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REPORT OF THE COMPTROLLER GENERAL OF THE UNITED STATES

⑥ Development And Use Of Military Services' Staffing Standards: More Direction, Emphasis, And Consistency Needed.

The budget requests for support personnel of the Department of Defense should be based on techniques that are reliable and useful to the budget process. Staffing standards based on the concept of work measurement offer the potential to do this.

Except for the Air Force, the services have been slow in even developing staffing standards, let alone using them. At the current rate, it will take several years before any meaningful progress is made. This condition is due to the absence of effective guidance and uniform definitions and Defense's low priority to the program.

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Report to Rep. Richard C. White, Chairman, House Committee on Armed Services: Military Personnel Subcommittee; by Elmer B. Staats, Comptroller General.

Issue Area: Federal Personnel Management and Compensation: All Volunteer Force, the National Guard and Reserve Components (319).

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Authority: OMB Circular A-11.

Personnel costs represent the largest part of the Department of Defense's budget, with over half of the personnel serving in support rather than combat functions in fiscal year 1977. The military services use a variety of management tools and techniques such as manpower surveys, staffing guides, criteria manuals, and staffing standards in determining support personnel requirements. Findings/Conclusions: With the exception of the Air Force, the services have made little progress in developing and using these techniques. The Office of the Secretary of Defense has not provided adequate leadership in the development and use of staffing standards which would eliminate ambiguity. This ambiguity has led to vast differences in the services' approaches to staffing standards and has limited the Office's ability to evaluate personnel budget requests. Differences exist within and among the services in: policies for and control of staffing standards and programs; assignment and training of personnel for standards development; personnel covered by standards; and use of standards in determining staffing requirements. Unlike the other services, the Air Force has saved money and gathered more accurate work force figures by extensive use of standards for determining staffing requirements. Work measurement is considered to be the most reliable basis for staffing standards. Recommendations: The Secretary of Defense should require greater use of staffing standards by: establishing a comprehensive program that would delineate basic assumptions, definitions, and methods; establishing realistic goals for increased coverage by standards and monitoring progress; insuring high priority for proper personnel assignment for standards development; directing the use of civilian rather than enlisted personnel unless otherwise

justified; and requiring personnel requests to specify positions supported by standards. The Committee should require the Office to periodically report to Congress on the services' progress in developing staffing standards, the extent to which personnel budgets are based on the standards, and the Office's progress in managing a staffing standards program. (Author/HTW)



COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-183257

The Honorable Richard C. White
Chairman, Subcommittee on
Military Personnel
Committee on Armed Services
House of Representatives

Dear Mr. Chairman:

As requested in your June 1, 1977, letter, we are reporting our findings on the status of development and use of staffing standards based on work measurement in determining and justifying support personnel requirements in the Department of Defense. We are providing our recommendations to your Committee on page 36.

As your office requested, we did not obtain written comments from the Department. However, we discussed the matters in this report with Department officials and considered their views in its preparation.

This report contains recommendations to the Secretary of Defense which are set forth on page 35. As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement on actions taken on our recommendations to the House Committee on Government Operations and the Senate Committee on Governmental Affairs not later than 60 days after the date of the report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report. We will be in touch with your office in the near future to arrange for release of the report so that the requirements of section 236 can be set in motion.

Sincerely yours,

James B. Stacks

Comptroller General
of the United States

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COMPTROLLER GENERAL'S
REPORT TO THE SUBCOMMITTEE
ON MILITARY PERSONNEL
HOUSE COMMITTEE ON ARMED
SERVICES

DEVELOPMENT AND USE OF MILITARY
SERVICES' STAFFING STANDARDS:
MORE DIRECTION, EMPHASIS, AND
CONSISTENCY NEEDED

D I G E S T

In view of rising personnel costs, it is increasingly important that staffing of the military services be credible, supportable, and visible as the Secretary and the Congress decide on the size and composition of the defense establishment.

Personnel costs represent the largest part of the Department of Defense's budget, which in 1977 included \$57.2 billion for 2.09 million active duty and 1.04 million civilian personnel--about 58 percent of the total.

Over half of the Department's personnel are not used in a combat role but in supporting combat forces. About 1.67 million of its personnel--53.3 percent--were in support functions in fiscal year 1977. (See p. 2.)

This is why Department of Defense personnel requirements must be determined on as credible and supportable a basis as practical and why the Congress needs assurance that personnel requests are based on reliable techniques that are useful in the budget process.

The military services use a variety of management tools and techniques such as manpower surveys, staffing guides, criteria manuals, and staffing standards in determining support personnel requirements. Staffing standards based on work measurement generally are considered to be more reliable than other methods.

With the exception of the Air Force, the services have made little progress in developing and using these techniques. GAO endorses the

↓
concept of work measurement as a potential means for more accurate, reliable, and useful staffing determination and justifiable budget submissions. (See p. 4.) In addition, it can be useful in measuring the efficiency of the work force, in preparing zero-based budgets, and in saving money. (See p. 6.)

However, the Office of the Secretary of Defense has not provided adequate leadership, guidance, or review of the military services' development and use of staffing standards. As a result, support personnel requests have not been based on staffing standards to the extent practical. ↗

More specifically, the Office has not provided guidance, definitions, or policy to eliminate ambiguity of terms and methods and resulting confusion associated with the current process of determining requirements. This has led to vast differences in the services' priorities, approaches, and progress in developing and using staffing standards. Further, the absence of Defense-wide definitions and procedures limits the Office's ability to evaluate the validity of service personnel budget requests. (See p. 31.)

Significant differences exist both within and among the services in

- development of comprehensive policies and procedures for determining and applying staffing standards;
- direction, control, and monitoring of standards programs;
- assignment and training of personnel for standards development;
- personnel covered by staffing standards; and
- use of staffing standards in determining and managing staffing requirements. (See p. 9.)

Consequently the military services, except for the Air Force, have progressed little in developing and using staffing standards. Decentralized direction and control and lack of policy emphasis by Army and Marine Corps Headquarters led GAO to conclude that these services do not have effective programs for assuring that their components develop and use staffing standards in determining staffing requirements.

These services use less precise manpower surveys, while the Air Force has saved money and gathered more accurate work force figures by extensively using staffing standards in determining and managing staffing requirements. Roughly 72 percent of its command manpower authorizations is covered by standards, and it has reported \$894 million in savings over 15 years as a result of using standards. The Navy began a staffing standards program in 1973, which according to Navy officials was approved in 1976. The Navy's program has covered about 8 percent of its shore personnel and should be an improvement over its former manpower survey program.

RECOMMENDATIONS TO THE SECRETARY OF DEFENSE

The Secretary of Defense should require the services to use staffing standards to a greater extent in determining staffing requirements. The Secretary should implement this recommendation by

- establishing a comprehensive staffing standards program that would delineate the basic assumptions, definitions, and methods to be used;
- establishing realistic goals for increased coverage of functions and personnel by staffing standards and periodically monitoring progress in achieving the goals.

- insuring that the services assign high priority in providing the proper number, quality, and training of personnel assigned to staffing standards development;
- directing the services to use civilians in lieu of enlisted personnel for developing staffing standards, unless a specific need for military personnel can be justified; and
- requiring that the services' justification for support personnel requests specify those positions supported by staffing standards.

RECOMMENDATIONS TO THE COMMITTEE

To make sure that the services give staffing standards the proper emphasis, the Committee should require the Office of the Secretary of Defense to periodically report to the Congress

- the services' progress in developing support-personnel staffing standards, the number of staffing requirements supported by the various workload measurement techniques (engineered and statistical standards, staffing guides) and the extent to which personnel budgets are based on staffing standards and
- the Office's progress in properly managing a staffing standards program, including guidance and standardized procedures and definitions.

The current Defense Manpower Requirements Report could convey this information to the Congress.

As requested by the Committee, GAO did not obtain written comments but discussed the matters in this report with Defense officials and considered their views in its preparation.

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ABBREVIATIONS

DIMES	Defense Integrated Management Engineering System
DOD	Department of Defense
GAC	General Accounting Office
OSD	Office of the Secretary of Defense

CHAPTER 1

INTRODUCTION

Congressional oversight committees have expressed a continuing interest in the use of staffing standards in the Department of Defense (DOD) to provide them with more credible personnel requirements. The Navy, in particular, was directed to improve its system for work-force planning. The Chairman, Subcommittee on Military Personnel, House Armed Services Committee, has expressed particular interest in this matter. (See app. III.)

Our prior reports and the Defense Manpower Commission Report have recommended that the Office of the Secretary of Defense (OSD) take a more active leadership role in directing and controlling the services' efforts to use work measurement and in specifying policy guidance to achieve commonality in the methods used for determining staffing requirements. DOD's policy is to use workload related standards whenever feasible in determining its staffing requirements. We wanted to find out what progress has been made by each of the services in this effort.

PERSONNEL COSTS SIGNIFICANT IN DOD BUDGET

DOD's fiscal year 1977 budget included \$57.2 billion for 3.12 million personnel. Of these personnel, 2.09 million were active duty military and 1.04 million were civilians. This outlay accounts for approximately 58 percent of DOD's total fiscal year 1977 budget. Moreover, trends in personnel levels indicate that strengths are decreasing while costs are increasing. Increasing personnel costs could reduce the number of personnel that can be maintained or the funds available for weapons and equipment and may disproportionately influence decisions on the choice of national strategies. In making these crucial decisions, the process of determining personnel requirements should be clearly understood and credible to decision makers. Therefore, it is essential that DOD use systematic and reliable means to determine staffing requirements and to allocate resources. Also the Congress needs assurance that the service's budget staffing requests are based on techniques which are reliable and useful in the budget process. GAO believes the concept of work measurement offers the potential to meet these goals.

SUPPORT PERSONNEL

Most of DOD's personnel are not combat forces, but rather support these forces. Approximately 1.67 million or 53.3 percent of the personnel in the DOD fiscal year 1977 budget are in support functions. Thus, DOD spends a large portion of its personnel funds for support personnel.

Support personnel in DOD can be defined in many ways. We defined support personnel mainly as those personnel in the Defense planning and programming categories of mission support, central support, and auxiliary forces. Mission support forces consist of personnel who are not a part of the basic combat units (battalions, squadrons, or ships) to which they provide support, but directly support a group of complementary units (fighter squadrons, tactical airlift squadrons) devoted to a common mission. For example, mechanics assigned to naval air stations to support squadrons when they are not assigned to aircraft carriers are mission support. Support that is completely centralized for an entire service or for all of DOD is central support. Naval air rework activities, where aircraft are taken for depot level maintenance and repair, are included in central support. Auxiliary forces carry out major Defense-wide programs under centralized DOD control, such as intelligence and communications.

The fiscal year 1978 Defense Manpower Requirements Report contains a detailed description of all Defense planning and programming categories, their subcategories, and the numbers of military and civilian personnel included in them for each service and Defense agency. Appendix II lists the major subcategories and shows the number of active duty military and civilian personnel in the mission support, central support, and auxiliary forces categories of the 1977 budget.

We also included in our review some personnel included in the general purpose forces category not having a direct combat role. For example, these personnel would include those not having a watch station assigned to ships in the Navy and combat service 1/ and combat support 2/ personnel under modified Tables of Organization and Equipment in the Army.

1/Combat service support includes such functions as maintenance supply, transportation, and dental and medical services.

2/Combat support personnel provide operational-type support, such as intelligence and communications to frontline combat personnel.

SCOPE OF REVIEW

Our review, in which the field work was completed in March 1977, was directed toward identifying the methods used by the services for determining support personnel requirements. Specific emphasis was placed on the progress made by the services in developing and using staffing standards based on work measurement. It was not the intent of the review to analyze and determine the accuracy or validity of individual staffing standards. Such information can be found in our other reports, such as the report on methods used by the Army, Navy, and Air Force to determine their below-depot level aircraft maintenance personnel requirements. ^{1/} Our intent was to evaluate the methods used by the services on a systematic basis.

We performed our work at the Office of the Secretary of Defense - Manpower and Reserve Affairs, the military service headquarters, and at the following commands:

- U.S. Army Training and Doctrine Command, Fort Monroe, Virginia;
- Tactical Air Command, Langley Air Force Base, Hampton, Virginia;
- Marine Corps Logistics Support Base, Albany, Georgia;
- Navy Manpower and Material Analysis Center, Atlantic, Norfolk, Virginia; and
- Commander-in-Chief, Atlantic Fleet, Norfolk, Virginia.

We examined pertinent DOD directives and service regulations and interviewed personnel regarding the methods used in determining support personnel requirements.

^{1/}"Determining Requirements for Aircraft Maintenance Personnel Could Be Improved--Peacetime and Wartime" (LCD-77-421, May 20, 1977).

CHAPTER 2

STAFFING STANDARDS--A VALUABLE MANAGEMENT

TOOL FOR DETERMINING WORK-FORCE REQUIREMENTS

Staffing standards based on work measurement that include industrial engineering and statistical techniques are a reliable, credible, and systematically developed management tool available to decision makers for determining personnel requirements. This is particularly true for support requirements. A conceptual outline for an effective staffing standards program is presented in appendix I (see p. 37). Although the services use a variety of other management tools and techniques, such as manpower surveys, staffing guides, criteria manuals, etc., staffing standards based on work measurement are generally considered to be more reliable. Several work-force planning officials in the military services and OSD shared this view. Their experience has shown that the conscientious application of well developed and maintained staffing standards in the programing and allocation process usually results in personnel efficiencies.

Staffing standards, in contrast to labor performance standards that generally tell a manager how long a job should take, specify the quantitative and qualitative personnel required to accomplish a given workload. Such standards are classified as engineered or statistical, depending on how they are developed and the degree of precision required. An engineered standard is developed within prescribed levels of accuracy and confidence using industrial engineering techniques, such as timestudy, and work sampling. Highly repetitive tasks are generally measured by these methods. Engineered standards, however, are not always the most appropriate. The nature of the work, such as tasks that are difficult to measure, may not lend itself to engineered techniques or be large enough to warrant the effort. In such cases, properly developed staffing standards using historical data and statistical estimates may be the most cost effective, although they are less precise. Tasks that are not highly repetitive generally fall into this category. Statistical staffing standards are developed extensively from historical data using correlation and regression techniques and involve less work sampling than engineered standards.

Adequate standards coverage requires that management examine the various operations and establish standards where benefits outweigh the cost of development. Most staffing standards generally fall somewhere between engineered and statistical standards; that is, engineered or statistical

standards are combined to provide the total work measurement package. Unfortunately these terms and those describing the techniques used in developing them are loosely used, creating considerable confusion of methods and types of standards being addressed. (See pp. 17 and 32.)

STAFFING STANDARDS IN PRIVATE INDUSTRY

Private companies generally prepare a forecast of sales for a future period and then estimate the work force needed to make the product or provide the service. The work-force estimates are built on past performance indicators, such as time standards, labor used per work unit, and ratios of indirect or supporting activity personnel to direct and known correlated efforts.

In private industry the subject of staffing standards encompasses the range of services provided by industrial engineering. These services include organization studies, sales forecasting, product design, plant selection, quality control, methods improvement, and engineered and statistical performance standards. The purpose of these services is to reduce costs and raise profits. They are usually part of a company's plan to provide the essentials for intelligent management decisions.

A study by the United States Army Engineering Training Agency concluded that all companies interviewed with direct manufacturing employees used a formal work measurement system for work-force planning. Moreover, most of the companies interviewed with nonmanufacturing direct employees used a formal work measurement system for work-force planning.

The majority of the companies studied were in the electronics, aircraft, and automotive industries, which have much in common with the operations of military maintenance support and have similar needs for staffing standards. It is evident that private industry plans its work force with work measurement to find out what the cost should be.

BENEFITS OF STAFFING STANDARDS

Progressive sets of staffing standards have been developed for different levels of management and offer potential benefits at each level of management. Staffing standards developed at the work-center level of an installation require the identification and documentation of the tasks and functions required to accomplish a specified mission. Once the

approved tasks are identified, the minimum staff-hours required to accomplish these tasks at incremental workload volumes is derived through work-measurement techniques. Staffing equations are developed to provide the capability for determining staff-hour requirements at different workload volumes. Staffing standards are derived by converting the staff-hours to personnel requirements. Such standards can provide managers at the work-center level a means for measuring the efficiency of their operations and for determining present and future personnel requirements.

Work-center staffing standards can also be used to develop higher level summary standards, known as program estimating equations. Program estimating equations describe and quantify the relationship between staffing requirements and relevant program variables, such as number of squadrons, flying hours, or inventory levels. Program estimating equations usually cover several work centers and, in some instances, several functions. The program estimating equations provide managers at installations and major command levels a means for determining and allocating personnel resources required to accomplish a given mission. Through the progressive aggregation of work-center staffing standards into higher level standards and program estimating equations, the headquarters level of management can attain a consistent, credible, and reliable basis for determining and allocating aggregate support personnel requirements.

From a monetary viewpoint, personnel positions can be saved or better used by applying staffing standards. The personnel positions saved can be eliminated from total requirements or reallocated to other functions or installations having valid deferred requirements. As a result of its management engineering program over a period of 15 years, the Air Force has reported cumulative savings of \$894 million.

Staffing standards can also be useful in preparing zero-based budgets. This capability is especially important in view of the February 1977 Presidential directive requiring executive departments and agencies to use zero-based budgeting for the fiscal year 1979 budget estimates.

PRIOR DOD USE OF STANDARDS

In 1950 the Bureau of the Budget (now the Office of Management and Budget) encouraged Federal agencies to use work-measurement techniques by issuing Circulars A-11 and A-44. Revised Circular A-11, for example, states that

"* * * work measurement, unit costs, and productivity indexes should be used to the maximum extent practicable in justifying staffing requirements for measureable workload."

DOD has made prior efforts to increase productivity through the use of standards. In 1965 DOD established the Defense Integrated Management Engineering System (DIMES) which was the first coordinated DOD-wide effort to use work measurement in improving DOD's use of staff resources at industrial activities. In 1970 DIMES was extended to nonindustrial activities, and it became the principal work-measurement system for all of DOD's activities. DIMES objectives were to improve labor productivity by applying management engineering techniques and provide a common base of work-measurement and productivity data for use in developing budget estimates and personnel requirements. Under DIMES, distinct levels of labor standards were to be used in measuring work. These levels were:

--Detailed: Detailed labor performance standards specify the amount of time required to perform a specific task, usually at the work-center level. Staffing standards differ from the labor performance standards in that they specify the personnel required to accomplish a given workload.

--Intermediate: An intermediate standard is the combination of all detailed standards for several similar work centers. For example, an intermediate standard developed for a jet engine would be derived from detailed standards developed for the components of the engine, such as fuel control, rotor blades, and fuel nozzles.

--Summary: Summary standards are developed to identify the staffing requirements for accomplishing the mission. For example, the manager responsible for overhauling a fleet of jet aircraft would use a summary standard developed from intermediate standards.

DIMES envisioned that activity managers would be able to use summary standards in developing their budgets. Due to greatly fluctuating workloads and dollar and personnel constraints, however, the services have found this very difficult.

Many earlier GAO reports 1/ document such problems with productivity and personnel forecasts in DOD. Moreover, earlier GAO reports 2/ have shown a decreasing emphasis on and determination of labor performance standards.

In August 1975 DOD consolidated its work-measurement system with its other efforts to enhance measurement and evaluate productivity. This program emphasized the development of summary level standards from labor performance standards for use with other management data at installation, command, and Department Headquarters in planning, controlling, and allocating personnel and fund resources.

1/"Navy Aircraft Overhaul Depots Could Be More Productive"
(LCD-75-432, Dec. 23, 1975).

"Improving Depot Maintenance of Combat and Tactical Vehicles"
(LCD-75-424, Sept. 3, 1975).

"Personnel Ceilings--A Barrier to Effective Manpower Management" (FPCD-76-88, June 2, 1977).

2/"Industrial Management Review of Puget Sound Naval Shipyard"
(B-118733, Aug. 5, 1975).

"Improvements Needed in Defense's Efforts to Use Work Measurement" (LCD-76-401, Aug. 31, 1976).

CHAPTER 3

SERVICES' PERSONNEL REQUIREMENTS

SHOULD BE MORE CREDIBLE,

SUPPORTABLE, AND VISIBLE

The services have given vastly different emphasis to the development and use of staffing standards in determining support personnel requirements. Significant differences exist concerning

- the priority and emphasis on management engineering techniques;
- the development of comprehensive policies and procedures for developing and applying standards;
- direction, control, and monitoring of the standards programs;
- assignment and training of personnel devoted to standards development;
- personnel covered by staffing standards; and
- use of staffing standards in determining and managing personnel requirements.

In addition, we observed certain problems in some services which raise questions regarding the probability of their obtaining an effective staffing standards program.

PRIORITY AND EMPHASIS ON MANAGEMENT ENGINEERING TECHNIQUES

Of the services, the Air Force places the most importance on developing and using staffing standards based on work measurement in determining and justifying staffing requirements. As early as January 1959--6 years before DOD instituted DIMES--the Air Force emphasized the development of work-center staffing standards in its United States Air Force Manpower Validation Program. Since 1959 the Air Force has given increasingly greater management emphasis and priority to the program, later known as the Air Force Management Engineering Program. The program currently is an

integral and highly visible part of the Air Force's determination, management, and justification of personnel requirements.

The Navy's emphasis on management engineering techniques for determining shore staffing requirements is a relatively recent effort compared to the Air Force's. The Navy's pilot standards program for the shore establishment began in 1973. According to a Navy official, it was not until March 1976 that the program was approved as the Navy's single effort replacing onsite manpower surveys for determining personnel requirements in shore activities. In response to a congressional mandate to improve work-force planning for the shore establishment, the Navy plans to complete development of shore staffing standards by June 1979.

The Navy also has separate programs for documenting the minimum qualitative and quantitative staffing requirements for ships and squadrons. In the past the ship and squadron programs have received more emphasis than the shore program. This is evident from the earlier dates of origin and greater coverage. For example, the ship and squadron programs began in 1966 and 1969, respectively, and currently have high percentages of ships and squadrons covered. Only limited progress, however, has been achieved in the shore staffing standards program.

The Army's emphasis on the development and use of staffing standards in determining requirements appears to have been primarily in response to DOD's productivity program. In August 1976 the Army issued Army Regulation 5-4, requiring that summary standards be developed from detailed labor performance standards for support of local personnel requirement determinations and eventual summarization to Army staffing guides. However, the responsibility for implementing and giving sufficient management emphasis to the effort was left to the major commands with little centralized monitoring and direction. Within the one command we visited (Training and Doctrine Command), we were told that staffing standards had been initially developed and applied at only two installations. (See p. 22.)

The Marine Corps has not emphasized developing, applying, or using staffing standards based on industrial management engineering techniques in work-force planning. According to a Headquarters official, the Marine Corps has no present goals nor specific policies on staffing

standards coverage. Furthermore, past DIMES labor performance standards, although highly emphasized, were not well applied by industrial activities. Instead, the Marine Corps publishes and distributes a Personnel Requirement Criteria Manual, a form of staffing guide for use by work-force planners in determining staffing requirements for base operating support functions.

DEVELOPMENT OF COMPREHENSIVE POLICIES AND PROCEDURES FOR DEVELOPING AND APPLYING STAFFING STANDARDS

The extent to which the services have developed policies and procedures for developing and applying staffing standards appears to vary depending on the degree of management emphasis exhibited by the services. Hence the Air Force, with a high degree of management emphasis, has issued detailed management engineering policies and procedures for developing and applying staffing standards, conducting management advisory studies, and reporting the results. Although currently under revision, Air Force Manual 25-5 describes the general policies related to the objectives, concept of operation, and Headquarters Air Force and major command responsibilities of the management engineering program. It also delineates in detail the standards development and maintenance procedures for engineered and statistical standards.

According to a Navy official, the Navy has drawn heavily upon the Air Force and issued similar policy and procedures for developing staffing standards in the shore establishment. The Army issued Army Regulation 5-4 in August 1976 requiring the major commands to develop summary-level standards from detailed labor performance standards. However, an Army official said the Army has not issued specific guidance to the major commands concerning the procedures to follow in developing summary staffing standards from detailed labor performance standards. On the other hand, a Marine Corps official said the Corps is still drafting its first policy emphasizing the development of staffing standards from labor performance standards.

MONITORING AND CONTROLLING STANDARDS PROGRAMS

Generally, decentralized management of standards programs requires more monitoring and control than centrally directed efforts. Sufficient monitoring and control is essential for an effective standards program. The Army's concept of standards development is much more decentralized than the Air

Force's or Navy's approaches. Hence, a greater degree of monitoring and control would generally be required. We observed little Headquarters monitoring and control over the Army's decentralized standards program, however. This raises doubts concerning the probability that the Army will implement a successful standards program.

Air Force

The Air Force maintains a high degree of centralized policy direction, control, and monitoring over its Management Engineering Program. The Directorate of Manpower and Organization, Headquarters Air Force, is primarily responsible for the program. As the focal point for the program's management, the directorate establishes its policy. The Air Force Management Engineering Agency implements management engineering policy established by Headquarters Air Force. The Director of Manpower and Organization, however, occupies a dual position also as the commander of the agency. The agency directs and supervises standards development and the management assistance efforts of its 11 functional management engineering teams. It also provides centralized control and common direction for the execution of the entire program. The agency provides the technical guidance necessary for standards development throughout the Air Force, schedules all Air Force study efforts, accomplishes the quality control of program products, and is the approving authority for all standards. In addition, the agency is responsible for developing all improvements in study methodology, management engineering computer support systems, and work-force productivity and use. The major command management engineering teams administer the program at the local base level under the direction of their respective major command staffs. These teams conduct studies addressing functions peculiar to the respective major commands or a base within a command and also provide input in support of Air Force studies conducted by the functional management engineering teams.

Prior to creating the agency in November 1975, the Management Engineering Program was directed, managed, monitored, and controlled directly by Headquarters Air Force. The major commands were responsible for operating the program within the command in accordance with Headquarters Air Force guidance. When the functional management engineering team concept was adopted, however, the agency's need to provide a central and consistent direction became evident.

In monitoring and controlling the Management Engineering Program, the agency develops a quarterly report compiled from data supplied by the major commands. The report provides a comprehensive status report of

- current and projected coverage by types of standards for each major command;
- personnel authorized, assigned, and used by command; and
- standard studies approved and scheduled.

Another important feature of the Air Force's program is the requirement to identify costs and benefits associated with the program. The Air Force claims \$894 million in savings resulting from its investment of \$157 million in the management engineering program from 1961 to 1976. Although we recognize that the program has probably resulted in significant savings, the reported savings may be overstated due to the methods used in computing savings. When staffing standards are initially applied, reductions in the number and rank or grade of personnel in the current year are recorded as savings. In addition to recording savings for the current year, however, the Air Force projects savings resulting from the initial standards application for future fiscal years. Savings were projected for 3 subsequent fiscal years before 1971 and for 2 subsequent fiscal years afterwards. Air Force officials said savings are projected to future years to recognize the costs avoided over the useful life of the standards.

Navy

The Navy's structure for standards development differs from the Air Force's command and functional management engineering team concept. Two major activities--the Navy Manpower and Material Analysis Center, Atlantic, in Norfolk, Virginia, and the Navy Manpower and Material Analysis Center, Pacific, in San Diego, California--are responsible for implementing the Navy's three standards programs (ships, squadrons, and shore). The Chief of Naval Operations provides the overall direction, guidance, and monitoring of the standards program. The centers, however, are responsible for most of the quality-control aspects of the program.

Army

The Army's approach for developing staffing standards is to develop such standards from labor performance standards under DOD's Productivity Program. The effort is decentralized with each major command being responsible for developing summary level standards through its methods and standards program. According to a Headquarters Army official, however, the Army had not established methods of review, monitoring, and control to identify the extent to which major commands have developed labor performance and summary level standards. Headquarters Army officials told us it may require as much as 2 to 3 years to develop and install an information system that would provide data with which to make such determinations. Furthermore, Headquarters Army has only one individual assigned to monitoring the standards development efforts of the major commands.

Marine Corps

Within the Headquarters level, very limited monitoring and evaluation of the Marine Corps Productivity Program exists. For example, only one Headquarters individual is assigned to monitoring the program, although responsibility for implementing the program is decentralized among the different commands. According to a Headquarters Marine Corps official, Headquarters does not know the actual number of types of personnel involved in the productivity standards effort nor the number of base operating support personnel covered by various types of standards throughout the Marine Corps. This limited monitoring may indicate potential problems in insuring that the commands give proper emphasis to the development of summary-level staffing standards.

ASSIGNMENT AND TRAINING OF PERSONNEL

The Air Force appears to give considerably more emphasis to the assignment, training, and career advancement of personnel associated with staffing standards development than any other service. For example, the personnel assigned include:

--2,126 personnel ^{1/} assigned to the Air Force Management Engineering Program at the 18 major commands in October 1976,

^{1/}Includes personnel responsible for performing management advisory studies and those developing and applying staffing standards.

--279 personnel assigned to standards development at the two Navy Manpower and Material Analysis Centers in March 1977, and

--about 380 personnel assigned to the Army's methods and standards efforts at the major commands in September 1976.

Both the Air Force and Navy have established minimum requirements for personnel entering their standards development programs. The Air Force, however, appears to give more emphasis to the selection of personnel. For example, we were told that Air Force enlisted personnel at the Tactical Air Command are interviewed by the management engineering teams to determine their suitability for the program prior to assignment. Whereas, according to a Navy official, military personnel are assigned to the Navy's standards program by the Bureau of Naval Personnel.

In addition, the Air Force's Tactical Air Command requires enlisted personnel to be at least the grade of sergeant (E-4) and have a minimum of 2 years obligated service after completing training. We were told that the Navy, on the other hand, does not have an obligated service requirement and requires enlisted personnel to be a minimum grade of E-6. Also, Navy military personnel assigned to standards development are not exempt from the Navy's customary sea-shore rotation practice. According to a Navy official, this practice has led to many personnel being assigned to the Navy's standards program only a short time before retirement. Therefore, assignment periods may not be long enough to substantially benefit the Navy's standards program.

At the time of our survey, a Navy official estimated that many enlisted personnel within the Manpower Requirements Department at the Navy Manpower and Material Analysis Center, Atlantic, had at least 26 years of time in service. According to him, 41 military personnel left the center during the 4-month period, June through September 1975. Of these 41, 31 retired (21 had been in the command 18 months or less and 10 had been in the command 12 months or less). The remaining 10 returned to normal sea duty.

A major feature of the Air Force program appears to be its career field in management engineering, which promotes more extensive training and advancement opportunities for its personnel. The Air Force is the only service that

has established a career field in manpower management. In terms of training, we were told the Air Force provides its officers and enlisted personnel with 10 and 11 weeks, respectively, of training in developing and applying management engineering techniques upon entering the program. The Navy's training for officers and enlisted personnel is 8 weeks. According to a Headquarters official, the Navy should take a more arduous approach to the assignment, training, and retention of personnel associated with staffing standards development.

According to Army officials, the Army requires all personnel entering its methods and standards effort to complete a 5-week course on work measurement provided by the Army Management Engineering Training Agency. An April 1976 special inspection of the Army manpower management survey program by the Inspector General and Auditor General, however, revealed that most individuals have received on-the-job training, but less than 20 percent of manpower management survey personnel have any formal training in the area. The study also stated there is no course of instruction in the Army system for manpower management analysts. And, if the program is to continue, such a course is needed to provide training for both military and civilian personnel.

Improved program effectiveness and retention of staffing standards personnel could be achieved by converting most positions now occupied by military enlisted personnel to civilian positions. Less training would be required and stability of assignments would permit staffing standards personnel to develop a greater knowledge of the functions and organizations they examine.

PERSONNEL COVERED BY STAFFING STANDARDS

The Air Force has a greater percentage of its personnel covered by staffing standards than any other service. For example, in October 1976, 513,050, or 71.5 percent, of Air Force command authorizations were covered by engineered or statistical staffing standards, as follows.

<u>Type of standard</u>	<u>Percent of command authorizations</u>
Air Force engineered	9.4
Command engineered	8.7
Air Force statistical	31.0
Command statistical	22.4
Total	<u>71.5</u>

The Navy, on the other hand, in December 1976 had developed staffing standards for six functions covering about 45,000 positions and representing about 8 percent of shore activity personnel positions. The Navy has progressed in developing standard manpower documents for ships and squadrons, however. These are called ship and squadron manning documents. In February 1977, about 71 percent of the ship classes were covered by standard ship manning documents, and about 43 percent of the total ships were covered by individual ship manning documents. Similarly, about 82 percent of the Navy's aircraft squadrons, with the exception of training squadrons, were covered by approved standard manpower documents, and another 15 percent by documents which were under development. Ship manning documents are generally referred to as a form of staffing standard. The building blocks and methods used to develop them, however, differ from the work measurement techniques used to develop staffing standards for shore activities. Use of similar terms in describing the methods used can be misleading. (See p. 32.)

According to Army officials, Headquarters does not know the extent to which personnel are covered by staffing standards. In September 1976 about 14 percent of the Army's military personnel and about 43 percent of the civilian personnel were covered by staffing guides. See page 21 for an explanation of staffing guides.

A Marine Corps official told us that Headquarters does not know the number of base operating support personnel covered by various types of labor performance standards. The Marine Corps has discontinued collection of coverage data under DIMES until Marine Corps guidance for DOD's Productivity Enhancement, Measurement, and Evaluation Program is developed and disseminated.

Unlike the other services, the Air Force appears to have matured in its standards development to the point of

primarily updating existing standards rather than developing new standards and significantly increasing coverage by standards. According to an October 1976 status report, the Air Force projects an increase of only 4 percent in coverage by standards over the existing coverage. Also, the report indicated Air Force personnel spend over twice as much time updating existing standards as developing new ones. In short, the Air Force is approaching the limit on jobs that can be covered by staffing standards. The Navy, in contrast, has achieved only limited progress in developing staffing standards for the shore establishment but is currently planning to complete standards development by June 1979. The Army and Marine Corps appear to be primarily emphasizing the use of manpower surveys and staffing guides rather than staffing standards in determining their requirements.

USE OF STAFFING STANDARDS IN DETERMINING AND MANAGING PERSONNEL REQUIREMENTS

Air Force

The Air Force is the only service using staffing standards extensively in determining and managing requirements. The Air Force's management of personnel requirements has been acclaimed by the Congress ^{1/} as the best among the services. It attributed this success to the extensive use of management engineering techniques. In determining the force levels of the Air Force, Headquarters used factors and computer models that included staffing standards in their development. In addition, staffing standards are used extensively by the major commands in allocating personnel among support functions and installations.

Determining force levels of the Air Force

In manpower planning and programing, the Air Force attempts to determine force requirements initially in aggregate, rather than specific terms and to identify all activity (such as active aircraft wings) in terms of changes to the existing 5-year force program. When there

^{1/}U.S. Congress, House Committee on Armed Services, H.R. 94-967, Defense Appropriation Authorization Bill for FY 1977, 94th Cong. 2d sess., 1976.

are no changes to the existing force program, Headquarters Air Force uses existing program data as a baseline for determining staffing requirements. According to a Headquarters Air Force official, the existing force program is based on engineered or statistical staffing standards wherever they are used to determine staffing requirements. When changes are required to the existing force program, Headquarters uses broadly based program estimating tools and computer models that take applicable engineered or statistical standards into account in their development. For example, the following factors and models are said to be used:

- The Logistics Composite Model, which simulates the interaction of the expected maintenance environment with the required aircraft operations needed for wartime scenarios, is the primary method for computing maintenance personnel requirements for tactical aircraft.
- Computer models developed by the Air Training Command and based on current approved staffing standards, are used to estimate personnel requirements for recruit, specialized, and flight training.
- A computer model, developed by the Logistics Command, is the primary means for determining staffing requirements for depots as a result of flying hour/aircraft inventory changes.
- Percentages are applied to the personnel impact directly related to a force structure change to determine the corresponding change in base operating support requirements. For example, if there is a reduction in the number of unit equipment aircraft, a percentage factor is applied to the personnel directly associated with those aircraft to estimate the decrease in base operating support requirements.

After the Air Force program force is derived, Headquarters Air Force allocates end-strengths and staff-years to the major commands and provides guidance for converting the authorizations into specific qualitative and quantitative authorizations for each unit in the command. Operating within these end-strengths and Headquarters guidance, the major commands then allocate the end-strengths to units within the command.

Major command manpower management

We were told that staffing standards are used extensively by the major commands in allocating and managing personnel resources among different support functions and units. When properly applied, based on projected workload data, staffing standards provide the personnel requirements for support functions. This enables the commands to know the deferred requirements by function, which is essential for effectively managing personnel resources within the Headquarters imposed command end-strengths.

For those support functions for which staffing standards are not available, the major commands use manpower guides to determine staffing requirements. Manpower guides, like staffing standards, are also quantitative expressions of personnel requirements. They are less structured than standards, however, and are based on staff estimates, manpower surveys, and contractor estimates rather than on work-measurement techniques. Guides are preferred when functions or systems have a known short-term life or in situations in which the nature of the work performed or the size and composition of the work center make this approach more economical and effective.

Navy

The Navy's weapons system approach has led it to develop and use standard staffing requirements documents for ships and squadrons in determining its program force structure requirements. However, because limited standards coverage has been achieved for the shore establishment, historical data and estimates, rather than staffing standards, have been used in developing the force levels for shore activities. The development of staffing standards is designed to reduce the dependence on less precise estimates and data in determining shore staffing requirements. The program force requirements serve as the basis for the Navy's budget.

Eventually the Navy plans to incorporate staffing standards into its automated Navy Manpower Planning System. The Navy claims this capability will permit it to be more responsive in assessing the manpower impacts of changes in operational requirements.

Army

The Army determines its force structure requirements during an annual total-force structure analysis. The analysis operates within the framework of the Army Planning, Programming, and Budgeting System and culminates in the force structure presented to OSD in the Army program objective memorandum. Headquarters Army uses various computer models in determining the support personnel requirements. These models are used to compute support military and civilian requirements necessary to perform a given workload in specific functions.

The Army uses two organizational types of units--table of organization and equipment and table of distribution and allowances units. Generally, table of organization and equipment units are designed for mobile combat or combat support roles, whereas table of distribution and allowances units are found mostly in support and administrative areas. Support personnel requirements of a table of organization and equipment unit are determined through application of a standard-type approach called manpower authorization criteria. Essentially, the number of personnel required for support activities (mess, maintenance, supply) is determined by standard staffing criteria. These criteria are based on workload data, tests, and experience. They apply to non-supervisory enlisted personnel working in a function having a measurable workload in a simulated wartime environment. Officer and other supervisory positions are added as standard position requirements based on span of control considerations and other experience data.

The Army's Manpower Management Survey Program is the primary means for determining personnel requirements for table of distribution and allowances units. The survey program is decentralized among the major commands. Each major command is responsible for surveying its installations and units. Army regulations require that normally all activities will be surveyed every 2 to 4 years.

The manpower surveys consist of an onsite determination of personnel requirements based on workload data submitted by the activity and use of staffing guides, wherever applicable. The staffing guides are based on a 5-day, 40-hour week and usually provide yardsticks on the number and kinds of personnel required to perform specific functions. Data obtained by manpower surveys are the primary sources for developing and updating staffing guides.

Staffing standards based on industrial engineering and statistical techniques, however, are generally considered to derive more accurate, supportable staffing requirements compared to the staffing guides and manpower survey approach. For example, the Deputy Chief of Staff for Resource Management at the Training and Doctrine Command said neither his office nor most of the Army has a proven methodology for determining staff needs. The official endorses the use of staffing standards based on proven statistical techniques in determining and allocating personnel requirements.

In addition, the Comptroller for Ft. Sill, Oklahoma (where staffing standards are used extensively), said the current Army system for distributing staff on an installation is outdated and inadequate. He believes that staffing standards based on work measurement result in more precise requirements than manpower surveys and staffing guides.

The Deputy Chief of Staff, Resource Management, Headquarters, United States Army Europe and Seventh Army, in comments to recommendations on a recent Manpower Management Survey Program Study (see p. 27) stated that the current Army system for determining staffing requirements should be eliminated due to its cost and inefficiencies. A new system with centralized control at Department level and decentralized execution in the field that constantly maintains updated engineered standards for staffing guides should be developed. The study also identified support for the use of staffing standards based on work measurement techniques by several other installation and major commanders.

The development and use of staffing standards in the Army appears limited, however. Army officials told us that staffing standards have been used only to a limited extent in four commands--the Army Communications Command, Health Services Command, Development and Readiness Command, and Training and Doctrine Command. At the Training and Doctrine Command, we were told that staffing standards had been initially developed and used at only two installations (Ft. Sill and Ft. Knox). At Ft. Sill, staffing standards were developed and applied for the combat developments directorate and finance and accounting, print plant, and adjutant general functions. The application of the staffing standards identified personnel savings of 141 personnel in the adjutant general function.

Marine Corps

According to a Marine Corps official, onsite manpower surveys rather than staffing standards are the primary means for determining the personnel requirements for nonfleet Marine forces or noncombat units. Such surveys are required to be conducted at all major activities at least once every 3 years. We were told that a headquarters survey team, consisting of six or seven individuals, conducts the surveys for noncombat units, and it normally takes from 3 to 4 weeks. In addition, a Marine Corps official said the survey teams use and update the Marine Corps Personnel Requirements Criteria Manual, which provides recommended staffing criteria for base operating support functions. This staffing criteria is similar to the staffing guides used by the Army. The primary purpose for the Marine Corps criteria manual is to assist base-level functional managers in determining personnel requirements.

RISKS ASSOCIATED WITH NAVY'S ACCELERATED SHORE STAFFING STANDARDS PROGRAM

In June 1976 the House and Senate Armed Services Committees expressed considerable dissatisfaction with the Navy's progress in understanding, defining, and explaining its shore establishment personnel needs to the Congress. The Committees then directed the Navy to complete its program for improving shore work-force planning within 2 years. As a result, the Navy has accelerated the completion date for staffing standards development to June 1979. According to Navy officials, however, this accelerated effort has inherent risks. For example, the plan assumes that everyone will do the job right the first time, which may not be the case considering the complexity of staffing standards development. Moreover, it should be noted that the Air Force has been developing staffing standards since 1959--a total of 18 years to achieve about 75-percent coverage. Also, the plan includes contracting with private firms for standards development in four mission areas--facilities support, weapons, electronics material support, and environmental support. According to Navy officials, the ability of the contractors to obtain properly trained personnel presents a risk.

With its years of standards experience, the Air Force argues against contracting for standards development because its industrial and management engineering capability not only develops staffing standards but also applies the standards at the various levels of organization. Also, the Air

Force professes that the contracting alternative does not offer the benefits of continued expertise provided by an in-house, mixed work force of military and civilian management engineers. Army officials generally concur.

LIMITATIONS APPARENT IN NAVY'S
SHIP MANPOWER DOCUMENTS
DEVELOPMENT PROCEDURES

The ship manpower documents delineate combat and support personnel requirements for various categories of ship readiness conditions. The number of personnel required for each depends on required operational watch stations and support workload necessary to sustain ship operations.

According to Navy officials, four basic types of support workload exist on most ships. These are

- planned maintenance based on scheduled equipment operations;
- corrective maintenance including restoration of disabled systems equipment, or components to an operational condition;
- facilities maintenance including preservation of hull, superstructure, and all equipment against corrosion or deterioration and maintenance of cleanliness levels; and
- own-unit support including staff required to perform administrative military, resupply, food service, hygienic, and other service tasks.

Navy officials told us that the Navy determines total support workload, distributes it first to fill the available time for required operational positions, and uses the remaining workload to compute additional support positions required. The validity of the support workload, therefore, is essential to determining the minimum number of positions assigned to the ships. The Navy uses ratios and broad-based tables developed several years ago in determining major portions of support workload, rather than accumulating actual maintenance workload data and using more precise work measurement techniques to determine ship staffing requirements. Navy officials told us they rely heavily on an approved data bank of minimum required maintenance for each type of equipment and ship configuration in determining planned maintenance.

workload. Computation of such workload includes identification and maintenance of onboard equipment and systems and the addition of certain nonproductive allowances commonly referred to as "make-ready, put-away" time. We were told that actual planned maintenance workload data is neither accumulated nor used.

According to Navy officials, corrective maintenance is computed as a ratio of planned maintenance. The Navy generally uses an hourly ratio of 1:2 for corrective versus planned maintenance for nonelectronic equipment and a ratio of 1:1 for such maintenance on electronic equipment, fire control, and data systems. This assumes that as planned maintenance increases, corrective maintenance increases at the same rate. Presumably then, increasing preventive maintenance does not reduce corrective maintenance requirements. Conversely, if planned maintenance decreases toward zero, corrective maintenance also decreases to zero. We believe this logic is faulty.

The ratios were derived from a study apparently conducted during the period 1968 through 1970. However, a Headquarters Navy official responsible for ship manpower documents said he was unable to locate a copy of the study and told us he was unaware of methods, data, or assumptions used in the study. In addition, the Navy official told us he was unaware of any Navy plans to reassess the ratios since corrective maintenance represents only a small percentage (about 3 percent for three selected ships) of a ship's total workload. In November 1973 the Navy eliminated the requirement that most ships document actual corrective maintenance, thus preventing extensive use of work measurement to more accurately assess the corrective maintenance workload.

We were told that facilities maintenance and own-unit support workloads normally represent from 23 to 35 percent of a ship's total workload delineated in the ship manpower documents. To determine the facilities maintenance and own-unit support workloads, the Navy refers to tables developed about 2-1/2 years ago (1974) showing respective workloads by ship class and division on the ship. A Navy official told us that data used in developing these tables was about 6 years old and that it should be updated since the Navy has changed its manner of performing own-unit support functions aboard ships. As a result, the Navy has asked the Navy Manpower and Material Analysis Center, Pacific, to develop a work plan for validating the facilities maintenance and own-unit support tables. Officials anticipate

completion of the study within 1 year after approval of the work plan.

A Navy official said current support officer requirements contained in the ship manpower documents merely represent current authorizations with no relation to actual workload performed. The Navy plans to begin officer workload measurement in October 1977, however, with the goal of basing officer requirements on measured workload.

NAVY PROBLEMS IN CIVILIAN
WORK-FORCE PLANNING, PROGRAMING,
AND BUDGETING

In fiscal year 1976 the Navy employed about 302,000 civilians, the vast majority of whom were support personnel. The Navy, however, has not determined how many civilians were required in support functions. A February 1977 Navy management study identified significant problems in the Navy's ability to properly determine civilian staffing requirements and to identify the effect of civilian reductions on reduced capabilities. The study states that civilian requirements changes during the annual program objectives memorandum process are not clearly tied to over-all programs and that the Navy currently has no effective system for assessing the effect of civilian staffing on proposed or accepted increases or decreases. The Navy study stated that, as a result, OSD is unable to tie civilian personnel ceilings or changes to major programs since the Navy does not have the information. Consequently, the Navy has in past years arbitrarily made across-the-board percentage cuts in civilian personnel ceilings without corresponding workload reductions and without knowing the effects of reductions in shore capabilities on the operational forces.

The Navy recognizes these problems and has established a new civilian requirements organization at the headquarters level to develop a fully integrated military and civilian planning and programing system using documented staffing requirements. The proposed civilian work-force planning system is designed to satisfy the need for a workload-driven civilian staffing system and will use staffing standards to justify changes in staffing requirements. Once operational, the new system will enable the Navy to

- derive civilian requirements based on staffing standards at the local level;

- link civilian requirements with changes to or modifications of programs and with operational capabilities in order to program planned requirements and better defend the resultant civilian personnel budget; and
- assess the impact of a budget cut on civilian staff in terms of degraded operational capability at the activity level.

In summary, the new system should greatly assist in total-force planning of military and civilian staffing requirements. Navy officials plan to have this fully integrated system developed near the end of calendar year 1977 for use in developing the 1980 program objectives memorandum.

ARMY STUDY RECOGNIZES NEED
FOR INCREASED USE OF
SUMMARY-LEVEL STANDARDS

A December 1976 report on a study of the Army's manpower management survey program identified numerous problems with the existing manpower survey program. The study found a need for increased usage of summary-level work performance standards by survey teams. The study found:

- Several commands have active standards development programs, but are not using such programs to supplement the staffing survey program.
- Standards usually consist of detailed engineered standards or statistical standards relating to a specific work unit and are not representative of a functional area.
- Functions are not defined nor standardized to facilitate the common type of summary-level work-performance standards.
- No centralized collection of standards exists for Army-wide use other than staffing guides.
- Standards development is neither economical nor feasible in some functional areas.

The report recommended that:

- A comprehensive Army-wide work-measurement program be developed and implemented by Headquarters Army.

- Commands and managers at all levels exercise active interest and support in the program.
- Survey teams make maximum use of approved standards in their recommendation for staffing requirements.
- A standards data base be established at Headquarters Army and all Army-wide summary-level work-performance standards be approved and maintained at the Headquarters Army level.

PROBLEMS IN MARINE CORPS
PERFORMANCE STANDARDS COULD
AFFECT STAFFING STANDARDS

A Marine Corps official said the Marine Corps approach for developing staffing standards will be to develop them from detailed labor performance standards. Prior audits and evaluations of Marine Corps labor performance standards, however, have revealed problems that may render future prospects for development of reliable staffing standards doubtful in the Marine Corps. For example, an August 1973 Navy area audit report of the Marine Corps Supply Center at Albany, Georgia, showed that

- performance standards were developed without using available historical data, time studies, or previous standards;
- update methods were not documented; and
- the level of standard quality was actually lower than reported.

Two years later in August 1975, a similar audit report at the same activity showed that

- workload data from the DIMES program was not being used by work-force planning officials in assessing staffing needs,
- inadequate documentation existed on management studies which should precede standards development, and
- required annual maintenance of standards was lacking.

CHAPTER 4

OSD LEADERSHIP AND MANAGEMENT EMPHASIS ON STAFFING STANDARDS IN WORK-FORCE PLANNING

Many alternatives are available to OSD for its role in the determination of personnel requirements. However, the most practical approach seems to be focusing on the processes used by the services in developing and documenting personnel requirements to insure high integrity. The proper development and use of staffing standards by the services could provide a high degree of credibility and integrity to the processes. In spite of increased emphasis on the need for more credible personnel requirements and zero-based budgeting, however, OSD has not provided strong leadership or sufficient guidance to the services in developing and using staffing standards based on work measurement.

DOD directives and instructions strongly emphasize increased productivity and efficiency within DOD and require that the services adopt measurable staffing standards to cover as many positions as practical. But no firm comprehensive policy has been issued to insure that the services develop staffing standards with the priority and intensity such that work-force planning will be based on work-measurement techniques. As a result, the services are giving significantly different priority and emphasis to the development and use of staffing standards.

LACK OF OSD POLICY AND GUIDANCE ON STAFFING STANDARDS DEVELOPMENT

DOD instructions and directives issued under the productivity, enhancement, and evaluation program strongly emphasize increased productivity and efficiency in the services. One of these instructions states that summary level staffing standards should be developed for use in planning, controlling, and allocating personnel positions. In addition, OSD guidance for preparation of the services' program objective memorandums requires the services to adopt measurable staffing standards to cover as many positions as practical. Yet, OSD's Office of Manpower and Reserve Affairs, responsible for personnel

planning, has issued no specific guidance to the services concerning

- the desired methodology and approaches for developing standards;
- the appropriate levels of responsibility and control;
- the types, quality, and number of personnel to develop, implement, and maintain staffing standards; or
- the use of work-measurement data under the productivity improvement program for developing and applying staffing standards.

OSD guidance for summary-level staffing standards was issued in 1975 through DOD's Productivity Enhancement, Measurement, and Evaluation Program. DOD Instruction 5010.34 states that DOD components shall use productivity data in developing requirements and that summary-level staffing standards should be developed for use in planning, controlling, and allocating manpower. DOD Directive 5010.31 states that productivity will receive priority emphasis and that aggressive methods and standards efforts will be maintained in all services.

Development of summary standards from labor performance standards is one major thrust of this effort. The directive further states that the Office of Manpower and Reserve Affairs in OSD is responsible for issuing appropriate guidance on use of productivity data by components in determination of staffing requirements. An OSD official, however, said this guidance has not been issued. The official said the office has only issued instructions in guidance for preparation of the services' program objectives memorandums concerning increased staffing standards coverage. These instructions initially mentioned staffing standards in November 1975 and required that the quantity and quality of authorized personnel positions be based on workload and engineered or statistical standards as much as possible.

Further instructions required the services to report their goals for increasing coverage of military and civilian positions by staffing standards. The most recent instructions issued in March 1977 for the 1979 program objective memorandums require the services to adopt measurable staffing standards to cover as many positions as practical. Yet, OSD has not developed comprehensive policy, definitions, or

guidance on the development, application, and use of staffing standards in justifying personnel requirements.

As a result, the services did not know what data to report concerning coverage goals. This confusion, according to an OSD official, led OSD to delete the reporting requirement for the 1979 memorandums. An OSD official said that efforts of Manpower and Reserve Affairs to develop comprehensive policy and guidance for the services on staffing standards over the past 5 years has met with limited success. This was primarily because officials felt that a policy requiring the services to develop and use staffing standards could not be reasonably enforced. Therefore, reporting instructions to date have "no teeth." The official said that Manpower and Reserve Affairs has no way of enforcing the services' non-compliance with a comprehensive policy. We believe, however, that such a policy could be developed and reasonably enforced if sufficient priority and management emphasis were afforded staffing standards.

For example, DOD Instruction 5010.34 emphasizes that productivity trend data is becoming a more important element in budgeting and work-force planning. The DOD components that do not show productivity improvements or cannot support projections of productivity changes in their budgetary estimates may find that both OSD and the Office of Management and Budget will make alternative projections based on other factors. Manpower and Reserve Affairs, through proper policy, guidance, monitoring, and enforcement, could take a similar position.

LIMITED MONITORING AND EVALUATION

Before OSD can develop sufficient policy and guidance in determining personnel requirements, it must have an understanding of the reliability and validity of the current requirements determination processes. However, there appears to be little or no real monitoring and evaluation of the services' efforts to determine personnel requirements based on work measurement. OSD officials responsible for evaluating services personnel programs told us they are not completely aware of the methodologies, assumptions, or validity of those assumptions used by the services in determining personnel requirements. Moreover, the officials told us that a contract study completed in October 1976 to identify the services work-force planning processes was not sufficiently detailed to properly evaluate the validity of the services' personnel requirements.

In November 1976 OSD contracted with a private firm to conduct a further work-force management study designed to provide a policy level assessment of the services' methods for determining and changing staffing requirements. Some OSD officials, however, doubt the potential usefulness of the study results because the contractor's personnel, according to available documentation, have no experience in staffing standards development and need considerable guidance.

In addition, a March 1976 OSD report found problems with the consistency, accuracy, and completeness of work-force data developed and used within OSD. The report attributed the problems to the way in which data is processed and the use of subjective work-force definitions by OSD personnel. Moreover, the services' use in the requirements determination processes of similar terms that are not in fact interchangeable could be misleading. For example, terms such as staffing standards, performance standards, and staffing guides are used to describe staffing criteria, but do not identify similar methodologies in each service. Further, similar work-measurement terms are used during budget hearings and in staffing requirements justification documents to describe the techniques for developing these criteria.

This confusion results from the lack of DOD-wide policy, definitions, and procedures for implementing and maintaining staffing standards. In looking at DOD documents explaining staffing requirements, we noted that some services use terms which convey that more precise techniques are generally used. In our recent report on the use of work measurement in the Department of Defense, ^{1/} we pointed out that confusion existed among the services over which personnel were susceptible to coverage by either engineered or statistical standards. Even within a service, extraordinary differences existed in the perception of work measurement. This was because OSD did not precisely define what was to be included under engineered or statistical standards.

PREVIOUS REPORTS RECOMMEND
IMPROVEMENTS IN OSD'S EMPHASIS
ON WORK MEASUREMENT

Our prior reports and the Defense Manpower Commission Report have recommended that OSD take a more active leadership

^{1/}"Improvements Needed in Defense' Efforts to Use Work Measurements" (LCD-76-401, Aug. 31, 1976).

role in directing and controlling the services' efforts to use work measurement and in specifying policy guidance to achieve commonality in the methods used for determining staffing requirements. For example, in one of our reports 1/ we found DOD's current methods of implementation, monitoring, and review were not adequate to insure that the process of work measurement and its associated outputs--standards--are credible as a resource allocation tool. We found (1) no continuing analysis existed to determine the areas where work measurement should be applied, (2) no credible reporting mechanism existed to evaluate work-measurement progress or costs, and (3) no means existed for determining whether OSD is obtaining the best return for resources committed to work measurement. Similarly, in our report 2/ we found that neither OSD nor the military services had established adequate controls or monitored progress sufficiently to insure effective implementation of work measurement.

In its April 1976 report, the Defense Manpower Commission concluded that OSD should also take a more active role in the staffing requirements determination process, specifying policy guidance to achieve commonality in the methods used by the services in determining requirements.

1/"Improvements Needed in Defense's Efforts to Use Work Measurements" (LCD-76-401, Aug. 31, 1976).

2/"Major Cost Savings Can Be Achieved by Increasing Productivity in Real Property Management" (LCD-76-320, Aug. 19, 1976).

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

In view of rising personnel costs and the increased competition for funds within DOD, it is essential that personnel requirements be determined on as credible and supportable basis as practical. Also, the Congress needs greater assurance that the personnel budgets received are based on sound techniques that are reliable and useful in the budget process. We believe that staffing standards based on the concept of work measurement offer the potential to meet these needs. Staffing standards, compared to manpower surveys, are a more reliable means of determining support personnel requirements with greater precision and provide a means for determining future requirements. In addition, they can be useful in measuring work-force efficiencies and preparing zero-based budgets, and their application can result in significant dollar savings.

We believe, however, that OSD's leadership, guidance, and monitoring of the military services' development and use of staffing standards have not been adequate to provide the proper emphasis to insure that support personnel budgets will be based on staffing standards to the maximum extent practical. More specifically, OSD has not provided guidance, definitions, or policy to eliminate ambiguity of manpower terms, methodologies, and resulting confusion associated with current requirements determination processes. The lack of a strong OSD leadership role in the Office of Manpower and Reserve Affairs has led to significant differences in the services' priorities, approaches, and progress in developing and using staffing standards to determine requirements. Further, the absence of DOD-wide definitions and procedures limits OSD's capability to evaluate the validity of service personnel budget requests.

Consequently, the military services, with the exception of the Air Force, have made little progress in developing and using staffing standards in support personnel requirements determination. Decentralized direction and control and lack of policy emphasis by Headquarters Army and Marine Corps lead us to conclude that these services do not have effective programs for assuring that their components develop and use staffing standards in staffing requirements determination. Instead, these services use less precise manpower

surveys in determining and allocating support personnel requirements. The Air Force, however, has reported that significant dollar savings and more accurate work-force figures result when staffing standards are used extensively in determining and managing staffing requirements. Roughly, 72 percent of its command manpower authorizations are covered by standards, and it has reported \$894 million in cumulative savings over a 15-year period as a result of standards applications. The Navy began a staffing standards program in 1973; according to Navy officials, it was approved in 1976. It covers about 8 percent of its shore personnel and should be an improvement over its former manpower survey program.

RECOMMENDATIONS TO THE
SECRETARY OF DEFENSE

To provide more credible, supportable, and visible staffing requirements, we recommend that the Secretary of Defense require the services to use staffing standards to a greater extent in determining requirements. The Secretary should implement this recommendation by

- establishing a comprehensive DOD staffing standards program that would delineate the basic assumptions, definitions, and methods to be used;
- establishing realistic goals for increased coverage of functions and personnel by staffing standards and periodically monitoring progress in achieving the goals;
- insuring that the services assign high priority in providing the proper number, quality, and training of personnel assigned to staffing standards development;
- directing the services to use civilians in lieu of enlisted personnel for developing staffing standards, unless a specific need for military personnel can be justified; and
- requiring that the services' justification for support personnel requests specify those positions supported by staffing standards.

RECOMMENDATION
TO THE COMMITTEE

To insure that the services give staffing standards the proper emphasis in determining personnel requirements, the Committee should require OSD to periodically report to the Congress

--the services' progress in developing support-personnel staffing standards, the number of staffing requirements supported by the various work-load measurement techniques (engineered and statistical standards, staffing guides) and the extent to which personnel budgets are based on staffing standards and

--OSD's progress in properly managing a staffing standards program, including guidance and standardized procedures and definitions.

The current Defense Manpower Requirements Report could convey this information to the Congress.

ATTRIBUTES OF AN EFFECTIVE STAFFING STANDARDSSYSTEM IN DETERMINING AND JUSTIFYINGPERSONNEL REQUIREMENTS

The development and implementation of an effective staffing standards program must be well defined and properly controlled. Factors that should be considered are

- staffing standards development,
- workload determination,
- application of staffing standards,
- responsiveness capability,
- management and organizational structure, and
- tie-in with the budget process.

STAFFING STANDARDS DEVELOPMENT

Staffing standards developed at the functional work-center level should have the following minimum characteristics.

- The scope of the function down to and including the task level should be identified and defined.
- Workload data should be identified and defined.
- Staff-hour data should be collected through accepted industrial engineering work-measurement techniques (timestudy, work sampling, analysis of past performance, operational audit).
- The standards should specify the required skill levels (apprentice, journeyman) and occupational specialties (sonar or electronic technician). Standards should also include all personnel associated with the function studied (training, maintenance).

These work-center level standards should also be aggregated into higher level summary standards to reflect required positions as a function of one or more programing factors (aircraft, ships).

Procedures for developing both work-center and summary-level standards should be explicit and applicable to all organizations developing standards. A formal procedure should also exist for issuing the standards development procedures to all organizations involved. Such procedures should cover the required quality control of the data collection and computations used in developing standards and should define the variables to be considered, such as length of work week, allowances for fatigue and delay, training, etc. Documented explicit procedures for keeping standards current should also exist.

WORKLOAD DETERMINATION

The sources of workload data for applying staffing standards should be clearly identified and defined. These sources should be as consistent as possible throughout the service. In addition, the methodology for projecting future workload should be clearly documented. Also, explicit documented procedures should exist for reviewing all workload data for accuracy prior to applying standards.

APPLICATION OF STAFFING STANDARDS

Each service should be able to justify its support personnel requirements on the basis of applying staffing standards to the maximum extent feasible. Inherent in this overall capability should be the ability to identify the fixed and variable personnel requirements as well as the interrelationships among the variable personnel requirements. For example, force-structure changes affect not only operational, but also support requirements. The capability should also exist for identifying personnel requirements by occupational specialties, skill levels, and types of hire (active officer and enlisted, reserve, civilian, and contractor personnel).

RESPONSIVENESS CAPABILITY

For an effective staffing standards program, each service should be able to respond quickly to force-level changes in determining personnel requirements based on staffing standards. Personnel requirements based on such standards should

be available and clearly defined for both aggregate and individual functional levels in the service.

MANAGEMENT AND ORGANIZATIONAL
STRUCTURE

Proper organizational placement of the staffing standards personnel and good management of a standards program is essential to insure credibility and consistency in policy, procedures, and quality. The organizational structure used within each service to determine personnel requirements should be documented to reflect, as a minimum, the functions performed at each major organizational level to facilitate comparisons among services, the personnel requirements for each function within each major organizational level, and an organizational diagram showing the levels of responsibility for personnel requirements. Sufficient numbers of qualified personnel should be used to develop staffing standards and determine requirements. Proper management of a standards program also requires a plan for developing, reviewing, and updating standards and programing factors in each service. The plan should reflect standards coverage by function, milestones for improved coverage in applicable functions, and milestones for reviewing and updating standards. The cost effectiveness of the standards program should be identified. This would include savings in approved positions resulting from standards implementation and cost avoidances resulting from the existence of staffing standards.

TIE-IN TO BUDGET PROCESS

Work-center staffing standards should be aggregated into progressively higher level standards so that they can be used to substantially support budgeted personnel requirements. Annually each service prepares a proposed program describing its total requirements in terms of resources (equipment and personnel) for the 5-year defense plan. These requirements are submitted in the program objective memorandum to the Joint Chiefs of Staff and later submitted to the Secretary of Defense for budget preparation. A direct traceable relationship should exist between requirements reflected in the services' programs and budgets and those requirements derived through application for staffing standards to enable OSD and the Congress to better understand the basis for requirements.

SUBCATEGORIES OF MISSION SUPPORT,CENTRAL SUPPORT, AND AUXILIARY FORCESDEFENSE PROGRAMING AND PLANNING CATEGORIESMISSION SUPPORT FORCES

Mission support forces provide direct support to the combat mission forces. Mission support forces are not part of the basic battalions, squadrons, or ships to which they provide support. They are grouped at a higher organizational level to provide better service at less cost, and they are categorized separately because they are not identified with specific operating units or groups of similar operating units.

The subcategories included are

- reserve components support,
- base operating support,
- force support training, 1/and
- command. 1/

CENTRAL SUPPORT FORCES

The goods and services essential for the proper functioning of DOD are provided by a wide spectrum of activities throughout the Defense establishment and the private sector. Some of the goods and services are managed on a centralized basis either DOD-wide or servicewide. This is the function of the million people in central support forces. The subcategories included are

- base operating support,
- medical support,
- personnel support,
- individual training,

1/Also subcategories of central support forces. The difference is these are traceable to specific missions.

APPENDIX II

APPENDIX II

- command,
- logistics, and
- Federal agency support.

AUXILIARY FORCES

Auxiliary forces carry out major defense programs under centralized DOD control. The subcategories included are

- intelligence,
- centrally managed communications,
- research and development,
- support to other nations, and
- geophysical activities.

The chart on page 42 shows the number of active duty military and civilian personnel in mission support, central support, and auxiliary forces, Defense planning and programming categories.

ACTIVE DUTY MILITARY AND CIVILIAN PERSONNEL IN
MISSION SUPPORT, CENTRAL SUPPORT, AND AUXILIARY FORCES

FISCAL YEAR 1977 DOD BUDGET

	<u>Mission support</u> <u>forces</u>	<u>Central support</u> <u>forces</u>	<u>Auxiliary</u> <u>forces</u>
	----- (thousands) -----		
Army			
Active military	44.2	123.2	24.9
Civilian	<u>96.9</u>	<u>208.3</u>	<u>28.3</u>
Total	141.1	331.6	53.2
Marine Corps			
Active military	19.7	22.6	1.9
Civilian	<u>10.6</u>	<u>9.5</u>	<u>2</u>
Total	30.3	32.1	1.9
Navy			
Active military	62.6	83.3	29.6
Civilian	<u>29.7</u>	<u>219.8</u>	<u>43.2</u>
Total	92.3	303.1	72.8
Air Force			
Active military	151.8	94.5	65.0
Civilian	<u>63.8</u>	<u>126.3</u>	<u>31.2</u>
Total	215.6	220.8	96.2
Defense agencies			
Civilian	<u>-</u>	<u>67.4</u>	<u>11.6</u>
Total	<u>479.3</u>	<u>955.0</u>	<u>235.7</u>

APPENDIX III

[illegible]

COMMITTEE ON ARMED SERVICES
Washington, D.C. 20515

MELVIN PRICE, CHAIRMAN

June 1, 1977

[illegible]

Dear Mr. Staats:

The Subcommittee on Military Personnel of the Committee on Armed Services has had a continuing interest in the use of manpower staffing standards in the Department of Defense. For several years, the Subcommittee has received testimony to the effect that increased use of staffing standards provides credible manpower requirements. Further, we have been informed that use of staffing standards identifies considerable manpower and related dollar savings. Yet, we also observe that each service appears to be using different procedures to document its requirements.

The Subcommittee believes that a survey by your office of the status of development and use of standards among the services, especially for support activities would be very useful when it considers future Department of Defense manpower budget requests. The survey should provide: (1) a description of types and levels of standards, their use in DoD, and expected benefits; (2) some perspective on how these techniques are applied in private industry; (3) the role of standards in developing manpower requirements; and (4) the degree of policy guidance and direction of the Office of the Secretary of Defense to the services in developing manpower staffing standards.

APPENDIX III

APPENDIX III

The Subcommittee staff has had preliminary discussion on this matter with members of your Federal Personnel and Compensation Division. We understand that considerable work in this regard has been conducted. We would appreciate receiving a report on the results of this work as early as possible.

Thank you for your continuing cooperation.

Sincerely,

Richard C. White

Richard C. White
Chairman, Military
Personnel Subcommittee

RCW:kww

APPENDIX IV

APPENDIX IV

PRINCIPAL DOD OFFICIALS RESPONSIBLE FOR
ACTIVITIES DISCUSSED IN THIS REPORT

	<u>Tenure of office</u>	
	<u>From</u>	<u>To</u>
<u>DEPARTMENT OF DEFENSE</u>		
SECRETARY OF DEFENSE:		
Harold Brown	Jan. 1977	Present
Donald H. Rumsfeld	Nov. 1977	Jan. 1977
DEPUTY SECRETARY OF DEFENSE:		
Charles W. Duncan, Jr.	Jan. 1977	Present
William P. Clements	Jan. 1973	Jan. 1977
ASSISTANT SECRETARY OF DEFENSE (MANPOWER, RESERVE AFFAIRS AND LOGISTICS):		
John White	May 1977	Present
ASSISTANT SECRETARY OF DEFENSE (MANPOWER AND RESERVE AFFAIRS):		
Carl W. Clewlow (acting)	Feb. 1977	May 1977
David P. Taylor	July 1976	Feb. 1977
<u>DEPARTMENT OF THE ARMY</u>		
SECRETARY OF THE ARMY:		
Clifford Alexander	Jan. 1977	Present
Martin R. Hoffman	Aug. 1975	Jan. 1977
ASSISTANT SECRETARY OF THE ARMY (MANPOWER, RESERVE AFFAIRS AND LOGISTICS):		
Robert L. Nelson	June 1977	Present
ASSISTANT SECRETARY OF THE ARMY (MANPOWER AND RESERVE AFFAIRS):		
Donald G. Brotzman	Aug. 1975	June 1977
<u>DEPARTMENT OF THE NAVY</u>		
SECRETARY OF THE NAVY:		
W. Graham Claytor, Jr.	Feb. 1977	Present
J. William Middendorf II	Apr. 1974	Feb. 1977

APPENDIX IV

APPENDIX IV

	<u>Tenure of office</u>	
	<u>From</u>	<u>To</u>
ASSISTANT SECRETARY OF THE NAVY (MANPOWER, RESERVE AFFAIRS AND LOGISTICS): Edward Hidalgo	Apr. 1977	Present
ASSISTANT SECRETARY OF THE NAVY (MANPOWER AND RESERVE AFFAIRS): Joseph T. McCullen, Jr.	Sept. 1973	Apr. 1977
COMMANDANT OF THE MARINE CORPS: Gen. Louis H. Wilson	July 1975	Present

DEPARTMENT OF THE AIR FORCE

SECRETARY OF THE AIR FORCE: Thomas C. Reed	Jan. 1976	Present
ASSISTANT SECRETARY OF THE AIR FORCE (MANPOWER, RESERVE AFFAIRS AND LOGISTICS): Ms. Antonia Handler Chayes	July 1977	Present
ASSISTANT SECRETARY OF THE AIR FORCE (MANPOWER AND RESERVE AFFAIRS): James P. Goode (acting) Ms. Nita Ashcrasp	Jan. 1977 Aug. 1976	July 1977 Jan. 1977

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