AD-A142 734 CONFUSION OVER VALIDITY AND EFFECTS OF PURPORTED PETTY OFFICER SHORTAGE(U) GENERAL ACCOUNTING OFFICE WASHINGTON DC NATIONAL SECURITY AND.. 27 JUN 84 1/1

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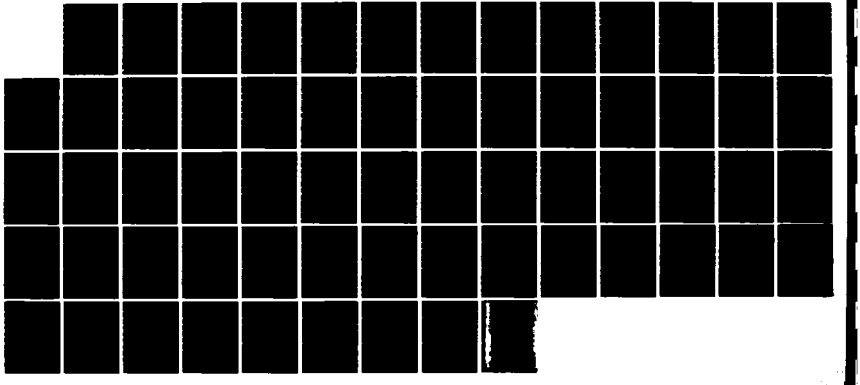

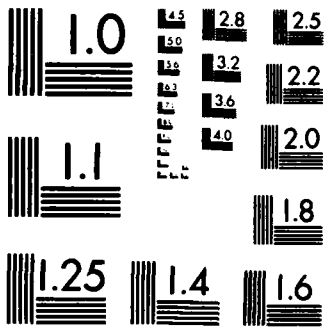

MICROCOPY RESOLUTION TEST CHART
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BY THE U.S. GENERAL ACCOUNTING OFFICE

Report To The Chairman, Subcommittee On Defense, Committee Of Appropriations, United States Senate

Confusion Over Validity And Effects Of Purported Petty Officer Shortage

In recent years, congressional concern has focused on (1) the validity of the Navy's claim of a shortage of petty officers; (2) the Navy's ability to increase the numbers of petty officers and (3) the costs and benefits of increasing the paygrade and experience levels in the Navy's enlisted force.

GAO found that the Navy determined its petty officer shortage by computing the difference between the number of petty officers in the enlisted force and the number of petty officers shown in an internal Navy statement of personnel needs--the Enlisted Programmed Authorizations (EPA). Since the number of petty officer positions requested by the Navy and funded by Congress each year has been nearly the same as the actual petty officer inventories, the continued claims of a petty officer shortage have been confusing.

GAO could not validate the Navy's contention that its petty officers lacked sufficient experience. From 1983 to 1988, GAO estimates that $602 million in additional costs will be spent by the Navy to bring its petty officer inventory into agreement with the number of petty officers shown in the EPA.

GAO/NSIAD-84-30
JUNE 27, 1984

UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

NATIONAL SECURITY AND
INTERNATIONAL AFFAIRS DIVISION

B-212047

The Honorable Ted Stevens
Chairman, Subcommittee on Defense
Committee on Appropriations
United States Senate

Dear Mr. Chairman:

In response to your March 4, 1982, request, we have evaluated the Navy's purported petty officer shortage. This report describes how the Navy computes a shortage, weaknesses in determining petty officer requirements, uncertainties about the influence of shortages on mission capability, and the Navy's justification for increasing the petty officer portion of the enlisted force. We are recommending that the Navy describe its manpower and personnel needs clearly and consistently throughout the budget process.

As you requested, we obtained agency comments on this report and incorporated program officials' views, where appropriate.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 5 days from the date of the report. Then, we will send copies to the Chairmen, House Committee on Government Operations, Senate Committee on Governmental Affairs, House and Senate Committees on Appropriations, and House and Senate Committees on Armed Services; the Director, Office of Management and Budget; and the Secretaries of Defense and Navy. Copies will also be made available to other interested parties upon request.

Sincerely yours,

Frank C. Conahan

Frank C. Conahan
Director

GENERAL ACCOUNTING OFFICE
REPORT TO THE SUBCOMMITTEE
ON DEFENSE, COMMITTEE ON
APPROPRIATIONS, UNITED
STATES SENATE

CONFUSION OVER VALIDITY AND EFFECTS OF PURPORTED PETTY OFFICER SHORTAGE

D I G E S T

Petty officers are the trained and experienced enlisted personnel in the Navy's top six pay grades (E-4 through E-9). Since 1972, Navy officials have cited a petty officer shortage as a serious personnel readiness problem. Yet for 8 of the 12 years, from 1972 through 1983, the Congress authorized an overall personnel strength equalling or exceeding the total number of military positions (billets) in the Navy's budget requests and, in general, the Navy has been fully staffed. Consequently, the continuing references to shortages, as well as the expenses associated with correcting them, have created both misunderstanding and concern.

The Chairman, Subcommittee on Defense, Senate Committee on Appropriations, asked GAO to (1) define and validate the extent of the Navy's longstanding claim of a petty officer shortage and (2) assess plans to substantially increase the number of petty officers.

This report attempts to clarify the petty officer shortage issue by analyzing (1) the Navy's definitions and calculations of petty officer shortages, (2) the validity of Navy statements of petty officer needs, (3) the influence of petty officer shortages on mission capability, and (4) the Navy's plans and justification for projected increases in petty officer requirements.

Tear Sheet

GAO/NSIAD-84-30
JUNE 27, 1984

PETTY OFFICER SHORTAGE NOT WELL DEFINED OR EXPLAINED

The Navy computes a petty officer shortage by comparing the paygrade distribution of personnel currently in the enlisted force to the grade structure in an internal Navy document of personnel needs, called the Enlisted Programmed Authorizations (EPA). The Navy characterizes the EPA as a key internal planning document, providing critical data on occupational and paygrade needs, which the Navy uses to manage its enlisted force.

GAO found that a petty officer shortage does not mean the Navy needs an increase in its enlisted force strength. Rather, a petty officer shortage refers to the Navy having fewer petty officers (personnel in paygrades E-4 to E-9) and more lower grade personnel (E-1s to E-3s) than the Navy believes it needs.

During congressional budget hearings, Navy presentations have not clearly defined what a petty officer shortage is nor identified the basis for shortage calculations. GAO found that many different statements of the Navy's personnel needs are produced as the Navy's program requirements are evaluated during the annual budget review process. Each statement, including the EPA, has specific uses and limitations. There has been considerable misunderstanding about petty officer shortage calculations because the size of the shortage depends on which statement of personnel needs is compared to the enlisted force inventory. In presenting its petty officer shortage to the Congress, the Navy has not clearly explained that its references to petty officer needs and shortfalls were based on the EPA grade structure, which differs from the grade structure shown in budget documents submitted to the Congress.

GAO found that:

--Despite EPA's importance in military personnel planning, the Navy has not developed or issued formal instructions describing what the EPA is, how it is prepared, its uses, or its limitations. (See pp. 7 and 8.)

--In developing and revising the EPA, the Navy incorporates some budgeting constraints but ignores others. For example, the Navy limits the total number of billets in the EPA to the budgeted and congressionally authorized end strength numbers. However, the distribution of billets by paygrade shown in the EPA does not conform to the paygrade distribution presented in budget documents submitted to the Congress. (See pp. 8 and 9.)

--From 1972 to 1982, the EPA paygrade mix showed that, when compared to the enlisted inventory, the Navy needed an average of 22,000 more petty officers and 22,000 fewer lower grade personnel per year. In fiscal year 1983, the enlisted inventory showed a shortage of about 9,300 petty officers when compared to the EPA. However, a comparison of the paygrade mix in the enlisted inventory to the paygrade distributions shown in the budget requests and funded by the Congress for those years did not indicate that a petty officer shortage existed. (See pp. 9 through 12.)

VALIDITY OF THE NAVY'S STATEMENTS OF PETTY OFFICER NEEDS

The EPA paygrade distribution is derived from Navy manpower requirements documents which specify the number of personnel, occupations, and experience needed to accomplish the Navy's work. The Navy contends that the paygrades assigned to billets are determined primarily through a rigorous technical analysis of the experience needed to do the work. GAO found, however, that personnel management considerations and Navy judgments appear to be major determinants of paygrade requirements.

There is little evidence that paygrade requirements are derived from an objective measure of the experience that personnel need to have to perform jobs effectively. In fact, Navy regulations and directives recognize that judgment plays a significant role in grade determination. Given the nature of the Navy's paygrade determination process, the manpower requirements documentation programs do not produce precise statements of the Navy's petty officer needs. (See pp. 17 through 26.)

INFLUENCE OF PURPORTED SHORTAGE ON MISSION CAPABILITY

The underlying reason for concern about petty officer staffing levels involves their potential impact upon the Navy's capability to fulfill missions. Navy summary data on personnel readiness for fiscal year 1980 through fiscal year 1982 showed that citations of the petty officer shortage as a primary cause of degraded unit readiness had decreased. GAO also found that the Navy's ability to staff operational ships and squadrons was not seriously impeded. The Navy agrees with this assessment because a large number of petty officers in shore assignments can be reassigned to these ships and squadrons as needed. Public statements by the Navy also indicate that it is confident that it can meet the challenge of a national emergency. (See pp. 28 through 30.)

GROWTH OF THE PETTY OFFICER FORCE COSTLY

By fiscal year 1988, the Navy plans to bring its personnel inventory into alignment with the EPA paygrade structure. This will increase the proportion of petty officers in the enlisted force to 68 percent. Because retention rates have improved since 1980, the Navy believes that the EPA grade structure is attainable even while expanding the size of the force to staff a proposed 600-ship Navy.

GAO found that as the Navy moves toward its target of achieving the EPA grade structure, the cost of staffing the Navy will increase. From 1983 to 1988, GAO estimates that $602 million in additional costs will be spent to increase the petty officer grade mix. The Center for Naval Analyses (CNA) has initiated a series of projects aimed at measuring personnel productivity and determining whether manpower requirements that will lead to increases in the Navy's level of readiness can be developed. Given the potential additional costs and the lack of evidence concerning the validity of the EPA grade structure or the impact of not attaining it, GAO supports CNA's research efforts. (See pp. 38 through 42.)

RECOMMENDATIONS TO THE SECRETARY OF THE NAVY

GAO recommends that the Secretary take the following actions:

--Develop and issue written guidelines for the EPA. At a minimum, the guidelines should explain what the EPA is, how it is developed and revised, its uses, and its limitations.

--Clearly identify the sources of all data used in calculations of enlisted personnel needs, authorizations, and shortages in all presentations of manpower and personnel issues to the Congress.

AGENCY COMMENTS AND GAO'S EVALUATION

GAO obtained official oral comments from Department of Defense officials. Defense stated that the report recommendations are reasonable and can be implemented.

Defense agreed that the absence of standardized and conventionally accepted terms to describe manpower and personnel requirements in the budget planning and review process has led to misunderstandings about petty officer shortage calculations. Defense believes, however, that the EPA has consistently been used by the Navy to state its personnel

needs and that the other statements of need discussed in GAO's report (budget submission, congressionally funded grade mix, etc.) are influenced by factors which the Navy cannot control.

GAO found that shortage calculations based on an internal Navy statement (EPA), which has not been explained, reviewed, or approved by anybody outside the Navy, are unfamiliar to external reviewers and confusing. Because the presence, if any, of the petty officer shortage depends on which personnel statement is chosen, consistent definitions and usage of terms to describe manpower and personnel requirements would improve understanding of the shortfall issue.

Defense agreed that judgment is a major factor in determining paygrade structure. It noted, however, that the report did not present evidence to show that Navy judgments were bad. GAO did not question the need to use judgment in personnel decisionmaking. However, GAO concluded that the Navy should not present its statements of paygrade requirements as being precise given the nature of the paygrade determination process.

According to Defense, the petty officer shortage degrades the Navy's ability to perform missions. Defense stated that GAO's report did not point out the staffing problems in shore activities associated with the Navy's policy to sustain staffing levels in ships and air squadrons. In this regard, GAO used Navy statements and data to conclude that the petty officer shortage has not recently been cited as a primary cause of degraded unit readiness. Because the Navy's documentation of its staffing requirements in shore support activities is incomplete, GAO could not evaluate petty officer needs or the effects shortfalls would have on getting work accomplished in those units.

Although Defense agreed that additional compensation costs will be associated with achieving the EPA grade structure, it maintained that the benefits associated with a higher proportion of petty officers, such as reduced training costs and improved productivity, justify and offset higher compensation costs. Defense indicated that the Navy has research projects underway which demonstrate the increased productivity of more senior personnel in some occupations and functions. As discussed in the report, GAO found that these Navy studies have not resulted in any official Navy position or a more systematic way to develop and document paygrade requirements.

Contents

ABBREVIATIONS

CNO	Chief of Naval Operations
DOD	Department of Defense
EPA	Enlisted Programmed Authorizations
GAO	General Accounting Office
OMB	Office of Management and Budget
OSD	Office of the Secretary of Defense
POM	Program Objectives Memorandum
PPBS	planning, programming, and budgeting system
SHORSTAMPS	Shore Requirements, Standards, and Manpower Planning System
SMD	Ship Manpower Documentation Program
SQMD	Squadron Manpower Documentation Program
UNITREP	Unit Status and Identity Report System

CHAPTER 1

INTRODUCTION

Since the advent of the All-Volunteer Force in 1972, manpower and personnel management[1] has received an increasing amount of attention from all four military services. Public and congressional interest in military personnel issues, particularly force effectiveness and personnel costs, has also increased. As a result of rapidly growing personnel costs and heightened competition among federal programs for funds, reviewing authorities in the Department of Defense (DOD), Office of Management and Budget (OMB), and the Congress have demanded that the services use objective and supportable methods to determine and justify their staffing needs. This report focuses on the Navy's methods of determining and reporting petty officer needs and the influence of reported petty officer shortages on mission capability.

The term "petty officer" generally refers to enlisted personnel in the top six paygrades (E-4 to E-9) of the Navy. Petty officers are the trained, experienced members of the enlisted force. The E-4 paygrade is sometimes excluded in discussions about petty officers because it tends to be filled predominantly by first-term personnel who have not yet decided to reenlist. Because the Navy has generally stated its petty officer needs in terms of the top six paygrades, references to petty officers in this report include the E-4 paygrade, unless otherwise stated.

Since the early 1970s, the size of the Navy's enlisted force has fluctuated considerably. In 1972 congressionally authorized end strength[2] stood at 525,000. By 1976 and again in 1979 this figure had declined to 456,000. In fiscal year 1980 the Congress began authorizing higher end strengths so that by fiscal year 1983 the number of authorized enlisted personnel totaled 498,103.

For 8 of the 12 years, from 1972 through 1983, the Congress authorized an end strength equalling or exceeding the total number of military positions (billets) requested in the annual

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[1]In the context of military personnel management, "manpower" connotes requirements or billets (positions), whereas "personnel" connotes individuals.

[2]Throughout this report, "end strength" refers to the number of active-duty enlisted personnel in the Navy on the last day of the fiscal year.

budget. However, Navy witnesses testified during congressional budget hearings that a significant, continuing shortage of petty officers existed, which degraded the Navy's ability to adequately train personnel, maintain systems, and operate weapons. This has led to some confusion about how shortages could continue when the Congress granted the Navy all the personnel levels it asked for and the Navy achieved the authorized end strengths.

OBJECTIVES, SCOPE, AND METHODOLOGY

We initiated our review in response to a March 1982 request from the Chairman, Subcommittee on Defense, Senate Committee on Appropriations, to conduct an overall assessment of the Navy's manpower and personnel management systems. Recognizing that such an assessment would require several systematic, long-term evaluations, the Chairman asked us to first focus on two major issues confronting the Subcommittee during budget deliberations. Specifically, the Chairman asked us to (1) define and validate the extent of the Navy's longstanding claim of a petty officer shortage and (2) assess whether the Navy can accomplish plans to substantially increase the number of petty officers, the cost of an increased grade structure, and the overall impact of improving the experience level of the Navy enlisted force. We conducted most of the review work from April through December 1982 and briefed the Subcommittee on these issues in January and March 1983. This report provides a comprehensive analysis of the petty officer shortage issues which continue to confront the Subcommittee, together with selected fiscal year 1983 updates on shortage calculations.

In undertaking this review, we interviewed Navy officials, as well as officials of the Office of the Secretary of Defense (OSD) (Manpower, Reserve Affairs and Logistics). We also held discussions with staffing specialists at the Center for Naval Analyses and conducted a literature search of both government and private sources.

In conducting the review, we relied primarily on manpower, personnel, and budget data already collected by the Navy but specially formatted, collated, or assembled at our request. We also used Navy data from the Defense Manpower Data Center (DMDC) to evaluate shifts in the experience levels of the enlisted force from 1972 through 1982. At the time of our review, fiscal year 1983 data was not available. As a result, our discussion in the report (chapter 5) of issues using DMDC data does not include any reference to the fiscal year 1983 time frame. We did not independently assess the reliability of the Navy and DMDC data. Most of the data was raw numerical information, which we further sorted manually and by computer in

order to examine (1) the Navy's method of computing petty officer shortages and (2) the influence of shortages on reporting mission capability.

We also reviewed instructions explaining the Navy's methods of determining and documenting manpower requirements. In addition, we discussed the requirements documentation process with Navy officials and reviewed prior government and private studies on methods for determining staffing requirements. We performed this work to gain some insight into the Navy's requirements determination process, which is the foundation for the Navy's calculation of a petty officer shortage.

Finally, to evaluate the Navy's claim that petty officer shortages had seriously degraded fleet readiness, we reviewed selected aspects of the Navy's unit readiness reporting system related to personnel readiness. In addition, we examined Navy and OSD documents on personnel readiness and reviewed Navy data on changes in the experience levels of the enlisted force.

We conducted this review in accordance with generally accepted government audit standards. In carrying out this review, we identified four principal questions to be answered:

1. How does the Navy calculate its petty officer shortage?

2. How valid are the Navy's statements of petty officer needs?

3. Is mission capability affected by the Navy's claimed petty officer shortage?

4. Is the projected increase in the proportion of petty officers justified?

Chapters 2 through 5 address each of these questions in turn.

CHAPTER 2

NAVY'S PETTY OFFICER SHORTAGE IS A QUESTION OF PERSPECTIVE AND DEFINITION

The Navy's contention that it has a petty officer shortage does not mean that the Navy needs more sailors. Budget statements show that the Navy has consistently achieved its total congressionally authorized enlisted strength. A petty officer shortage is reported because the Navy's enlisted personnel inventory has more lower grade personnel (E-1 to E-3) and fewer petty officers (E-4 to E-9) than the Navy believes it needs.

HOW ARE PETTY OFFICER SHORTAGES CALCULATED?

To calculate a personnel shortage, there must be two identifiable populations: the number of personnel in the applicable work force (or current inventory) and the number of personnel needed to do assigned tasks (or manpower/staffing). A shortage exists when staffing needs exceed the current inventory available to fill those needs. In the Navy's case, a petty officer shortage occurs when the current enlisted inventory in paygrades E-4 to E-9 is less than the personnel needed in those paygrades.

Although several factors may affect the reporting of the number of personnel in specific paygrades as of a particular date (e.g., status of active duty reservists, promotion actions, etc.), there is general agreement throughout the defense community on how to calculate current inventory. Calculating the other population--staffing needs--is far less precise and the subject of greater dispute than inventory calculations.

Any statement of staffing needs represents a blend of subjective as well as objective considerations about wartime scenarios, tasks, and personnel factors, which are difficult to quantify and verify. Not surprisingly, considerable disagreement exists within the defense community as to the appropriate methods for computing staffing needs. In its 1982 report to the President, the Military Manpower Task Force concluded:

> "There are differences in the methods used by the Services to determine requirements for NCOs [non-commissioned officers]. To eliminate any lingering doubt on the validity of these requirements, it would be prudent for the Office of the Secretary

of Defense to intensify its review of the criteria each Service uses to determine the required number of personnel in grades E-5 to E-9."[1]

While no consensus exists on the proper way to calculate staffing needs, it is possible to describe the staffing needs that are recognized as part of the annual planning, programming, and budgeting system (PPBS) cycle. At least five different statements of the Navy's enlisted personnel needs can be produced for any fiscal year. Each statement represents a different assessment of the Navy's staffing needs as political, fiscal, strategic, and personnel constraints are applied to the defense program during the budget cycle.

The size of the petty officer shortage for a particular fiscal year heavily depends on which statement is chosen to represent the Navy's petty officer needs. A brief description of the five statements, their uses, and limitations appears below. The statements are listed chronologically on the basis of when they are generated in the PPBS cycle.

Requirements. Requirements show the quantity and quality (by occupation and paygrade) of military personnel needed to accomplish assigned tasks and missions in wartime. The Navy determines requirements without considering funding constraints or availability of personnel and organizations. The computed number of required personnel depends heavily on Navy and OSD management judgments and assumptions concerning wartime scenarios, operating tempos, probable timing, and deployment schedules. Given the uncertainty about whether and where the next war will occur, whether it would be nuclear or nonnuclear, long or short, and so forth, Navy and Defense planners' judgments are imprecise. Because staffing requirements computations rely on these judgments, the Navy's statements of requirements are also imprecise.

The Navy has three primary requirements documentation programs--one for ships, one for aircraft squadrons, and one for shore activities. These programs focus on the best way to staff a ship or air squadron or to staff a shore function to perform assigned tasks and missions. Thus, Navy's staffing requirements represent a blend of considerations, some based on subjective evaluations of how to cope with uncertain situations and others based on detailed quantitative techniques.

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[1]Military Manpower Task Force, A Report to the President on the Status and Prospects of the All Volunteer Force, Oct. 1982, p. III-22.

The other four statements of the Navy's staffing needs are subsequently developed during various phases of the PPBS cycle. These statements reflect the Navy's staffing needs after constraints are applied to the Navy's stated total staffing requirements.

Program Objectives Memorandum. The annual PPBS cycle provides the DOD portion of the President's budget submission to the Congress. As part of this cycle, each service develops a Program Objectives Memorandum (POM). The Navy POM is a forecast of the resources required to support approved programs. It is also the vehicle for including new requirements for budgetary action. In the Navy, the POM is developed through a series of management meetings and reviews and is ultimately approved by the Chief of Naval Operations (CNO) and the Secretary of the Navy before being formally submitted to OSD. The Navy POM contains the CNO's and Secretary of the Navy's decisions on the programming and distribution of Navy manpower for the POM fiscal year and 4 subsequent years.

President's budget submission. After the services submit their POMs to OSD, the Secretary of Defense and OMB staffs review each program and weigh its relative merits against all other programs competing for the limited dollars available. Program changes are negotiated among the service, OSD, and OMB staffs. When these revisions are completed, the Secretary of Defense presents the DOD program to the President for inclusion in the President's budget. At this stage, defense programs, including Navy personnel programs, are weighed against the programs of all other Cabinet Departments.

The President's final budget and the Navy Justification of Estimates,[2] the primary supporting document for the Navy budget, are both submitted to the Congress in January each year. The budget requests a Navy enlisted force which simultaneously is deemed adequate to meet national security needs and is still affordable within current fiscal constraints.

The enlisted paygrade distribution shown in the President's budget and supporting documents is also the result of approval or modification of the Navy POM to conform to OSD and OMB guidelines. The budget submission is based only on the personnel paygrade structure achievable within the particular budget cycle. In other words, the Navy's budget includes only funds needed for a petty officer inventory mix expected in the budget year.

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[2]The Justification of Estimates provides data to support and and explain the personnel funding requested in the President's budget.

Congressional Authorization and Appropriation. The last phase of the budget process involves the review and approval of the completed budget by the Congress, which places two binding constraints on the Navy's military staffing levels. First, the Congress mandates the total number of military personnel the Navy's force can contain (congressionally authorized fiscal year end strength). Second, the Congress approves the maximum dollars available to compensate Navy military personnel that year (the Military Personnel Appropriation). These end strength and dollar limitations represent the Congress' final determination of the Navy's manpower and personnel needs when weighed against other national interests.

While the Congress does not authorize a grade structure for the Navy's enlisted force, congressional decisions about end strength and personnel appropriations are based on the grade structure presented in the President's budget submission and supporting budget justification documents. Thus, congressional authorizations and funding are consistent with a budgeted grade structure. (We call this congressionally reviewed and approved grade structure "funded grade mix" throughout the rest of this report.)

In making end strength and funding decisions, the Congress reviews the paygrade structure set forth within the budget submission and the Navy's Justification of Estimates. In the last several years, the Congress has, for the most part, authorized end strengths and appropriated dollars to fund personnel strengths in line with the grade mix requested in the budget submission.

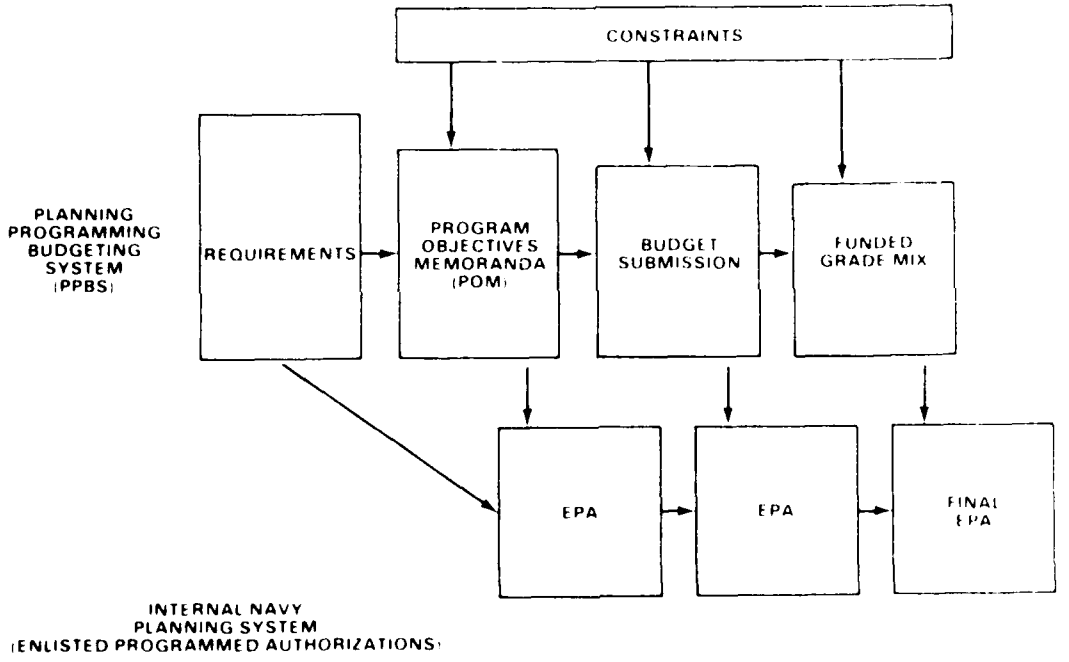
Enlisted Programmed Authorizations. Throughout the PPBS cycle, the Navy generates and updates an internal statement of its manpower needs, called the Enlisted Programmed Authorizations (EPA). This statement of needs is never officially delineated in the budget request and the Navy Justification of Estimates sent to the Congress.

The EPA describes the occupational and paygrade mix of the end strengths requested in the annual budget submission and later authorized by the Congress. The Navy uses the EPA to provide planning guidance for internal personnel management (e.g., accession and training goals in each rating/occupation and promotion opportunities) and to compute its petty officer shortage.

Although the Navy characterizes the EPA as a key internal planning document, it has issued no formal instructions on the EPA, describing what it is, how it is developed and revised, its uses, and its limitations. The EPA report on the quality of Navy programmed billet authorizations is not reviewed

or approved outside the Navy. The statements of Navy staffing needs discussed earlier do receive external review as part of the budget review process. Navy, DOD and OMB analysts, other administration officials, and congressional committees review and analyze the Navy's staffing requirements, considering such factors as the Navy's enlisted inventory, money, economic and political conditions. These and other factors impose limits on how much of the Navy's staffing requirements, both quantity and quality, are approved and funded during a fiscal year. The statements of Navy staffing needs expressed in the POM, the budget submission, and congressional authorizations and appropriations reflect the constraints applied during these external reviews.

STATEMENTS OF NAVY'S MANPOWER NEEDS



As shown in the chart above, the EPA is not a budget document, even though the EPA represents the paygrade structure the Navy believes it needs for a budgeted end strength. According to the Navy, its budget requests have not presented the EPA grade structure because it was not attainable within the budget year. Instead, Navy budget documents incorporate the grade structure presented in Navy strength plans which are based on actual inventory projections and conform to both end strength and appropriation controls in the budget process.

While the Navy revises the EPA end strength to agree with PPBS and congressional end strength mandates, it does not revise the EPA grade structure to agree with budgeted fiscal constraints. Because the EPA is an internal Navy document, it does not have to conform to these external constraints.

MEASURING THE SHORTAGE

In fiscal year 1982 the EPA and funded grade mix statements differed significantly in terms of grade structure. The EPA called for 323,976 petty officers; the Navy's budget submission contained 306,448 petty officers. Comparing the petty officer inventory to the petty officer funded grade mix, we found no shortage existed in fiscal year 1982. However, the petty officer inventory fell short of the EPA-measure of petty officer needs by 17,400.

Table 1 presents the paygrade distribution contained in each of the statements of staffing needs developed during the budget process for fiscal year 1982. Table 2 shows the shortages calculated for the top five and top six grades using each statement.

Table 1

Distribution of Navy Enlisted Personnel by Pay Grade (FY 1982)
----------(Staffing Needs)----------

Grade	POM	Budget submission	Funded grade mix	EPA	Current inventory
E-9	3,700	3,700	3,700	4,530	3,742
E-8	8,700	8,704	8,704	10,340	8,697
E-7	30,825	30,885	30,885	33,450	31,061
E-6	66,385	66,749	66,749	76,962	67,686
E-5	87,424	89,345	91,753	96,221	91,995
E-4	104,804	107,065	104,657	102,473	103,378
E1-E3	182,115	179,127	174,827	157,299	174,627
Total	483,953	485,575	481,275	481,275	481,186

Table 2

Calculations of Petty Officer Shortage (FY 1982)

Top six paygrades

	POM	Budget submission	Funded grade mix	EPA
Needs	301,838	306,448	306,448	323,976
Inventory	306,559	306,559	306,559	306,559
Difference	-4,721	-111	-111	17,417
Percent of needs	(2% over)	(100%)	(100%)	(5% short)

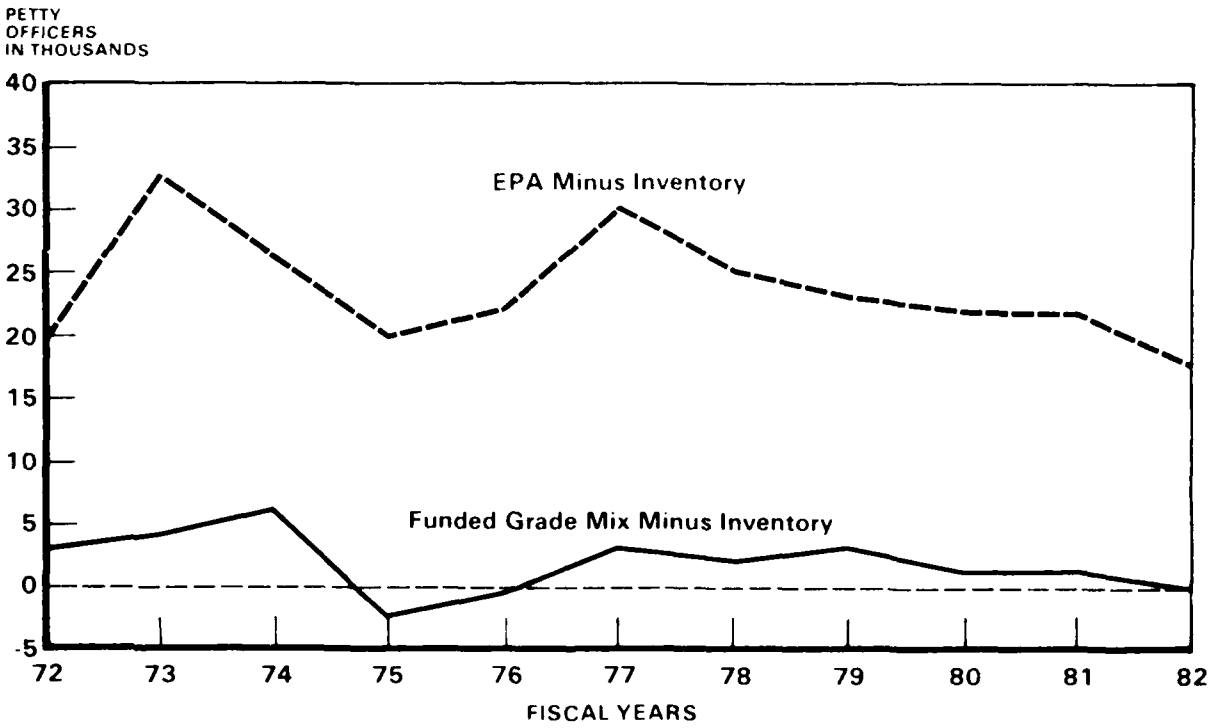
Top five paygrades

	POM	Budget submission	Funded grade mix	EPA
Needs	197,334	199,383	201,791	221,503
Inventory	203,181	203,181	203,181	203,181
Difference	-5,847	-3,798	-1,390	18,322
Percent of needs	(3% over)	(2% over)	(1% over)	(8% short)

Clearly, the Navy's claim of a petty officer shortage at the end of fiscal year 1982 was based on the EPA statement which shows that more petty officers and fewer personnel in paygrades E-1 through E-3 were needed in the Navy's enlisted inventory.

The following chart shows that, on average, a differential of about 22,000 petty officers existed between a shortage measured against EPA and a shortage measured against the funded grade mix each year from 1972 through 1982. (See app. I for strength and paygrade distribution of Navy enlisted personnel shown in budget, EPA and inventory documents for fiscal years 1972 through 1983.) If either POM or budget submission grade mix levels were substituted for the funded grade mix, little change would have occurred.

DIFFERENCES IN SHORTAGE CALCULATIONS



From 1982 to 1983, the Navy showed a significant decline in its petty officer shortage calculation. Comparing the EPA statements for the two years, the fiscal year 1982 shortage of 17,400 had been reduced to less than 9,300 by the end of 1983.

In fiscal year 1983, the petty officer inventory exceeded the top six and top five POM, budget submission and funded grade mix levels as the table on the following page shows.

Table 3

Calculations of Petty Officer Shortage (FY 1983)

Top six paygrades

	POM	Budget submission	Funded grade mix	EPA
Needs	321,457	321,463	321,324	335,250
Inventory	325,964	325,964	325,964	325,964
Difference	-4,507	-4,501	-4,640	9,286
Percent of needs	(1% over)	(1% over)	(1% over)	(3% short)

Top five paygrades

	POM	Budget submission	Funded grade mix	EPA
Needs	207,110	209,516	209,264	228,691
Inventory	214,224	214,224	214,224	214,224
Difference	-7,114	-4,708	-4,960	14,467
Percent of needs	(3% over)	(2% over)	(2% over)	(6% short)

Nonetheless, the petty officer inventory continued to fall short of the EPA statement of needs in fiscal year 1983. The EPA called for 9,286 more top six petty officers than the inventory contained.

NAVY USES THE TERM "AUTHORIZATIONS" TO MEAN DIFFERENT THINGS

In explaining its petty officer shortage to the Congress, the Navy sometimes uses terms that are confusing and often misunderstood. Specifically, the Navy uses the terms "authorizations" or "authorized billets" to refer to both EPA and funded grade mix. Using the terms interchangeably makes it difficult to understand the basis for the Navy's calculation of a petty officer shortage and can leave the impression that the remedy to the Navy's reported shortage is additional sailors.

In 1982, for example, the House Committee on Appropriations asked the Navy to provide information defining and describing its claimed petty officer shortage. The Navy provided the following definitions of terms:

1. "Authorization.--(Authorized billets)--The aggregate number of billets for which funding is requested via the annual budget submission, and subsequently authorized by the Congress.

2. "Enlisted Program Authorization.--A qualitative (by enlisted paygrades and skills) description of the authorized billets."

It further stated that:

> "Petty officer shortages are computed by comparing the inventory to a qualitative distribution of the congressionally authorized enlisted end strength. For example, in fiscal year 1981, the inventory of Navy petty officers (E-4 thru E-9) was 293,000, the authorized strength of petty officers was 315,000. Therefore, the petty officer shortfall was 22,000."[3]

In other words, the Navy computes the petty officer shortage by first arranging the congressionally authorized number of billets in the grade structure it desires (EPA), and then comparing that to the actual grade structure in the inventory.

The Navy also stated that it was achieving its authorized end strength; but within that authorized strength, nonpetty officers (E-1s through E-3s) were filling billets authorized (by the Navy, not the Congress) for petty officers.

While the Navy's fiscal year 1984 appropriations statement about its manpower and personnel needs did emphasize that it was "important to recognize that the widely reported petty officer shortfalls are a quality rather than a quantity issue,"[4] the statement did not identify the basis for the Navy's calculation of its petty officer shortage:

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[3]Navy responses to questions during hearings on the 1983 Defense Appropriations request before the Subcommittee on the Department of Defense, House Committee on Appropriations, 1983, part II, p.264.

[4]Prepared statement of Admiral James D. Watkins, Chief of Navy Operations during hearings on the 1984 Defense Appropriations request before the Subcommittee on the Department of Defense, House Committee on Appropriations, part II, p. 434.

"Compensation initiatives have demonstrated to our Service members that you in the Congress recognize the value of their contributions and sacrifices. However, there are still serious manpower problems and we cannot become complacent or reduce our efforts. Despite the excellent retention progress this past year, there was still a petty officer shortfall of 17,400 for E-4 through E-9 at the end of FY 1982, reflecting poor retention in earlier years. Although we are making excellent improvement over FY 1981's shortfall of 22,000 petty officers, this shortage still translates into a lack of experienced and technically trained sailors both to do the needed technical work and to train more junior personnel. To rectify these shortfalls, our strategy for manning the Navy must be based on both retaining and recruiting."[5]

The Navy statements did not clearly explain that the Navy's references to petty officer authorizations and shortfalls were based on the EPA grade structure, which has more petty officer billets and fewer E-1 through E-3 billets than the paygrade structures shown in the President's budget submission, and the Navy's Justification of Estimates supporting the budget request.

CONCLUSIONS

The Navy computes a petty officer shortage by comparing its enlisted inventory to an internal statement of personnel needs--the EPA. The EPA does not show that the Navy needs more sailors. Instead, the EPA calls for more petty officers and fewer lower grade personnel (E-1s to E-3s) than the Navy inventory contains. Other statements of Navy manpower needs developed and approved during the budgeting process have a lower paygrade structure than the EPA. These statements do not show that a petty officer shortage exists.

From 1972 to 1982, the EPA paygrade structure showed that the Navy needed approximately 22,000 more petty officer billets and 22,000 fewer low grade billets than contained in PPBS statements or the enlisted inventory. In 1983, the inventory had more petty officers than requested in the budget submission. Still, the inventory fell short of the EPA measure of petty officers needs by more than 9,000. This EPA grade structure is the basis for the Navy's statements about petty officer shortages.

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[5] Ibid., pp.445-446.

The Navy characterizes the EPA as a key internal planning document providing critical data necessary to manage the Navy's enlisted force. However, the Navy has issued no formal instructions on the EPA, describing what it is, its uses, and its limitations.

The EPA report on the quality of Navy programmed billet authorizations is not reviewed or approved outside the Navy. In developing and revising the EPA, the Navy limits the EPA to PPBS and congressional end strength mandates. The EPA paygrade structure is based on the Navy's perception of needs, without consideration of inventory or external funding limitations on grade structure.

The Navy has not made it clear to the Congress that its shortage is based on a comparison of inventory to the EPA. One source of this lack of clarity is the Navy's use of the term "authorization" to refer to both EPA and congressionally authorized end strength. Although the Congress does not authorize a paygrade distribution for the enlisted force, decisions about end strength and personnel appropriations are, in fact, made with reference to the grade structure presented in budget documents. Congressional authorizations are based on the paygrade structure projected to be achievable during the fiscal year, considering inventory and funding limitations. The Navy also has not adequately explained the differences between the EPA planned force and the force for which funding is actually requested. Nor has the Navy explained that because of inventory limitations the EPA paygrade structure is not achievable within one fiscal year and, therefore, is a future goal.

RECOMMENDATIONS TO THE SECRETARY OF THE NAVY

We recommend that the Secretary take the following actions:

--Develop and issue written guidelines for the EPA. At a minimum, the guidelines should explain what the EPA is, how it is developed and revised, its uses, and its limitations.

--Clearly identify the sources of all data used in calculations of enlisted personnel needs, authorizations, and shortages in all presentations of manpower and personnel issues to the Congress.

AGENCY COMMENTS AND OUR EVALUATION

DOD provided official oral comments on this report. Overall, DOD considered our analysis of the issues presented in this chapter to be reasonable. DOD agreed that there has been confusion over the use of the term "authorizations" and that

there is a need to carefully define and standardize the use of commonly accepted terms relating to manpower and personnel requirements. However, DOD believes that the EPA has consistently been used by the Navy to state its petty officer needs and that the other statements of need discussed in our report are influenced by external factors which the Navy cannot control.

As we stated in this chapter, the issue surrounding the differing statements of petty officer needs is not whether one statement is more useful than another, or even whether there should be more than one statement, but rather, whether the Navy is properly using its various statements in its presentations to the Congress. Although the Navy has testified for several years about the petty officer shortfall, the terms the Navy used to describe its petty officer needs and shortages ("requirements", "authorizations", and "enlisted programmed authorizations") have not been clearly defined. As a result, the terms are not used in consistent and appropriate ways to discuss manpower and personnel issues during the budgeting process. Our findings highlight the point that if the Navy intends to discuss its EPA goals in the budget process, it should clearly differentiate between the EPA and other statements of authorizations to avoid confusion.

CHAPTER 3

JUDGMENT PLAYS A MAJOR ROLE IN DETERMINING NAVY'S GRADE STRUCTURE REQUIREMENTS

The Navy bases its conclusions concerning a petty officer shortage on the paygrades shown in the EPA statement of staffing needs. The EPA grade structure is derived from Navy manpower requirements. The paygrades assigned to billets in the Navy's requirements documentation programs reflect Navy judgments about both actual workload requirements and personnel management considerations, such as the need to provide sufficient advancement opportunity to retain qualified, experienced personnel. These personnel management considerations can increase billet paygrade assignments above the minimum experience level required to perform the work.

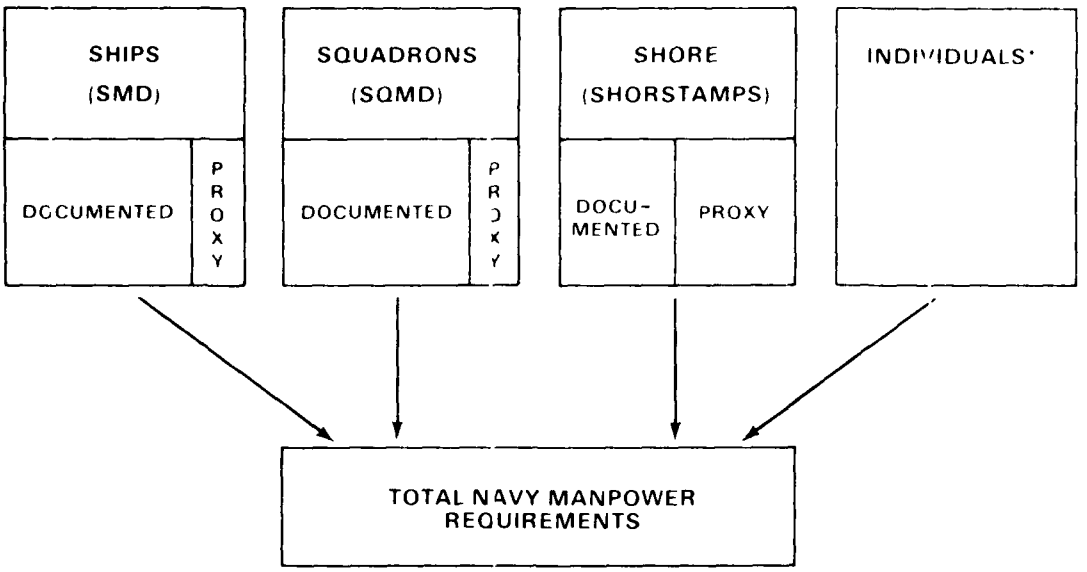
DOCUMENTATION OF STAFFING REQUIREMENTS IS INCOMPLETE

While the Navy has made progress in documenting its manpower requirements, many of those requirements are still determined through a subjective, unverified process. The incomplete implementation of Navy manpower requirements documentation programs raises concerns about the precision of the EPA paygrade structure.

The starting point for any statement of petty officer needs is estimates of total manpower requirements to accomplish work aboard Navy ships, in air squadrons and shore activities. Prior to 1966 the procedures the Navy used to determine manpower requirements were based almost exclusively on existing staffing patterns and value judgments. Because this methodology was difficult to defend and resulted in potentially wasteful and inequitable resource allocations, the Navy initiated programs to objectively calculate and document its manpower needs.

The Navy's requirements determination and documentation processes are embodied in three separate programs. (See chart on following page.) Two programs, the Ship Manpower Documentation (SMD) Program and the Squadron Manpower Documentation (SQMD) Program, cover the operating forces. The third program, the Shore Requirements, Standards, and Manpower Planning System (SHORSTAMPS), documents staffing requirements for shore-based activities. (In December 1983, SHORSTAMPS became a component of the newly formed Navy Manpower Engineering Program.) GAO and others have identified inadequacies in the techniques, assumptions, and coverage of the manpower requirements documentation programs. (See app. IV.)

SOURCES OF NAVY MANPOWER REQUIREMENTS



*The Individuals Account is made up of billets required for transients, patients, separatees, and disciplinary actions, plus students and trainees.

Whatever their inadequacies, the SMD, SQMD, and SHORSTAMPS programs are supposed to provide objective standards for measuring workload and translating work requirements into statements of the number of personnel needed. At the end of fiscal year 1982, the SMD program covered 92 percent of all ships and initial SQMD documentation had been completed for all active duty squadrons. However, the shore establishment (which accounts for one third of Navy total military manpower requirements) had slightly less than 40 percent coverage by an applicable SHORSTAMPS standard. According to Navy officials, erratic program budgeting, poor contractor products, and the time-consuming efforts required to develop standards to cover the diversity of shore fuctions account for the low standards coverage of the shore establishment.

In fiscal year 1982, over 127,000 of the more than 213,000 enlisted requirements (excluding the Individuals Account) in shore activities were proxy requirements. Proxy requirements are judgments about staffing needs which can be traced back to staffing requests submitted by the commanding officer of a shore activity. If the request remains through the budget process and is funded, it will become part of the proxy requirement. Proxy requirements are difficult to validate since they are based on judgment and subjective evaluation and not independent, objective calculation of workload.

Because of the previously identified inadequacies in measurement techniques and data sources and the incomplete implementation of the existing manpower documentation programs, Navy statements of personnel requirements cannot be accepted as absolute. The number of personnel needed may be overstated or understated. Although our work here focused on the way the Navy assigns paygrades in the documentation programs, we are currently evaluating the Navy methodology and implementation of the SMD, SQMD, and SHORSTAMPS programs.

PAYGRADE ASSIGNMENTS ARE LARGELY JUDGMENTAL

Determining the number of personnel needed is only the first part of establishing manpower requirements in the SMD, SQMD, and SHORSTAMPS programs. Determining the occupational skills and experience needed to effectively perform the work is equally important. (The Navy generally equates skill level and related experience with paygrade.) The process of establishing qualitative needs is less precise than work measurement techniques used to establish the number of personnel needed to accomplish specific jobs. However, acceptable statements of manpower requirements depend on establishing occupational and experience requirements in an objective and systematic way as possible.

There is little evidence, however, that paygrade assignments in the requirements documentation programs reflect primarily an objective measure of the experience that personnel need to have in order to effectively perform the Navy's work. Navy judgments, rather than workload measures, are major determinants of grade assignments. The data sources and techniques the Navy uses to develop its statements of paygrade requirements provide insufficient evidence to validate Navy's contention that the grades assigned to specific billets in the documentation programs are set at the minimum grade necessary for satisfactory performance of billet functions.

In its 1976 report to the President and the Congress, the Defense Manpower Commission noted the subjectivity of paygrade assignments:

> "In general, the Services use, or are in the process of implementing, an industrial engineering work measurement system for those tasks that lend themselves to such analysis. These efforts have the potential to do a credible job in determining the quantity of people required to do specific work. The process of extending those quantities into qualitative requirements [paygrades] is not as precise. The qualitative

aspects of the requirements seem to be the result of what is desired rather than justifiably required."[1]

The principal data sources used to determine the enlisted grade assignments for billets in ships, aviation squadrons, and shore activities are the Manual of Navy Enlisted Manpower and Personnel Classifications and Occupational Standards (NAVPERS 18068D) and Navy staffing tables. (App. III discusses problems with these data sources.) To a large extent, the petty officer shortage depends on the validity of the grade levels assigned in the standards manual and staffing tables. Currently, some designated E-5 and E-6 billets are filled by E-4 personnel; some E-4 billets are filled by E-3s, etc. The Navy contends that these lower grade personnel do not have the skills and experience needed to perform all the designated tasks associated with the paygrade assigned to the billet. We found no objective basis for evaluating the validity of this statement.

The link between the grade levels assigned in staffing tables and effective performance has not been established. The Navy has not maintained documentation showing the basis for grade level distinctions made in the classification manual and the staffing tables.[2] As a general Navy assignment policy, "one up" or "one down" is the accepted norm; this means that a billet calling for an E-5 can be filled with an E-6 or E-4 if an E-5 is not available at the proper time. More important, the Navy has not documented specific performance problems related to this practice nor assessed whether units staffed in accordance with the grade levels assigned in staffing tables perform more effectively than units with different grade structures.

The Navy recognizes the subjectivity of its paygrade assignments. For example, the Manual of Navy Total Force Manpower Policies and Procedures (OPNAVINST 1000.16E) states that:

"The various grade levels are associated with technical levels of expertise and supervisory and managerial levels of responsibility. The difference in skill between any two grades is defined by the appropriate rating occupational standards . . . However, there is a natural progression of

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[1]Defense Manpower Commission, Report to the President and the Congress, Apr. 1976, p. 254.

[2]Defense Audit Service Report, Review of the Methods Used to Assign Enlisted Grades (Project 1IJ-105), Dec. 28, 1981.

skills from one level to the next and, since experience is largely a factor of time in service, the decision on a particular grade requirement is to some extent a value judgment."[3]

The Navy instruction on the ship manpower requirements program goes further in characterizing the subjectivity of paygrade assignments.

"Through the assignment of workload and watchstation data, the paygrade requirements based on the raw data often result in a structure that is not supportive of an organization that is militarily functional from the standpoint of span of control or career opportunity. Paygrade itself is not a true indication of skill, in that paygrade is influenced by a large number of variables that are not related to task accomplishment. The overall paygrade structure in the Navy is influenced by a system that gives consideration to career patterns and advancement opportunities which in turn are designed to maximize retention. In support of the overall paygrade structure, standard paygrade distribution matrices (staffing tables) have been developed so all rating groups will have an appropriate mix of paygrades for a given number of billets assigned without downgrading skill levels driven by work or watch. The standard paygrade distribution matrices are approved by CNO."[4]

Many other personnel management considerations influence the grading of enlisted positions in the Navy. For example, in the SMD program each watch organization[5] must include the necessary skills to ensure adequate supervision, effective performance, and necessary decisionmaking, communication, and training. Similarly, in determining the minimal skill and paygrade required to perform individual administrative and support tasks, the SMD instruction states that "due consideration must be given to the need for supervisory and management capability, accountability requirements and the basic

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[3]Department of the Navy (OPNAV) Instruction 1000.16E, pp. 6-20.

[4]Department of the Navy (OPNAV) Instruction 5310.19, p. V-6.

[5]A watch organization is the part of a ship's company required to be on duty during a particular time period.

parameters of a viable organization structure."[6] The instruction points out that while each task individually might require no more than an individual in paygrade E-4, all tasks reviewed collectively may dictate an E-6 or E-7 on the basis of overall responsibility assigned. Essentially, any of these factors can be used to increase the paygrade assigned to a particular billet in the manpower requirements document. The paygrade assigned will be based on the analyst's judgment and, to a large extent, prior staffing patterns.

A 1980 Rand report on the Air Force manpower requirements system describes the significance of analysts' judgments and historical staffing patterns in deriving paygrade assignments. The Navy employs a comparable process for assigning paygrades.

> "Basically, data regarding the detailed distribution of effort among tasks is aggregated into total manhour expenditures and employed in estimating the standard equation. Then, essentially using MET [management engineering teams] personnel's [NAVMMAC analysts in the Navy] best judgments, each possible total number of people that *might* be employed in the work center is disaggregated into constituent numbers of people according to specialty, skill level and grade. Detailed data regarding the quantities of different types of work to be performed are relatively little used. Strong influences in establishing these breakdowns belong to past manning practices (as reflected in authorizations) and to grade guidelines (developed in planning long-term force structures which are also based on historical patterns)." [7]

Thus, the personnel system through the occupational standards manual, the staffing tables, and existing staffing patterns injects into the requirements determination process a management-desired set of paygrade structures for each rating which represents an ideal grade distribution from the point of view of personnel policies and practices.

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[6]Department of the Navy (OPNAV) Instruction 5310.19, p. III-16.

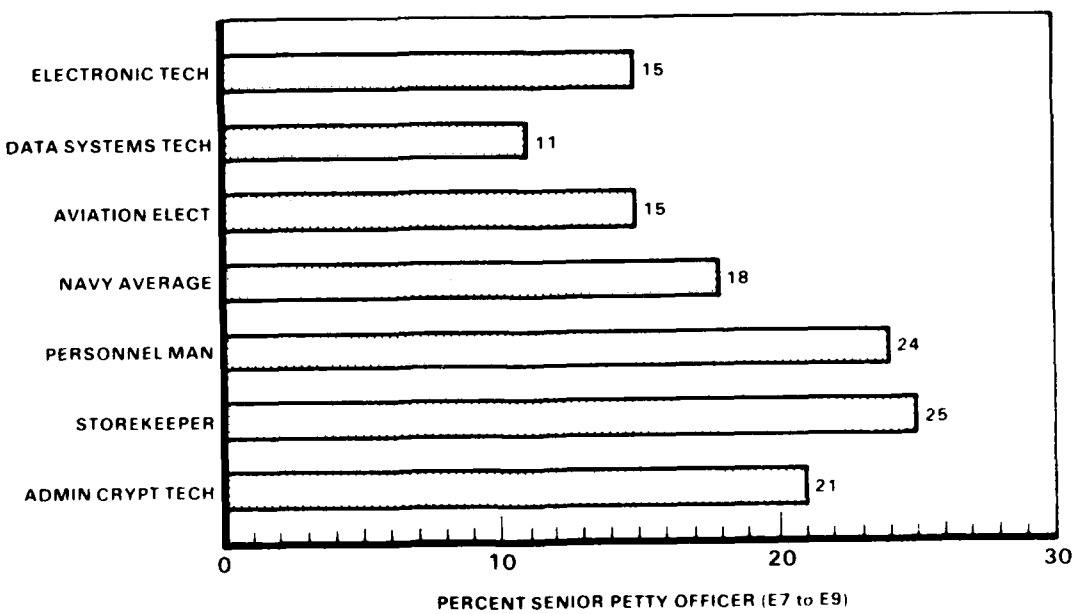
[7]Air Force Manpower, Personnel and Training System: Volume II--Analysis of the Enlisted Authorization/Assignment and Manpower Requirements/Personnel Objectives Subsystems, A Rand Note, May 1980 (N-1476-AF), pp. 56-57.

FACTORS OTHER THAN WORK COMPLEXITY MAY AFFECT GRADE STRUCTURE

If a primary objective of the paygrade assignment process is to determine the minimum paygrade necessary to accomplish the required workload, then the paygrade distributions in some ratings appear questionable. In most cases, the technical ratings had a higher proportion of petty officer billets than nontechnical ratings, but there were some exceptions.

Navy officials told us that the growth in the proportion of petty officers needed in the force (from 65 percent in fiscal year 1972 to 67 percent in fiscal year 1982) is principally the result of increasing technical workload requirements produced by the new complex weapon systems introduced in the fleet. Therefore, we expected that technical ratings would contain more senior paygrade mixes than nontechnical ratings. This is reasonable because greater experience and training are required to master the more difficult tasks encountered while performing a technical job. However, we found that some nontechnical ratings with relatively short (less than 12 weeks) occupational training requirements, such as personnelman, administrative cryptologic technician, and storekeeper, had a higher proportion of senior petty officers than such technical ratings as electronics technician, data systems technician, and aviation electronics technician, which have extensive occupational training requirements. (See chart below.)

COMPARISON OF PAY GRADE DISTRIBUTIONS IN CERTAIN TECHNICAL AND NONTECHNICAL RATINGS (FY 1982 DATA)



Typically, managers and supervisors can oversee fewer employees performing technical work than nontechnical work. However, we found that the span of supervisory control was no higher in nontechnical ratings than in technical ratings, which further suggests that work complexity is not the primary factor in determining requirements for supervisors and managers (E-7s through E-9s). It appears that personnel policies and practices, together with other subjective factors which influence grade assignments in the requirements determination process, may produce paygrade distributions in some ratings above the minimum required to get the work done.

We made a similar observation in a 1977 report[8]:

> "Two factors affecting the development of the services . . . top-six grade structure are (1) technical skill requirements to support today's sophisticated equipments and (2) demands for better career paths and promotion opportunity as a career incentive. These factors and their purported benefits generate demands for higher grades than may be necessary."

According to Navy officials, the work environment dictates a need in some nontechnical ratings for a higher percentage of senior petty officers who have a complete understanding of their entire area. For example, most ships have requirements for approximately three personnelmen and, due to the detailed work involved, one billet is an E-7. This represents 33 percent of the total billets in the rating. At the same time, ships may require 10 electronics technicians again with only one E-7 billet. This E-7 billet represents only 10 percent of the total electronics technician billets aboard ship.

We also found that the paygrade structure for shore activities had significantly more petty officer billets than the grade structure for ships and squadrons in fiscal year 1982. (See chart on the following page.)

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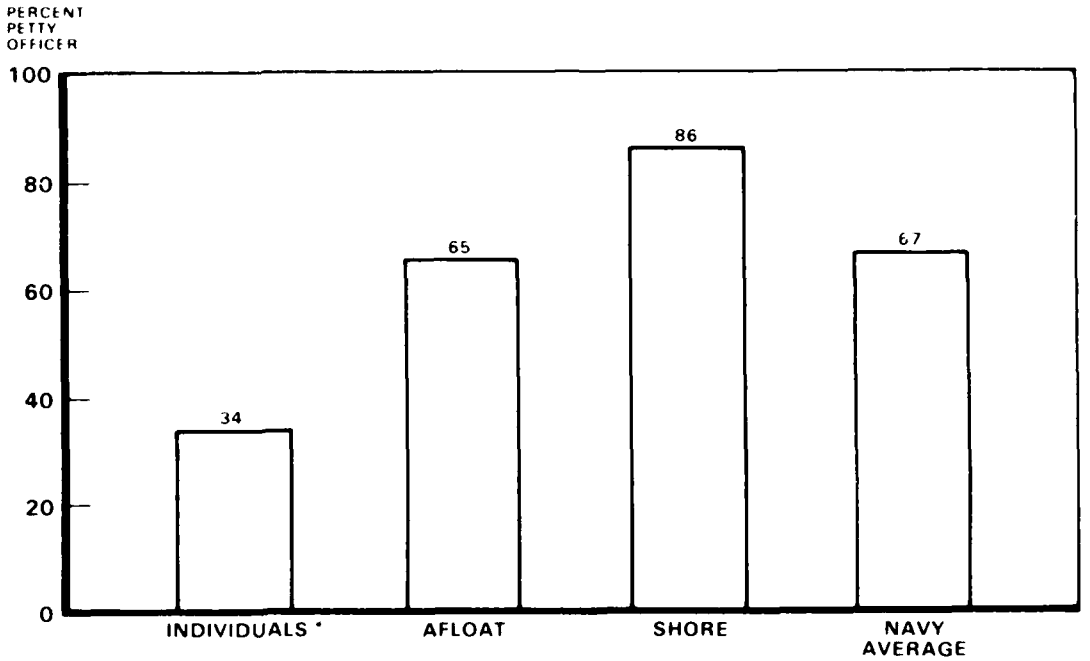
[8]Urgent Need for Continued Improvements in Enlisted Career Force Management (FPCD-77-42, Sept. 29, 1977), p.8.

PERCENTAGE OF PETTY OFFICER BILLETS BY LOCATION



*The Individuals Account is made up of billets required for transients, patients, separatees, and disciplinary actions, plus students and trainees

We could not determine whether the workload in shore support activities requires a more skilled and experienced work force than the workload aboard ships and in air squadrons. However, the Navy's desire to send first term personnel to sea and to provide a 3-year sea/shore rotation pattern for most ratings may explain why the Navy keeps large numbers of petty officer billets in the shore establishment. In fiscal year 1982, approximately 11,000 of the 108,000 E-5 through E-9 billets in shore activities were designated to support the Navy's sea/shore rotation policies.

CONCLUSIONS

The grade distribution embodied in the EPA is derived directly from Navy manpower requirements documentation programs. The process of determining paygrade requirements lack precision, in part, because of changing organizational arrangements and other judgmental considerations. The interrelationship of personnel policies and workload factors in determining paygrade assignments is complex. An objective evaluation requires an analysis of the relative importance of many different personnel policies and goals as well as work-related issues, most of which

necessarily contain at least some element of subjectivity or judgment. However, it appears from our work, as well as from pertinent Navy guidance, that personnel considerations play an important, if not primary, role in the establishment of the EPA grade mix. Thus, while workload requirements influence the EPA grade mix, the Navy should not present its shortage contentions as resulting from a rigorous and objective analysis of task-related requirements.

AGENCY COMMENTS AND OUR EVALUATION

DOD agreed that the EPA, as well as other statements of need, is based, in part, on judgment. DOD believes that the use of judgment in determining paygrade needs is unavoidable and, in fact, necessary to good decisionmaking.

We recognize and agree that judgment plays an important and necessary part in manpower and personnel decisionmaking. Our report questioned the precision of the EPA because the Navy lacks any systematic way to test the quality of its judgments about paygrade needs.

CHAPTER 4

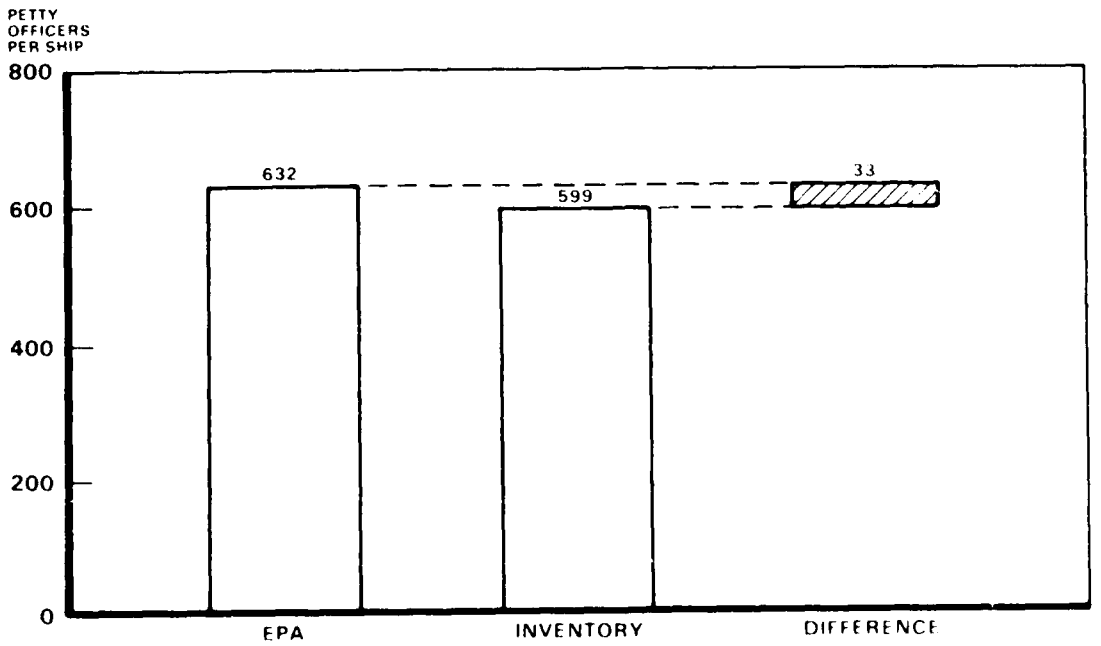
INFLUENCE OF PURPORTED PETTY OFFICER SHORTAGE ON MISSION CAPABILITY UNCERTAIN

The underlying reason for congressional concern about whether the Navy has enough experienced personnel involves the potential impact upon the Navy's capability to accomplish its missions. Since no simple objective measures of the Navy's ability to perform its mission exist, it is difficult to assess the influence of the purported petty officer shortage on mission capability.

REPORTED SHORTAGE DOES NOT CLEARLY AFFECT MISSION CAPABILITY

The Navy has long contended that even a marginal petty officer shortage degrades its wartime capability. In fiscal year 1982, the Navy's inventory for the top six paygrades fell short of the EPA statement of needs by 5 percent, or 17,400 personnel. It is difficult to determine the impact of this shortfall on the Navy's ability to accomplish wartime missions. As the chart below shows, staffing to EPA petty officer levels in fiscal year 1982 would have increased the number of petty officers per ship by 33. While this is a simplistic way to look at the implications of a petty officer shortfall, it does show that the shortage is marginal in terms of overall numbers and as a proportion of total petty officer needs.

EFFECT OF INCREASING PETTY OFFICER NUMBERS TO EPA LEVELS



The fact that less than half of the billets authorized for petty officers were in ships and air squadrons, (43 percent of petty officer billets were in shore activities and another 9 percent were students, trainees, transients, or patients) makes it even more difficult to assess the impact of a 5-percent "shortage." Less than half of the staffing requirements ashore have been validated through systematic techniques documenting the minimum quantity and quality of personnel required to accomplish the assigned missions.

REPORTED SHORTAGE NOT LIKELY TO IMPAIR NAVY'S ABILITY TO STAFF SHIPS AND SQUADRONS

Even though the EPA-based "shortage" is of continuing concern to the Navy, from a readiness standpoint, the Navy believes that its ability to staff its ships and squadrons with required skills and experience is not seriously affected. In its report[1] to the President, the Military Manpower Task Force concluded in part that,

> "The Navy is confident that it can meet the challenge of a national emergency during the period while the shortage is being rectified. Petty officers assigned to shore duty can be reassigned to fill vacancies in deployed forces, and some qualified E-4's can perform tasks usually done by E-5's. In addition, petty officers from the Naval Reserve would be available during mobilization."

The operational components of the DOD force structure submit periodic reports on their "readiness" to perform their assigned missions. The Joint Chiefs of Staff Unit Status and Identity Report (UNITREP) system provides basic information related to personnel, training, and materiel readiness indicators in military units. The UNITREP can identify certain deficiencies in these areas that could affect a unit's ability to accomplish wartime missions.

Reporting units (in the Navy, primarily ships and squadrons and major combat service support units) report an overall combat rating (C-rating) in each of the four measured resource areas of personnel, equipment and supplies on hand, equipment readiness, and training. The four major C-rating categories are C-1, fully combat ready; C-2, substantially combat ready; C-3, marginally combat ready; and C-4, not combat ready. For the personnel

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[1] Military Manpower Task Force Report, p. III-19, October, 1982.

resource area, a Navy unit commander compares the unit's currently available personnel against the unit's wartime strength requirement in the categories of "total end strength," "critical skills," and "senior strength" (E-5 to E-9).

The C-rating system, however, is limited by the objectivity, accuracy, and completeness of the input data. C-ratings cannot directly measure the combat quality of the commander, the morale of the troops, or other subjective areas that could have even more influence on actual combat readiness than resources alone. Furthermore, because the Navy elects to program billets only to bunk constraints in ships,[2] but continues to report readiness against higher wartime requirements, many units, even if staffed to fully authorized levels, could not achieve C-1 readiness levels.

While recognizing the limitations of the reporting system, we examined Navy summary data on personnel readiness for trends in Navy units reporting C-3 or C-4 because of senior strength (petty officer) problems. From the time Navy units began UNITREP reporting in fiscal year 1980 through fiscal year 1982, the data showed that citations to petty officer shortages as a primary cause of degraded unit readiness decreased.[3] Reported ship and squadron days lost due to petty officer staffing problems had declined substantially over the two year period and, according to Navy projections, should continue to decline.

A review of the distribution of billet authorizations suggests that the Navy's ability to staff ships with petty officers is not seriously impeded. In fiscal year 1982 authorized petty officer billets were established so that approximately 157,000 were in ships and air squadrons, 138,000 were in shore activities, and 28,000 were students, trainees, transients, or medical patients. (This proportional distribution is not expected to change significantly over the next decade.) At the end of fiscal year 1982, the Navy had 306,559 petty officers. Thus, in times of crisis the Navy plans to staff operational sea billets at full strength by reassigning petty officers from shore activities to deploying units and to use other personnel to staff shore activities.[4] As noted in chapter 3, shore activities have a significantly higher proportion of petty officer billets authorized than ships and air squadrons.

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[2]A ship is bunk constrained when its personnel requirements exceed the available sleeping accommodations.

[3]Precise figures from the UNITREP system are classified and are therefore not cited here.

[4]We recognize that the work performed and skills needed may not be the same in ships, squadrons, and shore activities.

Navy officials maintain that the Navy has actively managed the distribution of the petty officer shortfall to sustain staffing levels in the operating forces and thus ensure mission capability. The decline of the shortage in 1983 and continued management of it account for Navy confidence that the shortfall is not likely to impair staffing of ships and squadrons. According to Navy officials, the policy to staff ships before shore establishments has had an adverse impact on accomplishing shore support functions. Navy officials also believe that if the shortfall is not eliminated in the near future, it will lead to personnel retention problems and degrade personnel readiness and sustainability over the long term. This would occur, according to Navy officials, because much of the shortage is in critical skills where sea tours are already long, shore tours are minimal, and staffing at sea is marginally sustained.

CONCLUSIONS

EPA statements showed that the Navy had a shortage of petty officers averaging 33 per active duty ship in 1982. The Navy did not substantiate the importance of this shortage in terms of actual shipboard operations. In addition, from 1980 to 1982, Navy reports identifying readiness deficiencies because of petty officer shortages have decreased and the Navy has cited continued improvements in personnel readiness. Navy officials believe that the impact of the shortage has been masked by the policy of fully staffing ships before staffing shore facilities. However, since less than half of the staffing requirements in shore activities have been validated, the impact of a shortage on shore support operations is even more difficult to substantiate and assess.

AGENCY COMMENTS AND OUR EVALUATION

DOD considered our analysis of the impact of the Navy's management actions to sustain staffing levels in operating forces to be insufficient. DOD stated that we did not evaluate the penalties of the Navy's management efforts, including degradation in accomplishing shore support functions. DOD and Navy officials stated that an awareness of these impacts, as well as the potential effect on operational readiness, prompts the Navy to eliminate even a marginal petty officer shortage.

Our analysis showed that the shortage is marginal in terms of overall numbers and as a proportion of overall petty officer needs. The readiness degradation reported by individual units due to petty officer shortages has decreased since fiscal year 1980 and, according to Navy projections, should continue to decline. Because the Navy's documentation of its staffing requirements in shore support activities is incomplete, we could not evaluate petty officer needs or the effects shortfalls would have on getting work accomplished in those units.

CHAPTER 5

THE COSTS AND BENEFITS OF INCREASING THE PROPORTION OF PETTY OFFICER LEVELS IN THE ENLISTED FORCE HAVE NOT BEEN SUBSTANTIATED

According to the Navy, the experience levels in the petty officer force have declined significantly since 1974. The Navy asserts that the experience shifts that substitute junior (less than 10 years of service) personnel for senior (over 10 years of service) personnel degrade mission readiness. According to the Navy, because it does not have enough experienced senior personnel, "individuals without the requisite skills and technical managerial expertise are filling jobs requiring those attributes."[1]

The Navy did not adequately substantiate its position. Our analysis did not disclose a decline in experience levels for the entire enlisted force. Nor did we find documentation that the Navy's operations, as a whole, were adversely affected because of an "experience shortage." The Navy has recognized the need to conduct research and document the influence of different pay-grade and experience mixes on the efficiency and cost effectiveness of its operations. However, to date, its studies demonstrate the need for more senior personnel only in certain occupations or in particular functional areas. Without knowing the intended use of personnel with increased experience, it is difficult to judge the benefits of a general increase in experience on overall force effectiveness and to calculate the value of increased experience levels Navy-wide.

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[1]Navy responses to questions during hearings before the Subcommittee on the Department of Defense, House Committee on Appropriations, March 3, 1982, p. 264.

BASIC ANALYSES OF EXPERIENCE SHOW FAVORABLE TRENDS

Changes in the Navy's enlisted force from 1972 to 1982 can be divided into three phases: (1) a period of rapid reduction, (2) a period of stability, and (3) a period of expansion. During the reduction phase, which lasted from fiscal years 1972 through 1976, the size of the enlisted inventory shrank by 16 percent, from 542,000 to 457,000 sailors. From fiscal years 1976 through 1980, the Navy maintained approximately constant force strengths of about 460,000 sailors. From 1980 to 1982, the Navy's enlisted inventory expanded by 5 percent.

Changes in the petty officer force mirrored these total enlisted force fluctuations. The petty officer percentage of the total enlisted force has remained relatively stable over the entire period as table 4 shows. Similarly, the percentage of the enlisted force in senior petty officer grades (E-7 to E-9) has remained virtually constant over this same period. Thus, changes in the experience level of Navy sailors cannot be determined solely by analyzing changes in the enlisted grade distributions. Since the grade distribution in the enlisted force has changed only slightly since 1972, other indicators of changes in the experience level of Navy sailors must be examined.

Table 4

Percentage of the Navy Enlisted Force in Petty Officer Paygrades (FY 1972-82)

Fiscal year	Total Navy enlisted force	Petty officer inventory	Percent petty officer	Percent E4-E6	Percent E7-E9
	(thousands)				
1972	510.7	319.0	63%	53%	10%
1973	490.0	302.5	62	52	10
1974	474.1	285.3	60	50	10
1975	465.4	282.1	60	51	9
1976	456.7	279.4	61	52	9
1977	461.4	277.7	60	51	9
1978	462.0	282.3	61	52	9
1979	456.3	281.4	61	52	9
1980	458.5	286.0	62	53	9
1981	469.1	291.2	62	53	9
1982	479.7	299.2	62	53	9

Source: GAO calculations using data from the Defense Manpower Data Center

The most commonly accepted measure of experience is years of service. From fiscal years 1972 to 1982, the average experience level of the total Navy enlisted force has been relatively constant, as table 5 shows.

Table 5

Average Years of Service of the Total and Selected Portions of the Navy Enlisted Force (FY 1971-82)

Fiscal year	Total Navy enlisted force	All petty officers (E4-E9)	Top 5 petty officers (E5-E9)	Senior petty officers (E7-E9)
1972	5.7	8.3	10.9	17.3
1973	5.8	8.6	11.3	17.6
1974	5.9	8.8	11.5	17.8
1975	5.8	8.6	11.4	17.9
1976	5.8	8.5	11.2	17.8
1977	5.7	8.5	10.9	17.9
1978	5.6	8.3	10.7	17.7
1979	5.7	8.3	10.8	17.9
1980	5.6	8.1	10.7	17.9
1981	5.6	8.1	10.6	17.8
1982	5.7	8.2	10.6	17.9

Source: GAO calculations using data from the Defense Manpower Data Center

The Navy, however, stresses that the experience level of the total petty officer force has steadily declined since 1974. The average years of service for all petty officers declined from 8.8 years in 1974 to 8.2 years in 1982. The decline in experience of the top five petty officer grades was more noteworthy, falling from 11.5 years in 1974 to 10.6 years in 1982. (However, in both cases, the average experience level of sailors in the top-six or top-five grades was almost equal to the experience of their fiscal year 1972 counterparts.)

Because the average experience level of the total force has been relatively constant while the average experience of petty officers has declined (at least if fiscal year 1974 is used as the comparison year), a more detailed analysis of experience shifts within the Navy's enlisted force is appropriate. The Navy's petty officer force of the early 1970s included a large group of senior sailors who had enlisted during the Korean War but who retired during the mid-1970s. Today's petty officer force has expanded with junior petty officers as reenlistment rates increased rapidly during recent years. Table 6 shows the large increases in reenlistment rates which occurred from fiscal year 1979 through fiscal year 1982.

Table 6

Reenlistment Rates in the Navy Enlisted Force
(FY 1979-82)

Fiscal year	First term	Second term	Third and higher terms
1979	37.5	45.3	91.4
1980	36.7	50.5	91.6
1981	41.7	56.9	94.1
1982	50.3	63.0	95.3

Source: Department of the Navy

Table 7 shows the changes in the year of service composition of the enlisted force during the period fiscal years 1972 through 1982.

Table 7

Percentage Composition of the Navy Enlisted Force
(FY 1972-82)

Fiscal year	Junior personnel (Less than 5 years of service)	Mid-level personnel (Between 5 and 10 years of service)	Senior personnel (More than 10 years of service)
1972	62.3%	15.0%	22.7%
1973	59.8	16.8	23.4
1974	59.5	17.4	23.1
1975	59.3	18.4	22.2
1976	58.0	20.3	21.7
1977	58.4	21.5	20.1
1978	58.8	21.7	19.5
1979	57.8	22.6	19.6
1980	57.9	23.0	19.1
1981	56.6	24.4	18.9
1982	54.5	26.2	19.3

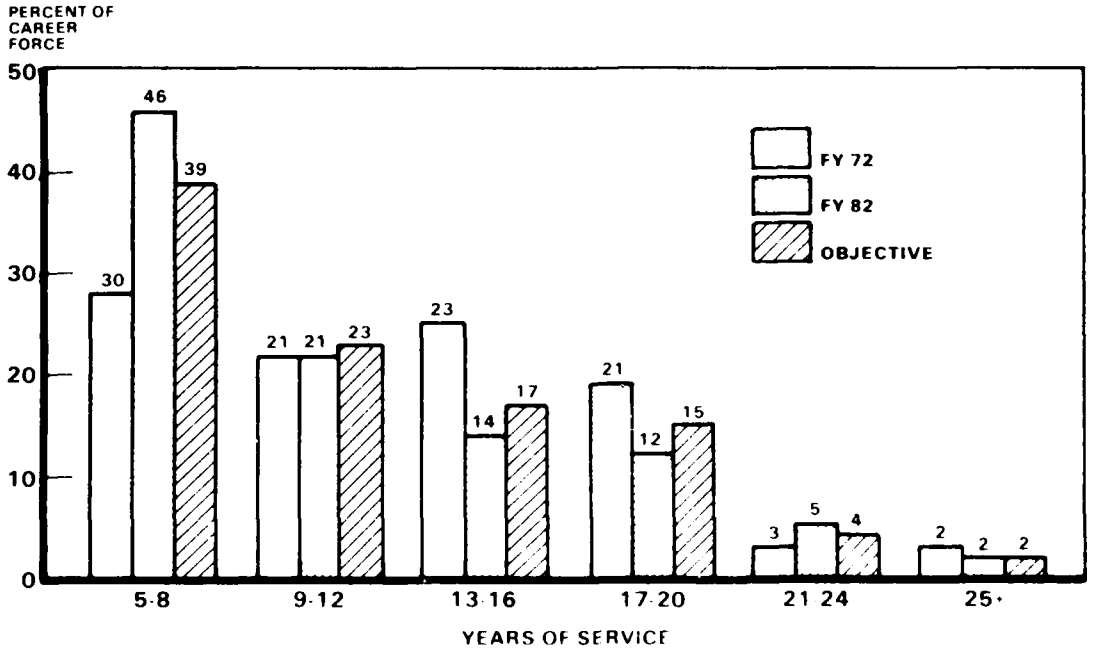
Source: GAO calculations using data from the Defense Manpower Data Center

During this period, the relative numbers of junior and senior enlisted personnel declined as the number of mid-level personnel grew. In fiscal year 1972 the career force (those with 4 or more years of service) made up about 38 percent of the total force. By fiscal year 1982, the career force had increased to over 45 percent of the total force.

The chart below compares the year-of-service profiles of the fiscal year 1972 career force with the fiscal year 1982 career force. Each bar shows the percentage of the total career force at each particular experience level. The large proportion of the fiscal year 1972 force in the 13-to-20 year experience level represents the Korean War era sailors approaching retirement. This group was relatively unique because it provided such a large resource of trained, experienced personnel to run Navy operations.

An enlisted force in which one group of sailors entering the force in a given year is significantly larger than another group is more difficult to manage than one in which the year groups are similar in size. For this reason, each service maintains an objective force plan of its long-term goal for the makeup of the enlisted force in terms of grades and years of service. The chart below also shows this objective force distribution. The current force is much closer in composition to this long-term Navy objective than was the 1972 force. Thus, one contributing factor to the perceived lower experience level of petty officers in today's force may be the excess (above Navy objective levels) of senior petty officers in the enlisted force during the early and mid-1970s. In 1976, for example, careerists with 21 or more years of service exceeded objective force goals by 1,660.[2]

COMPARISON OF YEARS-OF-SERVICE PROFILES: FY 1972, FY 1982, & OBJECTIVE FORCE



[2]Urgent Need for Continued Improvements in Enlisted Career Force Management (FPCD-77-42, Sept. 29, 1977), p.8.

A second contributing factor to the reduction in the average experience level has been the large growth in the numbers of junior careerists since 1972. From fiscal year 1972 to fiscal year 1982, the number of careerists with 5 to 8 years of service increased over 42,000 while the number of careerists with more than 16 years of service decreased more than 10,000. Because the junior careerists have less time in service than other petty officers and because they exceed the number of persons leaving the ranks (principally retiring senior petty officers), the average experience level of petty officers must fall. Under these circumstances, the decline in petty officer experience levels would appear to be a natural (and unavoidable) consequence of a positive personnel trend--increased enlistment and retention.

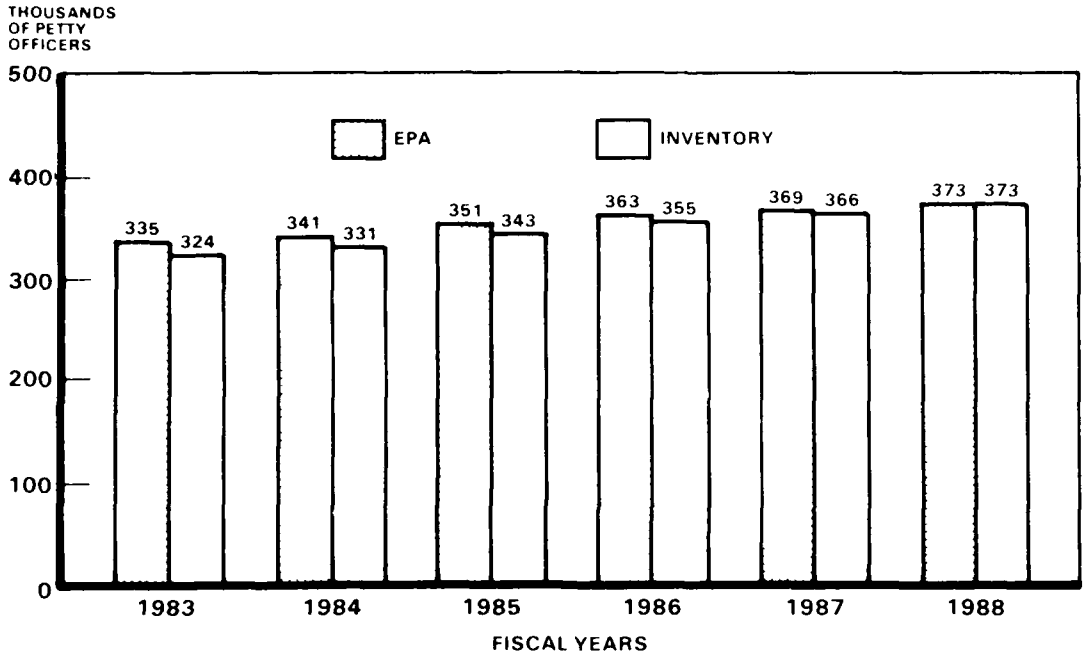
FUTURE OF THE PETTY OFFICER SHORTAGE

Even if the EPA figures are accepted as valid statements for manpower and experience needs, the Navy has projected the petty officer shortage will be virtually eliminated by 1988. According to the Navy, these projections are based on maintenance of a compensation package competitive with the private sector, continuation of the present bonus programs, continued success in recruiting sufficient numbers of high quality personnel, and unemployment patterns as predicted by OMB.

If these assumptions are valid, the Navy expects to improve the petty officer mix as stated above, even if no other special corrective measures are taken. We did not evaluate the probable validity of these assumptions.

The chart below displays the Navy's 1982 projections of its petty officer needs as defined by the EPA and of its future petty officer inventories. (App. II provides more detailed enlisted inventory and EPA projections for fiscal years 1983-88.).

PETTY OFFICER INVENTORY AND EPA PROJECTIONS FOR FISCAL YEARS 1983-88



These projections assumed that the retention behavior observed in fiscal year 1982 would continue over the next 5 years. Despite a 10-percent increase in desired enlisted strength to about 363,000 petty officers in fiscal year 1986, the projected shortage falls from 17,000 to only 8,000 in the same year. If the shortage is measured for only the top five grades, the shortage shrinks from 18,300 in fiscal year 1982 to only 10,800 in fiscal year 1986.

This decline in shortages is simply the culmination of a number of positive Navy retention trends. High first-term reenlistment rates mean year groups entering the force are relatively large. Because the petty officer force currently has few senior members, relative to junior members, the number of members who leave the force--largely retirees--is relatively small. Finally, high reenlistment rates in the second, third, and fourth terms reduce attrition from the petty officer force during the 8th through 20th years of service.

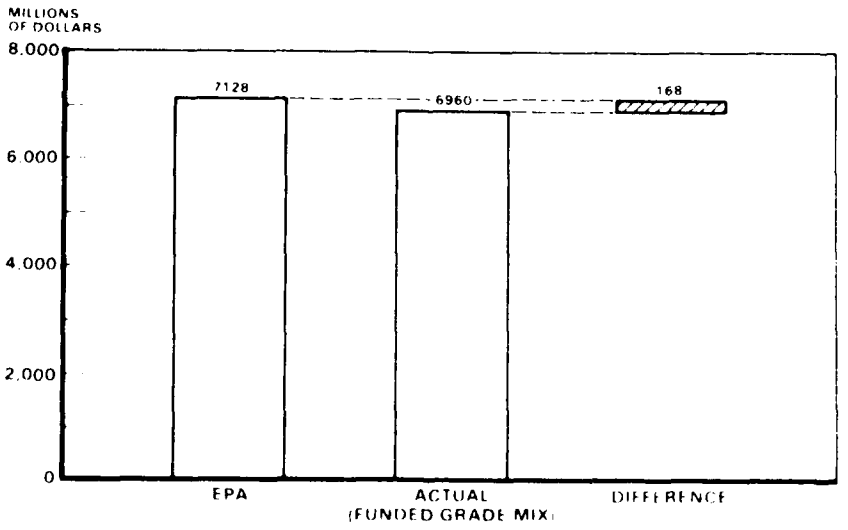
From 1983 to 1988, the average experience level of the petty officer force was expected to grow because the large groups of junior petty officers, present in today's force, would mature. If current high second-term reenlistment rates continue, the future petty officer force, now similar in experience to the Navy's objective, may soon exceed desired experience levels.

COMPENSATION FOR EPA GRADE STRUCTURE COSTS MORE

As the Navy increases its enlisted inventory to the EPA levels, it will incur additional compensation costs because the EPA grade structure contains more petty officer billets. It is still an open question whether increasing the paygrade and experience mix in the enlisted force is an efficient and cost-effective way to improve Navy operations. The Navy has not performed a comprehensive cost-benefit analysis of increasing the petty officer grade structure and we did not have the resources to do so within the scope of this audit. Such an exercise would include analysis of the additional pay and fringe benefits associated with the EPA grade structure including bonuses, moving expenses, and retirement. It would also include analysis of any offsetting cost savings which an EPA grade structure may produce. For example, the increased retention of senior personnel associated with the EPA structure could reduce recruiting and training costs.

The chart below shows the compensation costs of the fiscal year 1982 EPA and funded grade mix statements of enlisted needs, using standard Navy estimates of pay and allowance costs for each grade (costs include basic pay, FICA, basic allowance for subsistence, basic allowance for quarters, and variable housing allowance).

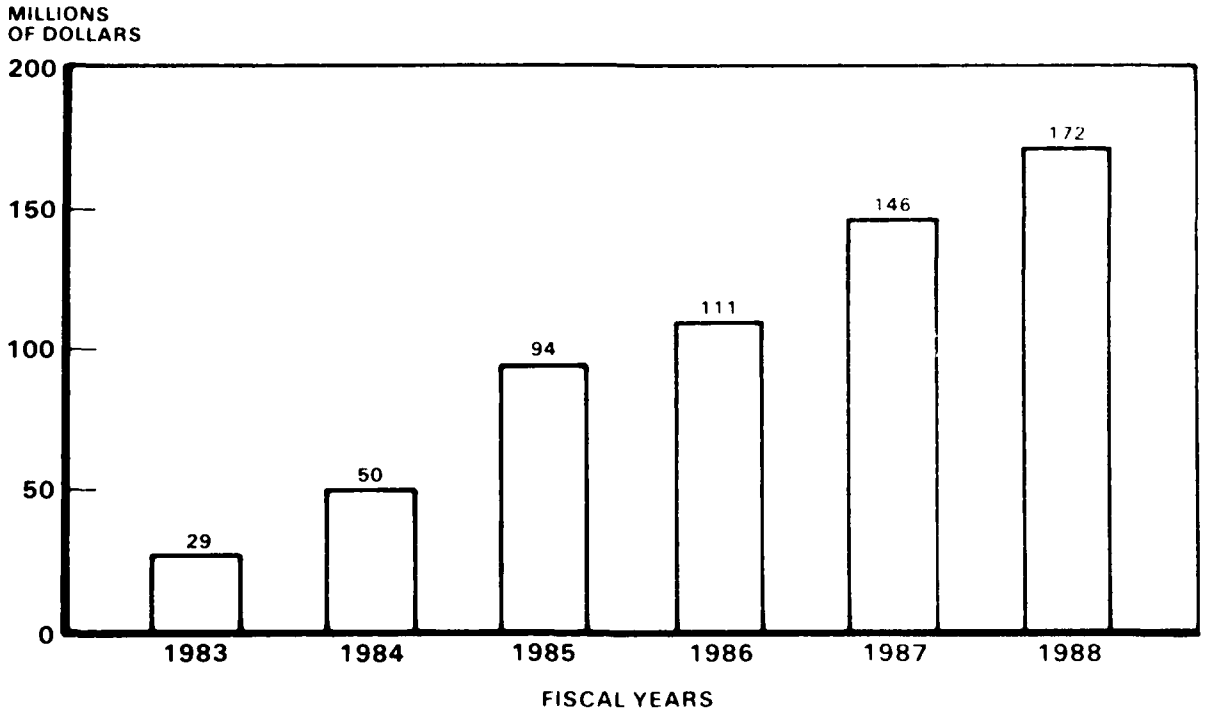
FUNDING FOR EPA AND FUNDED GRADE MIX STATEMENTS



On the basis of fiscal year 1982 costs, the EPA force would have received about $7.13 billion. The funded grade mix force received about $6.96 billion. The funded grade structure, which had approximately 17,500 fewer top-six billets than the EPA grade structure, resulted in lower personnel compensation dollar costs of about $168 million in fiscal year 1982.

The Navy plans to increase the proportion of petty officers in its enlisted force each year through fiscal year 1988 when the Navy projects its inventory grade mix will achieve the EPA level of 68 percent petty officers. As the chart below illustrates, additional funds will be needed each fiscal year to pay for the inventory grade mix increase. The cumulative additional costs in 1983 constant dollars attributable to increasing the inventory grade structure to achieve the EPA level would exceed $602 million by fiscal year 1988.

CUMULATIVE ADDITIONAL COMPENSATION COSTS TO ACHIEVE EPA GRADE STRUCTURE



To arrive at these additional costs for each fiscal year, we subtracted the compensation costs associated with the projected end strength distributed in accordance with the fiscal year 1982 inventory paygrade distribution from the costs associated with the projected inventory pay grade distribution. We also subtracted the costs associated with force growth above the fiscal year 1982 end strength in order to isolate the compensation costs attributable to grade structure increases.

Whether the value of increasing the proportion of petty officers to EPA levels (from 64 to 68 percent of total enlisted strength by fiscal year 1988) offsets the costs is unknown. We described the need for cost-benefit analysis of enlisted force configurations in a 1977 report[3]:

> "Our review shows a need for research on the relative value and cost-benefit analysis of enlisted force configurations. It is difficult to know how much to pay for something without knowing how valuable it is. This problem is not unique to enlisted management, but is the major unrecognized problem the services have. Considerable effort appears to have gone into developing compatible policies for maintaining a stable number of careerists than into maintaining a given level of effectiveness or estimating the marginal contribution of a person in each occupation, pay grade and experience level. This may be the most glaring deficiency in the services' analysis of questions concerning force configuration. This is due to a large extent to the absence of any measure of acceptable military output and the great difficulties in creating one."

Navy officials have acknowledged the need to conduct research analyzing the costs and benefits of different paygrade and experience mixes. The Center for Naval Analyses has underway a series of analysis projects aimed at measuring personnel productivity and determining whether manpower requirements that will lead to increases in the Navy's level of readiness can be developed.

We recognize the Navy's efforts to study and link paygrade and experience requirements to readiness. We plan to evaluate these research efforts as part of our continuing work in assessing the manpower requirements determination processes across DOD. However, we noted that the Navy studies have not yet resulted in any official Navy positions, nor have the studies been applied in any systematic way to develop and document paygrade requirements on a less subjective basis.

CONCLUSIONS

From a readiness standpoint, the petty officer shortfall centers around the need for higher graded, more experienced personnel. The Navy did not provide sufficent evidence to support its views concerning readiness degradation and adverse impact on ship or shore operations caused by junior personnel filling higher graded positions. The Navy's claims of a shortage of experienced personnel and its possible adverse

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[3]Urgent Need for Continued Improvements in Enlisted Career Force Management (FPCD-77-42, Sept. 29, 1977), p.8.

impact on readiness need to be supported. We [illegible] the Navy should more completely analyze the influence of [illegible] experience on actual job performance and verify that the shortage, if any, in experience has a substantive effect on readiness. This type of analysis could be included [illegible] the expanded Navy personnel research effort.

The Navy intends to bring its personnel [illegible] into agreement with its EPA paygrade structure by fiscal year 1988. That will increase the proportion of petty officers in the enlisted force from 64 percent to 68 percent. We estimated that, as the Navy moves toward its EPA grade structure, its enlisted personnel compensation costs will increase. From fiscal year 1983 through fiscal year 1988, the total cumulative additional costs to compensate the EPA grade structure would exceed $602 million. Offsetting cost savings resulting from the more senior EPA force profile have not been identified and substantiated. Given the additional costs, the uncertainty about the validity of the EPA grade mix, and the questionable impact of the purported shortage on the Navy's mission capability, we do not believe the projected elimination of the EPA-based petty officer shortage has been adequately justified.

AGENCY COMMENTS AND OUR EVALUATION

DOD commented that our analysis of the cumulative additional compensation costs associated with achieving the EPA grade mix should have been reconciled against the overall benefit to the Navy. DOD believes that the potential improved retention behavior and related reduction in recruiting and training costs, improved productivity, and enhanced mission accomplishment warrant the increased personnel costs.

DOD did not provide estimates of the cost savings in other personnel areas which it claims would offset the increased compensation costs associated with the EPA grade structure. While we believe the Navy's research efforts with regard to analyzing paygrade and experience requirements are an important step in the right direction, we found that the studies have not yet resulted in any official Navy policy positions or applications. How much more capable the Navy would be with a more senior force and at what costs are still open questions. The Navy believes that higher grades and more experience are required to produce a more effective force. These beliefs need to be supported by a more complete analysis. The Navy could analyze the effects of the purported benefits in terms of cost and effectiveness in order to determine the point at which a grade mix becomes unnecessarily high or too costly.

GRADE STRUCTURE OF NAVY ENLISTED FORCE IN BUDGET DOCUMENTS, EPA, AND ACTUAL INVENTORY (FY 1972-82)

	FY 1972				
	POM	Budget submission	Funded grade mix	Final EPA	Inventory
E-9	3,664	3,680	3,672	4,241	3,654
E-8	8,897	8,989	8,969	9,760	9,183
E-7	35,589	36,533	36,455	37,306	36,863
E-6	74,842	75,485	75,322	76,444	75,517
E-5	93,160	93,304	93,104	99,340	88,935
E-4	110,431	105,289	105,063	112,568	105,459
E1-E3	196,785	202,379	201,944	184,870	192,178
Total	523,368	525,659	524,529	524,529	511,789
Top 5	216,152	217,991	217,522	227,091	214,152
Top 6	326,583	323,280	322,585	339,659	319,611

	FY 1973				
	POM	Budget submission	Funded grade mix	Final EPA	Inventory
E-9	3,486	3,677	3,593	4,276	3,702
E-8	8,515	8,929	8,696	9,961	9,001
E-7	34,606	36,556	35,489	36,937	35,244
E-6	71,503	74,583	72,457	76,120	71,913
E-5	88,383	91,810	88,563	98,281	85,573
E-4	99,736	105,046	97,892	110,078	97,573
E1-E3	191,704	204,630	204,865	175,904	187,854
Total	497,933	525,231	511,555	511,557	490,860
Top 5	206,493	215,555	208,798	225,575	205,433
Top 6	306,229	320,601	306,690	335,653	303,006

FY 1974

	POM	Budget submission	Funded grade mix	Final EPA	Inventory
E-9	4,092	3,840	3,738	4,080	3,841
E-8	9,400	8,910	8,674	9,793	8,968
E-7	36,463	34,854	33,930	34,116	33,918
E-6	72,498	69,953	68,101	73,790	67,046
E-5	91,051	87,232	84,922	92,549	82,341
E-4	101,400	97,915	95,322	100,757	92,718
E1-E3	195,155	189,578	184,557	164,159	186,647
Total	510,059	492,282	479,244	479,244	475,479
Top 5	213,504	204,789	199,365	214,328	196,114
Top 6	314,904	302,704	294,687	315,085	288,832

FY 1975

	POM	Budget submission	Funded grade mix	Final EPA	Inventory
E-9	3,666	3,666	3,635	4,046	3,634
E-8	8,506	8,506	8,435	9,653	8,358
E-7	33,272	33,272	32,249	32,591	31,881
E-6	66,780	66,780	66,221	72,011	66,406
E-5	83,275	83,275	82,579	91,032	82,170
E-4	93,520	93,473	92,691	98,542	95,792
E1-E3	180,930	181,011	184,473	162,408	177,880
Total	469,949	469,983	470,283	470,283	466,121
Top 5	195,499	195,499	193,119	209,333	192,449
Top 6	289,019	288,972	285,810	307,875	288,241

FY 1976

	POM	Budget submission	Funded grade mix	Final EPA	Inventory
E-9	3,698	3,588	3,577	3,996	3,281
E-8	8,582	8,326	8,300	9,577	7,798
E-7	33,568	31,006	30,907	31,496	31,236
E-6	67,374	65,370	65,161	71,887	65,340
E-5	84,016	81,517	81,257	90,265	81,065
E-4	94,305	91,500	91,207	96,118	92,107
E1-E3	179,579	178,721	176,065	153,135	176,865
Total	471,122	460,028	456,474	456,474	457,692
Top 5	197,238	189,807	189,202	207,221	188,720
Top 6	291,543	281,307	280,409	303,339	280,827

FY 1977

	POM	Budget submission	Funded grade mix	Final EPA	Inventory
E-9	3,672	3,596	3,563	4,165	3,484
E-8	8,521	8,313	8,521	9,650	8,396
E-7	33,336	31,009	30,657	32,175	30,377
E-6	66,903	65,755	65,000	73,200	64,638
E-5	83,431	81,493	82,798	92,100	83,544
E-4	93,649	91,487	91,431	98,000	88,352
E1-E3	186,042	185,356	190,880	163,560	183,385
Total	475,554	467,009	472,850	472,850	462,176
Top 5	195,863	190,166	190,539	211,290	190,439
Top 6	289,512	281,653	281,970	309,290	278,791

APPENDIX I

FY 1978

	POM	Budget submission	Funded grade mix	Final EPA	Inventory
E-9	3,747	3,735	3,735	4,174	3,682
E-8	8,712	8,700	8,701	9,325	8,756
E-7	31,290	30,514	30,514	32,290	30,674
E-6	68,341	65,000	65,000	73,087	65,128
E-5	84,548	82,761	82,761	91,486	84,070
E-4	94,712	95,878	95,119	98,841	91,546
E1-E3	184,420	182,023	182,549	159,176	179,361
Total	475,770	468,611	468,379	468,379	463,217
Top 5	196,638	190,710	190,711	210,362	192,310
Top 6	291,350	286,588	285,830	309,203	283,856

FY 1979

	POM	Budget submission	Funded grade mix	Final EPA	Inventory
E-9	3,735	3,735	3,400	4,115	3,385
E-8	8,700	8,700	8,500	9,275	8,478
E-7	30,514	30,514	30,514	31,575	30,475
E-6	65,000	65,000	65,000	71,800	65,323
E-5	82,761	82,761	82,761	90,500	80,526
E-4	102,224	97,647	96,532	99,000	95,355
E1-E3	176,847	165,393	169,418	149,860	171,499
Total	469,781	453,750	456,125	456,125	455,041
Top 5	190,710	190,710	190,175	207,265	188,187
Top 6	292,934	288,357	286,707	306,265	283,542

FY 1980

	POM	Budget submission	Funded grade mix	Final EPA	Inventory
E-9	3,400	3,400	3,400	4,182	3,253
E-8	8,500	8,500	8,500	9,607	8,403
E-7	30,514	30,514	30,514	31,957	30,598
E-6	65,000	65,000	65,000	73,062	65,293
E-5	82,761	82,761	83,261	91,453	81,939
E-4	97,474	98,270	98,270	99,620	98,748
E1-E3	153,013	171,414	170,895	149,959	171,335
Total	440,662	459,859	459,840	459,840	459,569
Top 5	190,175	190,175	190,675	210,261	189,486
Top 6	287,649	288,445	288,945	309,881	288,234

FY 1981

	POM	Budget submission	Funded grade mix	Final EPA	Inventory
E-9	3,450	3,470	3,470	4,400	3,470
E-8	8,550	8,580	8,580	10,032	8,718
E-7	30,514	30,665	30,665	32,758	31,162
E-6	65,200	65,485	65,485	75,079	66,230
E-5	83,261	84,699	84,699	93,826	84,253
E-4	99,456	101,119	101,119	99,351	99,351
E1-E3	165,394	176,802	176,802	155,374	177,063
Total	455,825	470,820	470,820	470,820	470,247
Top 5	190,975	192,899	192,899	216,095	193,833
Top 6	290,431	294,018	294,018	315,446	293,184

FY 1982

	POM	Budget submission	Funded grade mix	Final EPA	Inventory
E-9	3,700	3,700	3,700	4,530	3,742
E-8	8,700	8,704	8,704	10,340	8,697
E-7	30,825	30,885	30,885	33,450	31,061
E-6	66,385	66,749	66,749	76,962	67,686
E-5	87,424	89,345	91,753	96,221	91,995
E-4	104,804	107,065	104,657	102,473	103,378
E1-E3	182,115	179,127	174,827	157,299	174,627
Total	483,953	485,575	481,275	481,275	481,186
Top 5	197,034	199,383	201,791	221,503	203,181
Top 6	301,838	306,448	306,448	323,976	306,559

FY 1983

	POM	Budget submission	Funded grade mix	Final EPA	Inventory
E-9	3,950	3,950	3,921	4,645	3,875
E-8	9,000	9,000	8,919	10,554	9,197
E-7	31,449	31,093	30,950	34,455	31,380
E-6	69,900	69,900	69,781	80,052	70,327
E-5	92,811	95,573	95,693	98,985	99,445
E-4	114,347	111,947	112,060	106,559	111,740
E1-E3	190,194	184,940	176,779	162,853	169,215
Total	511,651	506,403	498,103	498,103	495,179
Top 5	207,110	209,516	209,264	228,691	214,224
Top 6	321,457	321,463	321,324	335,250	325,964

PROJECTED EPA AND INVENTORY

	FY 1983		FY 1984	
	EPA	Inventory	EPA	Inventory
E-9	4,645	3,859	4,776	4,248
E-8	10,554	9,363	10,800	9,313
E-7	34,455	31,573	35,263	31,649
E-6	80,052	69,640	81,932	73,246
E-5	98,985	99,011	101,120	102,827
E-4	106,559	110,614	107,976	109,633
E1-E3	162,853	171,268	162,127	173,078
Total	498,103	495,328	503,994	503,994
Top-5	228,691	213,446	232,818	221,283
Top-6	335,250	324,060	340,794	330,916

	FY 1985		FY 1986	
	EPA	Inventory	EPA	Inventory
E-9	4,917	4,603	5,083	4,950
E-8	10,931	9,819	11,449	10,234
E-7	36,178	34,226	37,115	37,134
E-6	83,999	76,719	86,725	77,402
E-5	103,411	104,440	107,563	107,403
E-4	111,072	112,872	115,236	117,759
E1-E3	166,120	173,949	169,779	178,068
Total	516,628	515,628	532,950	532,950
Top-5	239,436	229,807	247,935	237,123
Top-6	350,508	342,679	363,171	354,882

	FY 1987		FY 1988	
	EPA	Inventory	EPA	Inventory
E-9	5,155	5,155	5,213	5,213
E-8	11,701	10,670	11,838	11,116
E-7	37,570	38,601	37,944	38,666
E-6	87,911	79,349	88,839	80,948
E-5	109,530	112,181	110,970	118,861
E-4	117,415	120,286	118,689	118,689
E-1-E3	173,759	176,799	176,070	176,070
Total	543,041	543,041	549,563	549,563
Top-5	251,867	245,956	254,804	254,804
Top-6	369,282	366,242	373,493	373,493

ANALYSIS OF OCCUPATIONAL STANDARDS AND STAFFING TABLES

The Manual of Navy Enlisted Manpower and Personnel Classifications and Occupational Standards (NAVPERS 18068D) defines rates (paygrades) and ratings (occupations) by describing the Navy's requirements for enlisted skills as determined by manpower management. The manual consists of two sections. Section I contains the occupational standards which define the enlisted tasks required of, and within, specified occupations. Occupational standards form the basis for training, advancing, and distributing personnel. The standards are based on general responsibility levels with the more routine tasks placed at the lower paygrades, and the more difficult tasks and tasks requiring additional experience or involving supervision placed at progressively higher paygrades. Section I also contains Naval Standards. These are skills and knowledges, other than those defined by occupational standards, which the Navy considers essential to the overall effectiveness of enlisted personnel in performing their duties.

Section II of the manual contains Navy Enlisted Classifications (NECs) which identify skills requiring more specific identification than is provided by rates and ratings and which are not rating-wide requirements.

A staffing table is a matrix showing the kinds of skills and numbers of people, arranged by grade, the Navy believes are needed to accomplish given increments of work in various types of work centers. Staffing tables have been made for each rating aboard ship and in aviation squadrons for use in determining the minimum enlisted grade required. Staffing tables have also been developed to cover shore activities as part of the SHORSTAMPS program. Staffing tables are used to make final paygrade adjustments to manpower documents. The tables impose a "pyramidal structure" on manpower documents for the purpose of managing the enlisted personnel force.

The Navy does not have documents supporting the development of the standards manual and the original basis for grade level distinctions within each rating. The levels of skills and overall scope of employment experience and responsibility of personnel within the nine paygrade levels are not precisely defined.

Navy officials' judgments and consideration of workload factors are used to develop the paygrade structure for individual ratings in the standards manual and staffing tables and to assign paygrade levels to individual billets in requirements documents.

In reviewing and revising the standards manual, analysts collect data through surveys to determine the tasks performed by incumbents at various paygrades within the rating and the amount of time spent on tasks. The survey data plus the current occupational standards and data from other sources, such as training manuals and Navy officials, are used to develop or revise occupational standards. If this process was followed in developing the manual, then the paygrade structure for a rating essentially mirrors the structure that currently exists, unless input from sources outside the survey prompts changes in the structure. There is no emphasis placed on assigning the minimum paygrade level capable of performing the tasks, unless the majority of the personnel performing the tasks are all currently at the minimum paygrade.

A 1974 study[1] by the Navy pointed out that the paygrades assigned to ratings in the enlisted classification system did not necessarily reflect the experience requirements needed in the billet but were assigned instead to improve personnel retention.

Similarily, the paygrades assigned in staffing tables will either meet or exceed the minimum paygrade requirements set forth in the occupational standards manual in order to promote personnel goals. Even though staffing tables are used to make final adjustments to manpower documents, the Navy does not have supporting documentation on how these tables were developed.[2] For the most part, the Navy supports the use of subjective factors and management discretion in grading enlisted positions.

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[1]Navy Enlisted Occupational Classification (NEOCS) Study, Volume II, January, 1974, p. 20

[2]Defense Audit Service Report (Project 1IJ-105), 12/28/81.

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