Audit Report

OFFICE OF THE INSPECTOR GENERAL

FOLLOW-UP OF THE MANAGEMENT OF LABOR STANDARDS AT AERONAUTICAL DEPOTS

Report No. 95-049 December 8, 1994

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Acronyms

ALC	Air Logistics Center
CLASS	Computer Logic for Automated Standards Setting
NADEP	Naval Aviation Depot
NAVAIRSYSCOM	Naval Air Systems Command
OIG	Office of the Inspector General
OSD	Office of the Secretary of Defense

INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
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December 8, 1994

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE (PERSONNEL AND READINESS)
ASSISTANT SECRETARY OF THE NAVY (FINANCIAL MANAGEMENT)
ASSISTANT SECRETARY OF THE AIR FORCE (FINANCIAL MANAGEMENT AND COMPTROLLER)
AUDITOR GENERAL, DEPARTMENT OF THE ARMY

SUBJECT: Audit Report on the Follow-up of the Management of Labor Standards at Aeronautical Depots (Report No. 95-049)

We are providing this final report for your review and comments. It discusses matters concerning the management of labor standards at five aeronautical depots. Comments on a draft of this report from the Principal Deputy Under Secretary of Defense (Personnel and Readiness), the Army, the Navy, and the Air Force were considered in preparing the final report.

Based on the Principal Deputy's and the Navy's comments, we revised three recommendations concerning comprehensive DoD policy, standardization of automation for DoD work measurement programs, and Navy labor standards of short duration. We also deleted the recommendation concerning the Navy's Productivity Gain Sharing Program. DoD Directive 7650.3 requires that all audit recommendations be resolved promptly. Therefore, we request that the Under Secretary of Defense (Personnel and Readiness), the Army, the Navy, and the Air Force provide comments on the 12 unresolved recommendations by February 6, 1995. The unresolved recommendations to the Army, the Navy, and the Air Force and the specific requirements for your comments are identified in the response required table at the end of Finding A. Recommendations are subject to resolution in accordance with DoD Directive 7650.3 in the event of nonconcurrence or failure to comment.

The courtesies extended to the audit staff are appreciated. If you have questions on this audit, please contact Mr. Christian Hendricks, Audit Program Director, at (703) 604-9427 (DSN 664-9427) or Mr. Tilghman Schraden, Audit Project Manager, at (703) 604-9436 (DSN 664-9436). Appendix E lists the distribution of this report. The audit team members are listed on the inside back cover.

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Assistant Inspector General
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Office of the Inspector General, DoD

Report No. 95-049 **December 8, 1994**
(Project No. 3LB-0016)

FOLLOW-UP ON THE MANAGEMENT OF LABOR STANDARDS AT AERONAUTICAL DEPOTS

EXECUTIVE SUMMARY

Introduction. This audit was a follow-up to Office of the Inspector General, DoD, Report No. 91-039, "Management of Labor Standards for Airframes at Aeronautical Depots," January 31, 1991.

Objective. Our follow-up audit objective was to assess the effectiveness of actions taken by the Military Departments to reduce depot maintenance costs and to improve aeronautical depot competitiveness by increasing the accuracy and reliability of labor standards for the maintenance and repair of aircraft airframes, engines, and components. The audit also assessed the incentives for the Military Departments to develop labor standards and the consequences of not developing labor standards. Additionally, we evaluated the applicable internal controls.

Audit Results. The Military Departments' work measurement programs for managing the development and evaluation of labor standards were ineffective and inconsistently applied to competitive and noncompetitive work loads. As a result, inefficiencies at the Military Departments' aviation depots affecting 5.84 million direct labor hours valued at $319.3 million were not readily identifiable to management. Additionally, DoD savings objectives from the competition of maintenance work loads and from improved capacity utilization at the maintenance depots may not be achieved. Further, bonus payments made to employees under the Navy's productivity gain sharing program may not have been fully justified (Finding A).

The Office of the Secretary of Defense oversight of the Military Departments' work measurement programs was ineffective. As a result, the Military Departments may be inefficiently operating their aviation maintenance depots, with work loads valued at about $2.7 billion annually (Finding B).

Internal Controls. Internal controls and the implementation of the DoD Internal Control Management Program were not effective in identifying material internal control weaknesses in the Military Departments' work measurement programs that should ensure engineered labor standards are established, reviewed, and updated. See Part I for the internal controls assessed and Finding A in Part II for details on the internal control weaknesses.

Potential Benefits of Audit. We could not quantify the potential monetary benefits to be realized from implementing the recommendations because the Military Departments did not maintain sufficient summary data for selecting and evaluating labor standards to determine projected savings from improving the management of labor standards. Details on the potential benefits are in Appendix C.

Summary of Recommendations. We recommend that the Military Departments implement effective guidance for managing the development and evaluation of labor standards and implement and use automated industrial engineering techniques. We recommend that the Army adequately staff its work measurement program. We also recommend that the Under Secretary of Defense (Personnel and Readiness), in coordination with other offices in the Office of the Secretary of Defense (OSD), develop and implement comprehensive policy on work measurement, complete the standardization of automated industrial engineering techniques, and sufficiently staff its oversight office.

Management Comments. The Principal Deputy Under Secretary of Defense (Personnel and Readiness) concurred or partially concurred with the findings and recommendations. The Principal Deputy noted that labor standards are not the only tool for evaluating the efficiency of depot maintenance operations. For Finding B, the Principal Deputy did not comment on the recommendations but described alternative measures to update management philosophy and policy on work measurement programs in coordination with other OSD offices. The Army concurred with the findings and recommendations, stating that additional policies and procedures on work measurement were published. However, the Commander, Corpus Christi Army Depot, nonconcurred with the recommendation to determine and assign the appropriate staffing to accomplish an effective work measurement program. The Commander believes that increased personnel staffing will not improve the effectiveness of a work measurement program; so he proposed an alternative action, stating that he would emphasize work measurement standards as a management tool to control labor hours. The Navy nonconcurred with all recommendations addressed to it except to provide adequate oversight and inspections to ensure that Navy policies and procedures are properly enforced. The Navy stated that a review of inspection reports indicates the Navy policies on work measurement were addressed. Further, the Navy believes that its current policies and procedures are adequate. The Air Force concurred fully or in principle with all recommendations addressed to it. A detailed discussion of management's comments is in Part II of the report. The complete texts of management's comments are in Part IV of the report.

Audit Response. We agree that labor standards are not the only available management tool; however, the DoD has invested heavily in this particular tool and should use it more effectively. We revised our recommendations to the Under Secretary of Defense (Personnel and Readiness) to establish comprehensive policy for work measurement in DoD in coordination with other OSD offices, and for the Office of the Secretary of Defense to complete the standardization of the automation of work measurement programs. Based on the Navy's comments, we revised the recommendation to the Navy on consolidating and reducing the number of existing labor standards of short duration. Because of the suspension of the Navy's Productivity Gain Sharing Program in FY 1994, we deleted the related recommendation. Other comments from the Under Secretary of Defense (Personnel and Readiness), the Army, the Navy, and the Air Force were not responsive. Therefore, we request that each provide comments to the final report on the unresolved issues by February 6, 1995.

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

Part I - Introduction

Background

This audit is a follow-up to Office of the Inspector General (OIG), DoD, Report No. 91-039, "Management of Labor Standards for Airframes at Aeronautical Depots," January 31, 1991, to determine whether the Military Departments implemented the recommendations in the report.

Chapter 76 of the DoD Accounting Manual 7220.9-M, "Special Cost Accounting and Reporting Requirements for Depot Maintenance," March 23, 1990, requires that Military Departments perform uniform accounting for depot maintenance costs and report depot maintenance costs, productivity, and performance data to the then Assistant Secretary of Defense (Production and Logistics), currently, the Deputy Under Secretary of Defense for Logistics. Military Departments and maintenance organizations are required to establish work measurement standards for labor and materiel to develop cost estimates for job orders. The work measurement standards shall be based on generally accepted industrial engineering techniques where high value and high volume work is involved. For low value and low volume work, the standards may involve less sophisticated engineering techniques, but work measurement standards or estimated resources required shall be developed for all work performed.

Other DoD guidance requires the Military Departments to achieve optimum productivity growth through methods and standards improvement by streamlining and refining work procedures and processes and labor performance standards. The DoD guidance also requires evaluations of actual labor performance against preestablished standards for work covered by detailed labor standards. Labor performance standards used at depot maintenance organizations are divided into two general categories, engineered and nonengineered, with engineered being more accurate.

Objectives

Our follow-up audit objective was to assess the effectiveness of actions taken by the Military Departments to reduce depot maintenance costs and to improve aeronautical depot competitiveness by increasing the accuracy and reliability of labor standards for the maintenance and repair of aircraft airframes, engines, and components. The audit also determined the incentives for the Military Departments to develop labor standards and the consequences of not developing labor standards. Applicable internal controls were evaluated.

Scope and Methodology

We used nonstatistical sampling methods to select the FY 1992 and FY 1993 maintenance work loads and associated operations for review at one aviation depot in the Army, two aviation depots in the Navy, and two air logistics centers (ALCs) in the Air Force. The maintenance officials at the Norfolk Naval Aviation Depot stated that the Depot's work measurement program was inactive and the Depot did not have any engineered labor standards. Therefore, we did no further analysis of labor standards at the Norfolk depot. We evaluated the work measurement programs and maintenance operations at the other five depots to determine whether the required back-up documentation for labor standards was available and whether workload labor standards were kept current, accurate, and reliable.

We also examined FY 1991 through FY 1993 competitions of depot maintenance work loads among the Military Departments (public versus public), and among organic activities and the private sector (public versus private) to determine whether incentives exist to develop labor standards and to determine the consequences of not developing labor standards. We analyzed operating cost reports, product and standard distribution listings, labor standard indexes, program status reports, management plans, labor hour data sheets, and work measurement program schedules related to the work measurement programs in each Military Department. Our evaluations on the accuracy and reliability of the Military Departments' computer-processed data used to develop and engineer labor standards are discussed in Part II of this report.

Our Technical Assessment Division assisted the auditors in researching the development of engineered and nonengineered labor standards in the DoD and private industry. The specialists concluded that DoD and private industry have no documented experience in converting nonengineered labor standards to engineered labor standards at maintenance depots. The most widely cited documents on work measurement in DoD applications are audit reports or technical assessments issued by the OIG, DoD (see Appendix A). Consequently, for evaluations in this report, we assumed a minimum 25-percent reduction rate in labor standard hours when converting nonengineered labor standards to engineered labor standards, as shown in the OIG, DoD, reports.

We reviewed work measurement programs to determine the adequacy of the Office of the Secretary of Defense (OSD) and the Military Departments' policies and procedures. Organizations visited or contacted during this audit are in Appendix D. This economy and efficiency audit was made from January 1993 through March 1994 in accordance with auditing standards issued by the Comptroller General of the United States as implemented by the OIG, DoD, and accordingly included such tests of internal controls as were considered necessary.

Internal Controls

Controls Assessed. The audit evaluated the Military Departments' internal controls over the management of labor standards. Specifically, we evaluated existing OSD and Military Departments' policies and guidance concerning the implementation of internal controls over work measurement programs for managing labor standards. We also examined the Military Departments' procedures for ensuring the accuracy and reliability of labor standards for maintenance and repair of aircraft airframes, engines, and components at aeronautical depots. Additionally, we reviewed the portions of the Military Departments' Internal Management Control Program applicable to managing labor standards.

Internal Control Weaknesses. The audit identified material internal control weaknesses as defined by DoD Directive 5010.38, "Internal Controls Management Program," April 14, 1987. The Military Departments' internal controls were not effective to ensure that engineered labor standards were established, reviewed, and updated. The Internal Management Control Program failed to prevent or detect internal control weaknesses because labor standards were not an assessable unit or part of an assessable unit within the Army, the Navy, or the Air Force Commands responsible for the oversight of work measurement programs. All recommendations in Finding A of this report, if implemented, will assist in correcting the weaknesses. We could not quantify the potential monetary benefits to be realized from implementing the recommendations. See Appendix C for a summary of benefits resulting from audit. A copy of the final report will be provided to the senior officials responsible for internal controls within OSD, the Army, the Navy, and the Air Force.

Prior Audits and Other Reviews

In the last 5 years, the General Accounting Office issued two reports addressing problems in the Navy on managing labor standards, the OIG, DoD, issued an audit report on problems that the Military Departments encountered in managing labor standards, and the Air Force Audit Agency issued a report on problems the Air Force encountered in managing labor standards. Appendix A provides a synopsis of each report issued on this subject area.

Other Matters of Interest

Since 1990, the DoD has been attempting to strengthen, streamline, and restructure depot maintenance organizations. The Deputy Secretary of Defense memorandum, "Strengthening Depot Maintenance Activities," June 30, 1990, initiated a series of actions whereby the Military Departments would save $6.3 billion in their depot maintenance operations. The DoD Corporate Business Plan for FY 1992 through FY 1997 indicated that the Military Departments would achieve the total savings by downsizing the work force, closing military bases, consolidating work loads at depots, interservicing work loads, competing work loads between depots and private industry, and improving the depots' capacity utilization. Engineered labor standards establish reliable data for measuring work loads and for making management decisions on the efficient redistribution, consolidation, and competition of depot maintenance work loads; these decisions are necessary to achieve the Military Departments' savings objectives.

Public versus public and public versus private competitions of depot maintenance work loads were the largest single source of long-range savings projected by the Military Departments. The National Defense Authorization Act for Fiscal Year 1993 allowed the Military Departments to competitively contract as much as 40 percent of depot-level maintenance work loads. The Deputy Secretary of Defense memorandum, "Depot Maintenance Operations Policy," May 4, 1994, discontinued public versus private and public versus public competitions for depot maintenance work loads. The Deputy Secretary of Defense stated that the competitions were discontinued because the Military Departments' databases and financial management systems were not capable of supporting the determination of actual cost of specific work loads. However, the Deputy Secretary of Defense further stated that in the future, if accurate and comparable cost data are available, the issue of cost competition should be reopened. Well-managed labor standards could provide the Military Departments the means for survival of the depots during the downsizing in DoD by ensuring that work loads are accurately measured for public and private competitions in the future.

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Part II - Findings and Recommendations

Finding A. The Military Departments' Work Measurement Programs

The Military Departments' work measurement programs for managing the development and evaluation of labor standards at aeronautical depots were ineffective and inconsistently applied to competitive and noncompetitive work loads. The conditions occurred because the Military Departments revised and rescinded guidance, did not enforce guidance, or did not implement new guidance on work measurement. Additionally, the Army reduced its work measurement staff. The Military Departments were also not effectively using automated industrial engineering techniques. As a result, the accuracy and reliability of labor standards for maintenance and repair operations was reduced at the Military Departments' maintenance depots, and inefficiencies in their work loads affecting 5.84 million direct labor hours valued at $319.3 million were not readily identifiable to management. Additionally, the DoD savings objectives in the FY 1992 through FY 1997 DoD Corporate Business Plan from the competition of maintenance work loads and from improved capacity utilization at the maintenance depots may not be achieved. Further, bonus payments made to employees under the Navy's productivity gain sharing program may not have been fully justified.

Background

Chapter 76 of the DoD Accounting Manual 7220.9-M provides general policy on the development and reevaluation of labor standards. Other general guidance on DoD work measurement requirements include:

o DoD Directive 4151.18, "Maintenance of Military Materiel," August 12, 1992;

o DoD Directive 5010.31, "DoD Productivity Program," April 27, 1979;

o DoD Instruction 5010.34, "Productivity Enhancement, Measurement and Evaluation -- Operating Guidelines and Reporting Instructions," August 4, 1975; and

o DoD Instruction 5010.37, "Efficiency Review, Position Management, and Resource Requirements Determination," November 17, 1987.

The Military Departments' implementing guidance for work measurement is in Army Materiel Command Regulation 5-9, "Methods and Standards Program," January 10, 1990, and Army Depot System Command Regulation 5-10, "Methods and Standards Program," March 25, 1987; Naval Air Systems Command (NAVAIRSYSCOM) Instruction 5220.16, "Process and Productivity Enhancement Program," August 15, 1990; and draft Air Force Materiel Command Regulation 66-4, "Equipment Maintenance, Production Engineering and Planning," December 15, 1992.

The Army has one aviation depot, located at Corpus Christi, Texas. The Corpus Christi Army Depot reported 3.4 million direct labor hours in the maintenance work load for FY 1992, valued at $159.8 million.

The six naval aviation depots (NADEPs) reported 13.3 million direct labor hours in their maintenance work load for FY 1992, valued at $942 million. The three NADEPs we reviewed at Cherry Point, North Carolina; Jacksonville, Florida; and Norfolk, Virginia, reported 6.8 million direct labor hours (51 percent of the total 13.3 million direct labor hours) in their aircraft airframes, engines, and components work loads.

The five Air Force ALCs reported a maintenance work load of 32.2 million direct labor hours for FY 1992, valued at $1.61 billion. The two ALCs we reviewed at Oklahoma City, Oklahoma, and Warner Robins, Georgia, reported 13.2 million direct labor hours (41 percent of the total 32.2 million direct labor hours) in their work loads.

Management of Labor Standards

The Military Departments' work measurement programs for managing the development of labor standards were ineffective. Also, the development of labor standards used in competitions varied from the methods used for noncompetitive work loads. Additionally, no Military Department effectively evaluated the adequacy of the labor standards by analyzing performance efficiencies or by performing variance analyses for detailed maintenance and repair operations. Those conditions are discussed below, by Military Department.

Army. The Corpus Christi Army Depot was not effectively managing the development and evaluation of engineered labor standards.

Developing Labor Standards. In FY 1992, Corpus Christi Army Depot developed engineered labor standards totaling 944 direct labor hours. The Corpus Christi Army Depot did not determine the direct labor hours in the work load affected by the engineered labor standard hours in FY 1992. However, the hours engineered by the Corpus Christi Army Depot amounted to 0.027 percent of the total work load.

To evaluate the Army's development of labor standards, we nonstatistically selected 309 airframe labor standards from a total universe of 1,410 airframe labor standards for the UH-1, CH-47D, OH-58, UH-60, and AH-64 helicopters. The Army Letter of Instruction, August 9, 1991, in conjunction with Army Materiel Command Regulation 5-9, January 10, 1990, established minimum documentation requirements for engineered and nonengineered standards, such as a description of the work. Army guidance before the Army Letter of Instruction required labor standards to be reviewed and updated every 3 years, which we believe is a reasonable interval for selecting high volume and high value labor standards for updating.

Of the 309 labor standards selected for review, 65 were engineered standards and 244 of the labor standards were nonengineered standards. Of the 65 engineered standards reviewed, 47 lacked the documentation required to support the establishment of those standards. For the 18 engineered standards with required documentation, 14 were outdated because they had not been reviewed and updated in 3 to 13 years from the date the standards were established. Of the 244 nonengineered standards, 243 lacked adequate documentation to support the establishment of the standards.

We also determined that the labor standards used for the Army competition programs were inconsistently developed. Labor standards for similar maintenance operations in different work centers for competitive and noncompetitive work loads were classified differently and had different extended times. For example, the Engine Assembly Branch and the Mechanical Branch at the Corpus Christi Army Depot each repaired the T700 engine. For seven maintenance operations, common to each branch, the labor standards for the seven operations were classified differently at the two work centers. The labor standards for the seven maintenance operations in the Engine Assembly Branch totaled 1.726 hours, and in the Mechanical Branch the labor standards for the same seven operations totaled 1.9 hours. Although the difference in the total hours of the seven operations is only a 10 percent variance, the repetition of the operations throughout the work load and other inconsistencies among work centers in developing, estimating, and applying labor standards contributed to inaccuracies and unreliability of labor standards in the competition programs.

Evaluating Labor Standards. The Corpus Christi Army Depot was not performing variance and methods analyses on high volume and high value maintenance and repair operations. The DoD Accounting Manual 7220.9-M states that work measurement standards shall be based on generally accepted industrial engineering techniques where high volume and high value work is involved and that the standards shall be established and reevaluated as required by DoD Instruction 5010.34. DoD Instruction 5010.34 requires evaluations of actual labor performance against preestablished standards for work covered by detailed labor performance standards. The Army had agreed to issue standard operating procedures at the Corpus Christi Army Depot for personnel to review performance efficiencies of maintenance and repair operations in its response to OIG, DoD, Report No. 91-039, "Management of Labor Standards for Airframes at Aeronautical Depots," January 31, 1991. Although the Corpus Christi Army Depot developed the standard operating procedures, the maintenance personnel did not implement the procedures and evaluate performance efficiencies for actual direct labor hours compared to standard labor hours. As a result, performance efficiencies were out-of-tolerance.

A special Army Depot System Command review of performance efficiencies at the Corpus Christi Army Depot showed that for FY 1992, 40 of the Army's top 51 maintenance programs (of 991 total programs), accounting for about 58.4 percent of the total actual direct labor hours (2 million direct labor hours of a total of 3.422 million direct labor hours), were out-of-tolerance. The Army Letter of Instruction, August 9, 1991, in conjunction with Army Materiel Command Regulation 5-9, January 10, 1990, established that out-of-tolerance was plus or minus 20 percent variance from the standard hours. In FY 1992, the Army's third largest aircraft maintenance program (AH-1 helicopter), for example, was out-of-tolerance by 2,029 percent. The actual hours for the program were 17,282 compared to the earned standard hours of 350,621.

Navy. The NADEPs at Cherry Point, Jacksonville, and Norfolk were not developing and updating engineered labor standards or performing variance analysis as required by OSD and Navy guidance.

Developing Labor Standards. At Cherry Point, Jacksonville, and Norfolk, maintenance personnel stated that the work measurement programs were inactive. In FY 1993, Cherry Point, Jacksonville, and Norfolk did not develop any engineered labor standards. In FY 1992, Norfolk also did not develop any labor standards; however, Cherry Point developed engineered labor standards totaling 125 direct labor hours and Jacksonville developed engineered labor standards totaling 383 direct labor hours. The NADEPs did not determine the direct labor hours in the work load affected by the engineered labor standard hours in FY 1992, but the hours engineered by Cherry Point amounted to 0.006 percent of the total work load. For Jacksonville, the 383 direct labor hours engineered was 0.019 percent of the total work load in FY 1992.

To evaluate the Navy's development of labor standards, we nonstatistically selected 55 engineered labor standards from a total universe of 44,089 labor standards for the P-3 aircraft, CH-47E helicopter, and J-52 engine. The NAVAIRSYSCOM Instruction 5220.16 established minimum documentation requirements for engineered standards, such as a description of the work. The Navy instruction required that certain types of labor standards be reviewed and updated every 3 years, which we believe is a reasonable interval for selecting all types of high volume and high value labor standards for updating.

Of 18 labor standards reviewed at Cherry Point, 11 engineered labor standards had inadequate supporting documentation, and the remaining 7 standards had not been reviewed or updated in more than 10 years. Of the 37 labor standards reviewed at Jacksonville, 12 engineered labor standards had inadequate supporting documentation, and 12 labor standards had not been reviewed in more than 10 years.

Management at the Cherry Point and Jacksonville NADEPs stressed the development of labor standards used in competition work loads without similar emphasis on labor standards used in organic work loads that were not being competed. For example, the Jacksonville NADEP competed with the Air Force and private industry for the overhaul of the J-52 engine. The Navy estimated that 85 percent of the workload hours for the J-52 engine were covered by engineered labor standards. This contrasted with the 49 percent average coverage for engineered labor standards reported by Jacksonville for its total work load. This inconsistency in the NADEPs' practices and procedures for developing labor standards resulted in inequitable applications for organic and competition work loads.

Evaluating Labor Standards. Because the NADEPs were not performing variance analyses, the range of variances for airframe maintenance operations was unavailable. However, we determined variances for end items, including the CH-46E helicopter, P-3 aircraft, and J-52 engine, in the FY 1993 work loads at Cherry Point and Jacksonville. The variances we calculated ranged from minus 2,835 percent to plus 70 percent for airframe maintenance operations of the P-3 aircraft. The Cherry Point and Jacksonville variances substantially exceeded the plus or minus 10 percent control limit required by NAVAIRSYSCOM Instruction 5220.16 and indicated that the labor standards were out-of-tolerance and the quality of the labor standards was questionable.

Air Force. Oklahoma and Warner Robins ALCs were not developing and updating engineered labor standards for organic and competition work loads and were not performing effective variance analysis.

Developing Labor Standards. To evaluate the Air Force development of labor standards for organic work loads, we nonstatistically selected 30 airframe labor standards from a total universe of 33,644 airframe labor

standards for the F-15, C-130, and C-141 aircraft. The 30 airframe labor standards we reviewed were nonengineered standards. None of the selected standards had the required documentation to support the establishment of the labor standards. The Air Force officials stated that the work measurement program for developing engineered labor standards for organic and competitive work loads had been suspended since 1989, standards were not being engineered, and an estimated 98 percent of the airframe labor standards were nonengineered. Our selective review indicated that the Air Force estimate was reasonable.

To evaluate the Air Force's development of labor standards for competition work loads, we nonstatistically selected 72 labor standards developed for the competition for the repair of the AN/ARC 186 radio system. Of the 72 labor standards, 25 were engineered standards and 47 were nonengineered standards. Before the competition, the Air Force performed 54 repair operations on the AN/ARC 186 radio system. In preparation for bid proposal, the standard labor hours were reduced for 39 of the 54 repair operations before the bid proposal. These reductions occurred due to operation analyses performed by the avionics engineering planners. According to the planners, no industrial engineering techniques were used to measure and update the labor standards. Documents to support the analyses of labor standards that were performed were destroyed and could not be evaluated by us.

Evaluating Labor Standards. The Air Force did not have a computer system for collecting actual labor hours at the job order level for maintenance and repair operations. Consequently, the Air Force could not perform variance analysis at the detailed operations level required in DoD Instruction 5010.34. We reported this deficiency in OIG, DoD, Report 91-039. Although the Air Force agreed with the report, it can not correct this condition until the Depot Maintenance Management Information System is implemented in FY 1995.

Guidance and Staffing

The Military Departments did not have the guidance in place and in use for their work measurement programs to ensure that labor standards were effectively managed. Specifically, the guidance was ineffective for work measurement because it was revised and rescinded by the Army, not enforced by the Navy, and not implemented by the Air Force. Additionally, the Army reduced its work measurement staff.

Army Policies and Procedures. The Army deemphasized its work measurement program in 1991 by revising and rescinding applicable guidance. In August 1991, the Army revised Army Materiel Command Regulation 5-9 and

rescinded Army Depot System Command Regulation 5-10 that governed the methods and standards program (work measurement program). Army officials believed that the guidance was too restrictive and could not be cost-effectively enforced. For example, the policy had a requirement that 80 percent of the maintenance work load was to have engineered labor standards. The 80 percent standard had not been achieved in the past and was considered too expensive to implement for the work measurement staffs.

On August 9, 1991, the Army Depot System Command issued a Letter of Instruction that replaced the revised and rescinded guidance and gave the Army depots more autonomy in the management of their work measurement programs. The Letter of Instruction decentralized the work measurement functions and permitted each depot to issue local policy and procedures for work measurement. The Letter of Instruction was in effect through the end of FY 1993.

The Corpus Christi Army Depot policy and procedures for work measurement were not effectively implemented. For instance, the standard operating procedures did not have criteria for selecting and evaluating labor standards. The standard operating procedures required the maintenance personnel to periodically review performance efficiencies for labor standards. However, the standard operating procedures did not specify the criteria for selecting the standards, such as the degree of variance beyond the tolerance limits. Consequently, the work measurement staff at the Corpus Christi Army Depot had not implemented standard operating procedures and was not investigating performance efficiencies to determine the causes for the actual direct labor hours for aircraft repair programs exceeding labor standard hours or vice versa. When aircraft actual repair hours exceed the labor standard hours, the cause could be either an inefficient labor force or inaccurate labor standards; therefore, the cause of the variance should be investigated.

The standard operating procedures also did not specify priorities for evaluating labor standards between the organic and competition work loads. As a result, the work measurement staff was inappropriately concentrating on developing labor standards for the competition work load.

Army Staffing. The Army also deemphasized its work measurement program by reducing its work measurement staff. The Corpus Christi Army Depot reorganized its work measurement staff at least twice since 1990. During the reorganizations, the Depot reduced the work measurement staff from 24 industrial engineering specialists in 1990 to 10 specialists in 1992. The work measurement functions for the industrial engineering specialists were also reduced to less than 50 percent of the work measurement staff's total work load. The work measurement that was accomplished focused on developing and

updating labor standards for the work load designated for competition with other military maintenance depots and private contractors (competition work load), and not the work load preprogrammed for the depot (organic work load).

Navy Policies and Procedures. The NADEPs were not managing labor standards effectively and performing variance analyses because the Navy expected changes in OSD guidance and because NAVAIRSYSCOM Instruction 5220.16 and local policies at the Cherry Point and Jacksonville NADEPs for developing, engineering, and reevaluating labor standards were too vague. Additionally, officials at NAVAIRSYSCOM and the aviation depots were not enforcing the Navy's guidance for its work measurement program.

OSD Changes in Guidance. Navy maintenance officials anticipated changes in OSD work measurement policy and did not update their policies to emphasize the need for an effective work measurement program in the Navy. In its March 1992 response to OIG Report No. 91-039, the Navy stated that the OSD was revising DoD Instruction 5010.37 to deemphasize using engineered labor standards. However, representatives in the Office of the Under Secretary of Defense (Personnel and Readiness), formerly the Assistant Secretary of Defense (Force Management and Personnel), informed the Navy and the OIG, DoD, that OSD had no plans to revise its guidance and to deemphasize using engineered labor standards. Additionally, in an April 20, 1992, memorandum, the Deputy Assistant Secretary of Defense (Civilian Personnel Policy and Equal Opportunity) informed the OIG, DoD, that OSD had no plans to deemphasize engineered labor standards. Therefore, the Navy's consternation over OSD work measurement policy was unfounded.

NAVAIRSYSCOM Policy. NAVAIRSYSCOM Instruction 5220.16 was vague because it did not provide the NADEPs with quantified and definitive criteria for the development and evaluation of engineered labor standards. Instead of specifying criteria, the NAVAIRSYSCOM Instruction 5220.16 required that the NADEPs develop policies and procedures to define high value and high volume operations and the criteria for performing variance analysis.

Local Policies and Procedures. The NADEPs were not developing, reviewing, and updating engineered labor standards because local policies and procedures within each NADEP did not have criteria for reviewing and updating engineered labor standards. The local policies and standard operating procedures for Cherry Point did not include criteria for development of engineered labor standards and for performing variance analysis. The engineering personnel at Cherry Point stated that they were expecting the NAVAIRSYSCOM to clarify the requirements for high value and high volume labor standards.

The Jacksonville policies and procedures were not consistent with the NAVAIRSYSCOM Instruction. Local policies required NAVAIRSYSCOM to provide Jacksonville the percentage of coverage for engineered labor standards,

while NAVAIRSYSCOM Instruction 5220.16 required the NADEP to define its own criteria. The NADEP representatives stated that the local policy was prepared before NAVAIRSYSCOM Instruction 5220.16, and updating the local policy was not considered a priority issue. We believe, at a minimum, the NAVAIRSYSCOM needs to revise NAVAIRSYSCOM Instruction 5220.16 to quantitatively specify high value and high volume maintenance operations to achieve consistency in managing the standards and encourage compliance with its Instruction.

Because Navy policy was vague, the Cherry Point and Jacksonville NADEPs developed labor standards for maintenance operations of short duration, and these standards could not be managed efficiently and effectively. At Cherry Point, we selectively reviewed 1,303 labor standards from a universe of 8,724 labor standards for the QF-4N aircraft. Of the 1,303 labor standards, 578 of the standards were for work less than 1 hour each. At Jacksonville, of the 12,400 labor standards in the P-3 aircraft data base, about 8,100 standards were for less than 1 hour for each standard, and many showed an expected value of 1 minute each. For the J-52 engine, about 4,000 of 4,200 standards were less than 1 hour each. Maintenance officials at Jacksonville explained that the data base had the detailed labor standards because standards were developed to respond to different reporting requirements from various, higher level Navy organizations.

DoD Instruction 5010.34 provides flexibility to DoD managers in determining the appropriate length of time for a maintenance operation that is measured by a labor standard. The NAVAIRSYSCOM Instruction 5220.16 addresses the need for work measurement personnel to avoid developing labor standards that measure maintenance operations over excessively long periods of time because the quality of the labor standard will be reduced. The Navy Instruction does not address excessively short periods of time for developing labor standards, but managing standards for maintenance operations with excessively short time periods would be inefficient because of the large quantity of labor standards that would need to be administered, as indicated in the 8,100 standards of 1 hour or less for the P-3 aircraft.

Labor standards that are developed to measure excessively short time periods, or very detailed operations, are impractical because they are difficult to maintain and costly to manage. For example, in performing required variance analyses, production workers are required to accurately log the time expended against operations with labor standards. The NADEPs would expend an inordinate amount of time recording and evaluating labor standards that cover very short time periods. Although we cannot determine the savings, we would expect considerable savings by eliminating management of those labor standards because as much as two-thirds of the labor standards have potential for consolidation with other labor standards to cover longer time periods.

NAVAIRSYSCOM Oversight. The NAVAIRSYSCOM oversight of Navy's work measurement program was ineffective because guidance to the NADEPs was not enforced. NAVAIRSYSCOM Instruction 5220.16 required that the NADEPs provide a quarterly report to NAVAIRSYSCOM on the status of labor standard development. Cherry Point maintenance officials stated that NAVAIRSYSCOM did not provide feedback or guidance to the NADEP concerning the quarterly reports. Consequently, the NADEP discontinued compiling the report after the first quarter of FY 1992.

Neither Cherry Point, Jacksonville, Norfolk, nor the Deputy Assistant Commander for Aviation Depots conducted annual evaluations of the NADEPs' work measurement programs from FY 1990 through FY 1993. Although the NAVAIRSYSCOM Inspector General was required to perform a command inspection once every 3 years at the NADEPs, the NAVAIRSYSCOM Inspector General's office provided only one inspection report to the audit staff. That inspection was completed in December 1992 at Jacksonville and did not identify deficiencies in the local policy.

The NAVAIRSYSCOM had only one person assigned to the oversight of the NADEPs' work measurement programs. That person was not reviewing the NADEPs' quarterly reports or performing annual reviews of labor standards. The NAVAIRSYSCOM representative had no explanation for the noncompliance with the NAVAIRSYSCOM instruction on work measurement. The NAVAIRSYSCOM could not ensure the effectiveness of the NADEPs' work measurement programs without periodic reports, inspections, and sufficient staffing.

Air Force Policies and Procedures. The ALCs did not have effective work measurement programs because the Air Force Materiel Command, formerly the Air Force Logistics Command, had not implemented new guidance on work measurement since it suspended Air Force Logistics Command Regulation 66-4, "Equipment Maintenance, Production Engineering and Planning," on April 1, 1989. The Air Force Materiel Command had separate regulations for the two data bases that contain labor standards, Air Force Materiel Command Regulation 66-4 for components and engines (Data Base EO46B) and Draft Air Force Logistics Command Regulation 66-55 for airframes (Data Base GO37E), November 12, 1986. The draft Air Force Materiel Command Regulation 66-4 will combine the guidance from the two regulations and provide overall policy on the Air Force's work measurement program for developing and evaluating labor standards for airframes, engines, and components. Although the draft was issued on December 15, 1992, the regulation was not finalized as of March 1994 because the ALCs could not agree with the revised contents of the regulation.

Oversight. The Air Force Logistics Command suspended oversight of the management of labor standards at ALCs in FY 1989. As an alternative to its oversight, the Air Force Logistics Command established a work measurement group within the Headquarters Resource Management Directorate and the maintenance directorates at each ALC in FY 1989. However, on April 1, 1989, the Air Force Logistics Command temporarily waived the work measurement provisions (including the 80-percent criterion) of Air Force Logistics Command Regulation 66-4. The waiver was intended to allow engineering personnel to concentrate on the implementation of the Fast Access Computerized Time Standards (Pacer Facts II) system. In FY 1992, the Air Force Materiel Command reorganized the work measurement program under the logistics directorate within its headquarters and under the financial management directorates at each ALC. Approximately 4 years after imposing the waiver, on February 1, 1993, the Air Force Materiel Command removed the work measurement waiver, but also removed the 80-percent goal for engineered labor standards. As a result of the new Air Force policy, no quantified criteria existed for developing and evaluating engineered labor standards.

Standard Operating Procedures. The Air Force did not provide guidance for the ALCs to establish uniform procedures to use in developing and evaluating labor standards. Neither the Oklahoma City ALC nor Warner Robins ALC had developed standard operating procedures for developing labor standards, for performing variance analysis for organic and competition work loads, for quantifying goals for engineered labor standards, and for monitoring the development of labor standards. The ALCs did not implement procedures because the Air Force Materiel Command did not issue new guidance and effectively suspended the oversight of the ALCs' work measurement programs.

Automating Industrial Engineering Techniques

The Military Departments' work measurement programs were also ineffective because automated industrial engineering techniques were not effectively used. The Army did not fully use its automated work measurement system, the Navy did not use its automated system, and the Air Force had not completed updating its automated work measurement systems.

Army. The Corpus Christi Army Depot did not fully use its automated industrial engineering techniques. Officials at the Army Depot System Command stated that the Corpus Christi Army Depot had the most cost-effective work measurement program in the Army because it was the lead Army installation in using the Computer Logic for Automated Standards Setting (CLASS) system. The CLASS system develops engineered standards using predetermined time values for elements of work. The Army maintenance

management information system, in conjunction with CLASS, also had the capability to identify labor standards that were out-of-tolerance and needed updating. However, other Army depots did not fully implement the CLASS system and the Army depots were using manual industrial engineering techniques, such as stopwatch, and time and motion studies to measure work operations or some combination of manual and automated techniques.

Using the CLASS system in FY 1992, the Corpus Christi Army Depot developed about 203 engineered labor standards totaling about 944 labor standard hours for components and engines for the competition programs. The average time for an analyst to develop one labor standard hour was approximately 14 work hours to 1 engineered hour (14,016 analyst hours to 944 labor standard hours engineered). The Army Depot System Command and the Corpus Christi Army Depot did not have data on the work hours required to develop engineered labor standards using manual methods. However, the Army Depot System Command Letter of Instruction, August 9, 1991, stated that an engineered labor standard typically takes 20 to 25 analyst hours to 1 engineered hour. Extending the use of the CLASS system to the organic and competition work loads, and at other Army depots, would reduce the costs of developing Army labor standards significantly over manual methods.

Navy. The NADEPs were not fully using automated industrial engineering techniques to develop and update labor standards. NAVAIRSYSCOM Instruction 5220.16 required the work measurement personnel at aviation depots to use automation for engineered labor standards. According to maintenance officials at NADEPs in Cherry Point, Jacksonville, and Alameda, automation could reduce the time needed to develop new labor standards by a minimum of 25 percent. To support the automation requirement, the Navy developed an automated data base at Alameda that was a repository for the standard elemental data, the basic timed measurements of work used in developing labor standards for larger work operations.

The Cherry Point NADEP had acquired an automation capability to develop engineered labor standards for an estimated cost of $84,000. Although Cherry Point had the automated capability for developing labor standards, it was not fully utilizing the automated capability because management was not emphasizing work measurement at the depots. The Jacksonville NADEP did not have an automation capability but estimated the cost for the capability at $29,000. Further, Alameda was a maintenance depot on the DoD Base Realignment and Closure list for 1993. Consequently, management of the repository of elemental standard data at Alameda had been suspended.

The NADEPs also did not have a reliable automated management system to monitor labor standards for the updating of labor standards and for selecting labor standards with recurring, excessive variances for review. At Cherry Point and Jacksonville, no system existed to automatically identify those standards that

were older than established criteria. For example, the data control record for labor standards in the Navy's automated system insufficiently identified the year of labor standard establishment by including only the last digit of the year in the database. Consequently, work measurement technicians could not automatically monitor the status of labor standards, but had to retrieve the supporting documents to determine the accurate age of the standards. Because the standards were not monitored through an automated system, standards that were 10 years old or older were not being identified for update.

Further, the Navy had no automated system to identify standards that had significant recurring variances that were out-of-tolerance with predetermined criteria. In those instances when variance analyses were done, the technicians relied on subjective selection of the standards to review. Considering that the P-3 aircraft has more than 12,400 labor standards, manual monitoring of labor standards would be unmanageable.

Air Force. The Air Force spent $6 million on the Pacer Facts II system to improve the development of engineered labor standards, but the capability was incomplete. The Pacer Facts II system was initiated in February 1989 to economically develop engineered labor standards and improve their accuracy. The Pacer Facts II system was to reduce the ratio for developing engineered labor standard hours from 12 work hours to engineer a 1-hour labor standard to 2 work hours for 1 engineered labor hour. With the ratio reduction, work measurement personnel can increase engineered standards coverage for the maintenance work loads.

The Air Force Materiel Command designated the Oklahoma City ALC as the executive agent for the development and implementation of the Pacer Facts II system. The executive agent was coordinating the development of 15 industrial processes that would interface existing work measurement data bases with the Depot Maintenance Management Information System, which is a major Air Force Materiel Command project to modernize the Air Force Logistics Computer Systems with possible DoD-wide applications. Although the Pacer Facts II system was expected to be implemented by February 1993, the system was not complete.

The Air Force ALCs did not use all of the 15 industrial processes under development for the Pacer Facts II system because the processes were incomplete and the integration of Pacer Facts II was a low priority. Sacramento ALC had the responsibility to develop two of the industrial processes: test and fabrication; but it did not complete those developments. Consequently, as of March 31, 1994, the Pacer Facts II system had not been completed for full implementation at each ALC. Additionally, the industrial processes were not integrated into the Depot Maintenance Management Information System because the industrial processes had a low priority for funding.

The Air Force development of the Depot Maintenance Management Information System that was being developed concurrently with the Pacer Facts II system was also delayed. The Depot Maintenance Management Information System is planned to replace batch processing reporting systems with an integrated, real-time processing network that will provide more accurate and timely information for management decisionmaking. Of the Air Force's 32 depot maintenance systems, 18 were planned to be replaced by the Depot Maintenance Management Information System. In addition to integrating the work measurement data bases, the Depot Maintenance Management Information System will provide actual hours for each labor operation, making variance analysis of labor hours possible at the detailed operations level. Current Air Force systems compute variances at the organizational level, which is not consistent with DoD guidance.

The Joint Logistics Commanders designated the Depot Maintenance Management Information System as a standard migratory maintenance system for use throughout DoD. To implement the Depot Maintenance Management Information System as the standard DoD maintenance system, the Air Force was coordinating and evaluating other Military Departments' system requirements for its development. Consequently, the development of the system was delayed, and engineered labor standards for airframes, engines, and components, as well as the collection of actual labor hours and corresponding variance analyses, will not be available until September 1995 or later. Without the Pacer Facts II system and the Depot Maintenance Management Information System, the Air Force does not have an automated system that will economically develop engineered labor standards.

Accuracy and Reliability of Labor Standards

The accuracy and reliability of labor standards at the Military Departments' aeronautical maintenance depots have decreased since 1990. As a result, the Military Departments' maintenance depots had inefficiencies in their work loads affecting 5.84 million direct labor hours valued at $319.3 million that were not readily identifiable to management.

Army. In FY 1990, the Army Depot System Command reported that the Army coverage for engineered airframes, engines, and components labor standards was 46 percent for its major programs. The FY 1992 summary data indicated that the Corpus Christi Army Depot had significantly less coverage in FY 1992 than in FY 1990.

The Corpus Christi Army Depot had a 33-percent engineered labor standards coverage for its FY 1992 maintenance work load of 3.4 million direct labor hours, which was 13 percentage points less than the Corpus Christi Army Depot coverage in FY 1990. If an average reduction rate for labor hours of 25 percent (for converting nonengineered labor standards to engineered labor standards) were applied to the 13 percentage point variance at the Corpus Christi Army Depot between the FY 1992 and FY 1990 coverage, the Corpus Christi Army Depot could have identified 111,000 direct labor hours that could be reduced through more efficient operations. The direct labor hours represent an inefficiency cost of about $5.2 million. The total potential inefficiency cost for 80 percent of the work load (the quantified goal in DoD before new guidance in each Military Department) for FY 1992 was 399,500 direct labor hours valued at $18.8 million.

Navy. The NAVAIRSYSCOM did not retain FY 1990 summary data on the Navy-wide coverage for engineered labor standards for airframes, engines, and components. However, our review of the partial FY 1992 and FY 1993 summary data indicated that the North Island NADEP had less coverage for airframe labor standards in FY 1992 and FY 1993 than it reported in FY 1990. North Island reported 18 percent coverage in FY 1990 compared to 15 percent reported in FY 1992 and 10 percent reported in FY 1993.

The six NADEPs did not have complete data on the engineered labor standards coverage for FY 1992. From the data available, we calculated that the six NADEPs had 0 to 49 percent engineered labor standards coverage for their FY 1992 maintenance work loads totaling 13.3 million direct labor hours. If an average reduction rate for labor hours of 25 percent were applied to the variances between the FY 1992 coverage and an 80 percent criterion, the NADEPs could have identified 1.9 million direct labor hours which could be reduced through more efficient operations. The 1.9 million direct labor hours represent a potential inefficiency cost of about $123.5 million at the NADEPs.

Air Force. In FY 1990, the Air Force Materiel Command reported that the Air Force maximum amount of coverage for engineered labor standards for airframes, engines, and components was 38 percent. Air Force FY 1992 summary reports indicated that the ALCs at Oklahoma City and Warner Robins achieved significantly less than the Air Force-wide coverage in FY 1990.

Oklahoma City ALC reported a 23-percent engineered labor standards coverage for its FY 1992 maintenance depot work load of 6.4 million direct labor hours. Oklahoma City engineered labor standards coverage represented 15 percent less than the total Air Force coverage reported in FY 1990. If an average reduction

rate for labor hours of 25 percent were applied to the 15 percentage point variance at Oklahoma City from the Air Force-wide coverage in FY 1990, Oklahoma City could have identified 240,000 direct labor hours which could be reduced through more efficient operations. The direct labor hours represent a potential inefficiency cost of more than $12 million.

Warner Robins ALC reported 28-percent engineered labor standards coverage for its FY 1992 maintenance depot work loads of 6.8 million direct labor hours. The Warner Robins inefficiency cost could be calculated as 170,000 direct labor hours valued at $8.5 million. The total inefficiency cost by not engineering standards for 80 percent of the Air Force work load for FY 1992 was about 3.54 million direct labor hours valued at $177 million.

DoD Savings Objectives

The savings objectives in the DoD "Corporate Business Plan Fiscal Years 1992-1997" from the competition of maintenance work loads and from improved capacity utilization at the maintenance depots may not be achieved.

Competition in the DoD Corporate Business Plan. The Military Departments may not realize projected savings from competing their depot maintenance work loads from FY 1991 through FY 1997. In the DoD Corporate Business Plan, the Military Departments estimated that they would save $1.7 billion from FY 1991 through FY 1997 by competing maintenance work loads among private and public facilities. When the Military Departments use engineered labor standards for determining the estimated contract price during competitions, the Military Departments have a greater opportunity to win the contract and ensure that the savings objectives estimated in the DoD Corporate Business Plan will be achieved.

By using engineered labor standards, the Military Departments can ensure that the most cost-effective bids are prepared for the contracting officers' evaluations and acquisition officials' decisions. For example, in its competition with the Air Force and private industry, the Jacksonville NADEP won the $33 million contract to overhaul the J-52 engine. The use of engineered labor standards by maintenance personnel in preparing the NADEP estimate for the overhaul was an important factor in Jacksonville winning the contract. The J-52 engine overhaul had an estimated 85 percent of its workload hours covered by engineered labor standards.

The engineered labor standards provided Jacksonville with a significant price advantage for the J-52 engine overhaul against the competing bids of the Air Force and the private industry, which did not base their estimates on engineered

labor standards. The contracting officer evaluated labor cost and associated overhead in determining the most cost-effective bid for the maintenance work load during the competition. The acquisition documents supporting the evaluation of Jacksonville's proposal identified accuracy and reliability of the labor estimate as an important factor influencing the acquisition official's decision.

In contrast to the Navy success, we believe the Army had more limited success because it did not have a high percentage of engineered labor standards coverage for maintenance work loads in its competitions. In FY 1992, the Corpus Christi Army Depot lost four of five competition programs. The work measurement staff concentrated on developing labor standards for the competitions, resulting in overall standards increasing from 295 to 784 for the five programs that were competed. However, the work measurement analysts developed more nonengineered standards than engineered standards and the relative coverage of engineered labor standards decreased from 85 engineered standards of 295 total standards before the review to 106 engineered standards of 784 total standards after the review. The analysts did not update any engineered labor standards that were in the existing inventory. As a result, we believe the labor standards for the competition were less accurate and reduced the Army's competitive status.

Capacity Utilization. The Military Departments may not realize projected savings from improving the capacity utilization of their maintenance depots. In the DoD Corporate Business Plan, the Military Departments estimated that they would save $1.3 billion from FY 1991 through FY 1997 by improving capacity utilization in the downsizing of DoD maintenance depots and in consolidating work loads. However, the Military Departments may not achieve these savings objectives because the Military Departments were not using engineered labor standards for estimating their work loads and the Military Departments were reporting inaccurate capacity utilization in the DoD Corporate Business Plan.

The Military Departments' depots use labor standards to plan aviation depots' maintenance work loads. The planned work loads compared to available work hours determine the depots' capacity utilization. Because engineered labor standards are more efficient than nonengineered labor standards, a broader application and use of engineered labor standards could have significantly reduced the planned workload labor hours and the capacity utilization that were reported for aviation maintenance depots in the DoD Corporate Business Plan for FY 1992.

Navy Productivity Gain-Sharing Program

The NADEPs made bonus payments to employees under the Navy's productivity gain-sharing program that may not have been fully justified. Productivity gain sharing is a Navy incentive program for aviation maintenance depot employees, designed to motivate employees and improve productivity by allowing employees to share the benefits from increases in productivity. Bonus payments are made to employees if a particular depot's annual productivity meets or exceeds a baseline that is determined by averaging the previous 20 quarters of factors for labor and material efficiency and for schedule and quality indexes.

Labor standards directly influence labor efficiency and the schedule index. For example, when labor standard hours are greater than actual work output, labor savings will be accrued. Concurrently, the baseline-scheduled units for meeting production goals will be low when labor standards for the units require a large amount of time. As a result, employees would need to produce fewer units to receive bonuses when labor standards are overstated.

Recognizing the value of engineered labor standards, on August 21, 1991, the Navy Deputy Assistant Commander for Aviation Depots directed the NADEPs to use engineered labor standards in support of the gain-sharing program. Additionally, NAVAIRSYSCOM Instruction 5220.16 emphasized the need to use high quality standards as a baseline for the gain-sharing program. Although the Navy had policies on the use of engineered labor standards for the gain-sharing program to promote productivity and ensure the propriety of bonuses to employees, the NADEPs did not effectively implement the policies through their work measurement programs.

In FYs 1991 through 1993, the NADEPs at Cherry Point, Jacksonville, and Norfolk paid more than $33 million in productivity gain-sharing bonuses to their employees. The bonuses were computed for productivity that was based in part on nonengineered standards, which were historically less accurate than engineered labor standards. The overall engineered standards coverage in the FY 1992 work load was 22 percent at Cherry Point, 49 percent at Jacksonville, and 0 percent at Norfolk. The Navy estimated and our analysis of labor standards for other Military Departments showed that engineering labor standards can reduce standard time by more than 25 percent. If the NADEPs had more engineered labor standards coverage in their work loads, the Navy may have paid significantly less for unwarranted productivity bonuses.

In its response to our draft report, dated May 24, 1994, the Navy stated that its Productivity Gain Sharing Program was suspended in FY 1994. Consequently, we deleted our recommendation concerning the Program.

Conclusion

The Military Departments' work measurement programs for developing and evaluating labor standards were ineffective. Because of the ineffectiveness of the program, the Military Departments had inefficiencies in their depot maintenance operations that management was not detecting, and the Military Departments were ineffectively competing for maintenance work loads. Without effective guidance and oversight, the Military Departments' work measurement programs may continue to decline and depot maintenance operations could become increasingly inefficient and ineffective.

On May 4, 1994, the Deputy Secretary of Defense discontinued competitions for maintenance work loads. However, the Deputy Secretary of Defense stated that in the future cost competition for the maintenance work loads could be restarted if accurate and comparable cost data become available. Development and evaluation of engineered labor standards would contribute to more accurate and comparable cost data and effective competitions in the future.

Management Comments to Finding and Audit Response

OSD Comments. The Principal Deputy Under Secretary of Defense concurred with the finding and recommendations but recommended changes to the report to clarify the usefulness of labor standards. The Principal Deputy stated that efficiencies and inefficiencies may be identifiable to management by means other than labor standards, that engineered labor standards do not necessarily indicate process efficiency and nonengineered labor standards do not indicate process inefficiency. The Principal Deputy also stated that the report does not address the broader issue of whether maintenance depots are managing their resources appropriately.

Audit Response. We agree with the Principal Deputy Under Secretary. Our intention was not to imply that labor standards were the only management tool for evaluating maintenance depot operations. However, DoD made substantial investments over the years in personnel, training, computer assets, and management systems to develop a work measurement program that provides the means for evaluating productivity, including efficiencies and inefficiencies, at maintenance depots. Labor standards represent a major investment in a management tool that needs to be managed properly. The General Accounting Office; Inspector General, DoD; and the Service audit agencies have issued audit reports that collectively reported on how well maintenance depots manage their resources. We believe this report, as written, shows how ineffectively the Military Departments manage their work measurement programs.

Department of the Air Force Comments. The Air Force took issue with the report's discussions on the DoD requirement to do variance analysis of labor hours at the detailed level, and with the report's evaluation of potential inefficiencies based on achieving 80 percent coverage of maintenance work loads with engineered labor standards. The Air Force stated that its standard cost accounting system allocates actual labor hours to specific jobs in proportion to the labor standards for those jobs within an Air Force resource cost center. The Air Force contends that the Defense Contract Audit Agency ruled that its standard cost accounting system was in compliance with cost accounting standards and that OSD officials were revising DoD instructions to eliminate the requirement to collect actual labor hours at the detailed level for variance analysis. The Air Force also stated that no data existed to support potential savings from developing engineered labor standards for 80 percent of the work load. Because of the diversity of the work load and the scarcity of manpower, the Air Force permits each maintenance organization to set individual coverage goals based on the size and type of operation being performed.

Audit Response. We support variance analysis involving comparisons of actual labor hours to labor standards for work operations that will provide management with sufficient information to evaluate the efficiencies of depot maintenance operations. We recognize both the process for recording and the level of detail that must be recorded for actual hours or standard hours as a function of the complexities in the maintenance operations, requirements for data, and the cost of accumulating the data. Therefore, management has discretion in determining the methods used and data necessary to adequately manage variance analysis. However, we continue to believe that the Air Force did not have sufficient data on actual labor hours and standard labor hours at the resource cost center level to perform variance analysis that would comply with the intent of DoD Instruction 5010.34, which has not been updated. Additionally, the Air Force response appears to be contrary to its agreement to Report No. 91-039. In response to that report, the Air Force agreed to collect actual labor hours at the detailed level as a by-product of the development of the Depot Maintenance Management Information System and to perform variance analysis at the detailed level when actual hours to perform operations were available.

Concerning potential savings based on achieving 80 percent engineered standards coverage, the inefficiency costs in the report were calculated to underscore the potential benefits of implementing an effective work measurement program by engineering labor standards. Although the Air Force stated that each organization was permitted to set individual coverage goals for engineering labor standards, we were unable to find any such goals established. Therefore, we used the 80-percent goal to emphasize our point because it was the last quantified target that the Military Departments established before policy changes were made in 1990.

Recommendations, Management Comments, and Audit Response

1. We recommend that the Commander, U.S. Army Depot System Command:

a. Standardize the development, required documentation, and use of engineered labor standards by providing oversight, policies, and guidance on the Army work measurement program.

Department of the Army Comments. The Army concurred with the recommendation and issued additional policy guidance to the depots on the work measurement program on September 29, 1994.

Audit Response. The Army's comments are partially responsive to the recommendation. The Army's additional guidance to the depots did not include sufficient oversight procedures. Therefore, we request that the Army reconsider its position on oversight in its response to the final report.

b. Evaluate the procedures used by both the competition office and the organic work measurement personnel and establish policy and procedures to promote the consistent development and use of labor standards.

Department of the Army Comments. The Army concurred in part with the recommendation stating that a decision by the Deputy Secretary of Defense on May 4, 1994, to discontinue workload competitions rendered much of the recommendation moot. However, the Army stated that consistent procedures and practices were addressed in the new work measurement policy issued on September 29, 1994.

Audit Response. The Army's comments are partially responsive to the recommendation. Although the Deputy Secretary of Defense discontinued the maintenance workload competitions, he stated in his May 4, 1994, memorandum that in the future, if accurate and comparable cost data are available, then the issue of cost competition should be reopened. Based on the contents of the Deputy Secretary's memorandum, we believe that our recommendation is valid and not moot. Therefore, we request that the Army reconsider its position in its response to the final report.

c. Implement to its full extent the Computer Logic for Automated Standards Setting system for organic and competitive labor standard development at the Corpus Christi Army Depot.

Department of the Army Comments. The Army concurred with the recommendation and stated that the Corpus Christi Army Depot will be directed to prepare a formal plan of action for FY 1995 describing specific programs and realistic standards coverage targets for engineered and nonengineered standards. The anticipated completion date for the corrective action was October 1, 1994.

2. We recommend that the Commander, Corpus Christi Army Depot:

a. Implement standard operating procedures for identifying those labor standards that need to be re-evaluated and updated by the work measurement personnel. The procedures should include the review of performance efficiencies of labor standards.

Department of the Army Comments. The Commander, Corpus Christi Army Depot concurred with the intent of the recommendation stating that procedures are addressed in existing policies, which were updated in May 1994. The Army stated that every out-of-tolerance performance efficiency would not be reviewed every month.

Audit Response. Although the Corpus Christi Army Depot had standard operating procedures, the work measurement personnel did not have selection criteria and were not implementing the procedures for reviewing out-of-tolerance performance efficiencies for labor standards. We believe monitoring performance efficiencies of work operations and selecting those operations that exceed a specified, significant tolerance over a specified period of time for further evaluation is a reasonable requirement for reviewing labor standards. If the Army's updated policies include practical criteria for selecting and reviewing work operations with out-of-tolerance performance efficiencies, the Army will satisfy the intent of our recommendation.

b. Determine and assign the appropriate personnel staffing to accomplish an effective work measurement program for engineering and updating labor standards in the organic and competition work measurement programs.

Department of the Army Comments. The Army nonconcurred with the recommendation stating that downsizing is affecting all organizational levels and it is unlikely that additional staffing will become available for the work measurement function in the near future. Additionally, the Commander, Corpus Christi Army Depot stated that staffing increases would not guarantee the effectiveness of the program. As an alternative, the Commander will place emphasis on the adherence to work measurement standards as a management tool to control labor hours.

Audit Response. Full implementation of CLASS and more effective selection of labor standards for evaluation should allow work measurement personnel at the Corpus Christi Army Depot to develop and update labor standards more efficiently. Additionally, the work measurement program at the Corpus Christi Army Depot was motivated more by increasing its potential work load by winning competitions than by increasing the efficiency of the depot's maintenance operations. As stated in our report, the labor standards that were selected for development and updating were the labor standards for the work loads being competed with other public depots and private contractors. The improvements in work measurement methods and techniques, in addition to a more equitable distribution and use of work measurement personnel, should result in an overall more effective work measurement program at Corpus Christi Army Depot without necessarily increasing the work measurement staff. We believe our recommendation is still valid and request that the Army reconsider its position in response to the final report.

3. We recommend that the Commander, Naval Air Systems Command:

a. Revise Naval Air Systems Command Instruction 5220.16 to require the naval aviation depots to establish system controls for their work measurement functions by:

i. Revising local policies and procedures, consistent with Naval Air Systems Command Instruction 5220.16, to include quantitative criteria for developing and updating engineered labor standards and for the limits and frequency of variance analysis. Equal emphasis should be placed on the accuracy of labor standards for both competitive and noncompetitive work loads.

Department of the Navy Comments. The Navy nonconcurred with the recommendation, stating that it will remain the NAVAIR policy to promote the development of engineered labor standards when a return on investment can be realized. Labor standards will be reviewed when changes occur or when the annual workload standard variance analysis demonstrates the need for a review.

Audit Response. As stated in this report, NADEPs were not implementing DoD and NAVAIR policies on work measurement to develop and update engineered labor standards and to perform adequate variance analyses because the NAVAIR policies were nebulous. The NADEP maintenance personnel we encountered did not know what "return on investment" meant concerning the development of and update of labor standards. Additionally, performing variance analysis annually at the workload level for only the component program is meaningless and not consistent with DoD policy. DoD Instruction 5010.34 requires the Military Departments to evaluate actual labor performance against detailed labor performance standards (covering individual tasks, jobs, and operations) at work centers and field operating levels. We

believe that the Navy will not have an effective work measurement program if top-level management does not ensure that quantified criteria is used in developing and updating labor standards, and in measuring the performance of NADEP work centers through adequate variance analysis. We further believe our recommendation is valid. Therefore, we request that the Navy reconsider its position in response to the final report.

ii. Determining the most cost-effective length of time that a labor standard should cover, then consolidate and reduce the number of existing labor standards for maintenance operations of short duration to conform with the new criteria.

Department of the Navy Comments. The Navy nonconcurred with the recommendation, stating that DoD and NAVAIR instructions do not require a minimum standard size. The Navy stated that maintenance actions must stand alone for various reasons, including optional or selective compliance, quality check points, and specific reporting requirements.

Audit Response. Reducing the amount of labor standards that must be administered at the NADEPs will make the work measurement program more manageable and cost-effective. We continue to believe that NADEPs can review their databases and consolidate or purge unnecessary, short interval labor standards that will ultimately improve the efficiency of the work measurement program. However, we agree that some short duration labor standards may be needed for selective compliance and quality checks. Therefore, we revised our recommendation by eliminating the requirement to impose a minimum time period for future labor standards. We request that the Navy provide comments on the revised recommendation in its response to the final report.

iii. Using automation for monitoring and updating labor standards and for performing variance analysis.

Department of the Navy Comments. The Navy nonconcurred with the recommendation, stating that NAVAIR Instruction 5220.16 encourages but does not require the NADEPs to use automation for standards development. NADEPs use automation for variance analysis of workload standards in the component program. Standard system reports are available to depots to assist in the depots' review of standards for all program work load.

Audit Response. We disagree with the Navy's comments. Although automated techniques were readily available or adaptable, work measurement personnel were using manual methods to update labor standards and perform variance analysis. Using automation will improve both the efficiency and effectiveness of the work measurement program in the Navy. Encouraging NADEPs to use automation instead of making automation a requirement does

not provide the top-level management emphasis needed and will only foster continued inefficiencies in managing labor standards. We request that the Navy reconsider its position in response to the final report.

iv. Modifying the existing electronic data system to identify standards that need to be updated and to identify significant variances for variance analyses of labor standards with recurring, out-of-tolerance operations.

Department of the Navy Comments. The Navy nonconcurred with the recommendation, stating that adequate automation already exists.

Audit Response. We disagree with the Navy that adequate automation already exists. Our report shows that additional automation capabilities were needed and that work measurement personnel were not fully using existing automated capabilities in identifying labor standards that were outdated or out-of-tolerance. We request that the Navy reconsider its position in response to the final report.

b. Provide adequate oversight and inspections to ensure Naval Air Systems Command Instruction 5220.16 is properly enforced by the Deputy Assistant Commander for Aviation Depots, including validation of the adequacy and implementation of the depots' policies and procedures.

Department of the Navy Comments. The Navy concurred in principle with the recommendation, stating that a review of the NADEPs inspection reports indicates that the Navy program policies on work measurement were addressed.

Audit Response. The Navy's actions satisfy the intent of the recommendation. However, we requested copies of all inspection reports for each NADEP for the past 5 years. When we requested the reports, we were provided only the report on the Jacksonville NADEP. We request that the Navy provide copies of the command inspection reports for the NADEPs since FY 1991 in its response to the final report.

4. We recommend that the Commander, Air Force Materiel Command:

a. Update Air Force Materiel Command Regulation 66-4 to:

i. Establish plans and quantified goals for engineered labor standards for the Air Logistics Centers.

Department of the Air Force Comments. The Air Force concurred with the recommendation stating that Air Force Materiel Command Instruction 21-105, which superseded Air Force Materiel Command Regulation 66-4 on

May 27, 1994, assigned product directorates the responsibilities to develop work measurement plans that included goals for developing engineered labor standards.

ii. Establish specific guidance requiring that the Air Logistics Centers follow standard operating procedures for developing nonengineered labor standards and for performing variance analysis for organic and competition work loads.

Department of the Air Force Comments. The Air Force concurred with the recommendation stating that Air Force Materiel Command Instruction 21-105 includes instructions for developing nonengineered standards and for performing variance analysis.

iii. Require the Air Logistics Centers to complete and fully utilize the Pacer Fast Access Computerized Time Standards system for developing labor standards.

Department of the Air Force Comments. The Air Force concurred in principle with the recommendation stating that Air Force Materiel Command Instruction 21-105 advocates the use of predetermined time systems and standard data, which includes Pacer Fast Access Computerized Time Standards.

b. Provide direction to the Air Logistics Centers for completing the industrial processes in the development of the Pacer Fast Access Computerized Time Standards system.

Department of the Air Force Comments. The Air Force concurred in principle with the recommendation stating that as resources become available and as appropriate, the ALCs will develop the remaining processes for the Pacer Fast Access Computerized Time Standards.

Audit Response. The Air Force's planned action satisfies the intent of the recommendation. However, we request that the Air Force provide a date when the planned action will be completed.

Responses Required

Responses to the final report are required from the addressees shown for the items indicated with an "X" in the chart below.

		Response Should Cover			
Number	Addressee	Concur or Nonconcur	Proposed Action	Completion Date	Related Issue
1.a.	Army	X	X	X	IC[1]
1.b.	Army	X	X	X	IC[1]
1.c.	Army	NR[2]	NR[2]	NR[2]	IC[1]
2.a.	Army	NR[2]	NR[2]	NR[2]	IC[1]
2.b.	Army	X	X	X	IC[1]
3.a.i.	Navy	X	X	X	IC[1]
3.a.ii.	Navy	X	X	X	IC[1]
3.a.iii.	Navy	X	X	X	IC[1]
3.a.iv.	Navy	X	X	X	IC[1]
3.b.	Navy	NR[2]	NR[2]	NR[2]	IC[1,3]
4.a.i.	Air Force	NR[2]	NR[2]	NR[2]	IC[1]
4.a.ii.	Air Force	NR[2]	NR[2]	NR[2]	IC[1]
4.a.iii.	Air Force	NR[2]	NR[2]	NR[2]	IC[1]
4.b.	Air Force	NR[2]	NR[2]	X	IC[1]

[1]IC=Material Internal Control Weakness
[2]NR=No further comment required
[3]Navy inspection reports of NADEPs are requested with Navy comments to the final report

Finding B. Office of the Secretary of Defense Oversight of Work Measurement Programs

The Office of the Secretary of Defense oversight of the Military Departments' work measurement programs was ineffective. The condition occurred because the Office of the Secretary of Defense did not have adequate comprehensive policy and procedures for regulating the Military Departments' work measurement programs. Additionally, the Office of the Secretary of Defense did not complete the standardization of the Military Departments' automation of industrial engineering techniques for developing labor standards. Further, the Office of the Secretary of Defense was insufficiently staffed to monitor the Military Departments' implementation of their work measurement programs. As a result, the Military Departments were managing the development and evaluation of labor standards at their aviation maintenance depots, with work loads valued at $2.7 billion annually, ineffectively and inefficiently.

Oversight of the Military Departments' Work Measurement Programs

OSD oversight of the Military Departments' work measurement programs was ineffective. A central office for oversight of the automation of the Military Departments' work measurement programs at maintenance depots was first established in the Office of the Under Secretary of Defense (Personnel and Readiness) in September 1992. Other responsibilities for oversight of depot maintenance functions involving work measurement were divided among the Comptroller of the Department of Defense, the Assistant Secretary of Defense (Production and Logistics), and the Under Secretary of Defense (Personnel and Readiness), formerly the Assistant Secretary of Defense (Force Management and Personnel). Consequently, procedures for ensuring that the Military Departments implemented effective work measurement programs were not developed in OSD.

As a result of OIG, DoD, Report No. 91-039, the Under Secretary of Defense (Personnel and Readiness) established a task group on April 14, 1991, on work measurement and information management for the development and use of performance standards throughout DoD. The objective of the task group

was to provide DoD organizations the appropriate work measurement and industrial engineering tools, through a common and uniform approach, to meet the improvement targets set by the Deputy Secretary of Defense in the Defense Management Report Decisions during FY 1990.

In April 1992, the task group made recommendations for a framework to apply work measurement as a management tool in DoD operations. The task group stated that a framework must provide:

- o a policy that defines the characteristics of sound work measurement;
- o criteria to establish value added applications; and
- o standardized technology applications to make work measurement tools flexible, easy, and inexpensive.

In September 1992, the Under Secretary of Defense (Personnel and Readiness) established the Work Measurement Business Process Office to implement the recommendations of the task group on the development and use of performance standards. We believe this initial step was essential in developing procedures for providing effective oversight of work measurement programs at the Military Departments' maintenance depots.

OSD Policies on Work Measurement

OSD did not establish adequate comprehensive policies and procedures on work measurement for the Military Departments. DoD general guidance on work measurement was issued by several different offices in OSD, including the then Assistant Secretary of Defense (Production and Logistics), the Assistant Secretary of Defense (Force Management and Personnel), and the Comptroller of the Department of Defense. Because of the diverse and inadequate policies, each Military Department had a different interpretation of the DoD guidance and none was effectively implementing the DoD guidance or following its own guidance for work measurement programs.

Industrial Engineering Techniques. The Military Departments were not using industrial engineering techniques for high value and high volume maintenance operations because the OSD guidance was too vague on the use of engineering techniques. The DoD Accounting Manual requires the Military Departments to use industrial engineering techniques for high value and high volume maintenance operations. However, requirements on the use of industrial engineering techniques are not quantified.

Before chapter 76 of the DoD Accounting Manual was updated in March 1990, the Military Departments had a goal of developing engineered labor standards for 80 percent of the work load in a fiscal year. Since chapter 76 of the DoD Accounting Manual was implemented to allow the Military Departments to develop engineered labor standards for high value and high volume maintenance operations, the depot maintenance activities have not set goals and are not emphasizing the development of engineered labor standards. In one case, the Norfolk NADEP had not developed any engineered labor standards for its FY 1992 and FY 1993 work loads. We attribute the inaction at the Norfolk NADEP on developing engineered labor standards, in part, to the ambiguity of the requirement in the OSD guidance.

Variance Analysis. The Military Departments were not performing variance analyses on maintenance operations and tasks and updating those standards because the OSD guidance was not specific. DoD Instruction 5010.34 recommends that the Military Departments perform evaluations of actual labor performance against preestablished standards for work covered by detailed labor performance standards. The OSD guidance does not specify any time period for re-evaluating engineered labor standards and updating those standards based on variance analysis criteria. As a result, the Military Departments' performance of variance analysis was ineffective and the Military Departments had labor standards that were inaccurate and unreliable.

For example, the Corpus Christi Army Depot generated internal reports on the performance efficiencies (actual labor performance compared to preestablished labor performance standards). In FY 1992, the Army's third largest aircraft maintenance program (AH-1 helicopter) had a performance efficiency of 2,029 percent. This large variance from the standard should have caused the work measurement staff to question the accuracy of the standard. The work measurement staff at the Corpus Christi Army Depot did not investigate the variance because no criteria were in the standard operating procedures for selecting, evaluating, and updating labor standards periodically.

Reports and Inspections. OSD guidance was incomplete. The OSD policies and procedures did not specify requirements for the Military Departments to provide to OSD measurement data or inspection reports for OSD-level managers to evaluate the effectiveness of their work measurement programs in developing and evaluating labor standards. Consequently, the Military Departments were not preparing the measurement data, performing inspections of their work measurement programs, and preparing inspection reports for Military Department Headquarters and OSD-level oversight.

For example, NAVAIRSYSCOM Instruction 5220.16 required that the NADEPs provide a quarterly report to NAVAIRSYSCOM on the status of labor standard development. Cherry Point maintenance officials stated that NAVAIRSYSCOM did not provide feedback or guidance to the NADEP

concerning the quarterly reports. Consequently, the NADEP discontinued compiling the report after the first quarter of FY 1992. Neither Cherry Point, Jacksonville, Norfolk, nor the Deputy Assistant Commander for Aviation Depots conducted annual evaluations of the NADEPs' work measurement programs from FY 1990 through FY 1993 to determine the NADEPs' compliance with NAVAIRSYSCOM Instruction 5220.16. If the Military Departments were required to provide measurement data and periodic reports of inspections of work measurement programs at the depots to Military Departments and OSD management, the Military Departments would put more emphasis on developing accurate and reliable labor standards by engineering labor standards.

Standardizing Automation

OSD did not complete the standardization of the Military Departments' automation of industrial engineering techniques for developing labor standards. OSD identified eight sets of work measurement data systems (Appendix B) in the DoD for developing labor standards. OSD, each Military Department, and the Defense Logistics Agency maintain computer data bases for the basic timed measurements of work used in developing labor standards. The annual estimated costs for operating each of the data systems ranged from $10,500 to about $427,500. Each data system was operated and funded independently with no interaction or sharing among the Military Departments, although most systems had the capability for the interactive development of labor standards.

Before July 1993, OSD had not reviewed the existing DoD work measurement data systems to determine the feasibility of consolidating existing systems into a joint DoD work measurement data system. In July 1993, OSD established a study group to accomplish a functional economic analysis of storing and sharing work measurement data within the DoD. The study group was to develop a transition and feasibility plan to consolidate the existing data systems. OSD's preliminary results estimated that $55 million could be saved over 4 years by consolidating existing data systems.

In August 1993, the OSD study group visited the Oklahoma City ALC and the Alameda NADEP to assess their standard data repository functions and operations. The study group concluded that a single repository could support all DoD work measurement needs. The Work Measurement Business Process Office recommended the Defense Industrial Engineering Support System as a migratory system for work measurement. However, the standardization of the automation of industrial engineering techniques was not completed because of funding constraints and the low priority for automating work measurement as established during the broader-based OSD initiative, Corporate Information

Management coordinated under the auspices of the Under Secretary of Defense (Personnel and Readiness) and the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence), for consolidating automated information systems.

We support the development of a repository for data that will provide a standard basis for automating the development of labor standards. A standard data repository would reduce the Military Departments' inefficiencies in developing labor standards by ultimately reducing the ratio of staff work hours to engineered hours and by providing a means for the Military Departments to share work measurement data.

OSD Staffing

The Office of the Under Secretary of Defense (Personnel and Readiness) was insufficiently staffed to oversee the Military Departments' work measurement programs. The newly established Work Measurement Business Process Office was originally staffed with two personnel. Those two personnel were required to coordinate the automation of work measurement programs in each Military Department. To effectively coordinate the automation, the two personnel would normally be required to monitor the Military Departments to ensure that they implement work measurement programs through sufficient funding, staffing, organizing, and developing of data bases and computer systems for their work measurement programs.

In March 1994, the two personnel responsible for the oversight of the Military Departments' work measurement automation programs retired. While the oversight function still exists, the Office of the Under Secretary of Defense (Personnel and Readiness) has not replaced the retirees. As a result, the Military Departments may continue to deemphasize work measurement programs and reduce their work measurement staffs regardless of DoD policy.

Conclusion

The OSD oversight of the Military Departments' work measurement programs for developing labor standards was ineffective. Consequently, the Military Departments deemphasized their work measurement programs for establishing, reviewing, and updating labor standards for the maintenance and repair of aircraft airframes, engines, and components. The ineffective oversight resulted in the Military Departments having inefficiencies in their maintenance depots'

operations, with work loads valued at about $2.7 billion annually that were not readily identifiable to OSD or the Military Departments' management. If the Military Departments' work measurement programs continue to decline, depot maintenance operations could become increasingly inefficient and noncompetitive.

The executive and legislative branches of Government have introduced new management reforms, such as the Vice President's National Performance Review and the Government Performance and Results Act, that could affect the implementation of an effective work measurement program in DoD. Although there may be philosophical differences among the varying tenets of management being espoused throughout the Government, we believe the work measurement program can provide management with a valuable tool to evaluate labor efficiency in DoD within the framework of the new management initiatives.

Management Comments to the Finding and Audit Response

OSD Comments. The Principal Deputy Under Secretary of Defense (Personnel and Readiness) partially concurred with the finding but noted that the audit focused on the Office of the Under Secretary of Defense (Personnel and Readiness) while three OSD offices shared oversight responsibilities for work measurement programs in DoD. The Principal Deputy stated that the oversight responsibility of his office was limited to the use of work measurement and labor standards in DoD for determining personnel requirements. The Principal Deputy believed that the Deputy Under Secretary of Defense (Comptroller), formerly the Comptroller of the DoD, had responsibility for oversight of the Military Departments to use effective industrial engineering techniques and that the Military Departments had the responsibility to develop labor standards and to evaluate their work measurement programs. Additionally, the Principal Deputy believed that his office made reasonable efforts to standardize automated industrial engineering techniques but funding constraints and higher corporate information management priorities prevented completion of that effort. The Principal Deputy further stated that his office was assessing the staffing requirements and assignments for overseeing the work measurement programs in DoD.

Audit Response. Based on the Principal Deputy's comments, we made changes to the report where appropriate. Concerning the Principal Deputy's comments that other OSD offices shared responsibility for oversight of the work measurement program, we agree that other DoD Components, including the Military Departments, had responsibilities to implement work measurement programs consistent with OSD policy. However, our report showed that the Military Departments were not implementing sound work measurement

programs. Therefore, we continue to believe that the Military Departments' work measurement programs will decline without active OSD proponency. The Office of the Under Secretary of Defense (Personnel and Readiness) is the office that should develop the comprehensive policy because it is the principal proponent for the productivity program in DoD; the action office for the overall policy on productivity (which includes DoD policies on work measurement, labor performance standards, and variance analysis in DoD Instruction 5010.34); and the OSD-level coordinator on automation of industrial engineering techniques.

Recommendations, Management Comments, and Audit Response

We recommend that the Under Secretary of Defense (Personnel and Readiness) in coordination with the Under Secretary of Defense (Comptroller), the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence), and the Deputy Under Secretary of Defense (Logistics):

1. Develop and implement comprehensive policy on work measurement, consistent with executive and legislative branch requirements for reinventing and streamlining government, that includes specific requirements for engineering labor standards, evaluating work measurement program performance, updating standards, and reporting program data to the Office of the Secretary of Defense.

OSD Comments. The Principal Deputy Under Secretary of Defense (Personnel and Readiness) did not comment specifically on this recommendation, but he stated that the DoD management philosophy and policy on work measurement should be revised to accommodate various management initiatives, including executive and legislative branch requirements for reinventing and streamlining government. The Principal Deputy also stated that other OSD offices shared responsibility in developing and implementing work measurement policy.

Audit Response. We revised our recommendation to incorporate the Principal Deputy's comments. We request the Under Secretary of Defense (Personnel and Readiness) provide comments on the revised recommendation in response to the final report.

2. Standardize the applications of work measurement techniques used by the Military Departments by establishing a priority within the DoD corporate information management initiatives that allows the completion of a system for sharing computer systems and common data bases.

OSD Comments. The Principal Deputy Under Secretary did not comment specifically on this recommendation, but he stated that much of the preliminary work to standardize an automated work measurement system had been completed. However, the effort to standardize was terminated because of funding shortfalls and other higher priorities among the corporate information management initiatives in DoD. Consequently, the Principal Deputy proposed an alternative recommendation.

Audit Response. We agree with the Principal Deputy's proposed alternative and we revised the recommendation. We request that the Under Secretary of Defense (Personnel and Readiness) provide comments on the revised recommendation in response to the final report.

3. Staff the Work Measurement Business Process Office with sufficient personnel to effectively oversee the implementation of the Military Departments' automation of work measurement programs.

OSD Comments. The Principal Deputy did not comment specifically on this recommendation, but he stated that the Office of the Under Secretary of Defense (Personnel and Readiness) had five staff positions for the policy, oversight, and program execution responsibilities of the work measurement program in DoD. Additionally, he stated that an internal review was in process to determine whether two vacant staff positions in the Work Measurement Business Process Office should be filled and whether another staff member should be reassigned.

Audit Response. The Principal Deputy's comments indicate that the ongoing internal review may conclude that personnel are not needed to oversee the coordination and consolidation of computer systems and data bases for work measurement in DoD. We continue to believe that the Work Measurement Business Process Office should be staffed with at least two people to ensure the effective oversight of the automation of work measurement in DoD. Therefore, we believe our recommendation is still valid and we request that the Principal Deputy reconsider his position in response to the final report.

Part III - Additional Information

Appendix A. Prior Audit Coverage

During the last 5 years, the OIG, DoD, the General Accounting Office (GAO), and the Air Force Audit Agency have issued four reports addressing problems in managing labor standards.

OIG, DoD, Report No. 91-039, "Management of Labor Standards for Airframes at Aeronautical Depots," January 31, 1991, stated that the Military Departments were not developing and updating labor standards and were not performing variance analyses of differences in actual labor hours expended versus standard labor hours for the maintenance and repair of aircraft airframes. We recommended that the Military Departments improve their work measurement programs by issuing specific guidance for developing and updating labor standards for airframes. The Assistant Secretary of Defense (Force Management and Personnel) concurred with all findings and recommendations and stated that the actions recommended were necessary if cost controls and improved manpower utilizations are to be realized. The corrective actions to be taken by the Military Departments included improving the work measurement programs by developing and updating labor standards and implementing a variance analysis program for airframes.

GAO Report No. NSIAD-90-193BR (OSD Case No. 8381), "Navy Maintenance, Improvements Needed in the Aircraft Engine Repair Program," June 18, 1990, stated that significant differences existed in the labor hour estimates developed by different depots to perform the same repair task at the different depots. GAO reported that labor hours estimated were based on outdated, unsupported labor standards. The Navy agreed with the findings and NAVAIRSYSCOM was required to submit quarterly reports to the Secretary of the Navy outlining progress in implementing corrective management initiatives. The Office of the Assistant Inspector General for Analysis and Followup, DoD, completed follow-up actions on March 18, 1991, reporting that the NAVAIRSYSCOM had initiated corrective actions. An on-site review performed by the Assistant Inspector General for Analysis and Followup, OIG, DoD, on November 20, 1991, reported that Navy funding restrictions were hampering coverage of engineered labor standards.

GAO Report No. NSIAD-89-171 (OSD Case No. 7949), "Aviation Component Repair Program Needs Greater Management Attention," July 6, 1989, stated that component repair prices were not adequately supported, audits and reports were not made, and variances between actual and billed labor hours were not analyzed. GAO recommended that the Navy establish internal controls to ensure that repair prices are supported and accurate. The report also stated that greater management emphasis was needed to improve efficiency and contain

costs. DoD agreed with GAO's findings and recommendations and indicated that the Navy was initiating a number of corrective actions. The corrective actions included developing a revised workload standards program, implementing a variance analysis program, directing an improved performance measurement system, and taking steps to improve productivity and efficiency.

Air Force Audit Agency Report No. 7106211, "Development and Use of Air Force Engineered Maintenance Labor Standards," June 28, 1989, stated that 63 percent of the total programmed depot work load did not have engineered labor standards, 54 percent of work performance observations did not meet the accuracy criteria, 68 percent of the required reviews of labor standards were not performed, and 82 percent of the operations had inadequate supporting documentation. Management agreed with the recommendations, and the corrective actions included verifying and upgrading the data base system, updating guidance and implementing procedures for the work measurement program, and reorganizing the work measurement group. The Air Force completed corrective actions on all recommendations.

Appendix B. DoD Work Measurement Data Bases

DoD Proponent	Data Base	Annual Cost of Operation
Office of the Assistant Secretary of Defense (Force Management and Personnel)	Defense Work Measurement Standard Time Data	$ 12,000
Army Depot System Command	Computer Logic for Automated Standards Setting System	Undetermined
Army Munitions and Chemical Command	Performance Measurement Analysis Package	Undetermined
Naval Sea Systems Command	Production Industrial Engineering Resource System	$280,000
Naval Air Systems Command	Elemental Standard Data	$427,500
Naval Facilities Engineering Command	Facilities Engineering Job Estimating	Undetermined
Air Force Materiel Command	Labor Standard Data System	$ 10,500
Defense Logistics Agency	Defense Industrial Management Engineering System	Undetermined

Appendix C. Summary of Potential Benefits Resulting From Audit

Recommendation Reference	Description of Benefits	Type of Benefits
A.1.a.	Internal Control. Provides centralization, oversight, policies, and procedures for the Army work measurement program.	Nonmonetary.
A.1.b.	Internal Control. Provides procedures for the consistent development of labor standards for competition and organic work loads.	Nonmonetary.
A.1.c.	Economy and Efficiency and Internal Control. Improves the time ratio of work hours needed to develop engineered labor standard hours.	Nonquantifiable. A statistical sample of the total labor standard hours could not be developed for determining and projecting time and cost elements for engineering labor standards manually and automatically.
A.2.a. and A.2.b.	Internal Controls. Establishes standard operating procedures and staffing to ensure that effective variance analyses and work measurement are performed.	Nonmonetary.
A.3.a.i. through A.3.a.iv.	Economy and Efficiency and Internal Control. Provides procedures for the Navy to economically develop accurate and reliable labor standards by quantifying criteria, eliminating unnecessary standards, using automation, and performing variance analyses.	Nonquantifiable. The Navy maintained insufficient summary data to evaluate savings for reducing costs for developing labor standards and using more accurate standards.

Appendix C. Summary of Potential Benefits Resulting from Audit

Recommendation Reference	Description of Benefits	Type of Benefits
A.3.b.	Internal Control. Provides for more effective oversight and inspections of Navy work measurement programs at aviation depots.	Nonmonetary.
A.4.a.i. through A.4.a.iii.	Economy and Efficiency and Internal Control. Provides Air Force policy and procedures that will improve the accuracy and reliability of labor standards.	Nonquantifiable. The Air Force maintained insufficient summary data to evaluate savings from reducing costs for developing labor standards and using more accurate standards.
A.4.b.	Economy and Efficiency and Internal Control. Provides the Air Force with an automated work measurement process that should reduce the cost of developing engineered labor standards.	Nonquantifiable. Implementing the work measurement process is a subset of larger Air Force management information system development, which could not be evaluated.
B.1.	Internal Control. Establishes comprehensive policy and procedures for monitoring the Military Departments' work measurement programs.	Nonmonetary.
B.2.	Economy and Efficiency. Standardizes work measurement techniques and associated computer systems and data bases in the Military Departments.	Nonquantifiable. The total costs and benefits associated with implementing standardization throughout the Military Departments could not be accurately identified, evaluated, and measured.

Recommendation Reference	Description of Benefits	Type of Benefits
B.3.	Internal Control. Sufficiently staffs the OSD office for the effective oversight of the Military Departments' work measurement programs.	Nonmonetary.

Appendix D. Organizations Visited or Contacted

Office of the Secretary of Defense

Office of the Deputy Under Secretary of Defense for Logistics, Washington, DC
Office of the Under Secretary of Defense (Personnel and Readiness), Washington, DC

Department of the Army

Office of the Army Deputy Chief of Staff for Logistics, Washington, DC
Army Materiel Command, Alexandria, VA
- Army Depot System Command, Chambersburg, PA
- Corpus Christi Army Depot, Corpus Christi, TX

Department of the Navy

Naval Air Systems Command, Arlington, VA
- Naval Aviation Depot Operations Center, Patuxent River, MD
- Naval Aviation Depot, Cherry Point, NC
- Naval Aviation Depot, Jacksonville, NC
- Naval Aviation Depot, Norfolk, VA

Department of the Air Force

Office of the Assistant Secretary of the Air Force (Financial Management and Comptroller), Washington, DC
Office of the Air Force Deputy Chief of Staff for Logistics, Washington DC
Air Force Materiel Command, Wright-Patterson Air Force Base, OH
- Oklahoma City Air Logistics Center, Tinker Air Force Base, OK
- Warner Robins Air Logistics Center, Robins Air Force Base, GA

Appendix E. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense (Comptroller)
Under Secretary of Defense for Personnel and Readiness
Assistant Secretary of Defense (Command, Control, Communications, and Intelligence)
Deputy Under Secretary of Defense for Logistics
Assistant to the Secretary of Defense (Public Affairs)

Department of the Army

Secretary of the Army
Auditor General, Department of the Army

Department of the Navy

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

Department of the Air Force

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

Defense Organizations

Director, Defense Contract Audit Agency
Director, Defense Logistics Agency
Director, National Security Agency
Inspector General, Central Imagery Office
Inspector General, Defense Intelligence Agency
Inspector General, National Security Agency
Director, Defense Logistics Studies Information Exchange

Non-Defense Federal Organizations

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

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

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

Part IV - Management Comments

Principal Deputy Under Secretary of Defense (Personnel and Readiness) Comments

OFFICE OF THE UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000

SEP 19 1994

PERSONNEL AND READINESS

MEMORANDUM FOR INSPECTOR GENERAL, DEPARTMENT OF DEFENSE

SUBJECT: Audit Report on the Follow-up of the Management of Labor Standards at Aeronautical Depots (Project No. 3LB-0016)

As requested by the Director, Logistics Support Directorate, Office of the Department of Defense Inspector General memorandum of May 24, 1994, Attachment 1 provides comments on the subject draft audit report.

The Office of the Under Secretary of Defense (Personnel and Readiness) appreciates the opportunity to comment on this report prior to its publication. This office is responsible for Department of Defense (DoD) policy on personnel requirements determination, including the use of work measurement and labor standards for that purpose. But we share responsibility for Office of the Secretary of Defense (OSD) oversight of the management and use of work measurement and labor standards at aeronautical depots with several other offices--the Office of the Under Secretary of Defense (Acquisition and Technology), the Office of the Department of Defense Comptroller, and the Office of the Assistant Secretary of Defense (Command, Control, Communications and Intelligence). Thus, we recommend that this report be sent to these offices for comment as well.

In general, we also recommend that this report be revised substantially to reflect (1) the specific policy responsibilities of these offices and their relationships to the management and use of work measurement and labor standards; and (2) the various DoD and Administration initiatives that affect those responsibilities--and make some of the report's recommendations problematic. For example, the report should address the relationship between work measurement and unit-based costing under the Defense Business Operations Fund, and it should also examine the impact of that relationship on policy oversight and program execution in this area. In addition, the report must address the effects of Executive Order 12871 (which requires collective bargaining of labor standards), and the Government Performance and Results Act. Attachment 2 provides a proposed rewrite of Finding B for your consideration. Point of contact for this action is Dr. James L. Raney, (703) 325-2084.

Al Conte
Albert V. Conte
Principal Deputy

Attachments:
As stated

COMMENTS ON THE DEPARTMENT OF DEFENSE INSPECTOR GENERAL'S DRAFT AUDIT REPORT ON THE FOLLOW-UP OF THE MANAGEMENT OF LABOR STANDARDS AT AERONAUTICAL DEPOTS (PROJECT NO. 3LB-0016)

Finding A. Ineffective Military Departments' Work Measurement Programs

CONCUR with these findings and recommendations, including the Internal Control weaknesses in Part I of the report, subject to incorporation of the following comments:

1. On page 8 in the first paragraph at lines 12-14, and in various other places throughout the report, the observation is made that inefficiencies in work were not readily identifiable to management because labor standards were not engineered, not accurate, or not available. Recommend that the report be amended to recognize that:

a. This observation may be applied to efficiencies as well as inefficiencies. However, efficiencies and inefficiencies may be identifiable to management through means other than labor standards (e.g., via management-by-objectives, management-by-results, unit costing, or other performance management approaches).

b. The presence of engineered labor standards does not necessarily indicate process efficiency. Rather, such standards provide one means of comparing alternative processes to identify relative efficiencies and inefficiencies of different ways to achieve the same result.

c. The lack of engineered or non-engineered labor standards does not necessarily indicate process inefficiency, since the value added by engineering a labor standard or developing a non-engineered labor standard may not be worth the cost of the level of work measurement effort required. (Reference: Office of the Assistant Secretary of Defense (Force Management and Personnel) memorandum for Deputy Assistant Inspector General for Inspection, GAO and Audit Follow-Up dated 20 April 1992, subject: Follow-up on OIG Report No. 91-039, "Management of Labor Standards for Airframes at Aeronautical Depots," January 31, 1991.)

d. In general, work measurement systems provide a resource management tool. The draft audit report discusses the extent to which maintenance depots use this particular tool. It does not address the broader issue of whether maintenance depots are managing their resources appropriately. In view of the major changes occurring throughout the Department, this issue seems paramount.

2. On page 15, paragraph heading OSD Changes in Guidance, lines 2 and 14, the term "OSD maintenance policy" is used. Recommend change to "DoD work measurement policy" because DoD Instruction 5010.37 pertains to DoD work measurement, vice maintenance, policy.

Attachment 1

Final Report Reference

Finding B. Ineffective OSD Oversight of Work Measurement Program

PARTIALLY CONCUR. In general, the USD(P&R) takes exception to this finding on grounds that it is based on an incomplete audit; that it contains inaccuracies regarding work measurement program oversight responsibilities; and that it is based on conclusions that are not supported by the record. Each of these exceptions is discussed below. Note that the following comments represent the views of the USD(P&R) only; the IG should refer the draft audit report to other cognizant OSD staff offices for comment on their respective work measurement program oversight responsibilities.

1. As a general matter, the USD(P&R) takes exception to this finding on grounds that it is based on an incomplete audit. As best we can determine, the USD(P&R) portion of the audit consisted of interviews of two mid-level P&R staff members, both of whom have since retired. While the audit acknowledges that program oversight responsibility rests primarily with three OSD staff offices--USD(P&R), DoD Comptroller, and USD(A&T)--senior officials in those offices were not contacted.

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2. With regard to P&R's work measurement program oversight responsibilities, we take exception to the audit's statement (at page 29) that "A central office for oversight of the Military Departments' work measurement programs...was only established in the office of the ASD(P&R) in January 1993." This is not true; as discussed below, P&R's policy on personnel requirements determination and its oversight of the use of work measurement and labor standards for that purpose have been the responsibility of a Senior Executive Service (SES)-level staff member for over a decade; the "central office" referenced in the report was exclusively concerned with work measurement automation.

a. As noted, work measurement program oversight responsibilities have been shared by three OSD staff offices--USD(P&R), DoD Comptroller, and USD(A&T). With policy responsibilities for the Department's production, depot maintenance, and logistics functions, USD(A&T) has responsibility for oversight of the management and use of work measurement and labor standards to support those functions. With policy responsibilities for the Defense Business Operations Fund and unit-based costing (which necessarily incorporates the results of work measurement) as well as other financial management functions, the DoD Comptroller has responsibility for oversight of the management and use of work measurement and labor standards to support those functions. These offices have established oversight mechanisms that are not addressed by the audit.

b. In P&R, work measurement program oversight responsibilities relate primarily to policy on the determination of DoD-wide military and civilian end-strength and staffing requirements. That oversight has been the responsibility of a senior civilian executive since the mid-1980's, with immediate support from at least one GM-15 on the P&R staff. Those two positions (currently the Director, Requirements and an Operations Research Analyst, both in the Office of the Deputy Under Secretary of Defense for Requirements and Resources) were recently realigned from the Office of the Deputy

Assistant Secretary of Defense for Civilian Personnel Policy. Additional staff support for this program has come from three members of the Defense Productivity Program Office--now part of the Defense Civilian Personnel Management Service (DCPMS); with this recent realignment and the ongoing internal USD(P&R) review of the DoD work measurement program, those three positions are subject to reassignment to support other USD(P&R) priority programs.

c. In September 1992 (not January 1993--this date and others reported in the audit are not consistent with P&R records), P&R established a Work Measurement Business Process Office to determine the feasibility of standardizing certain aspects of the Services' separate work measurement automation programs; that office was staffed with two of the three DCPMS positions supporting this program, and it was assigned to the Information Systems Division in DCPMS (formerly the Defense Civilian Personnel Center). Contrary to the statement made in the draft audit, this office had no policy oversight responsibilities; rather, it was concerned solely with work measurement automation efforts (see below).

3. With regard to the remainder of the audit's Finding B, we take exception on grounds that it is based on three conclusions that are not supported by the record as a whole: (a) that OSD did not establish adequate or comprehensive work measurement policies; (b) that OSD did not standardize Military Department work measurement automation efforts; and (c) that OSD was not sufficiently staffed to properly oversee Military Department work measurement programs. Each of these conclusions is addressed below:

a. As it relates to USD(P&R), we take exception to the finding that OSD did not establish an adequate work measurement policy framework. The audit cites three bases for this conclusion, and we take exception to each as follows:

(1) We have no comment on the conclusion that the DoD Accounting Manual was to blame for the Military Departments' alleged failure to effectively employ industrial engineering techniques. As noted, the audit should have addressed this allegation to senior DoD Comptroller officials.

(2) We object to the conclusion blaming the Military Departments' alleged failure to perform variance analysis on the absence of specific P&R guidance (that is, the failure to specify time periods for the re-evaluation and update of labor standards). As the audit correctly notes, it is the responsibility of the Military Departments to develop labor standards for literally thousands of different work situations; those work situations vary greatly, and it is clear that the Services are in the best position to determine whether their standards are current. Any OSD guidance in this regard (other than to state the obvious--that standards should be kept up to date) would be arbitrary and would do nothing more than impose an additional burden on the Services that would serve no useful purpose.

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(3) We object to the conclusion blaming the Military Departments' alleged failure to properly inspect their work measurement programs and submit inspection reports to OSD on the absence of an OSD requirement to do so. As noted, the Services are in the best position to determine the currency of their work measurement data; requiring them to submit that data to OSD, when OSD is in no position to assess the currency of the data, would add an additional reporting requirement that would serve no useful purpose.

b. As it relates to P&R, we take exception to the finding that OSD did not standardize Military Department efforts to automate industrial engineering techniques. That statement suggests that no actions have been taken in this regard. To the contrary, USD(P&R) in conjunction with the Department of the Army and the ASD(C3I), has taken all reasonable steps to standardize automation efforts; however, funding constraints and higher Corporate Information Management (CIM) priorities have placed this initiative on hold, and it is inappropriate to "blame" P&R for those circumstances.

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(1) While the audit recounts many of the actions taken by P&R, its conclusion (at page 32) does not take those actions into account. The audit states that in April 1991 the ASD(P&R) established a task force on work measurement and information management; it also notes that in April 1992 (not November 1992--this date and others reported in the audit are not consistent with P&R records) the task group recommended that the ASD attempt to standardize certain work measurement automation efforts, and in September 1992 (not January 1993--this date and others reported in the audit are not consistent with P&R records), the Work Measurement Business Process Office was created under the auspices of P&R and the ASD(C3I), with the Army serving as executive agent.

(2) Thereafter, the Work Measurement Business Process Office held numerous meetings and conducted numerous visits (some of which are cited in the audit) in furtherance of its objective, and even went so far as to propose a preliminary CIM work measurement migration system (the Defense Industrial Engineering Support System). However, those efforts have been terminated because of funding shortfalls and other priorities--both in P&R and in the Army, P&R's executive agent for this effort. Thus, instead of concluding that "OSD did not standardize the Military Departments' automation" efforts, the audit should acknowledge that much of the preliminary--and necessary--work has been done in this regard, and it should recommend that DoD and the Services determine the appropriate priority for this effort (among their other priorities).

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c. As it relates to P&R, we take exception to the finding (at page 33) that this office was understaffed to oversee the Military Departments' work measurement programs. The audit does not correctly state the number of P&R staff resources involved in this program, and it does not correctly report P&R intentions with regard to replacing the two staff members who retired. Moreover, as we have pointed out, several OSD staff offices share oversight responsibility for work measurement programs, and their

responsibilities (and respective staffing levels) must also be considered before drawing any conclusions in this area.

(1) As to P&R staffing for oversight of the work measurement programs, we have noted that there were a total of five authorizations--two on the OSD staff and three in DCPMS--with cognizant responsibilities. Policy oversight resides with the SES Director, Requirements and a GM-15 Operations Research Analyst in the Office of the Deputy Under Secretary of Defense for Requirements and Resources. In DCPMS, a P&R field activity, one position (currently encumbered) was assigned to the Workforce Quality and Productivity Division, and two others (both vacant) were assigned to the Information Systems Division, as the Work Measurement Business Process Office.

(2) As to P&R intentions with regard to replacing the two Work Measurement Business Process Office staff members who recently retired, no decision has yet been made pending completion of the internal USD(P&R) review of the DoD work measurement program. We should note that no one from the IG's office asked the superiors of those two individuals about replacement plans, so we do not know the source of the audit's conclusion.

PROPOSED REVISION OF FINDING "B" OF THE DEPARTMENT OF DEFENSE INSPECTOR GENERAL'S DRAFT AUDIT REPORT ON THE FOLLOW-UP OF THE MANAGEMENT OF LABOR STANDARDS AT AERONAUTICAL DEPOTS (PROJECT NO. 3LB-0016)

Finding B. Office of the Secretary of Defense Oversight of Work Measurement Programs

Oversight of the Military Departments' work measurement programs at aeronautical maintenance depots is shared among several OSD offices. Although OSD took appropriate actions to address known program deficiencies and other opportunities for improvement, DoD policy on work measurement has not been updated. The Military Departments' programs may be improved in three areas: (a) using industrial engineering techniques for high value and high volume maintenance operations; (b) performing variance analyses on maintenance operations and updating labor standards accordingly; and (c) ensuring effectiveness of work measurement programs in developing and evaluating labor standards. Although OUSD(P&R) continues to support enhancement of the Defense Industrial Engineering Support System (DIESS), DIESS has not been designated formally as the DoD Corporate Information Management (CIM) migration system for standardizing automation of industrial engineering techniques for developing labor standards and the Military Departments' work measurement automation programs appear to have potential CIM cost savings. Several OUSD(P&R) staffing and programmatic changes are being made to redirect the DoD work measurement program.

Oversight of the Military Departments' Work Measurement Programs

The Office of the Secretary of Defense (OSD) oversight of the Military Departments' work measurement programs at aeronautical maintenance depots is shared among the recently created Office of the Under Secretary of Defense (Personnel and Readiness) [OUSD(P&R)] and Office of the Under Secretary of Defense (Acquisition and Technology) [OUSD(A&T)], plus the Office of the Department of Defense (DoD) Comptroller [DoDCOMPT]. In addition, OSD oversight of work measurement automation is shared with the Office of the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) [OASD(C3I)].

In OUSD(P&R), DoD work measurement program oversight responsibilities relate primarily to policy on the determination of DoD-wide military and civilian end-strength and staffing requirements. With policy responsibilities for the Department's production, depot maintenance, and logistics functions, USD(A&T) has responsibility for oversight of the management and use of work measurement and labor standards to support those functions. With policy responsibilities for the Defense Business Operations Fund and unit-based costing (which necessarily incorporates the results of work measurement) as well as other financial management functions, the DoD Comptroller has responsibility for oversight of the management and use of work measurement and labor standards to support those functions.

Attachment 2

Since the publication of the DoD Inspector General Audit Report No. 91-039, Management of Labor Standards for Airframes at Aeronautical Depots, January 31, 1991, OSD has taken appropriate actions regarding the implementation of effective work measurement programs in the Military Departments to address known problems as well as other opportunities for improvement. A listing of major actions follows below:

- On February 25, 1991 OUSD(P&R) began staffing a proposed comprehensive revision to DoD Directive 5010.31, DoD Productivity Program, including work measurement systems. This action was later suspended due to major non-concurrences and programmatic changes (e.g., unit-based costing and the Defense Business Operations Fund).

- On April 14, 1991 OUSD(P&R) established the "DoD Task Group on Work Measurement and Application of Standards" (a.k.a. "DoD Work Measurement Task Force" et al.) with participation by the OUSD(A&T), DoDCOMPT, OASD(C3I), Military Departments, and Defense Agencies to address problems cited in DoD Inspector General Audit Report No. 91-039, Management of Labor Standards for Airframes at Aeronautical Depots, January 31, 1991 as well as other opportunities for improvement.

- On April 20, 1992 OUSD(P&R) provided the task group report to the DoD Deputy Assistant Inspector General Inspection, GAO and Audit Follow-up along with OUSD(P&R) comments on Navy responses on the DoD Inspector General follow-up to the audit report cited above, including pending revisions of DoD work measurement policy.

- On May 4, 1992 representatives from OUSD(P&R), OUSD(A&T), DoDCOMPT, and OASD(C3I) were briefed on the results of the task group to begin an effort to establish a DoD Corporate Information Management (CIM) project for labor standards determination. The objective of this CIM project was to create a business process model and analyze the process to determine which of the activities are non-value added and to identify business improvement opportunities where they exist. The existing OUSD(P&R) effort to improve the DoD work measurement and industrial engineering process was incorporated into this CIM project.

- In June 1992 OSD designated the Army to lead the business process modeling with contractor assistance, but no progress was made due to lack of funding and other Army priorities.

- On September 11, 1992 OUSD(P&R) announced the establishment of the Work Measurement Project (a.k.a. "Work Measurement Business Process Office" et al.) in the Information Systems Division of what is currently the Defense Civilian Personnel Management Service (DCPMS) and the reassignment of two personnel to support the project.

2

- In January 1993 the newly formed Work Measurement Business Process Office (WMBPO) facilitated the first of a planned series of DoD Component meetings to address improvements in the existing work measurement process, improve exchange of information, and develop a standard approach to automation. The resulting "DoD Work Measurement Executive Committee" (a.k.a. "Joint Service Work Measurement Technical Sub-Committee" et al.), which was a continuation of the DoD Task Group on Work Measurement and Application of Standards, met several times in 1993. The WMBPO also assisted the Joint Logistics Systems Center (JLSC) with their work measurement systems modeling in 1993 and conducted numerous OSD and DoD Component briefings on "Work Measurement Common Application System 1994" during September-November 1993.

- On March 13, 1994 the Senior Executive Service (SES) position of Director for Plans and Resources in what is currently the Office of the Deputy Assistant Secretary of Defense (Civilian Personnel Policy) [ODASD(CPP)] was reassigned to the SES position of Director, Requirements in what is currently the Office of the Deputy Under Secretary of Defense (Requirements and Resources) [ODUSD(R&R)]. With this reassignment ODUSD(R&R) assumed policy and program oversight responsibility for work measurement programs in OUSD(P&R).

- One Operations Research Analyst position in what is currently ODASD(CPP) had been identified to support the SES position of Director for Plans and Resources, and the incumbent employee was reassigned in March 1994 to support the Director, Requirements in ODUSD(R&R).

- The two personnel in the WMBPO of DCPMS retired in March 1994, and the status of their vacated positions was being reviewed in September 1994.

- The status of a Management Analyst position and incumbent employee in DCPMS was being reviewed in September 1994.

DoD Policies on Work Measurement

Although OSD took appropriate actions to address known program deficiencies and other opportunities for improvement, DoD policy on work measurement has not been updated. The Military Departments' programs may be improved in three areas: (a) using industrial engineering techniques for high value and high volume maintenance operations; (b) performing variance analyses on maintenance operations and updating labor standards accordingly; and (c) ensuring effectiveness of work measurement programs in developing and evaluating labor standards. Although this report does not address the broader issue of whether the maintenance depots are managing their resources appropriately in the context of the major changes occurring throughout the Department, the DoD policy on work measurement could be reviewed and updated to ameliorate these apparent deficiencies.

3

Industrial Engineering Techniques. The Military Departments were not using industrial engineering techniques for high value and high volume maintenance operations. The current DoD guidance does not quantify requirements on the use of industrial engineering techniques. In March 1990, DoDCOMPT updated Chapter 76 of the DoD Accounting Manual to remove the specific quantitative goal and change the requirement to allow the Military Departments to develop engineered labor standards for high value and high volume maintenance operations. Thus, DoD delegated responsibility and authority to the Military Departments to tailor goals for work measurement as appropriate for meeting their overall resource management requirements. Current DoD policy could be enhanced by specifying criteria for determining how "value added" by industrial engineering may be used to determine the level of effort required.

Variance Analysis. The Military Departments were not performing variance analyses on maintenance operations and updating the labor standards accordingly. The current DoD guidance requires performing variance analyses on maintenance operations and updating the labor standards. The DoD guidance does not provide any specific time period for re-evaluating engineered labor standards and updating those standards based on variance analysis criteria. Thus, DoD delegated the responsibility and authority to the Military Departments to tailor variance analysis as appropriate for meeting their overall resource management requirements. Current DoD policy could be enhanced by specifying criteria for determining how "value added" by variance analysis may be used to determine the level of effort required.

Reports and Inspections. The DoD policies and procedures did not specify requirements for the Military Departments to evaluate the effectiveness of their work measurement programs in developing and evaluating labor standards. Also, the DoD policies and procedures did not specify requirements for the Military Departments to provide to OSD measurement data or inspection reports for OSD-level managers to evaluate the effectiveness of their work measurement programs in developing and evaluating labor standards. Thus, DoD delegated the responsibility and authority to the Military Departments to tailor measurement data and inspection reports as appropriate for meeting their overall resource management requirements. Current DoD policy could be enhanced by specifying criteria for determining how "value added" by measurement data and inspection reports may be used to determine the level of effort required.

Standardizing Automation

Although OSD has not formally standardized the Military Departments' automation of industrial engineering techniques for developing labor standards, OUSD(P&R) supports enhancement of the Defense Industrial Engineering Support System (DIESS) as the DoD migration system. During September through November 1993 the "Work Measurement Common Application System 1994" was briefed to various OSD and DoD Components outlining enhancements to implement a common system. Since OSD was managing this proposal per applicable DoD Corporate Information Management (CIM) policies and

procedures, progress will be made in proportion to priorities and resources appropriate for this requirement in view of the major changes occurring throughout the Department.

OSD Staffing

The OUSD(P&R) staffing of the DoD work measurement program consisted of a total of five authorizations--two on the OSD staff and three in DCPMS--with cognizant responsibilities. Policy and program oversight responsibilities were assigned to the SES Director, Requirements and a GM-15 Operations Research Analyst in the Office of the Deputy Under Secretary of Defense for Requirements and Resources [ODUSD(R&R)]. In DCPMS, an OUSD(P&R) field activity, program execution responsibilities were assigned to two positions (both now vacant) in the Work Measurement Business Process Office (WMBPO) of the Information Systems Division, and one position in the Workforce Quality and Productivity Division (WQPD). In September 1994 no decision had yet been made about replacing the two WMBPO staff members or reassigning the WQPD staff member, pending completion of an internal OUSD(P&R) review of the DoD work measurement program.

- In March 1994, the Senior Executive Service and Operations Research Analyst positions and incumbent staff personnel were reassigned from the Office of the Deputy Assistant Secretary of Defense (Civilian Personnel Policy) [ODASD(CPP)] to the Office of the Deputy Under Secretary of Defense (Requirements and Resources) [ODUSD(R&R)] which assumed responsibility for OUSD(P&R) oversight of the DoD work measurement program.

- In March 1994 the two DCPMS WMBPO personnel retired. They had provided support for functional process improvement and development of a single automated DoD corporate database and system for engineering labor standards, per the 1991 DoD study of work measurement and information management initiated in response to the earlier DoD Inspector General Report No. 91-039.

- The DCPMS WQPD employee provided DoD work measurement program execution support on an as-needed basis.

Conclusion

Changes are needed in DoD management philosophy and policy which bear directly on the management of labor standards. Work measurement systems provide a resource management tool. This report discusses the extent to which aeronautical maintenance depots use this particular tool. It does not address the broader issue of whether the depots are managing their resources appropriately. In view of the scope, magnitude, and impact of major changes occurring both external and internal to the Department, this issue seems paramount.

The DoD management philosophy and policy on work measurement and related issues should be revised to accommodate various management initiatives both external and internal to the Department, such as (a) the Vice President's National Performance Review (NPR); (b) various Executive Orders and Presidential Memoranda; (c) the Government Performance and Results Act (GPRA); and (d) similar or related requirements, including budget and work force reductions. These changes encompass nearly all of the Department's infrastructure. Moreover, these changes sometimes appear to be inconsistent, and apparent conflicts must be resolved. Finally, these changes are not all equally important, and some changes must be made before others. The DoD guidance could be updated to integrate these new requirements into the way in which the Department manages its resources.

For example, the NPR calls for cutting red tape, putting customers first, empowering employees to get results, and cutting back to basics. Executive Order 12861 requires a 50 percent cut of internal regulations. Executive Order 12871 requires the establishment of labor-management partnerships, including bargaining with unions on "methods and means" of work. The President's Memorandum of September 11, 1993 requires streamlining of the bureaucracy, including major civilian work force reductions. The GPRA requires the Department to improve program effectiveness and accountability by focusing on results, quality, and customer satisfaction (n.b., not by focusing on inputs, such as labor). Some DoD streamlining efforts, such as the Corporate Information Management (CIM) initiative, emphasize reducing overhead (e.g., work measurement) as a way of enabling budget reductions. Others, such as bench marking defense processes against the best in business and government and outsourcing of non-core DoD functions, emphasize reinventing and changing the way that the Department operates. These examples represent just a few of the external and internal DoD requirements for change.

Recommendations for Corrective Action

We recommend that OUSD(P&R):

a. Complete the internal OUSD(P&R) review of the DoD work measurement program and take appropriate actions to redirect the program consistent with the Vice President's National Performance Review, applicable Executive Orders and Presidential Memoranda, and the Government Performance and Results Act, as well as DoD streamlining initiatives.

b. In conjunction with other OSD cognizant staff offices, update the Department's management philosophy and policy on work measurement and related issues in an appropriate and timely manner consistent with the Department's de-regulation initiative and other requirements.

Department of the Army Comments

Final Report Reference

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

DALO-AV 9401521L

22 JUL 1994

MEMORANDUM THRU

DEPUTY CHIEF OF STAFF FOR LOGISTICS

~~DIRECTOR OF THE ARMY STAFF~~ MICHAEL B. WILSON, LTC, GS, ADAS

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

FOR THE INSPECTOR GENERAL, DEPARTMENT OF DEFENSE (AUDITING)

SUBJECT: Draft Audit Report on Follow-up on the Management of Labor Standards at Aeronautical Depots, (Project No. 3LB-0016) --INFORMATION MEMORANDUM

NOT INCLUDED

1. USAAA memorandum of 26 May 94 (Tab A) asked ODCSLOG to respond to your memorandum 24 May 94 (Encl to Tab A). Your memorandum requested we review and provide comments to your draft report on management of labor standards at aeronautical depots.

2. The U.S. Army Materiel Command's (AMC) memorandum at Tab B provides comments from the U.S. Army Depot System Command and Corpus Christi Army Depot as enclosures one and two. AMC concurred with the draft report findings, and all recommendations except 2.b., which recommends increased staffing for the work measurement program.

Encl

ROBERT J. HOPPES
Colonel, GS
Chief, Aviation Logistics Office

CF:
VCSA
DALO-ZXA
DALO-SMM

DALO-SMM - Concur, LTC Swart/697-6356

LTC Penman/70487

AUG - 1 1994

HEADQUARTERS, DEPOT SYSTEM COMMAND REPLY

DODIG DRAFT REPORT, FOLLOW-UP ON THE MANAGEMENT OF LABOR STANDARDS AT AERONAUTICAL DEPOTS, Project No. 3LB-0016

FINDING A, THE MILITARY DEPARTMENTS' WORK MEASUREMENT PROGRAM

FINDING. The Military Departments' work measurement programs for managing the development and evaluation of labor standards at aeronautical depots were ineffective and inconsistently applied to competitive and noncompetitive work loads. The conditions occurred because the Military Departments revised and rescinded guidance, did not enforce guidance, or did not implement new guidance on work measurement. Additionally, the Army reduced its work measurement staff. The Military Departments were also not effectively using automated industrial engineering techniques. As a result, the accuracy and reliability of labor standards for maintenance and repair operations was reduced at the Military Departments' maintenance depots, and inefficiencies in their work loads affecting 5.84 million direct labor hours valued at $319.3 million were not readily identifiable to management. Additionally, the DoD savings objectives in the FY 1992 through FY 1997 DoD Corporate Business Plan from the competition of maintenance work loads and from improved capacity utilization at the maintenance depots may not be achieved. Further, bonus payments made to employees under the Navy's productivity gain sharing program may not have been fully justified.

ADDITIONAL FACTS. None.

RECOMMENDATION 1. We recommend that the Commander , U.S. Army Depot System Command:

a. Standardize the development, required documentation, and use of engineered labor standards by providing oversight, policies, and guidance on the Army work measurement program.

ACTION TAKEN. Concur. Headquarters, U. S. Army Depot System Command (HQDESCOM) will publish additional policy guidance to the depots on the Methods and Standards (M&S) Program, consistent with DESCOM's planned integration into the U.S. Army Industrial Operations Command. The anticipated completion date for this action is 1 Sep 94.

b. Evaluate the procedures used by both the competition office and the organic work measurement personnel and establish policy and procedures to promote the consistent development and use of labor standards.

ACTION TAKEN. Concur in part. A decision by the Deputy Secretary of Defense on 4 May 94 discontinuing both public/private and public/public competition programs renders much of this recommendation moot. HQDESCOM action to revise and publish new M&S policy (Recommendation 1a above) will also deal with questions of consistent procedures and practices. The anticipated completion date for this action is 1 Sep 94.

ENCL 1

c. Implement to its full extent the Computer Logic for Automated Standards Setting system for organic and competitive labor standard development at the Corpus Christi Army Depot.

ACTION TAKEN. Concur. HQDESCOM will direct Corpus Christi Army Depot (CCAD) to prepare a formal M&S plan of action for FY95 describing specific programs and realistic standards coverage targets for engineered and nonengineered standards. CCAD will be required to use the Computerized Logic for Automated Standards Setting system for calculating all engineered standards. The anticipated completion date for this action is 1 Oct 94.

RECOMMENDATION 2. We recommend that the Commander, Corpus Christi Army Depot:

a. Implement standard operating procedures for identifying those labor standards that need to be re-evaluated and updated by the work measurement personnel. The procedures should include the review of performance efficiencies of labor standards.

ACTION TAKEN. See separate reply from the Commander, CCAD.

HQDESCOM COMMENT ON RECOMMENDATION 2a: Depot personnel advised that the CCAD standard operating procedures were revised effective 19 May 94.

b. Determine and assign the appropriate personnel staffing to accomplish an effective work measurement program for engineering and updating labor standards in the organic and competition work measurement programs.

ACTION TAKEN. See separate reply from the Commander, CCAD.

HQDESCOM COMMENT ON RECOMMENDATION 2b: Army downsizing is affecting all organizational levels and the overhead areas are especially susceptible to reductions. It is unlikely that additional staffing will become available for the work measurement function in the near future.

DEPARTMENT OF THE ARMY
CORPUS CHRISTI ARMY DEPOT
308 CRECY STREET
CORPUS CHRISTI, TEXAS 78419-6280

SDSCC-GR (36-2B) 20 June 1994

MEMORANDUM FOR Commander, US Army Depot System Command,
ATTN: AMSDS-IR, Chambersburg, PA 17201-4170

SUBJECT: DoDIG Draft Audit Report, Follow-up of the Management of Labor Standards at Aeronautical Depots.

CCAD response to subject is provided. Although the depot concurs with audit conditions as stated, we do not agree to all recommended corrective actions. Our response is as follows:

Finding. The Military Departments' work measurement programs for managing the development and evaluation of labor standards at aeronautical depots were ineffective and inconsistently applied to competitive and noncompetitive work loads. The conditions occurred because the Military Departments revised and rescinded guidance, did not enforce guidance, or did not implement new guidance on work measurement. Additionally, the Army reduced its work measurement staff. The Military Departments were also not effectively using automated industrial engineering techniques. As a result, the accuracy and reliability of labor standards for maintenance and repair operations was reduced at the Military Departments' maintenance depots, and inefficiencies in their work loads affecting 5.84 million direct labor hours valued at $319.3 million were not readily identifiable to management. Additionally, the DoD savings objective in the FY 1992 through FY 1997 DoD Corporate Business Plan from the competition of maintenance work loads and from improved capacity utilization at the maintenance depots may not be achieved. Further, bonus payments made to employees under the Navy's productivity gain sharing program may not have been fully justified.

Recommendation 2a. Implement standard operating procedures for identifying those labor standards that need to be reevaluated and updated by the work measurement personnel. The procedures should include the review of performance efficiencies of labor standards.

Action Taken. Concur. We agree with the intent of the recommendation; however, the procedures already exist in AMC-R 5 - 9 and the DESCOM LOI. These same procedures are addressed in the CCAD Methods and Standards (M&S) SOP. It must be understood that every out-of-tolerance performance efficiency (PE) will not be reviewed every month. After one review and if the standard is accurate, no other review will be conducted on that

ENCL 2

BUY AND HOLD U.S. SAVINGS BONDS

standard until a change in the work method warrants it. This practice was designed to best utilize M&S analysts' time.

Recommendation 2b. Determine and assign the appropriate personnel staffing to accomplish an effective work measurement program for engineering and updating labor standards in the organic and competition work measurement programs.

Action Taken. Nonconcur. As a M&S entity that provides advisory service to mission organizations, we do not agree that staffing increases would guarantee the effectiveness of the program. Instead, emphasis will be placed on adherence to the work measurement standards as a management tool to control labor hours.

DAVID J. FOWLER
COL, AV
Commanding

Department of the Navy Comments

Final Report Reference

DEPARTMENT OF THE NAVY
OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20350-1000

JUL 22 1994

MEMORANDUM FOR THE DEPARTMENT OF DEFENSE ASSISTANT INSPECTOR GENERAL FOR AUDITING

Subj: DRAFT AUDIT REPORT OF THE FOLLOW-UP ON THE MANAGEMENT OF LABOR STANDARDS AT AERONAUTICAL DEPOTS (PROJECT No. 3LB-0016) - INFORMATION MEMORANDUM

I am responding to the draft audit report forwarded by your memorandum of 24 May 1994 (TAB A) concerning development and evaluation of labor standards at aeronautical depots. NOT INCLUDED

The Department of the Navy response is provided at TAB B. We do not concur with the applicable draft finding and recommendations. As outlined in the enclosed comments, the Department believes that current policies and processes provide sufficient guidance and internal controls regarding labor standards development and evaluation.

DOROTHY M. MELETKE
Assistant Secretary of the Navy
(Manpower and Reserve Affairs)
Acting

Department of the Navy Response
to
DODIG Draft Report of 24 May 1994
on
Follow-up on the Management of Labor
Standards at Aeronautical Depots
(3LB-0016)

Finding A:

The Military Departments' work measurement programs for managing the development and evaluation of labor standards at aeronautical depots were ineffective and inconsistently applied to competitive and noncompetitive work loads. The conditions occurred because the Military Departments revised and rescinded guidance, did not enforce guidance, or did not implement new guidance on work measurement. The Military Departments were also not effectively using automated industrial engineering techniques. As a result, the accuracy and reliability of labor standards for maintenance and repair operations was reduced at the Military Departments' maintenance depots, and inefficiencies in their work loads affecting 5.84 million direct labor hours valued at $319.3 million were not readily identifiable to management. Additionally, the DoD savings objectives in the FY 1992 through FY 1997 DoD Corporate Business Plan from the competition of maintenance work loads and from improved capacity utilization at the maintenance depots may not be achieved. Further, bonus payments made to employees under the Navy's productivity gain sharing program may not have been fully justified.

Recommendation:

We recommend that the Commander, Naval Air Systems Command:

a. Revise Naval Air Systems Command Instruction 5220.16 to require the naval aviation depots to establish system controls for their work measurement functions by:

i. Revising local policies and procedures, consistent with Naval Air Systems Command Instruction 5220.16, to include quantitative criteria for developing and updating engineered labor standards and for the limits and frequency of variance analysis. Equal emphasis should be placed on the accuracy of labor standards for both competitive and noncompetitive work loads.

DON Response: Do not concur. This paragraph suggests that numerical goals and time tables be set for review of engineered standards at the labor line level. It will remain NAVAIR's policy to promote the development of engineered labor standards when a return on investment can be realized. The review of those standards will be accomplished when known changes occur or when the annual workload standard variance analysis demonstrates the need.

ii. Determining the most cost-effective length of time that a labor standard should cover, then consolidate and reduce the number of existing labor standards for maintenance operations of short duration to conform with the new criteria. Future labor standards should also have an imposed minimum time period for measuring a maintenance operation.

DON Response: Do not concur. There is no DOD or NAVAIR instruction requiring minimum standard size. Process engineering personnel develop work documents which reflect technical requirements. There is a logical breakdown to most maintenance actions and they must stand alone for various reasons. These include: optional or selective compliance, quality check points, and specific reporting requirements.

iii. Using automation for monitoring and updating labor standards and for performing variance analysis.

DON Response: Do not concur. NAVAIRINST 5220.16 encourages but does not require the Depots to utilize automation for standards development. Automation for variance analysis at the workload standard level is utilized on the component program. Many standard system reports are available at the depots to assist in the review of standards for all program workload.

iv. Modifying the existing electronic data system to identify standards that need to be updated and to identify significant variances for variance analyses of labor standards with recurring, out-of-tolerance operations.

DON Response: Do not concur. Adequate automation already exists. Also, comments to iii apply.

b. Provide adequate oversight and inspections to ensure Naval Air Systems Command Instruction 5220.16 is properly enforced by the Deputy assistant Commander for Aviation Depots, including validation of the adequacy and implementation of the depots' policies and procedures.

Final Report Reference

DON Response: Concur in principle. A review of the inspection reports of the Naval Aviation Depots indicate that the Process and Productivity Enhancement Program (PPEP) was addressed. NAVAIR will continue to review the program in conjunction with command inspections as stated in NAVAIRINST 5220.16. The management focus regarding PPEP will be re-evaluated after BRAC 95.

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c. Establish controls to ensure that the bonuses paid to employees as part of the Navy's Productivity Gain Sharing Program are calculated using indexes based on engineered labor standards.

DON Response: Do not concur. This recommendation has essentially been overcome by events since the Naval Aviation Depots' PGS program was suspended in FY 1994, and it is unlikely that we would reinstitute the program prior to FY 1998. The driving factor behind this decision is the lack of workload stability that will exist as we transition the workload from the three closing Naval Aviation Depots.

DON Specific Comments:

Page 12, para. 1. Do not concur with the statement about updating standards every three years. The report is referring to individual labor lines for work to be performed on an aircraft, engine, or aircraft component. There is no DOD or Navy requirement to do this, nor would it be a prudent use of resources to make this a firm requirement. NAVAIR policy promulgated by NAVAIRINST 13023.1 and NAVAIR ltr 4790 Ser AIR-43/048 of 9 Mar 1993 require annual review and variance analysis of aircraft, engine, and component "Workload Standards". The NAVAIR Total Quality Management (TQM) approach is more cost effective because it addresses material standards as well as labor standards. Problems with individual labor lines will be dealt with as a result of this process.

Page 15, paras. 2 and 4; Page 16, para. 1. These paragraphs state that NAVAIRINST 5220.16 is too vague. NAVAIR has developed policy to promote good business practices and to ensure efficient use of all resources, including personnel resources. The instruction is extremely specific where NAVAIR considers it necessary, and it provides general guidance where management flexibility is appropriate.

Page 16, paras. 2 thru 4. Do not concur. These paragraphs discuss labor standards for maintenance operations of short duration. The report claims that they are impractical to manage. There is no DOD or NAVAIR instruction requiring minimum standard size. Process engineering personnel develop work documents which reflect technical requirements. There is a logical breakdown to most maintenance actions and they must stand alone for various reasons. Examples include the verification of incorporation of specific Technical Directives such as Airframe Changes, Bulletins, etc. For reasons related to configuration management of the end items, the incorporation and verification is an optional labor step which must stand alone to be included when appropriate. Individual steps in an operation may also require mandatory "Type 1" verification of quality characteristics as defined in OPNAVINST 4790.2E, Vol. IV, Chapter 4. An example of this would be the torquing of a bolt with a calibrated wrench. This small work step must stand alone on a work document to create a quality audit trail.

Page 17, paras. 1 thru 3. Partially concur. Concur with the need to enforce reporting requirements and for NAVAIR to review reports. NAVAIRINST 5220.16 does not require annual evaluations.

Page 17, para. 2. The following statement needs to be corrected and amplified: "...Additionally, the NAVAIRSYSCOM Inspector General conducted only one inspection of the NADEPs in the last 3 years. That inspection was completed in December 1992 in Jacksonville and did not identify deficiencies in the local policy."

Command inspections are performed on a three-year cycle in accordance with OPNAV Instruction 5040.7 (series). Each activity receives a Command Inspection once every three years. The statement that Jacksonville received a command inspection in December 1992 and was in basic compliance with local policy is accurate; however, all other NADEPs were also inspected as indicated below:

Norfolk	October 1991
Pensacola	April 1992
North Island	June 1993
Cherry Point	October 1993
Alameda	April 1994

Final Report Reference

Norfolk was found to be not in compliance with NAVAIRINST 5220.16. The finding stated that "currently NAVAVNDEPOT is not setting/developing Engineered Performance Standards. There are no certified industrial engineering technicians currently assigned for setting/developing standards." The inspector recommended that the activity comply with higher authority direction. Norfolk concurred with the finding but not with the recommendation. They stated that they were in compliance with the intent of the PPEP which is to perform process improvement studies to reduce costs. They believe it is more important to expend their industrial engineering manpower performing process improvement which reduces their cost, rather than developing engineered standards which adds to their costs. The activity had made a conscious decision to implement a facility-wide emphasis on process improvements consistent with engineered product standards. NAVAIR (AIR-43) agreed with the activity's rationale and considered the matter closed.

Also, Cherry Point was found not to have an instruction implementing NAVAIRINST 5220.16. The activity is in the process of implementing the recommendation.

Pages 19 and 20. NAVAIRINST 5220.16 encourages but does not require the Depots to utilize automation for standards development. Automation for variance analysis at the workload standard level is utilized on the component program. Many standard system reports are available at the depots to assist in the review of standards for all program workload.

page 25 paragraph 4

Page 25, para. 3. The statement, "If the NADEPs had more engineered labor standards coverage in their work loads, the Navy would have paid significantly less for unwarranted productivity bonuses". This statement is speculative and based on opinion rather than fact. As indicated in the audit report, labor efficiency is just one of the measurements used in the PGS program. The method used to measure labor efficiency improvement within the PGS program is valid since we compare a ratio of expended hours against standard hours in the baseline to the same ratio in the current year. This method of comparing ratio to ratio eliminates the requirement to constantly update the standards and allows for the variability in the workload from year to year. Use of more engineered standards may not at all change the final PGS results for the period.

Department of the Air Force Comments

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE

13 SEP 1994

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

FROM: HQ USAF/LGM

SUBJECT: Follow-up on DOD/IG Draft Audit Report 3LB-0016, "Management of Labor Standards at Aeronautical Depots

This is in reply to your memorandum requesting an Air Force response to subject report. We concur either totally or in principal with the draft recommendations. However, we take issue with many of the report's findings and have documented those points of departure in our response. Most of our differences deal with the issue of standard versus actual cost accounting. Our comments represent Air Force positions previously provided to the Defense Contract Audit Agency. Please direct any further questions to our POC, Mr. Ed Koenig, AF/LGMM, DSN 225-5583.

RONALD L. ORR
Associate Director
Directorate of Maintenance

Attachment:
Comments on Report 3LB-0016

cc: AFMC/LG

FOLLOW-UP ON THE MANAGEMENT OF LABOR STANDARDS AT AERONAUTICAL DEPOTS

Project No. 3LB-0016 **Sep 2, 1994**

Finding A. The Military Departments' Work Measurement Programs

The Military Departments' work measurement programs for managing the development and evaluation of labor standards at aeronautical depots were ineffective and inconsistently applied to competitive and noncompetitive work loads. The conditions occurred because the Military departments revised and rescinded guidance, did not enforce guidance, or did not implement new guidance on work measurement. Additionally, the Army reduced its work measurement staff. The Military Departments were also not effectively using automated industrial engineering techniques. As a result, the accuracy and reliability of labor standards for maintenance and repair operations was reduced at the Military Departments' maintenance depots, and inefficiencies in their work loads affecting 5.84 million direct labor hours valued at $319.3 million were not readily identifiable to management. Additionally, the DOD savings objectives in the FY 1992 through FY 1997 DoD Corporate Business Plan from the competition of maintenance work loads and from improved capacity utilization at the maintenance depots may not be achieved. Further, bonus payments made to employees under the Navy's productivity gain sharing program may not have been fully justified.

MANAGEMENT COMMENTS:

Management of Labor Standards

Evaluating Labor Standards. Both in this section and in the introduction under *Other matters of Interest* there are references to the Air Force Materiel command (AFMC) systems not being capable of supporting the determination of actual costs of specific workloads, or collecting actual labor hours at the job order level. These "findings" show the auditors chose not to consider the AFMC accounting system in the light of Cost Accounting Standard (CAS) 401.30(a)(2), which states, "Actual Cost. An amount determined on the basis of cost incurred as distinguished from forecasted cost. includes standard cost adjusted for applicable variance." AFMC uses a standard cost accounting system. In a standard system, costs can be arrived at by methods other than recording elapsed time expended on specific operations. In the AFMC standard cost system, incurred payroll hours are allocated to specific jobs in proportion to the standard "should take time" for each job. The labor standards are realistic and achievable; not theoretical or ideal numbers that can never be reached. For example, when a time study is recorded by an industrial engineer in diary format, the standard becomes a "floor" for performance under the prevailing repair conditions; not a "ceiling". The standards thus leave room for process and productivity improvements which will result in lower overall costs for depot customers.

The validity of standard cost accounting systems applied in this manner has been recognized by other audit agencies. The Assistant Comptroller General, Donald H. Chapin, had these

comments concerning GAO/AFMD-92-48R, DOD Inventory Valuation (February 25, 1992): "Management should analyze and investigate variances in order to be in a position to make changes to improve organizational efficiencies, or to adjust the standards, if warranted. However, when accounting for costs and preparing financial statements, variances from cost standards would be allocated to work in process so that reported results reflect actual costs." Also, the Defense Contracting Audit Agency (DCAA) previously criticized the AFMC cost system in a pre-award survey of October 13, 1992. After a series of meetings the DCAA reversed their position and instructed their auditors to recognize CAS 401 definitions. These audit agency positions should alleviate any concerns about the soundness of standard cost systems for allocating direct labor between job orders.

In general, standard cost accounting approaches have many merits when compared to systems that depend upon recorded elapsed time. There is no reasonable way to collect "actual hours" by product through detailed time keeping when one operator is serving several machines making different products. Manual recording of elapsed time in fact invites error and/or manipulation. There is a substantial probability of charging time to the wrong account, which can result in double errors. Also, emphasis on the "did-take time" leads to a self-fulfilling prophecy that carries over to budget construction. and, in turn, performance. As such, actual hour accounting provides no guarantee of the proper allocation of labor costs. As a contemporary example, Douglas Aircraft's' C-17 operation has experienced considerable difficulty in controlling costs when relying on a recorded elapsed time system. In contrast, standard cost accounting is based on "should-take" times that are related to work content. This emphasis leads to setting challenging budgets and sets the stage for continuous process improvement.

The broad requirement to record elapsed time at the detail level for variance analysis is being eliminated by the DOD Work Force Quality and Productivity Division, as part of the rewrite of the productivity instructions, including DODI 5010.34. Elapsed times will be recorded when and at the level needed to point the way to areas of improvement. In AFMC depot operations, variance analysis is normally performed at the Resource Control Center (RCC) level.

Air Force Policies and Procedures. AFMCI 21-105, Depot Maintenance Work Measurement, 27 May 1994, supersedes AFMCR 66-4.

Oversight. AFMC acknowledges a need for additional effort applied to the development and maintenance of direct labor standards. Oversight of the work measurement program has been complicated in the past by reorganization, downsizing, and changes in business practices, including the introduction of competition. Although the total number of industrial engineering technicians has remained stable over the past year, their attention to the business of labor standard development has been attenuated through assignment of a number of new collateral duties primarily related to competition. In the future, they will play a greater role in integrated product teams in process improvement initiatives. More emphasis is needed on TIME as a metric and methods work as the vehicle for improvement. The revision of labor standards and reduction of labor costs will follow as a natural consequence to improved methods.

Standard operating Procedures. This finding addresses inconsistent (between sites) application of procedures for establishing non-engineered standards in the airframe area. As a

result of DOD/IG Audit 91-039, instructions were included in AFMCI 21-105, that should lead to more consistent application of non-engineered standards. The change states that personal, fatigue, and delay allowances and preparation/de-preparation times should be applied just like they are in engineered standards.

Automating Industrial Engineering Techniques.

Air Force. The current labor standard system, EO46B, has near real time capability to build labor standards using a variety of industrial engineering techniques. EO46B is slated to be replaced by the Depot Maintenance Management Information System (DMMIS), which will interface with the current E046A standard data base in the same way E046B does. DMMIS is planned to be the standard DOD migration system for satisfying commodity repair requirements. Aircraft and engine requirements will be addressed by the Joint Logistics System Center independent from DMMIS. Future incorporation of all repair requirements is planned under the Depot Maintenance Standard System (DMSS). The number of current Air Force systems replaced by DMSS is unknown until the JLSC further defines the specific method of implementation. The JLSC has determined an Initial Operating Site (IOS) for each of the Services, but will not commit to an implementation schedule until a business case analysis is accomplished. Accordingly, September 1995 is no longer a valid date for having variance analysis available on a detailed level.

In the Corporate Information Management (CIM) environment, the Air Force cannot develop a Service peculiar system for work measurement. However, one logical consideration would be to use the capabilities of the systems used as modules for DMSS, and build on their capabilities. This would heavily favor the way in which DMMIS establishes labor standards. A baseline change request was submitted in October 1991 to interface Pacer Facts II data with DMMIS as an option for planners to use in setting standards. The change request is priority 3 (Mission Essential Function Work Around). It is considered a valid but unfunded requirement, since there are other means available for setting standards, and lack of this capability will not cause a work stoppage. When work measurement issues are to be considered in the CIM environment, this option will again be pursued.

Even though one of the major processes in Pacer Facts II (Test) was not completed, the remaining processes are being used. At OC-ALC, standards have been set in the aircraft paint/paint stripping function user Pacer Facts II data. Also, the data has been used to populate a modern commercial software package (trade name: EASE) that has a powerful formula generator. Even though Pacer Facts has met with some success, EASE provides a more up-to-date audit trail and may be the wave of the future for the standard data technique of setting standards.

Accuracy and Reliability of Labor Standards.

Air Force. There is no data to support an implied or stated computation of potential savings based on achieving 80 percent engineered standards coverage. In fact, the increasing age and deteriorating condition of the airframes and commodities in the USAF inventory could well dictate **increases** in labor standards. Recognizing the diversity of repair workload with AF

depots and to permit targeting of scarce manpower where the greatest savings can be realized, AFMC permits each organization to set individual coverage goals based on the size and type of operation being performed.

Conclusions

Recommendation 4. We recommend that the Commander, Air Force Materiel Command:

a. ***Update AFMCR 66-4 to:***

i. establish plans and quantified goals for engineered labor standards for the Air Logistics Centers. **Concur.**

Management Comments: AFMCI 21-105 supersedes AFMCR 66-4. Paragraph 2.2 of subject instruction assigns responsibility to the individual Product Directorates to develop work measurement plans and supporting procedures, which will be reviewed by the Financial Management Directorate. The Product Directorates have the authority to decide where, and to what extent to apply engineered standards based on economic considerations, i.e., where anticipated direct labor savings exceed the cost of standards development. The Product Directorates are instructed to set coverage goals, but these goals are not considered the most significant part of the plans. The plans submitted to date focus on identifying the operations where maximum returns can be obtained by applying work measurement. The blanket 80 percent engineered standards coverage goal is no longer a part of the guidance. since we consider it to be manpower intensive, cost prohibitive, and unrealistic in a repair environment.

ii. Establish specific guidance requiring the Air Logistics Centers to follow standard operating procedures for developing non-engineered labor standards, and for performing variance analysis for organic and competition workloads. **Concur.**

Management Comments. Instructions for developing non-engineered standards and for performing variance analysis are included in AFMCI 21-105. Non-engineered standards are discussed in paragraphs 2.3.4.4 and 2.4.4. Variance analysis is addressed in paragraphs 2.7.2. and 3.4-3.7.

iii. Require the air Logistics Centers to complete and fully utilize the Pacer Facts system for developing labor standards. **Concur in principle.**

Management Comments: The use of predetermined time systems and standard data is advocated in AFMCI 21-105. **This advocacy includes, but is not limited to Pacer Facts II, which is offered as but one tool to be used in setting standards.** Latitude is provided for the Product Directorates to use the techniques that best support their mission. We often bring individuals into planning jobs who are skilled in shop work, but

not experienced in computer use. As a system Pacer Facts II suffers somewhat from being rigid when compared to PC-based systems with drop-down menus. The Pacer Facts II data is being used directly in some cases. In other cases it is being used to populate other systems.

b. ***Provide direction to the ALCs for completing the industrial processes in the development of the Pacer Facts system.*** **Concur in principle.**

Management Comments. Two of the originally planned processes were not completed when the development effort ceased due to the decision to return industrial engineering resources to the Product Directorates. As stated above, the industrial engineering technicians are needed in the Product Directorates to use the data that has been developed. We feel it is not feasible at this time to devote scarce resources to completing development of the remaining processes. As resources become available and as appropriate, the ALCs will develop the remaining Pacer Facts II processes.

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