracts. The DLA method does not measure actual work requirements and allows for inefficient and ineffective quality assurance staffing. Therefore, we revised our recommendation and deleted the requirement to report the workload estimates through the Quality Assurance Management Information System. We request that DLA provide additional comments to the final report describing how it plans to measure the specific work that quality assurance specialists plan to perform.

3. Require that quality assurance specialist supervisors review and certify the process-oriented quality assurance actual workload estimates.

DLA Comments. DLA nonconcurred with the specificity of the draft report recommendation to require supervisors to review workload estimates as reported through the Quality Assurance Management Information System but concurred

with management verification of workload estimates through supervisory visits and management reviews. Also the DCMC manpower management program will also include methods for verifying the accuracy of workload estimates.

Audit Response. Although DLA nonconcurred with the draft report recommendation to review workload estimates through the Quality Assurance Management Information System, we consider the DLA comments responsive. We deleted the requirement to review workload estimates reported through the management information system because DLA cancelled the In-plant Quality Assurance Records system. Therefore, no further comments are required.

4. Use documented process-oriented quality assurance workload estimates as the basis for budget requests for each quality assurance resource.

DLA Comments. DLA concurred with the recommendation and stated that it was developing a manpower management program that would use appropriate factors to determine quality assurance workload estimates at the contractor plant level and that the action was scheduled for completion by December 31, 1995.

5. Develop standard methodology to determine the number of quality assurance specialists needed to perform the contract quality assurance mission based on documented estimates of workload.

DLA Comments. DLA concurred with the recommendation and stated that it was developing a manpower management program that was scheduled for completion on December 31, 1995.

6. Standardize the approach and the rationale for determining and describing surplus quality assurance positions and for identifying locations with urgent quality assurance needs.

DLA Comments. DLA concurred with the recommendation and stated that it was developing a manpower management program that was scheduled for completion on December 31, 1995.

7. Develop a system for identifying specific products on specific contracts that either can not or could not be supported with an adequate level of quality assurance so that the Commander of the Defense Contract Management Command can inform Defense Logistics Agency customers when quality assurance specialists either will not be able or were not able to provide an adequate level of quality assurance on specific source inspected contracts.

DLA Comments. DLA concurred with the recommendation in the draft report, stating that the DCMC policy to meet its customers expectations and only the Commander, DCMC, is authorized to say no to a customer request for quality assurance support.

Audit Response. Although DLA concurred with the draft report recommendation, we did not consider the DLA comments responsive. During the audit, we interviewed quality assurance specialists who told us that they

were asked to accept products that were not included in any quality assurance reviews. The quality assurance specialist statements were corroborated with an absence of documentation regarding process-oriented quality assurance. The mere presence of quality assurance specialists at a contractor's plant does not constitute an adequate level of quality assurance. Based on the DLA reply, we have revised our recommendation to create a system for informing the Commander, DCMC, that quality assurance specialists either were not able to or would not be able to support specific contracts with adequate quality assurance. Accordingly, we request that DLA provide additional comments to reflect how it intends to implement a system for informing the Commander, DCMC, and, ultimately, the DLA customer that specific products either were accepted and were not supported with an adequate level of quality assurance, or that specific products are scheduled for acceptance and DCMC is not able to provide an adequate level of quality assurance.

Management Comments Required

Management is requested to comment on the items indicated with an X in the following table.

Table 2. DLA Comments Required on Findings A and B Recommendations

Number	Concur/ Nonconcur	Proposed Action	Completion Date	Internal Control Issues
A.2.	X	X	X	X
A.3.	X	X	X	X
A.4.	X	X	X	X
A.5.	X	X	X	X
B.2.	X	X	X	X
B.7.	X	X	X	X

Part III - Additional Information

Appendix A. Glossary of Terms

Critical Process. DLA has not defined critical process. A similar term, critical application, as applied to weapon system application items, was defined in DLA Regulation 3200.1 (a Joint Service Regulation), "Engineering Support for Items Supplied By Defense Logistics Agency and General Services Administration," March 1986. A critical application item is defined as an item that is essential to weapon system performance, the preservation of life, or safety of operating personnel.

Nonconforming Material Review. Material reviews are described in DLAM 8200.5. Material review procedures exist to review, evaluate, and dispose of minor nonconforming supplies or services before acceptance by the Government. As part of the material review process, the contractor may establish a Material Review Board. The Material Review Board consists of technically qualified and knowledgeable contractor personnel and may include Government quality assurance personnel. The Material Review Board is responsible for investigating, identifying causes, evaluating performance, performing trend and recurrence analysis, and submitting recommended dispositions of "use as is" or "repair" of nonconforming material to Government quality assurance personnel for approval.

Process. Processes are described in DLAM 8000.5, "One Book," April 3, 1995, as a series of tasks leading to a common objective and satisfying a requirement, such as producing an estimate or making a handle. The processes described in DLAM 8200.5 consist of process inputs such as people, materials, environment, methods, and equipment. Processes can be related to product design, development, production, and support and are intended to provide a description of how to make a product.

Product Audits. Product audits, as described in DLAM 8200.5, are examinations or tests performed by Government Quality Assurance Specialists of contractor produced products after the contractor has performed examinations or tests. Product audits assess the contractor's ability to measure the process effectively by examining or testing products that the contractor has previously determined to be conforming. Product audits should confirm that the contractor is adequately detecting and rejecting defective products. Product audits differ from process proofings in that product audits are not necessarily conducted at each stage in a process. Product audits usually assess the overall effectiveness of contractor measurements techniques as a product moves from one acceptance point into the next manufacturing process.

Process Proofing. Process proofing is described in DLAM 8200.5. Process proofing is performed to determine the adequacy of contractor processes through thorough review of inputs employed to achieve desired outcomes. Process proofing includes the identification and flow charting of the sequence of processes, and the review of process inputs. The prioritization of which processes to proof first is determined through the criticality of the process.

Product Quality Deficiency Report Investigations. Product Quality Deficiency Report investigations are described in Joint Service Regulation Defense Logistics Agency Regulation (DLAR) 4155.24, "Product Quality Deficiency Report Program" (the Program). The Program provides for the initial reporting, cause, correction, and status accounting of individual product quality deficiencies. Additionally, the Program data on product deficiencies are used to identify problems, trends, and recurring deficiencies. The quality assurance specialist has the primary responsibility to investigate Product Quality Deficiency Reports to determine the cause of the reported deficiency and determine whether the contractor has taken the necessary action to prevent the same deficiency from occurring in the future.

Reproofing Processes. Reproofing processes as described in DLAM 8200.5 should take place when significant changes occur to process inputs, for example, number of people, changes in the type of equipment, composition of materials, manufacturing methods, and environmental conditions. Quality assurance specialists should reproof the processes affected by the significant changes.

Appendix B. Processes Identified and Proofed

Location and System	Total Number of Manufacturing Processes					Number of Critical Manufacturing Processes	
	Identified	Proofed	Proofed Since January 1, 1993	Proofed Between 1989 and 1992	Reproofed Since January 1, 1993	Identified	Proofed
DCMD Northeast							
DPRO							
Raytheon, Andover, Massachusetts							
Patriot missile guidance systems and ground units	47	28	12	16	0	40	22
General Electric, Lynn, Massachusetts	41	22	3	19	3	41	22
F404 engines							
T700 engines							
DCMAO Baltimore, Maryland							
Martin Marietta, Middle River, Maryland	178	0	0	0	0	0	0
C-17 aircraft tailcone							
Vertical launching system							
Trident missile nose fairing							
Allied Signal, Baltimore, Maryland	0	0	0	0	0	0	0
Patriot fuses							
Identification friend or foe							
DCMAO Boston, Massachussetts							
Simplex, Newington, New Hampshire							
Under water cable	319	0	0	0	0	0	0
Subtotal	585	50	15	35	3	81	44

Location and System	Total Number of Manufacturing Processes					Number of Critical Manufacturing Processes	
	Identified	Proofed	Proofed Since January 1, 1993	Proofed Between 1989 and 1992	Reproofed Since January 1, 1993	Identified	Proofed
DCMD West							
DPRO McDonnell Douglas, St. Louis, Missouri (Final assembly)							
F/A-18 aircraft	182	8	8	0	0	43	5
AV-8B aircraft	110	4	4	0	0	24	2
T-45 aircraft	126	4	4	0	0	24	3
C-17 aircraft	29	4	3	1	0	25	4
DCMAO San Francisco, California							
Aerojet, Sacramento, California							
Titan missile	324	19	11	8	2	324	19
Advance medium-range air-to-air missile	16	2	2	0	0	6	0
Standard missile	19	0	0	0	0	8	0
Hawk missile	20	0	0	0	0	13	0
Small motors	20	0	0	0	0	0	0
Delta rocket	232	0	0	0	0	20	0
Minuteman missile	91	0	0	0	0	10	0
Subtotal	1,169	41	32	9	2	497	33
DCMD South							
DPRO Martin Marietta, Orlando, Florida							
Patriot missile (warhead, tail, fins, and final assembly)	19	0	0	0	0	0	0
DCMAO Orlando, Florida							
Litton Laser, Apopka, Florida							
Low-altitude navigation targeting infra-red for night	8	0	0	0	0	0	0

Location and System	Total Number of Manufacturing Processes					Number of Critical Manufacturing Processes	
	Identified	Proofed	Proofed Since January 1, 1993	Proofed Between 1989 and 1992	Reproofed Since January 1, 1993	Identified	Proofed
DCMAO Clearwater, Florida							
Honeywell, Clearwater, Florida							
Trident MK-6 guidance system	11	0	0	0	11	0	0
Unisys, Clearwater, Florida							
Trident submarine	0	0	0	0	0	0	0
UYK-43 Navy standard shipboard computer	8	0	0	0	0	0	0
E-Systems, St. Petersburg, Florida							
Advanced narrowband digital voice terminal	9	0	0	0	0	0	0
DCMAO Dallas, Texas							
Electrospace Systems, Inc., Richardson, Texas							
Solar electrical optical network	9	8	0	8	0	9	8
Subtotal	64	8	0	8	0	20	8
Total	1,818	99	47	52	5	598	85

Appendix C. Quality Assurance Workload Review

Location and Contractor	Number of Open Contracts	Value of Open Contracts (millions)	Number of Contracts Included In Review	Value of Open Contracts Reviewed (millions)
DCMD Northeast				
DPRO Raytheon, Burlington Massachusetts	234	$13,234.9	10	$ 427.5
DCMAO Boston, Massachusetts				
Simplex, Newington, New Hampshire	8	85.1	8	85.1
DCMAO Baltimore, Maryland				
Allied-Signal, Baltimore, Maryland	29	412.6	8	121.5
Martin-Marietta, Middle River, Maryland	34	1,151.7	7	1,124.0
DCMD West				
DPRO McDonnell Douglas St. Louis, Missouri	5,767	70,000.0	9	7,434.2
DCMAO San Francisco, California				
Aerojet, Sacramento, CA	15	1,951.6	8	60.2
DCMD South				
DPRO Martin Marietta, Orlando, Florida	20	881.3	7	880.1
DCMAO Orlando, Florida				
Litton Laser, Apopka, Florida	683	69.1	10	36.5
Dayron, Orlando, Florida	4	42.2	4	42.2

Location and Contractor		Number of Open Contracts	Value of Open Contracts (millions)	Number of Contracts Included In Review	Value of Open Contracts Reviewed (millions)
DCMAO Clearwater, Florida					
Honeywell, Clearwater, Florida		34	$ 843.8	6	$ 88.5
UNISYS, Oldsmar, Florida		19	94.3	10	92.8
E-Systems, St. Petersburg, Florida		25	62.3	10	62.2
DCMAO DALLAS, Texas					
Electrospace Systems, Richardson, Texas		51	361.4	7	321.0
Total	DCMAOs	902	5,074.1	78	2,034.0
	DPROs	6,021	84,116.2	26	8,741.8
		6,923	$89,190.3	104	$10,775.8

Appendix D. Summary of Prior Audits and Other Reviews

Inspector General, DoD

Report No. 93-091, "Management of the DoD Action Plan for Improving the Quality of Spare and Repair Parts," April 28, 1993. The report states that Office of the Secretary of Defense officials did not manage the DoD Action Plan. The Under Secretary of Defense for Acquisition and Technology did not assign management of the DoD Action Plan to the appropriate action office, did not monitor implementation of the DoD Action Plan, and did not change the DoD Action Plan as needed. The report recommended that the Under Secretary of Defense for Acquisition and Technology revise and reissue the DoD Action Plan every 2 years, establish a feedback system to monitor DoD Component implementation of the DoD Action Plan, assign management responsibility to the appropriate office and update the March 1990 version of the DoD Action Plan. The Principal Deputy Assistant Secretary of Defense (Production and Logistics) concurred with the intent of the recommendations. He included elements of the action plan in DoD 4140.1-R, "Material Management Regulation," and included a requirement for the DoD Components to develop action plans that included performance measures and milestones in applicable acquisition phases and document actions and accomplishments that implement quality programs objectives.

Report No. 92-099, "Quality Assurance Actions Resulting from Electronic Component Screening," June 8, 1992. The report describes problems with the collection, distribution, and use of quality deficiency information in DoD. The report also stated that testing of electronic components was inadequate to identify and follow up on contractors who provided defective electronic components. In addition, DoD did not have effective remedies to obtain reimbursement or replacement for major and critical products with patent defects. The Army, Navy, Air Force, and DLA generally concurred with the report's findings and recommendations. As a result of the recommendation, the Director, Defense Procurement, requested and DLA officials agreed to identify problem products and product lines/suppliers and to describe ongoing, planned, or proposed initiatives to address nonconforming products and possible policy proposals covering recoupments for products with major nonconformances.

Report No. 90-113, "Nonconforming Products Procured by the Defense Industrial Supply Center," September 27, 1990. The report states that, of 1.3 billion parts, 27 percent (valued at about $171 million) were major nonconforming products. The audit recommendations involved standardizing definitions for nonconformances, improving new receipt quality assurance testing, establishing criticality of spare parts, and improving the quality

assurance feedback system. The DLA implementation of the DoD Action Plan for Improving the Quality of Spare and Repair Parts satisfied the intent of the recommendations.

Inspection Report No. 90-INS-17, "DoD Quality Assurance Program," August 29, 1990. The report states that administrative contracting officers were not seeking consideration for excessive amounts of minor nonconforming material. The report recommended that DLA establish and implement policy that ensured consideration would be sought for each contract containing nonconforming material. DLA nonconcurred with the recommendation, stating that DLA policy was consistent with the Federal Acquisition Regulation. DLA and IG, DoD, agreed that the proposed actions in the DLA implementation of the DoD Action Plan for Improving the Quality of Spare and Repair Parts would provide the needed improvements to the quality of products.

Appendix E. Staffing Methodologies and Cost Information Systems

DCMD Methodologies. DCMC provided the authority for determining staffing levels to the DCMD commanders. The district commanders developed separate and unique methodologies for determining appropriate staffing for DPROs and DCMAOs. Each methodology started with the past year's staffing plans and adjusted the staffing levels based on the funding allocations from DCMC. District commanders made adjustments on the basis of resource reviews of various metrics that always included business activity in the form of contracts. The adjustments were always constrained by the policies and procedures described in the DoD Priority Placement Program, which describes the restrictions for reassignments outside of commuting areas. We analyzed the staffing methodologies for DCMDs Northeast, South, and West to determine how staffing for quality assurance was done.

DCMD Northeast. DCMD Northeast uses a combination of workload measurements and on-site resource reviews to determine staffing levels. For FY 1994, 21 corporate business reviews were performed to relate the previous years staffing and workload with the estimates for future work and the staffing needed to satisfy the estimated work load. In addition, each DPRO and DCMAO commander conducted a staffing self assessment. All assessments were baselined on September 1993 staffing levels and were evaluated against various factors including:

- o projected volume of Defense contracts,
- o percentage of completion of existing contracts,
- o reductions in contractor workforce,
- o number of large contracts,
- o geographic dispersion of contractor sites,
- o projected reorganization or realignment,
- o unusual customer inspection requirements, and
- o prior staffing adjustments.

The combined corporate business reviews for DCMD Northeast recommended an overall reduction of 280 contract administration personnel from the 1993 baseline. Although the reviews considered the level of quality assurance required through review of historical workload indicators, the number of quality assurance specialists recommended was not broken out. The level of staffing for quality assurance was left to the individual DCMAO and DPRO commander within the commander's overall authorized staffing limits.

DCMD West. DCMD West relies primarily on Command Oversight, Assistance, and Resource Reviews (Command Reviews) and headquarters-level evaluations of projected workload to determine staffing levels. Command Reviews are assessments of operational support functions to determine whether DPROs and DCMAOs have implemented DLA regulations and policies. Command Reviews also evaluate DPRO and DCMAO staffing needs.

DCMD West scheduled Command Reviews for 19 DCMAOs and DPROs from October 1993 through December 1994. Of the 19 Command Reviews visits scheduled, 8 reports were completed before the end of our audit in August 1994. The Command Reviews as of August 31, 1994, recommended a reduction of 50 personnel at 7 sites and an increase of 15 at 2 sites. The DPRO and DCMAO commanders would determine at which sites to reduce personnel. The Command Reviews evaluated historical workload, including

- o the number of open contracts,
- o the complexity of items being manufactured,
- o the number of mandatory inspections,
- o administrative support activities,
- o material review board activity, and
- o corrective action requests.

In their review of staffing levels and workload, the Command Reviews identified quality assurance specialists performing nonvalue added tasks, or having little work, and determined that the lack of a management data system to fully assess workload obscured any further visibility of resource allocations. We interviewed members of the Command Review teams and were told that the resource portion of the review lacked guidance, structure, consistency, and objectivity for determining appropriate staffing levels. Although the Command Review team reports stated their staffing level recommendations were based on workload, the recommendations were based on estimates from workload factors. There were no indications that the quality assurance activities required for the contracts assigned to each DPRO was evaluated to provide a basis for future staffing levels.

DCMD South. DCMD South uses two systems to determine staffing needs. A statistical model called METRICS 2000 is used for allocating funds to the DCMAOs, while a less scientific approach for equitable allocation based on contractor environment, contract workload volume, and other unique factors was used for the DPROs.

The METRICS 2000 model applies regression analysis to performance indicators. The quality assurance indicator used to determine adequate staffing levels is the number of contracts on-hand adjusted by a factor for the level of quality oversight required. The three categories for weighted factors are MIL-Q-9858A contracts, MIL-I-45208 contracts, and all other contracts.

MIL-Q is graded as a higher level of quality assurance standard and is considered to require a greater level of effort over a longer duration. METRICS 2000 does not attempt to project the work needed to satisfy process oriented quality assurance.

A separate model was developed for the 10 largest DPROs because the performance indicators do not provide a valid correlation for smaller DPROs. The DPRO model applies regression analysis to three overall indicators:

- o total active contracts,
- o unliquidated obligations, and
- o the number of contractor personnel working on Government contracts.

Both the DCMAO and the DPRO models rely on information from the Quality Assurance Management Information System. Though the models contained adjustment factors for level of effort for quality assurance requirements, the METRICS 2000 models were designed to determine aggregate staffing levels based on the volume of Government business rather than the number of work hours required to accomplish directed quality assurance tasks.

Conclusion. The DCMDs use historical information as the bases for the staffing methodologies. DCMDs do not use projected workload derived from an analysis of the tasks required to adequately accomplish process-oriented quality assurance.

DLA Unit Cost

DLA relies on historical costs to determine the basis for future funding of DCMC staffing. The adequacy of staffing is not fully considered in the analyses of the unit cost information collected.

Unit Cost System. DCMC used information from the DLA Unit Cost System for budget planning and resource allocation. Unit cost provides the actual cost of producing 18 product and service categories DCMC-wide. The products and services were accounted for without regard to organizational structure. DoD and DLA formulated the DCMC budget based on the combined data for all 18 unit cost codes and predicted work volume. DCMC then allocated each DCMD budget based on unit cost data and the overall amount provided from DLA.

DCMC separated labor hours and costs into 18 products and services to predict work volume for the subsequent budget year. Unit cost codes 10, "Quality Assurance," and 11, "Mandatory QA Inspection Requirements," are the two primary codes associated with quality assurance.

o Unit cost code 10, "Quality Assurance," is based on the number of contracts closed.

o Unit cost code 11, "Mandatory QA Inspection Requirements," is based on the number of quality assurance letters of instruction received.

The letters of instruction provide details on the specific mandatory quality assurance inspections to be performed.

DCMC uses the unit cost method to determine the annual budget for the DCMDs. The unit cost method uses the number of contracts closed as the basis for determining cost per unit of administering contract quality assurance. Unfortunately, the number of contracts closed does not effectively consider quality assurance workload because the amount of quality assurance work varies between contracts. For example, the quality assurance work on 1 contract could exceed the cumulative quality assurance work on 100 contracts.

Activity-Based Costing. Activity-based costing is an analytical methodology that assesses the cost of the day-to-day operating processes prescribed by DCMC policy directives. Unit cost separates labor hours and costs into 18 unit cost codes covering all areas of contract administration, including quality assurance. Activity-based costing further identifies 117 separate activities within each of the 18 unit cost codes. The 117 activity-based costing activities are intended to identify for what purpose resources are expended in the 18 unit cost codes. According to DCMC officials, however, activity-based costing is based on historical data, only identifying the purposes for which resources were expended, and is not a method to determine the adequacy of quality assurance resources necessary for operational effectiveness.

Appendix F. Summary of Potential Benefits Resulting From Audit

Recommendation Reference	Description of Benefit	Type of Benefit
A.1.	Program Results. Standardizes a key concept of PROCAS in DLAM 8000.5 by defining the term, "critical manufacturing process."	Nonmonetary.
A.2.a.	Internal Controls. Establishes accountability for verifying compliance with FAR documentation requirements to document the scope of quality assurance work required.	Nonmonetary.
A.2.b.	Internal Controls. Establishes accountability for accurately identifying critical quality assurance work.	Nonmonetary.
A.2.c.	Internal Controls. Establishes accountability for requiring full documentation of process proofing of contractor process inputs.	Nonmonetary.
A.2.d.	Internal Controls. Establishes accountability for requiring full documentation of reproofing contractor processes when changes occur. Establishes requirement to certify every 2 years when changes have not occurred.	Nonmonetary.
A.2.e.	Internal Controls. Establishes accountability for requiring the reporting of processes identified, critical priority processes identified, and processes either proofed or reproofed through the Quality Assurance Information Management System.	Nonmonetary.

Appendix F. Summary of Potential Benefits Resulting From Audit

Recommendation Reference	Description of Benefit	Type of Benefit
A.3.a.	Internal Controls. Establishes accountability for requiring quality assurancce specialist supervisors to review and evaluate the adequacy of processes identified.	Nonmonetary.
A.3.b.	Internal Controls. Establishes accountability for requiring quality assurance specialist supervisors to review and evaluate the adequacy of documentation for proofed and reproofed processes.	Nonmonetary.
A.3.c.	Internal Control. Establishes accountability for requiring quality assurance specialist supervisors to review and evaluate the accuracy of information reported through the Quality Assurance Management Information System.	Nonmonetary.
A.4.	Internal Controls. Establishes an initiative to measure the effectiveness of each contractor's quality control program.	Nonmonetary.
A.5.a.	Internal Controls. Establishes a requirement in the internal Management Control Program to minimize quality assurance risks.	Nonmonetary.
A.5.b.	Internal Controls. Establishes quality assurance as a high risk area in the internal management control program.	Nonmonetary.
B.1.	Program Results. Establishes a DLA goal for basing quality assurance manpower on workload assessments.	Nonmonetary.

Recommendation Reference	Description of Benefit	Type of Benefit
B.2.	Internal Controls. Requires documenting of quality assurance workload tasks and reporting through the Quality Assurance Management Information System.	Nonmonetary.
B.3.	Internal Controls. Requires supervisory review and validation of quality assurance workload data input to the Quality Assurance Management Information System.	Nonmonetary.
B.4.	Internal Controls. Requires documentation of workload tasks to establish the baseline for staffing decisions.	Nonmonetary.
B.5.	Program Results. Establishes a standard methodology basis for determining staffing levels.	Nonmonetary.
B.6.	Internal Controls. Establishes a standard approach for determining surplus and needed quality assurance personnel by location.	Nonmonetary.
B.7.	Internal Controls. Establishes policy requiring DCMC to inform customers when quality assurance specialists cannot perform the quality assurance required on specific source inspected contracts.	Nonmonetary.

Appendix G. Organizations Visited Or Contacted

Defense Organizations

Defense Logistics Agency, Alexandria, VA
- Defense Contract Management Command, Alexandria, VA
  - Defense Contract Management District Northeast, Boston, MA
    - Defense Plant Representative Offices
      - General Electric, Lynn, MA
      - Raytheon, Burlington, MA
    - Defense Contract Management Area Operations Boston, MA
    - Defense Contract Management Area Operations Philadelphia, PA
  - Defense Contract Management District South, Atlanta, GA
    - Defense Contract Management Area Operations
      - Baltimore, MD
      - Clearwater, FL
      - Orlando, FL
      - Dallas, TX
      - Atlanta, GA
      - Birmingham, AL
    - Defense Plant Representative Offices
      - Martin Marietta, Orlando, FL
      - Lockheed, Marietta, GA
  - Defense Contract Management District West, El Segundo, CA
    - Defense Contract Management Area Operations
      - El Segundo, CA
      - San Diego, CA
      - San Francisco, CA
      - Van Nuys, CA
  - Defense Plant Representative Offices
      - McDonnell Douglas, St. Louis, MO
      - McDonnell Douglas, Long Beach, CA
      - McDonnell Douglas, Huntington Beach, CA
      - FMC, San Jose, CA
      - Hughes, Fullerton, CA
      - Lockheed, Sunnyvale, CA
      - TRW, Redondo Beach, CA
      - Northrop, Hawthorne, CA

Appendix H. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition and Technology
  Deputy Under Secretary of Defense (Acquisition Reform)
  Deputy Under Secretary of Defense (Logistics)
    Director of Materiel and Resource Management
Under Secretary of Defense (Comptroller) Financial Officer
Assistant Secretary of Defense (Economic Security)
Director, Administration and Management
  Program Manager, Total Quality Management

Defense Organizations

Director, Defense Logistics Agency
  Commander, Defense Contract Management Command

Non-Defense Federal Organizations

Office of Management and Budget
Technical Information Center, National Security and International Affairs Division, General Accounting Office

Chairman and Ranking Minority Member of Each of the Following Congressional Committees and Subcommittees:

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

Part IV - Management Comments

Defense Logistics Agency Comments

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

IN REPLY REFER TO DDAI

3 MARCH 1995

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

SUBJECT: DoD IG Draft Report, Defense Contract Management Command Management of Quality Assurance Resources (Project No. 3CF-0071)

This is in response to your 21 December 1994 request.

14 Enclosures

JACQUELINE G. BRYANT
Chief, Internal Review Office

cc:
AQCBA
AQCOG

TYPE OF REPORT: Audit **PURPOSE OF INPUT:** Initial Position

AUDIT TITLE: DCMC Management of Quality Assurance Resources (Project No. 3CF-0071)

FINDING A: DCMC did not effectively manage the quality assurance workforce. Quality assurance specialists and supervisors at all of the 13 audit sites did not effectively implement the In-Plant Quality Evaluation or the Process-Oriented Contract Administration Services programs (IQUE and PROCAS). Specifically, these conditions occurred because DCMC:

did not adequately prioritize the need to identify critical manufacturing processes for IQUE and PROCAS;
did not hold quality assurance specialists accountable for implementing either IQUE or PROCAS;
did not hold supervisors responsible for reviewing and evaluating the identification of, and proofing of, processes;
did not effectively follow-up on a 1992 action plan to improve the IQUE program; and
did not report realistic assessments of the risk associated with IQUE in its Internal Management control Plan.

Consequently, neither IQUE nor PROCAS provided adequate assurance that the products the Government accepted were produced under a reliable process that would consistently produce a conforming product. In addition, QASs did not take advantage of process-oriented quality assurance to establish a basis for substituting process proofing and product audits for more labor-intensive and expensive mandatory inspections.

DLA COMMENTS: Nonconcur. The IG does not provide sufficient evidence for the finding that DCMC did not effectively manage quality assurance specialists, or that the IQUE and PROCAS methodologies were not effectively implemented and managed at the 13 audit sites. We disagree with the IG's position relating to what constituted acceptable implementation of IQUE and PROCAS and what level of documentation with respect to process proofing is required to be maintained. In-plant personnel and supervisors have been and still are held responsible for assuring that contractors provide only conforming product to our customers. Although the report indicates that DCMC assurance actions are inadequate, no evidence concerning defective product accepted at the 13 audit sites is presented to support the statement.

The adoption of a process oriented methodology for contract administration was a significant change in the way DCMC verified contractor control. Throughout the transition to this methodology, the Agency has been identifying and making changes to improve the approach as necessary. This has been especially

true with respect to selecting and prioritizing processes for proofing and improvement. The IQUE manual did not specifically provide prioritization criteria for process selection and proofing. Rather, the application of the IQUE guidelines were to be tailored to specific facilities, product lines, and or/processes as judged necessary by DCMC personnel to implement an effective and efficient IQUE program. Based upon feedback and experience, prioritization is now more specifically addressed and defined in the PROCAS and Product and Manufacturing Assurance chapters of the DCMC "One Book". The fact that it wasn't done earlier is not, in our opinion, evidence of mis-management or mis-application of policy. Appropriate changes were being put in place prior to the initiation of the subject audit. The process oriented approach promulgated by IQUE and PROCAS is site specific and relies heavily upon the professional judgement of the onsite QA personnel, using customer input and data to select and prioritize processes. A wide variation of approaches to verifying contractor control of product quality can be expected. Variation is not indicative of mis-management or poor implementation.

The follow-on recommendations to this finding offered by the audit team builds a generic improvement scenario. It addresses a complete management accountability process that encompasses everything from individual performance appraisals through the Agency's internal control program. However, the improvement scenario offered is at times ill founded because of the "critical process" concept applied by the audit team during the review and the auditor's mis-interpretation of what constituted sufficient and proper process proofing documentation. These two factors led to an inaccurate assessment of the overall adequacy of DCMC's in-plant surveillance activities. While we may not agree with all of the specifics of the management accountability scheme offered by the report, we recognize the benefits of having such mechanisms in place is beneficial and we are taking steps to improve our actions in those areas. Specific actions will be addressed when commenting upon each recommendation. While we agree there is room for improvements in the manner of how PROCAS is defined and implemented, the audit team's assertions and conclusions do not accurately reflect the sufficiency of the Agency's efforts in the area of quality assurance.

INTERNAL MANAGEMENT CONTROL WEAKNESSES:
(x) Nonconcur

ACTION OFFICER: Robert Schmitt, AQCOG
PSE REVIEW/APPROVAL: Robert P. Scott, Exec Dir, Contract Mgmt
COORDINATION: Dave Stumpf, DDAI J Bryant, DDAI, 3 May 95

DLA APPROVAL:

03 [illegible] 1995

[illegible] Director

TYPE OF REPORT: Audit **PURPOSE OF INPUT:** Initial Position

AUDIT TITLE: DCMC Management of Quality Assurance Resources (Project No. 3CF-0071)

RECOMMENDATION A.1: Recommend that the Director, Defense Logistics Agency, define in the Defense Logistics Agency Manual 8000.5 "One Book" (draft) October 1994, the term "critical manufacturing process" so that the meaning and intent of the term is clear.

DLA COMMENTS: Concur. Clarification of the term "critical process" was required, and accomplished via DCMC Policy Letter 94-14, "Reporting PROCAS Progress." This policy letter was drafted prior to release of the DoD IG's initial draft report and published 11 Oct 94. A process is considered critical if during process selection it is found to significantly affect the cost, schedule, or technical performance of the product or service. This definition will also be incorporated into the DCMC "One Book" chapter on PROCAS, at next revision.

DISPOSITION:
(x) Action is Ongoing. Estimated completion Date: 30 Apr 95

INTERNAL MANAGEMENT CONTROL WEAKNESSES:
(x) Concur; however weakness is not considered material

ACTION OFFICER: Robert Schmitt, AQCOG
PSE REVIEW/APPROVAL: Robert P. Scott, Exec Dir, Contract Mgmt,
COORDINATION: Dave Stumpf, DDAI
Bryant, DDAI, 3 Nov 95

DLA APPROVAL:

Final Report Reference

TYPE OF REPORT: Audit **PURPOSE OF INPUT:** Initial Position

AUDIT TITLE: DCMC Management of Quality Assurance Resources (Project No. 3CF-0071)

Revised.

RECOMMENDATION A.2: Require that DCMC establish a system of accountability in either Defense Logistic Agency Manual 8000.5, "One Book" or in Defense Logistics Agency Manual 8200.5, "In-Plant Quality Evaluation," and in standard performance plans to make quality assurance specialists responsible for fully implementing process-oriented quality assurance by:

a. Identifying a complete universe of processes and sub-processes to a level of detail that satisfactorily describes the contractor's sequence of processes for producing conforming products in accordance with each contract assigned.

b. Identifying critical processes and documenting why the process is critical.

c. Fully documenting process proofing of contractor process inputs to including equipment, materials, people, methods, and environmental controls, and either flowcharting extensive or complex processes or, for simple processes, listing the sequence of applicable operations.

d. Fully documenting process reproofings and the changes in contractor processes every 2 years. If the contractor processes do not change, document the fact that no changes had occurred.

e. Requiring quality assurance specialists to report through the Quality Assurance Management Information System processes and critical processes identified, proofed, and reproofed.

DLA COMMENTS: Nonconcur. It is not always necessary to identify the "universe of processes," or to require a proofing of each process every two years. For example, where analysis of credible data indicates processes are consistently producing conforming products, it may not be necessary or prudent to expend DCMC resources identifying and proofing. We believe that significant events (e.g., Delta change to single cell) and data, not arbitrary minimum schedules, should drive the frequency and intensity of DCMC oversight. DCMC policies give the CAOs the flexibility to structure effective programs. PROCAS Teams are already required (see DCMC "One Book" Chapter on PROCAS, under step 5, "Understanding the Process") to document process proofing, including the techniques used, the process inputs and outputs proofed, where the proofing was performed, who performed the proofing, proofing results, and actions taken based on proofing results. Furthermore, PROCAS Teams are already

Final Report Reference

responsible (see DCMC "One Book" Chapter on PROCAS, under step 4, "Process Selection" and DCMC Policy Letter 94-14, "Reporting PROCAS Progress") for identifying critical processes (if any). The team leader's role is to guide, support, and manage. Individual accountability is maintained through routine team leader communication with individual specialists, individual performance plans, and individual appraisals. We feel that this is an effective method for tracking accountability, better than the recommended use of the Quality Assurance Management Information System. We do not believe it is necessary to mandate additional documentation requirements to maintain accountability. However, we recognize that documentation at some audit sites was insufficient. We will issue guidance in a letter to reemphasize the need for adequate documentation and re-proofing to all DCMC field activities and verify compliance during assessment activities.

Revised

DISPOSITION:
(x) Action is Ongoing. Estimated completion Date: 31 Mar 95

INTERNAL MANAGEMENT CONTROL WEAKNESSES:
(x) Nonconcur

ACTION OFFICER: Robert Schmitt, AQCOG
PSE REVIEW/APPROVAL: Robert P. Scott, Exec Dir, Contract Mgmt,
COORDINATION: Dave Stumpf, DDAI
Bryant, DDAI, 31 Mar 95

DLA APPROVAL:

01 [illegible] 1995

[signature]

[illegible] P. FARRELL, JR.
[illegible]
Principal Deputy Director

Final Report Reference

TYPE OF REPORT: Audit **PURPOSE OF INPUT:** Initial Position

AUDIT TITLE: DCMC Management of Quality Assurance Resources (Project No. 3CF-0071)

Revised

RECOMMENDATION A.3: Require that DCMC establish a system of accountability in either Defense Logistics Agency Manual 8000.5 "One Book" or in Defense Logistics Agency Manual 8200.5, "In-Plant Quality Evaluation," and in standard performance plans to make the supervisors of quality assurance specialists responsible for reviewing and evaluating:

a. The adequacy of the universes of processes identified,

b. The adequacy of documentation supporting processes proofed and reproofed.

c. The accuracy of the information reported by quality assurance specialists through the Quality Assurance Management Information system.

DLA COMMENTS: Nonconcur. As discussed above (under Rec A.2), we do not believe it is always necessary to identify the "universe of processes" and supervisors are already responsible through performance appraisals for guiding, supporting and managing the work of their employees. Similarly, supervisors are already responsible for guiding, supporting, and managing information gathering and reporting. That doesn't mean we are satisfied with status quo. The evolving DCMC Quality Improvement Criteria and Assessment Architecture (see DCMC "One Book" Chapter on Assessment Architecture) provides a framework in which the adequacy of the approach, deployment, and results of all management controls, information systems and operational processes can be uniformly evaluated and independently validated. The criteria and assessment architecture are akin to the Malcolm Baldrige National Quality Award Program. It is an integrated, corporate approach to accomplishing and evaluating management controls at each DCMC organizational level, including Headquarters, Districts, and CAOs. The purpose of these assessments is to identify the health of operations, and pinpoint where process improvements may be needed. The assessment process tools include self-assessments, internal operations assessments, internal customer support visits, contractor assessments, special process reviews, and culminating in Commanders' Annual Statements of Assurance. The Assessment Structure through the Unit Self Assessments will specifically address the efficiency and effectiveness of the process inputs and outputs in DLAM 8000.5 DCMC Contract Management, i.e. the adequacy of the Product and

Manufacturing Assurance surveillance plan and the sufficiency of its implementation. We believe this approach will lead DCMC to significant, long-term improvements in performance, efficiency, and customer satisfaction.

DISPOSITION:
(x) Action is Considered Complete.

INTERNAL MANAGEMENT CONTROL WEAKNESSES:
(x) Nonconcur

ACTION OFFICER: Robert Schmitt, AQCOG
PSE REVIEW/APPROVAL: Robert P. Scott, Exec Dir, Contract Mgmt,
COORDINATION: Dave Stumpf, DDAI
Bryst, DDAI, 31 Mar 95

DLA APPROVAL:

0 3 MAR 1995

Final Report Reference

Revised

TYPE OF REPORT: Audit **PURPOSE OF INPUT:** Initial Position

AUDIT TITLE: DCMC Management of Quality Assurance Resources (Project No. 3CF-0071)

RECOMMENDATION A.4: Implement Rec B.5.b in Inspector General, DoD, Report No. 94-079, "DoD Components Implementing Action Plans for Improving the Quality of Spare Parts," April 12, 1994, to revise the Defense Logistics Agency Action Plan for Continuously Improving the Quality of Spare and Repair Parts, adding an objective to measure the extent to which each DoD contractor's quality control processes are reviewed and validated.

DLA COMMENTS: Nonconcur. We do not believe that merely counting the tasks we perform is a good measure of performance. And for reasons previously discussed (under Rec A.2), we do not believe it is always necessary to count the processes in the "universe." It is therefore inappropriate to use that "universe" as a baseline against which process review and validation efforts are measured. As explained above (under Rec A.3), our evolving assessment methodology focuses on local responsibility and accountability, using the process outlined in the Assessment Architecture chapter of the "One Book". It evaluates the effectiveness of the local approach, deployment, and results, rather than just compliance with mandated, detailed documentation requirements.

DISPOSITION:
(x) Action is Considered Complete.

INTERNAL MANAGEMENT CONTROL WEAKNESSES:
(x) Nonconcur

ACTION OFFICER: Robert Schmitt, AQCOG
PSE REVIEW/APPROVAL: Robert P. Scott, Exec Dir, Contract Mgmt,
COORDINATION: Dave Stumpf, DDAI
[illegible], DDAI, 3 Nov 95

DLA APPROVAL:

[illegible]

LAWRENCE P. FARRELL, SR.
Major General, USAF
Principal Deputy Director

Final Report Reference

TYPE OF REPORT: Audit **PURPOSE OF INPUT:** Initial Position

AUDIT TITLE: DCMC Management of Quality Assurance Resources (Project No. 3CF-0071)

RECOMMENDATION A.5: Establish a requirement in the Internal Management Control Program to evaluate process-oriented quality assurance in accordance with criteria that measure the execution of In-Plant Quality Evaluation and Process-Oriented Contract Administration services in terms of the extent that each DoD supplier's quality control processes are reviewed and validated.

Revised

DLA COMMENTS. Nonconcur. We do not believe that merely counting the tasks we perform is a good measure of performance. And for reasons previously discussed (under Rec A.2), we do not believe it is always necessary to count the processes in the "universe." It is therefore inappropriate to use that "universe" as a baseline against which process review and validation efforts are measured. As explained above (under Rec A.3), our evolving assessment methodology focuses on local responsibility and accountability, using the process outlined in the Assessment Architecture chapter of the "One Book". It evaluates the effectiveness of the local approach, deployment, and results, rather than just compliance with mandated, detailed documentation requirements.

DISPOSITION:
(x) Action is Considered Complete.

INTERNAL MANAGEMENT CONTROL WEAKNESSES:
(x) Nonconcur

ACTION OFFICER: Robert Schmitt, AQCOG
PSE REVIEW/APPROVAL: Robert P. Scott, Exec Dir, Contract Mgmt,
COORDINATION: Dave Stumpf, DDAI
Bright, DDAI, 3 Nov 95

DLA APPROVAL:

TYPE OF REPORT: Audit **PURPOSE OF INPUT:** Initial Position

AUDIT TITLE: DCMC Management of Quality Assurance Resources (Project No. 3CF-0071)

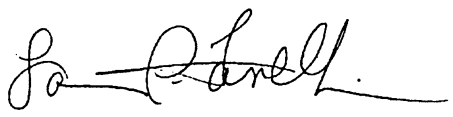
FINDING B: DCMC did not know how many quality assurance specialists were needed to perform the quality assurance mission because DCMC does not have an effective method for determining quality assurance staffing levels. Specifically, DCMC does not analyze the actual work required to perform process-oriented quality assurance required for IQUE and PROCAS. In addition, DCMC routinely adjusts the previous years' staffing levels downward relying primarily on normal attrition to fit reduced funding. As a result, DCMC did not have an adequate basis for justifying annual funding requests for quality assurance staffing required to perform the quality assurance mission and for determining the actual imbalances in quality assurance staffing levels.

DLA COMMENTS: Concur. Although DCMC does not have a single command-wide resourcing technique, it should be noted that a variety of resourcing methods are being used throughout the command (i.e. DCMD South Metrics 2000, onsite facility based resource assessments, and District resource reviews). As indicated in our response to Inspector General, DoD Report No. 94-INS-12, Inspection of the Defense Contract Management Command", September 29, 1994, DCMC is developing a manpower management program based upon quantitative and qualitative workload measurement techniques. The program objectives include identifying a proper resource baseline, and formulating a consistent resourcing process to be used throughout DCMC that reviews and projects requirements. The results and recommendations of this report will be factored into the program.

INTERNAL MANAGEMENT CONTROL WEAKNESSES:
(x) Concur; however weakness is not considered material

ACTION OFFICER: Robert Schmitt, AQCOG
PSE REVIEW/APPROVAL: Robert P. Scott, Exec Dir, Contract Mgmt,
COORDINATION: Dave Stumpf, DDAI
Bryst, DDAI, 31 Mar 95

DLA APPROVAL:



TYPE OF REPORT: Audit **PURPOSE OF INPUT:** Initial Position

AUDIT TITLE: DCMC Management of Quality Assurance Resources (Project No. 3CF-0071)

RECOMMENDATION B.1: Recommend that the Director, Defense Logistics Agency, establish a goal for developing quality assurance manpower estimates based on assessed workload by FY 1996.

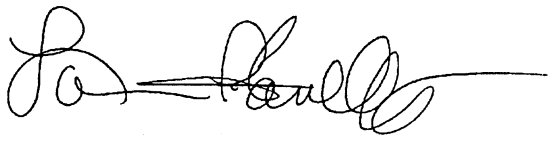
DLA COMMENTS: Concur. Manpower estimates will be a part of DCMC's manpower management program.

DISPOSITION:
(x) Action is Ongoing. Estimated completion Date: 31 Dec 95

INTERNAL MANAGEMENT CONTROL WEAKNESSES:
(x) Concur; however weakness is not considered material

ACTION OFFICER: Robert Schmitt, AQCOG
PSE REVIEW/APPROVAL: Robert P. Scott, Exec Dir, Contract Mgmt,
COORDINATION: Dave Stumpf, DDAI
Boyd, DDAI, 31Mar95

DLA APPROVAL:



LAWRENCE P. FARRELL, JR.
Director,

Final Report Reference

Revised

TYPE OF REPORT: Audit **PURPOSE OF INPUT:** Initial Position

AUDIT TITLE: DCMC Management of Quality Assurance Resources (Project No. 3CF-0071)

RECOMMENDATION B.2: Recommend that the Director, Defense Logistics Agency, require that quality assurance specialists document the estimated quality assurance workload tasks required for each contract and the time needed to proof applicable processes, fully perform mandatory inspections, product audits, material reviews, investigations of Product Quality Deficiency Report and subcontract quality assurance. Quality Assurance specialists should report the workload estimates through the Quality Assurance Management Information system.

DLA COMMENTS: Nonconcur with the specificity of the recommendation. It is unrealistic to expect a finite manpower estimate for such activities such as material review and investigations of PQDRs prior to contract performance. We do, however, concur with the documentation of estimated manpower needs at each facility. The DLAM 8000.5 process on Product and Manufacturing Assurance requires the development of a written plan for surveillance of the product assurance and manufacturing processes. One of the outputs of the process is a DCMC resource/skill requirement. The method for maintaining management visibility will be addressed by DCMC's manpower management program.

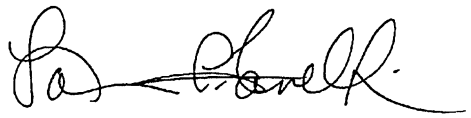
DISPOSITION:
(x) Action is Ongoing. Estimated completion Date: 31 Dec 95

INTERNAL MANAGEMENT CONTROL WEAKNESSES:
(x) Nonconcur

ACTION OFFICER: Robert Schmitt, AQCOG
PSE REVIEW/APPROVAL: Robert P. Scott, Exec Dir, Contract Mgmt,
COORDINATION: Dave Stumpf, DDAI
JST, DDAI, 3 Mar 95

DLA APPROVAL:

03 MAR 1995



Final Report Reference

TYPE OF REPORT: Audit **PURPOSE OF INPUT:** Initial Position

AUDIT TITLE: DCMC Management of Quality Assurance Resources (Project No. 3CF-0071)

RECOMMENDATION B.3: Recommend that the Director, Defense Logistics Agency, require that quality assurance specialists supervisors review and certify the process-oriented quality assurance actual workload estimates reported through the Quality Assurance Management Information system.

Revised

DLA COMMENTS: Nonconcur with the specificity of the recommendation. Concur with management verification of workload estimates. This will be accomplished during normally scheduled supervisory visits and management reviews. Implementation of DCMC's manpower management program will also include methods for verifying accuracy of workload estimates.

DISPOSITION:
(X) Action is Ongoing. Estimated completion Date: 31 Dec 95

INTERNAL MANAGEMENT CONTROL WEAKNESSES:
(x) Nonconcur

ACTION OFFICER: Robert Schmitt, AQCOG

COORDINATION: Dave Stumpf, DDAI
JS, DDAI, 31 Mar 95

DLA APPROVAL:

TYPE OF REPORT: Audit **PURPOSE OF INPUT:** Initial Position

AUDIT TITLE: DCMC Management of Quality Assurance Resources (Project No. 3CF-0071)

RECOMMENDATION B.4: Recommend that the Director, Defense Logistics Agency, use documented process-oriented quality assurance workload estimates as the basis for budget requests for each quality assurance resource.

DLA COMMENTS: Concur. Manpower management program being developed that will use appropriate factors to determine quality assurance workload estimates derived at the facility level. These estimates will be used as the basis for budget estimates at each organizational level.

DISPOSITION:
(x) Action is Ongoing. Estimated completion Date: 31 Dec 95

INTERNAL MANAGEMENT CONTROL WEAKNESSES:
(x) Concur; however weakness is not considered material

ACTION OFFICER: Robert Schmitt, AQCOG
PSE REVIEW/APPROVAL: Robert P. Scott, Exec Dir, Contract Mgmt,
COORDINATION: Dave Stumpf, DDAI
Jft, DDAI, 31 Mar 95

DLA APPROVAL:

LAWRENCE P. FARRELL, JR.
Major General, USAF
Principal Deputy Director

TYPE OF REPORT: Audit **PURPOSE OF INPUT:** Initial Position

AUDIT TITLE: DCMC Management of Quality Assurance Resources (Project No. 3CF-0071)

RECOMMENDATION B.5: Recommend that the Director, Defense Logistics Agency, develop standard methodology to determine the number of quality assurance specialists needed to perform the contract quality assurance mission based on documented estimates of workload.

DLA COMMENTS: Concur. Manpower management program being developed.

DISPOSITION:
(x) Action is Ongoing. Estimated completion Date: 31 Dec 95

INTERNAL MANAGEMENT CONTROL WEAKNESSES:
(x) Concur; however weakness is not considered material

ACTION OFFICER: Robert Schmitt, AQCOG
PSE REVIEW/APPROVAL: Robert P. Scott, Exec Dir, Contract Mgmt,
COORDINATION: Dave Stumpf, DDAI
JST, DDAI, 31 Mar 95

DLA APPROVAL:

TYPE OF REPORT: Audit PURPOSE OF INPUT: Initial Position

AUDIT TITLE: DCMC Management of Quality Assurance Resources (Project No. 3CF-0071)

RECOMMENDATION B.6: Recommend that the Director, Defense Logistics Agency, standardize the approach and the rationale for determining and describing surplus quality assurance positions and for identifying locations with urgent quality assurance needs.

DLA COMMENTS: Concur. Manpower management program being developed.

DISPOSITION:
(x) Action is Ongoing. Estimated completion Date: 31 Dec 95

INTERNAL MANAGEMENT CONTROL WEAKNESSES:
(x) Nonconcur

ACTION OFFICER: Robert Schmitt, AQCOG
PSE REVIEW/APPROVAL: Robert P. Scott, Exec Dir, Contract Mgmt,
COORDINATION: Dave Stumpf, DDAI
DJS, DDAI, 31 Mar 95

DLA APPROVAL:

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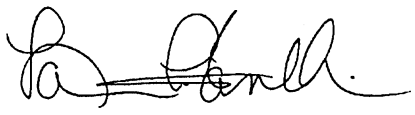

Final Report Reference

TYPE OF REPORT: Audit **PURPOSE OF INPUT:** Initial Position

AUDIT TITLE: DCMC Management of Quality Assurance Resources (Project No. 3CF-0071)

RECOMMENDATION B.7: Recommend that the Director, Defense Logistics Agency, inform Defense Logistics Agency customers when Defense Contract Management Command quality assurance specialists are not able to provide an adequate level of quality assurance on specific source inspected contracts.

Revised

DLA COMMENTS: Concur. It is DCMC policy to meet our customers expectations and only the Commander of DCMC is authorized to say no to a customer request for support. The DLAM 8000.5 process on Product and Manufacturing Assurance requires that appropriate customer technical representatives be contacted to establish points of contact, clarify requirements, express concerns and discuss findings.

DISPOSITION:
(x) Action is Considered Complete.

INTERNAL MANAGEMENT CONTROL WEAKNESSES:
(x) Concur; however weakness is not considered material

ACTION OFFICER: Robert Schmitt, AQCOG
PSE REVIEW/APPROVAL: Robert P. Scott, Exec Dir, Contract Mgmt,
COORDINATION: Dave Stumpf, DDAI
JT, DDAI, 3 Mar 95

DLA APPROVAL:

03 MAR 1995

Audit Team Members

This report was prepared by the Contract Management Directorate, Office of the Assistant Inspector General for Auditing, DoD.

Paul J. Granetto
Salvatore D. Guli
C.J. Richardson
Jeffrey L. Lynch
Michael J. Tully
Robert E. Bender
Joyce S. McCutcheon
Sanford J. Stone
Joseph E. Wolski
Ana M. Myrie