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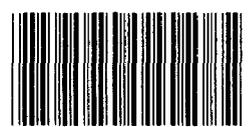
BY THE U.S. GENERAL ACCOUNTING OFFICE

**Report To The Assistant Secretary Of Defense
(Manpower, Installations And Logistics)**

**Survey Of Private-Sector Earnings
Of Navy Enlisted Personnel
Who Left The Service In Mid-Career**

How did the earnings of enlisted personnel who left the Navy for private-sector jobs compare with what they could have earned by reenlisting? Some personnel reported earning more and some less than they could have by reenlisting, but comparisons varied by occupational group. As unemployment increased from 1980 through 1982, and catch-up pay raises were granted in fiscal years 1981 and 1982, a higher proportion earned less annually in the private sector than they would have in the Navy. Retention improved significantly.

GAO believes that its analysis will be helpful in Navy efforts to maintain efficient and competitive pay levels aimed at retaining needed manpower.



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

NATIONAL SECURITY AND
INTERNATIONAL AFFAIRS DIVISION

B-208434

The Honorable Lawrence J. Korb
The Assistant Secretary of Defense
(Manpower, Installations & Logistics)

Dear Dr. Korb:

On July 1, 1983, we transmitted to the Department of Defense a draft of a report which addressed the questions of whether Navy enlisted personnel with 6 to 12 years of experience who were eligible but decided not to reenlist earned more or less in the private sector than they would have by enlisting in the Navy, and whether skills learned in the Navy helped in obtaining higher paying private-sector jobs. Our concern for these questions was sparked by statements and testimony given by DOD officials--especially emphasized by Navy officials--during hearings on the fiscal year 1982 budget request that large numbers of highly trained and experienced personnel were leaving the services to take more lucrative private-sector jobs. We selected the Navy for our survey because it, more than some other services, was having problems retaining experienced people.

The Department provided comments on the report draft on August 25, 1983. It took issue with our survey methodology, questioning (1) the reasonableness of using annual earnings as the basis for comparison since Navy personnel generally work longer hours with no overtime pay, (2) the inclusion of situational pays such as sea pay in the comparison, and (3) the usefulness of the data obtained for the first quarter of fiscal year 1982. The Department also disagreed with our proposed recommendation that private-sector pay data, on an occupational basis, be used in making judgments about total military pay levels. In addition, the Department was concerned that recipients of the report might misinterpret the data, and conclude that military pay levels were too high as compared to private-sector pay levels, at least in fiscal year 1982--a conclusion that we agree cannot properly be drawn from our survey.

In light of the Department's concerns, we have carefully reexamined the draft report, our survey methodology, and the data developed. While there is certainly room for other opinions about how a survey should be designed to address the questions we focused on, we believe that our survey methodology was sound and did answer our specific objectives. At the same time, however, it is important to emphasize that our survey objectives were limited, and that our study was by no means intended to be an exhaustive analysis of the military pay system, its underlying structure, and the determination of pay levels. Upon reevaluation of the draft report, we concluded that the best approach would be to report the results of our survey to you because we believe that they will be helpful in your efforts to maintain competitive and efficient pay levels and to avoid the recurrence of manpower problems of the mid-1970s to early 1980s.

Our survey results, summarized below, are shown in more detail in appendix I. Appendixes II and III provide information on our sample size and an analysis of questionnaire responses. The process we used to estimate expected military pay had individuals decided to reenlist is described in appendixes IV and V. Detailed annual and hourly-rate comparisons, on an occupation-specific basis, are given in appendixes VI and VII.

SUMMARY OF SURVEY RESULTS

The timeframe covered by our survey--fiscal years 1980 through the first quarter of 1982--was a period during which the services were trying to recover from serious recruiting and retention problems. These problems were largely attributed to the failure of military pay to remain competitive with the private sector: Across-the-board pay raises had been capped for 3 of 5 preceding years; a portion of basic pay had been reallocated to housing allowance the other 2 years; and amounts allocated for special and incentive pays, particularly bonuses, had been held down for several years. With the catch-up pay raises granted for fiscal years 1981 and 1982, the Department said that military pay was once again competitive with the private sector. These general pay raises, along with the doubling of the enlisted bonus budgets between fiscal years 1980 and 1981 and increases in other special and incentive pays--assisted, no doubt, by rising unemployment rates--resulted in dramatic improvements in enlistment and reenlistment rates.

Given these events, the results of our survey questionnaire portray what one might have expected to see. In general, our survey results for fiscal year 1980 confirmed what DOD officials had been saying. People who left the Navy from all three types of jobs selected--highly technical jobs, jobs considered to be

unattractive, and generally easy-to-fill jobs--reported that, on the average, they earned considerably more in their first private-sector job than they would have by reenlisting. Survey respondents also indicated that job skills learned in the Navy were valuable in obtaining private-sector work, and the responses indicated that those who used their Navy-learned skills generally earned more than those who did not.

While reported starting pay in the private sector did not significantly increase over 1980 for those who left the Navy during fiscal year 1981, people leaving the Navy during that year reported earning about the same on an annual basis in their first job as they would have by reenlisting. Since people who left in both years looked about the same demographically, the leveling of earnings between the private sector and what was available in the military can no doubt be attributed to the first of the two across-the-board catch-up pay raises (the 11.7 percent raise of October 1980) as well as the introduction of the variable housing allowance, increases in reenlistment bonuses, and increases in other special and incentive pays. It is also noteworthy that fiscal year 1981 marked the beginning of the significant upturn in first-term and overall reenlistment rates.

Since our survey extended only through the first quarter of fiscal year 1982, and also since fewer people were leaving the Navy by that time (reenlistment rates were up 11 percentage points over the preceding fiscal year), the universe of people surveyed was considerably smaller. Consequently, while we surveyed the entire population of people who left from the selected Navy occupations during this quarter, the reported private-sector earnings data is less conclusive because of the small numbers involved. Nonetheless, it shows that, on an annual basis, people generally would have earned more had they remained in the Navy. This can probably be attributed to the second of the two catch-up raises (the average 14.3 percent pay raise of October 1981). However, since people reported working longer hours in the Navy than in their private-sector jobs, when annual earnings were converted to hourly rates, private-sector pay still exceeded what people would have earned--per hour--by reenlisting in the Navy, except for those who left the easy-to-fill jobs.

POTENTIAL LESSONS FROM RECENT HISTORY

Once again in fiscal years 1983, 1984, and 1985, the across-the-board pay increases have been capped at 4 percent, a level below average private-sector increases--as measured by both the Employment Cost Index and the Professional, Administrative, Technical and Clerical wage survey. But, despite these pay caps, up through fiscal year 1984 Defense officials have stated that military pay has remained competitive with private-sector pay, and reenlistment rates have remained at or near

historic high levels. While there are, no doubt, many factors contributing to the continued high retention rates, it is important to note that, in contrast to the earlier period, bonuses and other targeted pays have remained a more significant part of the pay package than in the past. This, we believe, is a very positive development and, as we have said in testimony over the past few years, represents a move toward a more efficient use of compensation dollars.

In commenting on our draft report, the Department took exception to our suggestion that having private-sector pay data on an occupational basis would be useful in the military pay-setting process, stating that it is inappropriate to try to match military pay checks with the private sector on an occupation-by-occupation basis. We believe that such data would be useful, but we agree with the Department that it may not be possible to have a direct correlation between military and private-sector pay on an occupation-specific basis. This was not the thrust of our suggestion. We recognize that a direct correlation would ignore the fact that many military occupations have no civilian counterpart and that military service places demands on individuals that are not often found in the rest of society.

Nonetheless, we believe that a closer tie between military and private-sector pay levels than now exists would be desirable. Experience has shown that, when military pay for people with marketable skills lags behind private-sector pay for those same types of skills, retention in those military occupations begins to fall. And, as pointed out by the Department's own studies, retention problems often do not become immediately apparent because members are usually under long-term contracts. These gaps in pay can be, and have been, offset by bonuses and other special and incentive pays. The opposite, however, is also generally true; that is, when total military pay gets ahead of what they can expect to earn in the private-sector, more people than desired tend to want to stay in the service. This most often occurs for people with not-so-marketable skills. Many economists have commented that such situations are the result of pay system inefficiencies and have contributed to the services' historical skill-imbalance problems.

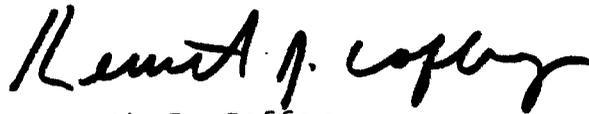
We recognize that the military personnel budget is subject to the same political processes as are other portions of the defense budget. However, in applying lessons learned from past experience to the present or future, it seems to us that if, during the mid-1970s to early 1980s, the services would have had the type of information developed by our survey, they may have been better able to foresee the widening gap between military and private-sector pay for certain types of critical skills and may have been able to take appropriate actions to avoid some retention losses, either through management initiative or by having more specific pays data to convince the Congress that increased targeted pays were needed.

As we have indicated, our survey had a modest objective, i.e., to obtain data on whether experienced career personnel leaving the Navy earned more or less in their first private-sector job than they would have by reenlisting. While specific details of the survey methodology can be debated, we believe that the survey results answered this objective. We trust that you will find the data in the appendixes useful.

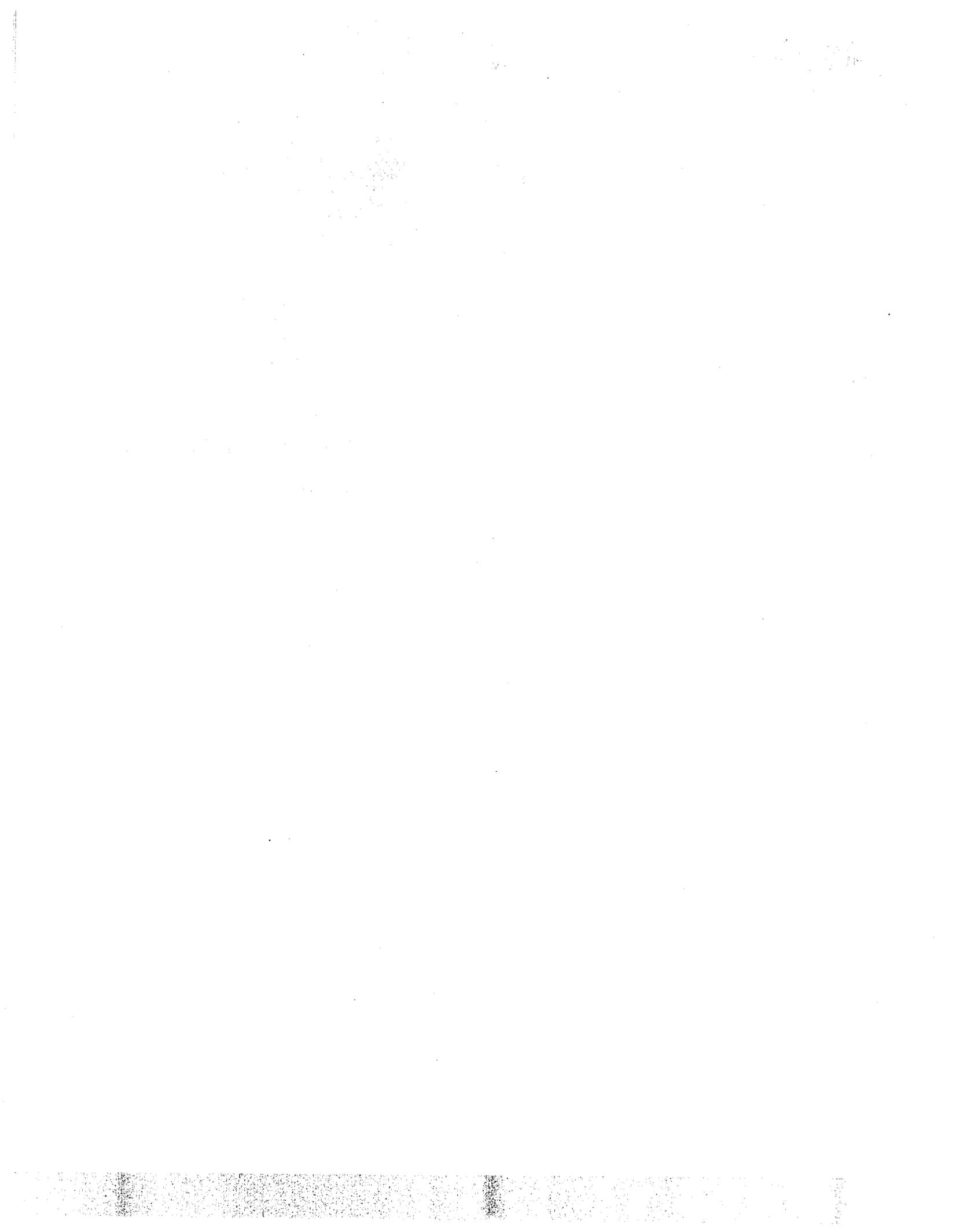
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We appreciate the assistance provided by DOD and the Navy on this survey. A copy of this report is being sent to the Assistant Secretary of the Navy (Manpower and Reserve Affairs). Copies will be made available to others upon request.

Sincerely yours,



Kenneth J. Coffey
Associate Director



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QUESTIONNAIRE SURVEY RESULTSINTRODUCTION

Among the manpower and personnel issues that directly affect the men and women serving in the Armed Forces, perhaps none has received more attention during the past four decades than military compensation. Beginning with the Hook Commission in 1948, military compensation has been the subject of numerous studies and evaluations authorized by the President and Congress, Department of Defense (DOD) reviews, and independent research studies.

It is for good reason that all this attention has been paid to military compensation.

--First, compensation (which includes basic pay, food and housing allowances, an imputed tax advantage on the tax-free allowances, bonuses, special and incentive pays, retired pay, and numerous other benefits ranging from special shopping privileges to free medical care) is essentially a management support system designed to achieve certain organizational goals. For the services, it is the chief management mechanism available with which to shape the force profile; that is, to attract, retain for as long as desired, and motivate the number and quality of people needed to carry out the military mission. Thus, even without considering the cost, effective compensation policies--that is, policies which will result in a motivated and properly structured force--are vitally important to national security.

--Second, military personnel are expensive. The military payroll and associated personnel costs represent the largest single item in the defense budget, projected to cost about \$70.6 billion in fiscal year 1985. Thus, while effective compensation policies are important, cost-efficiency is an equally important consideration. The concept of cost efficiency holds that pay should vary to the extent that supply and demand conditions vary across occupations, and contrasts with the more traditional military philosophy which holds that pay should vary by rank and years of service rather than by occupation.

Despite the many findings and recommendations that have come out of the multitude of commissions, reviews, and studies, structurally the military compensation system has changed very little. It is true that some structural adjustments to the system were made during the early 1970s to help ensure that the recruiting and retention goals of the newly introduced all-volunteer force would be met. First-term basic pay was

substantially increased, occupationally targeted selective enlistment and reenlistment bonus programs were introduced, and other special and incentive pays were revamped and increased.

These were positive changes and offered military managers some added flexibility to better respond to changing labor markets. But still, in fiscal year 1985, about 97 percent of total military compensation will be in the form of nondiscretionary pay items, such as basic pay and allowances, retirement benefits, and other entitlements which offer military managers very little flexibility. The Navy uses discretionary pays, such as occupationally targeted enlistment and reenlistment bonuses and other special pays more than the other services (about 4.7 percent of total compensation as compared with 2.7 percent DOD-wide) but the fraction is still quite small.¹ As a result, the considerable occupational pay differentials that exist in the private sector are less prevalent in the military. This, according to many economists who have studied this issue,² is not only inefficient pay policy, but is also largely responsible for the staffing imbalances--surpluses in some occupations and shortages in others--that all services have experienced to some extent.

FOCUS OF THIS STUDY

As the above discussion would imply, military compensation policy concerning the level, composition, structure, and method of periodic adjustment is a complex and frequently controversial issue. The purpose of this study was not to review and evaluate the entire military compensation system or to recommend changes to it. Instead, this study had the modest goal of finding out whether experienced petty officers leaving the Navy in mid-career earned more or less in the private sector than they would have by reenlisting in the Navy. We selected the Navy for this study because it, more than the other services, reported that the problem of retaining experienced career personnel had reached serious proportions by 1979 and 1980, and that the

¹For a more complete description of the current military pay structure, see Military and Federal Civilian Disposable Income Comparisons and Extra Pays Received by Military Personnel (GAO/NSIAD-84-41, May 9, 1984).

²Martin Binkin and Irene Kyriakopoulos, Paying the Modern Military, The Brookings Institution, 1981.

Richard V.L. Cooper, Military Manpower and the All-Volunteer Force, The Rand Corporation, R-1450-ARPA (Sept. 1977).

John T. Warner, Issues in Navy Manpower Research and Policy: An Economist's Perspective, The Center for Naval Analyses, Professional Paper 322 (Dec. 1981).

effect of these retention problems could be seen in an experience shift then taking place--senior people leaving and being replaced by less experienced people.³

The Navy attributed its retention problems to what it said were low levels of military pay when compared with what individuals could earn in the private sector. Military pay raises had been capped at levels below the average increases in private-sector pay for 3 of the 5 preceding fiscal years; a portion of the pay raise had been reallocated to the housing allowance the other 2 fiscal years; and bonus budgets had been held down for several years. In urging the Congress to grant a substantial across-the-board pay raise for fiscal year 1982, Navy officials stated that

...if there were any doubts regarding the importance of compensation in the retention process,.... the trends of the last few months speak for themselves. However, there is still more to be done....

The first is to make us competitive with the civilian job market. Although there is a certain amount of debate surrounding just what constitutes competitive levels, I submit that until we have people standing in line for our jobs and conversely, until we stem the tide of experienced officers and petty officers leaving the Navy for more lucrative civilian jobs, we are not competitive in a real sense.

* * *

Despite the advances of last year, military pay is still not competitive with private sector wages.... Unlike the civilian sector, we do not find people standing in line to apply for a job in the military.... [W]e continue to lose experienced career personnel who find that the job market on the outside is more monetarily attractive.⁴

³Data clearly shows the drop in first and second term reenlistment rates, but whether this drop resulted in an experience shift, as measured by average years of service, is somewhat debatable. For a more complete analysis and supporting data on this question, see Report by the U.S. General Accounting Office, Confusion Over Validity and Effects of Purported Petty Officer Shortage (GAO/NSIAD-84-30, June 27, 1984), ch. 4.

⁴Remarks of Vice Admiral Lando Zech, Deputy Chief of Naval Operations for Manpower, Personnel, and Training, and Chief of Naval Personnel, in hearings on the Department of Defense Authorization for Appropriations of Fiscal Year 1982, before the Committee on Armed Services, House of Representatives, 97th Congress, First Session.

Navy officials said that this testimony was supported by data obtained from the enlisted separation questionnaire administered to each member leaving the Navy and by overall aggregate wage and salary trends in the private sector. The Navy's separation questionnaire data showed that the single most important factor in members' decisions to leave the Navy was "low pay"--an individual judgment based on the person's perception or knowledge of what could be earned in the civilian economy.

To deal with the personnel shortages and retention problems reported by the Navy and the other services, the Congress authorized substantial increases in basic pay and allowances, and special and incentive pays, including enlistment and reenlistment bonuses. Two across-the-board catch-up pay raises were authorized, one in fiscal year 1981 (11.7 percent), and another in 1982 (14.3 percent). Together, they increased basic pay and allowances by an average of 27.6 percent, with higher raises going to career grades. Also, other compensation components were newly authorized or increased in 1981 and 1982, including

- an increase in maximum career sea pay from \$55 to \$310 per month,
- a variable housing allowance (paid in addition to basic allowance for quarters) for high-cost-of-living areas, and
- an increase in maximum selective reenlistment bonuses from \$15,000 to \$20,000 for nuclear occupations and from \$12,000 to \$16,000 for other occupations.

Since the catch-up pay raises were granted in fiscal years 1981 and 1982, across-the-board pay raises have again been capped at 4 percent per year for fiscal years 1983 through 1985, for a cumulative increase of about 12.5 percent for this period. This is below the cumulative private-sector increase of 18.2 percent as measured by the Employment Cost Index. However, in contrast to the earlier period when retention rates were declining and budgets for targeted special and incentives pays were held down, these targeted pays, including enlistment and reenlistment bonuses, have remained a more significant component of the total compensation package.

OBJECTIVES, SCOPE, AND METHODOLOGY

As stated, our survey objective was not to assess whether Navy pay levels were too high or too low, or to determine the overall adequacy of total Navy pay. Instead, our objectives were limited to determining the following:

- Did mid-level enlisted personnel (individuals with at least 6 but less than 12 years of service) who left the Navy earn more or less in their first private-sector job than they would have earned had they reenlisted in the Navy?
- Were these personnel able to transfer job skills learned in the Navy to private-sector jobs, and did their possession of these skills enable them to obtain higher paying civilian jobs?
- Was pay more important than other factors in an individual's decision to leave the Navy?

To determine whether experienced enlisted people leaving the Navy obtained and sustained higher paying civilian jobs, we selected, in consultation with Navy representatives, 9 of the 99 Navy ratings for study--3 ratings from 3 groups, categorized as follows:

- Highly technical occupations that have costly preparatory training and are highly marketable in the civilian sector:

1. Electronics technician.
2. Data systems technician.
3. Sonar technician.

People in these occupations are usually eligible to receive a selective reenlistment bonus.

- Less attractive occupations because of the working environment:

1. Boiler technician.
2. Engineman.
3. Machinist's mate.

People in these occupations are also usually eligible for a selective reenlistment bonus.

--Occupations that have been relatively easy for the Navy to fill and for which reenlistment bonuses usually have not been necessary:

1. Yeoman.
2. Personnelman.
3. Dental technician.

From these nine occupations, we selected a sample of individuals who left the Navy in fiscal years 1980, 1981, and the first quarter of 1982 and asked them to complete a questionnaire. From computer records provided by the Defense Manpower Data Center of those eligible for reenlistment, we randomly selected people with more than 6 but less than 12 years of service. (Our sample for the first quarter of fiscal year 1982 included the entire universe of those who left the nine occupations during that quarter.) We selected this mid-level group for our study because the Navy said that it had had difficulty retaining people in this category. (See appendixes II and III for information on our sample size and our analysis of response rates.)

To compare people's civilian pay with military pay, we computed the approximate annual military pay people could have expected to receive if they had reenlisted at the time of separation. Our computation included the total military pay they were receiving at about the time of separation; i.e., regular military compensation⁵ plus any other allowances and special and incentive pay they were receiving. To this, we added the annual prorated value of any reenlistment bonus they would have been eligible to receive had they decided to reenlist rather than to leave the Navy. (See appendix IV for details on how military pay upon reenlistment was computed.)

In discussing our study methodology, Navy officials disagreed with our inclusion of sea pay, career sea pay, and family separation allowances in our computation of military pay. They said that such pays are not for work performed but are differential pays to compensate those people working in less-than-desirable duty situations. We agree that these are situational

⁵Regular military compensation is defined as basic pay, basic allowance for quarters, basic allowance for subsistence, variable housing allowance, and the federal income tax advantage resulting from the allowances which are nontaxable.

pays, but we included them because they are a part of the military pay package, and we wanted to know how total military pay for people who left the Navy compared with their total civilian pay.

Navy officials also disagreed with our methodology of comparing annualized pay data, contending that comparisons of pay should be made on the basis of hourly rates or a normalized 40-hour workweek. We believe that annualized pay comparisons are appropriate because the Navy does not pay on an hourly basis, nor does it have a direct financial incentive to limit to 40 the number of hours individuals work per week. But, comparisons on an hourly rate basis, using data on hours worked as reported on the survey questionnaire, also provide useful insights, and these comparisons are shown in this report.

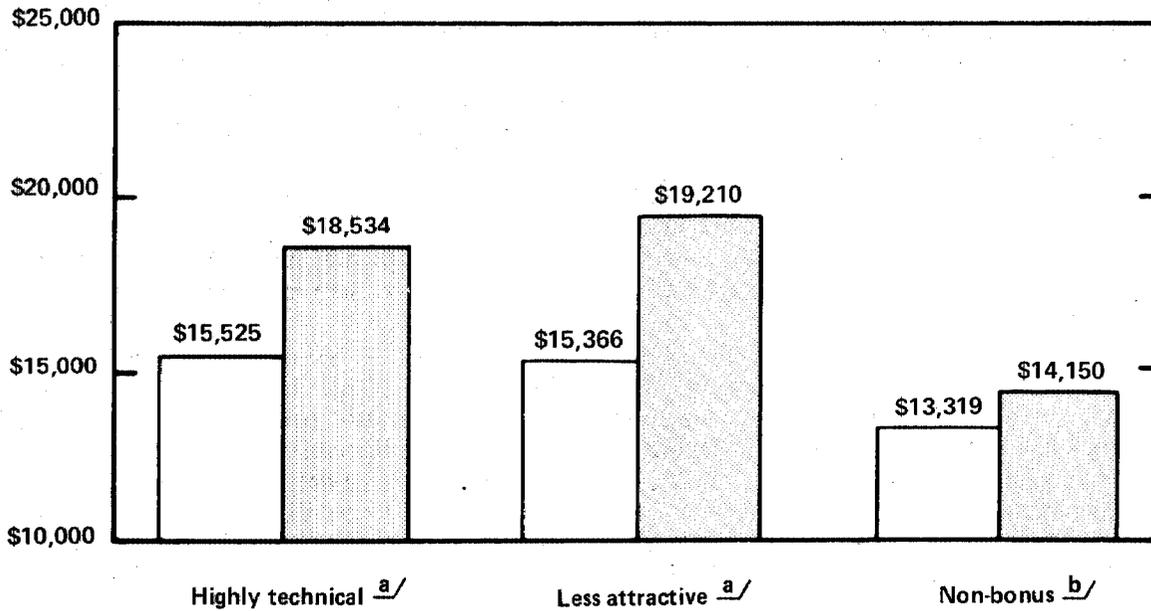
We analyzed the data in accordance with generally accepted statistical methods. The principal techniques used to analyze sample data were chi-square tests, comparison of means, analysis of variance, and multiple regression. For ease of presentation, we used percentages of sample results in the report. In computing the percentages, we weighted the data to reflect the fact that our samples were stratified random samples of differing proportions. Unless otherwise noted in the report, comparisons presented are statistically significant at the 95-percent confidence level. We considered differences highly significant at the 95-percent confidence level, significant at the 90-percent confidence level, and marginally significant at the 80-percent confidence level.

We performed our review from February 1982 through August 1983 at the Office of the Secretary of Defense and the Office of the Deputy Chief of Naval Operations for Manpower, Personnel, and Training, Washington, D.C. We also obtained data from the Defense Manpower Data Center, Monterey, California; and the Navy Finance Center, Cleveland, Ohio. We did not review controls over the Defense Manpower Data Center system used to produce computer tapes containing demographic data for persons separated from the Navy, nor did we identify any such internal or external evaluations. Also, we did not review controls over the Navy Finance Center's system to compute and process military pay and to produce related data.

**HOW MILITARY AND PRIVATE-SECTOR EARNINGS
COMPARED IN FISCAL YEAR 1980**

Most people who left the Navy in fiscal year 1980 reported earning more in their first civilian job than they would have earned had they reenlisted at the time of separation. As shown below, this was true for all three occupational groupings. Those who left less attractive Navy jobs earned, on the average, about \$3,800 more per year in the private sector; those who left highly technical Navy jobs earned about \$3,000 more; and those who left the nonbonus Navy jobs earned about \$800 more. (Detailed data by occupational group is given in appendix V and comparisons by individual occupation in appendix VI.)

Annual Military Pay Compared With Annual Initial Civilian Pay For Those Who Separated From The Navy In Fiscal Year 1980



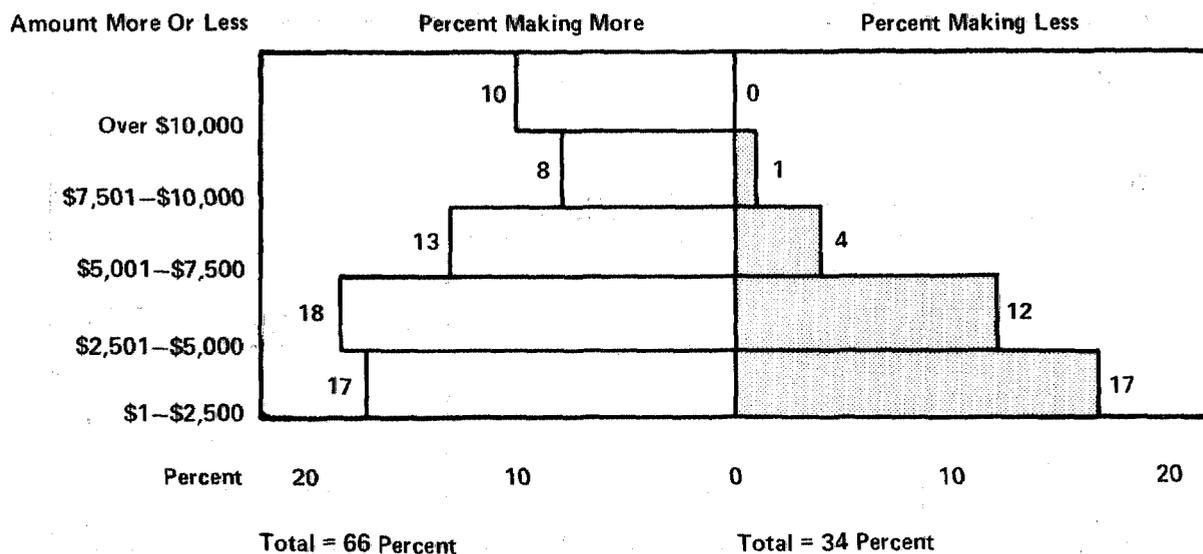
^{a/} Differences are highly significant.

^{b/} Differences are not significant.

Military
 Civilian

When measured in absolute numbers, a greater proportion of those who left the Navy in fiscal year 1980 made more in their civilian jobs. For example, as shown below, about 66 percent earned more, with 10 percent earning at least \$10,000 more per year. The survey responses confirm Navy's concern that many people were leaving the Navy in fiscal year 1980 and obtaining higher paying civilian jobs. But, as the next chart shows, even in 1980, 34 percent of those leaving the nine Navy occupations we examined reported earning less in their first private-sector jobs than they would have by reenlisting.

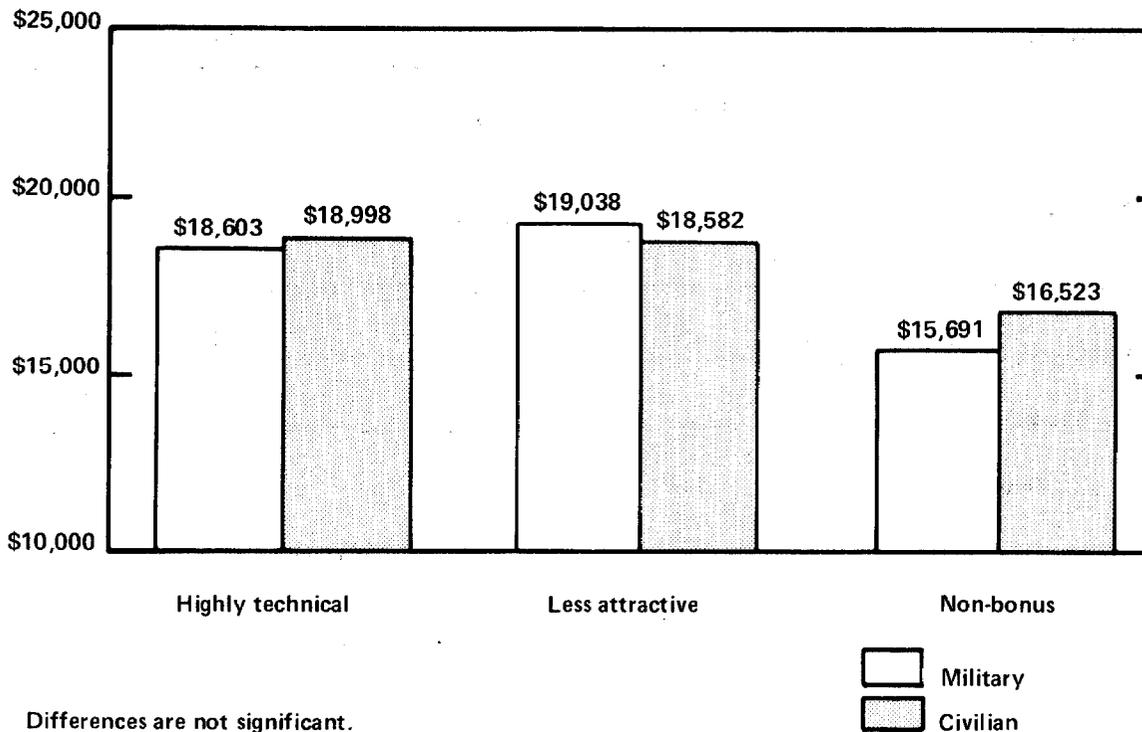
Percent Of People Who Separated From The Navy In Fiscal Year 1980 Making More And Less Initial Annual Civilian Pay Than Military Pay (All Three Occupational Groups Combined)



HOW MILITARY AND PRIVATE-SECTOR EARNINGS
COMPARED IN FISCAL YEAR 1981

As shown graphically below, people in the three occupational groups who left the Navy during fiscal year 1981 reported earning about the same in their first civilian job as they would have earned had they reenlisted. This pattern was essentially true for all occupational groups. (Detailed data by occupational group is given in appendix V and comparisons by individual occupation in appendix VI.)

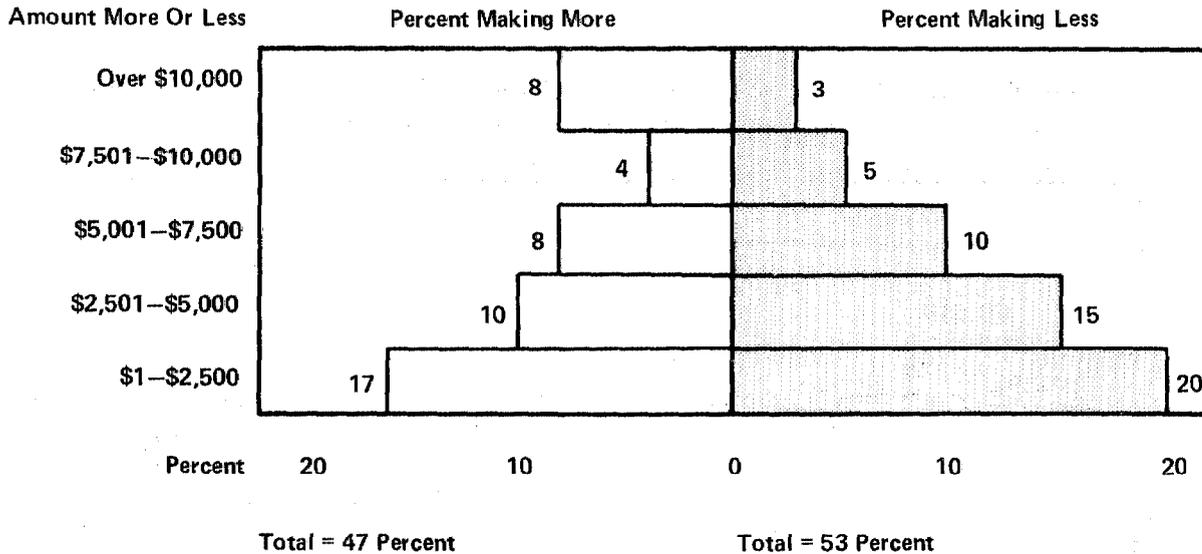
Annual Military Pay Compared With Annual Initial Civilian Pay For Those Who Separated From The Navy In Fiscal Year 1981



The survey responses indicate that the fiscal year 1981 improvements to the military pay package--increased basic pay and allowances of 11.7 percent, substantially improved sea pay, increased maximum reenlistment bonuses, a new variable housing allowance, and other special and incentive pays--had largely eliminated the gap between military pay people could have expected upon reenlisting and civilian pay people received upon leaving the Navy. Again, however, there were many individual differences, with 47 percent reporting that they earned more on

an annual basis in the private sector (8 percent earning over \$10,000 more) and 53 percent reporting that they earned less (3 percent earning at least \$10,000 less).

Percent Of People Who Separated From The Navy In Fiscal Year 1981 Making More And Less Initial Annual Civilian Pay Than Military Pay (All Three Occupational Groups Combined)



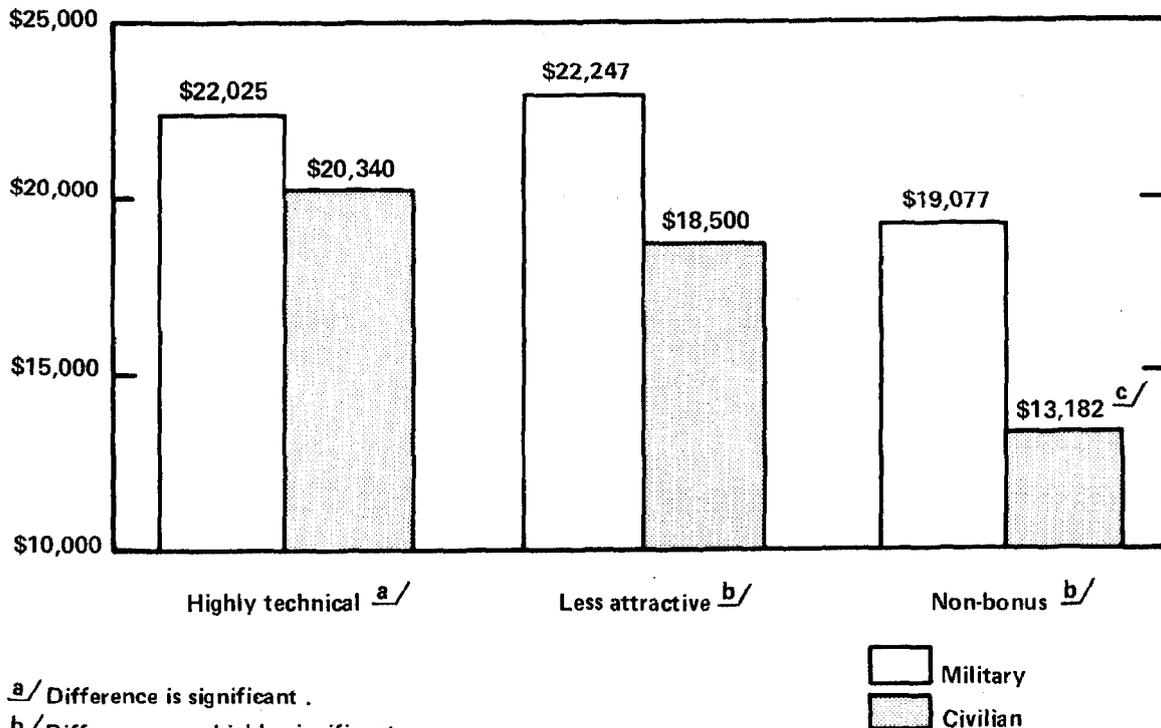
HOW MILITARY AND PRIVATE-SECTOR EARNINGS COMPARED IN THE FIRST QUARTER OF FISCAL YEAR 1982

Because of the small number of people who left the Navy during the first quarter of fiscal year 1982 from the nine occupations we surveyed, the data reported is inconclusive. Nonetheless, as shown below, it appears that military pay was becoming more attractive as compared with what people who left the Navy during this quarter were able to earn in the private sector. (See appendixes V and VI for detailed data.)

While the scope of our survey did not include a rigorous examination of all the reasons for the disparities between reported private-sector and expected reenlistment earnings, this disparity in annual earnings appears to be attributable to three things. First, the military received a substantial increase in regular military compensation at the beginning of fiscal year 1982--an average increase of 14.3 percent, with a higher percentage going to enlisted personnel who would generally be in the category included in our survey. Second, the value of available

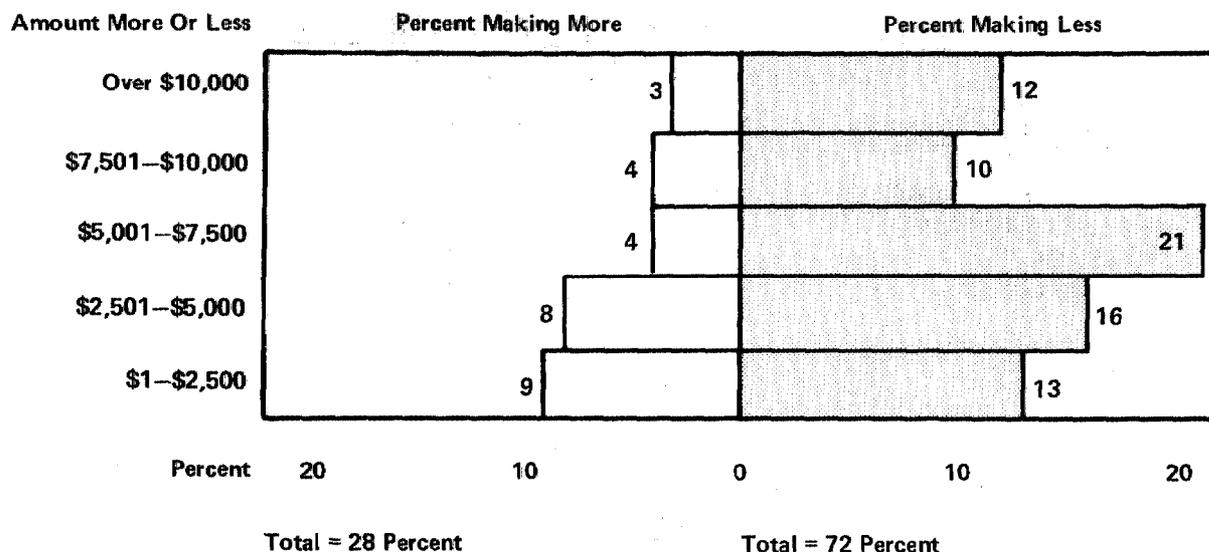
reenlistment bonuses increased somewhat. Third, the response data indicates that rising unemployment rates may have been a factor in the accepting of lower paying private-sector jobs by people who left the Navy. For instance, of those responding to our questionnaire, 21 percent said that they had not yet secured a full-time job at least 6 months after leaving the Navy. Respondents reporting no full-time employment were not included in the earning comparisons shown below, but the lower starting salaries accepted by people who left the "nonbonus" easy-to-fill jobs, as compared to those of fiscal year 1981, may have reflected the tightening labor market.

Annual Military Pay Compared With Annual Initial Civilian Pay For Those Who Separated From The Navy In The First Quarter Of Fiscal Year 1982 (a)



The reductions in civilian earnings are equally evident when looking at people's actual experiences--72 percent earned less in their first civilian job. Again, the extent of the earning reductions is illustrated by the proportion making over and under \$10,000: 3 percent earned \$10,000 or more per year, while 12 percent earned at least \$10,000 less per year than they would have by remaining in the Navy.

**Percent of People Who Separated From The Navy In The First Quarter Of Fiscal Year 1982
Making More And Less Initial Annual Civilian Pay Than Military Pay
(All Three Occupational Groups Combined)**



NAVY ANALYSIS OF GAO DATA

As part of our study, we provided the Navy with a duplicate copy of our raw questionnaire survey data--but without personal identifiers--for its analysis. The Navy used a different methodology to analyze the data than we did; consequently, its comparisons of average military and private-sector pay differ from ours. The key methodological difference was that the Navy used a "normalized" 40-hour workweek for its comparisons, using individuals' perceptions of the number of work hours, whereas we compared annualized earnings. The Navy believed that this was a better way to compare military and private-sector earnings because Navy personnel generally work longer hours with no overtime pay.

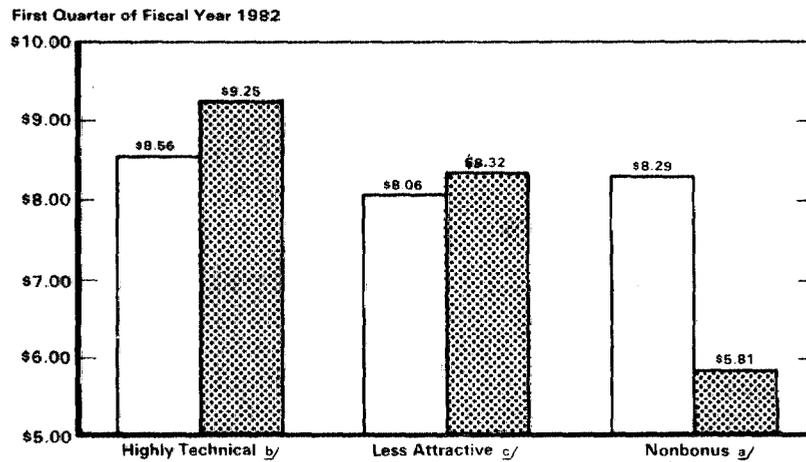
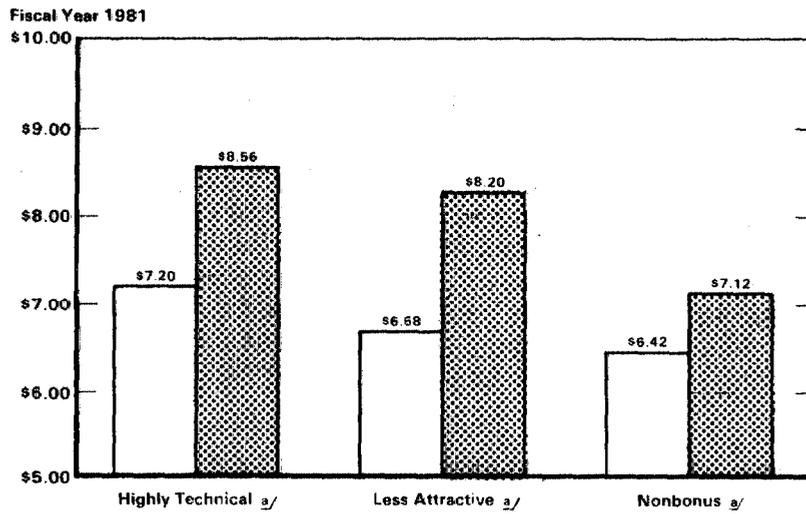
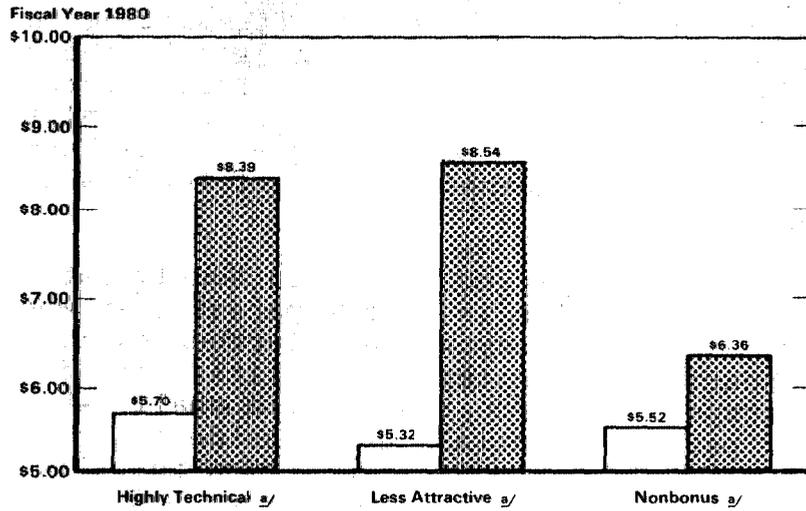
There is no question that the long duty hours in the Navy was a major complaint of many people responding to our study. To obtain information on the relative length of an average workweek in the Navy as compared with that in the private sector, we asked people in our study how many hours per week, on the average, they were required to spend at their Navy duty or work station during the 12 months prior to separation. We then compared the Navy work hours with those that people reported for their civilian jobs. On the average, people responded that they were required to be on duty in the Navy about 23 percent more hours

than at their civilian jobs. As shown below, people in the less attractive occupations worked the most hours in the Navy while those in the nonbonus occupations worked the least.

<u>Comparison of Average Navy and Civilian Weekly Work Hours</u>			
<u>Occupational group</u>	<u>Navy</u>	<u>Civilian</u>	<u>Difference</u>
Highly technical	53	43	10
Less attractive	58	44	14
Nonbonus	48	43	5
All combined	53	43	10

We agree with the Navy that comparing military and civilian pay on an hourly rate basis can provide useful insights into differences between military and private-sector pay and differences between occupational groups. Therefore, we made such a comparison after converting annual private-sector pay and total military pay available upon reenlistment to hourly rates. These conversions were based on the average number of workhours per week reported by questionnaire respondents. These comparisons are shown graphically on the following page. (Detailed data on hourly rate comparisons is given in app. VII.)

Military Pay Compared With Civilian Pay--Converted To Hourly Rates--For Those Who Separated From The Navy By Year Of Separation



^{a/} Differences are highly significant.
^{b/} Differences are marginally significant.
^{c/} Differences are not statistically significant.

□ Military
 ▨ Civilian

As the above comparisons show, in all cases except one, private-sector pay exceeded the amount individuals could have expected to earn on an hourly basis by reenlisting in the Navy. The data indicates that individuals who left "nonbonus," easy-to-fill jobs during the first quarter of fiscal year 1982 would have earned more, even on an hourly basis, by reenlisting. As we have already stated, data for that quarter is less conclusive than for other periods examined because of the small universe of people involved.

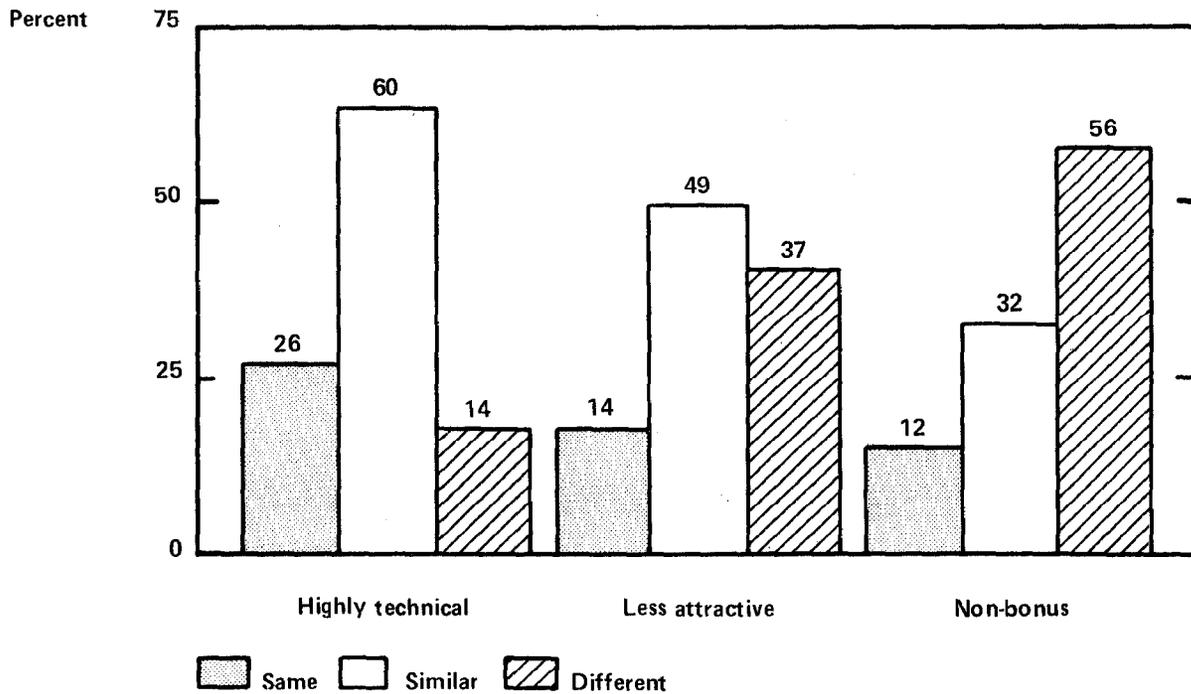
Comparing military pay converted to hourly rates also discloses a situation which is less apparent than when looking at annual wages and which may warrant further exploration by DOD. This comparison indicates that military pay differentials between the occupational groups are quite small, whereas private-sector pay differentials are considerably greater. In fact, the easy-to-fill nonbonus occupations actually paid more in the Navy on an hourly basis than harder-to-fill, less attractive occupations in fiscal year 1980 and the first quarter of 1982, and only slightly less (26 cents per hour) in fiscal year 1981. For example, people who left less attractive Navy jobs in fiscal year 1980 could have expected to earn an average of \$5.32 per hour had they remained in the Navy, whereas those who left nonbonus Navy jobs could have expected to earn an average of \$5.52 per hour. In contrast, the hourly private-sector earnings of those who left less attractive Navy jobs were considerably more than those who left nonbonus Navy jobs. People who left less attractive Navy jobs earned an average of \$8.54 per hour in the private sector, whereas those who left nonbonus jobs earned an average of \$6.36 per hour, a differential of \$2.18 per hour--and in the opposite direction of the military pay differential.

TRANSFERABILITY OF NAVY-LEARNED SKILLS

People responding to our questionnaire reported that their Navy-acquired skills were generally transferable to the private sector. Overall, about 70 percent of those leaving the three occupational groups obtained civilian jobs requiring skills the same as or similar to those used in their Navy occupations. Also, civilian pay was greater--in relation to military pay--for those who used their Navy-acquired skills in their civilian jobs than for those who did not.

The frequency that people transferred their Navy skills to civilian jobs varied among the three occupational groups. As the following graph shows, people from the highly technical occupations used the same or similar skills 86 percent of the time, less attractive occupations 63 percent of the time, and nonbonus occupations 44 percent of the time. We did not determine the extent that those who did not transfer their skills tried to do so.

Percent Using Civilian Skills The Same As, Similar To, Or Different From Navy Skills



Persons using skills in their civilian job that were the same as or similar to their Navy skills, on the average, received higher pay than those who did not. Those leaving in fiscal year 1980 and using the same skills in their civilian job made about 16 percent more than those who used different skills. For those leaving in fiscal year 1981, this difference was about 18 percent more, and for those leaving in the first quarter of fiscal year 1982, it was about 12 percent more.

OTHER FACTORS INFLUENCING
PEOPLE TO LEAVE THE NAVY

Family separation and "having a say in what happens to them"⁶ were the most important factors in people's decisions to leave the Navy. Next in importance was pay. Other factors varied in importance between occupational groups. Also, the intensity of concern about several of the factors increased over the period of our review for those in less attractive occupations. Conditions that were very important influences in people's decisions to leave the Navy were perceived as better in civilian life by the vast majority of people.

We asked people in our study to indicate how important each of 16 different factors was in their decisions to leave the Navy. In answering, they were to choose between four degrees of importance: "very great importance," "great importance," "moderate importance," or "little or no importance." We analyzed those factors checked as being of "very great importance" or "great importance." Principal concerns were as follows:

<u>Factors Influencing People to Leave the Navy</u>	
	<u>Percent expressing concern</u>
Family separation	81
Having a say in what happens to them	75
Long-range earnings potential	70
Gross pay and allowances	67
Number of working hours	53
Interesting work	52
Use of job skills	51
Geographic location	50
People worked with	44
Chance for promotion	42
Housing lived in	34
Training opportunities	32
Benefits	30
Support and guidance from supervisors	29
Job security	24
Support facilities	14

⁶The term "having a say in what happens to them" has been used in previous DOD studies of perceptions of military personnel. As a very broad measure of personal freedom, it likely would reflect many of the normal restrictions associated with military duty and the lack of control military members have over events affecting their future.

Other studies have also identified family separation and pay as important factors in people's decisions to leave the Navy.

Differences in Concern Among Occupational Groups About Specific Job Factors

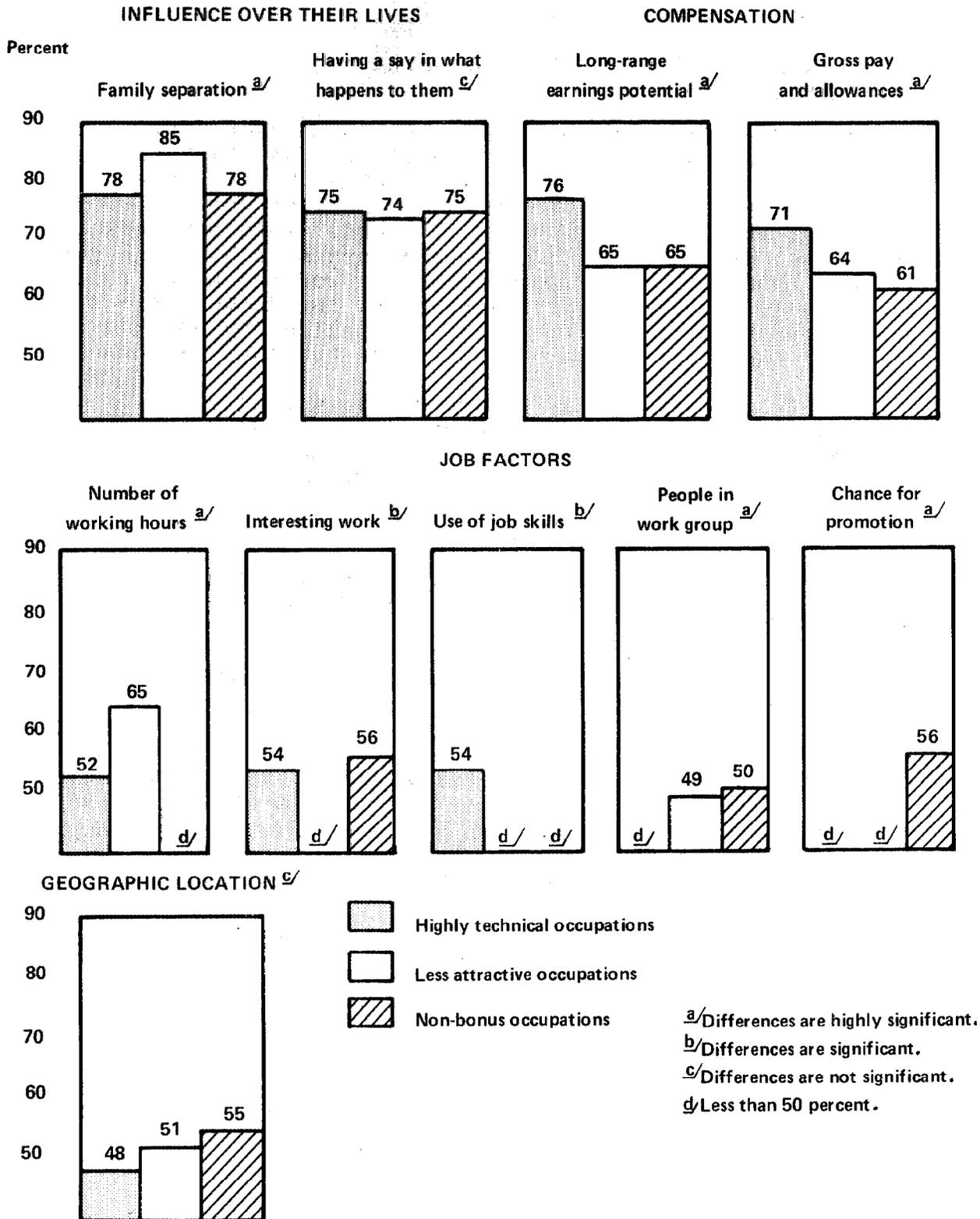
People who left all three occupational groups most frequently said that separation from family, having a say in what happens to them, and compensation were very important. People who left the less attractive occupations were as concerned about their number of working hours. This may reflect the fact that people in this group did work more hours in the Navy. For example, the average number of working hours reported by those in less attractive jobs exceeded the number of hours worked by those in highly technical occupations by about 9 percent and those in nonbonus occupations by about 21 percent.

Other job factors concerned people less than their compensation and having greater control over their lives, but concern over specific job factors varied among the groups. By focusing on those factors that at least 50 percent of the people who left one or more occupational groups said were very important, the differences among occupational groups become evident:

- People who left the less attractive occupations were concerned over the number of working hours and kind of people in their work group.
- People who left the highly technical occupations were concerned about working long hours, using their job skills, and having interesting work.
- People who left the nonbonus occupations were concerned about having interesting work, the kind of people in their work group, and having a chance for promotion.
- Geographic location was also important to all three occupational groups.

These differences in people's concerns are shown graphically on the following page.

Factors That At Least 50% Of The People In One Occupational Group Said Were Important In Their Decisions To Leave The Navy



People's Concerns Changed

People's concerns that were very important changed over the period covered by our study. Overall, the concern over gross pay and allowances decreased but remained about the same for long-range earnings potential. Concern about factors other than pay increased among people who left the less attractive occupations. At least two things set the less attractive occupations apart from the highly technical and nonbonus occupational groups. First, people in less attractive occupations work more hours. Second, they are required to be at sea longer. Just prior to leaving the Navy, 43 percent of the people in the less attractive occupations were at sea, compared with 19 and 14 percent, respectively, for the highly technical and nonbonus occupations. Furthermore, people leaving the less attractive occupations had spent more of their career at sea.

<u>Percent of Time at Sea</u>		
<u>Occupational group</u>	<u>Average years of service</u>	<u>Average percent of time at sea (note a)</u>
Highly technical	8.3	39
Less attractive	8.7	55
Nonbonus	8.5	40

^aDifferences between highly technical and nonbonus occupations are not significant; however, differences between less attractive and highly technical occupations and between less attractive and nonbonus occupations are highly significant.

Most People Believe That Their Civilian Job Is Better

The vast majority of people in our study reported that things were better in their civilian jobs. Job security was the only factor that was not better.

<u>Factors of Civilian Jobs That People Found Better Than Navy Jobs</u>	
<u>Factor</u>	<u>Percent that found civilian job better</u>
Family separation	95
Number of work hours	94
Long-range earnings potential	92
Housing lived in	88
Geographic location	87
Having a say in what happens to them	85
Gross pay and allowances	85
People worked with	73
Interesting work	72
Support facilities	72
Chance for promotion	71
Support and guidance from supervisors	69
Benefits	60
Chance to use job skills	60
Training opportunities	57
Job security	26

People leaving the highly technical occupations found more improvements in their civilian jobs than people who left the less attractive and nonbonus occupations. On the average, 83 percent of the people who left the highly technical occupations found things better, compared with about 75 percent of those who left the less attractive and nonbonus occupations. For three factors--family separation, number of hours worked, and geographic location--the three occupational groups generally reported the same frequency of satisfaction in the civilian job. But for the remaining 13 factors, they differed. For 8 of the 13 factors, the variance was at least 15 percent between two or more of the occupational groups. Again, more persons who left the highly technical occupations found things better in their civilian jobs. For example, 91 percent of the people who left the highly technical occupations said gross pay and allowances were better in their civilian jobs, compared with 85 and 67 percent, respectively, who left the less attractive and nonbonus occupations.

SAMPLE AND RESPONSES ANALYZED

Sample group	Fiscal year	Occupation (note a)	Universe	Sample	Responses	Responses not analyzed			Responses analyzed		
						No full-time job	In school	Reenlisted	Other than pay	Initial civilian pay (note b)	Current civilian pay (note c)
1980		<u>Highly technical</u>									
		ET	241	172	113	1	7	1	104	100	101
		DS	51	51	37	0	0	0	37	35	34
		STG	55	55	31	2	3	0	26	25	25
		Total	<u>347</u>	<u>278</u>	<u>181</u>	<u>3</u>	<u>10</u>	<u>1</u>	<u>167</u>	<u>160</u>	<u>160</u>
		<u>Less attractive</u>									
		BT	80	80	46	1	1	0	44	43	39
		EN	63	63	37	1	0	4	32	30	30
		MM	216	163	97	6	2	1	88	86	85
		Total	<u>359</u>	<u>306</u>	<u>180</u>	<u>8</u>	<u>3</u>	<u>5</u>	<u>164</u>	<u>159</u>	<u>154</u>
		<u>Nonbonus</u>									
		YN	114	86	54	6	6	5	37	35	34
		PN	66	50	33	4	3	4	22	22	22
		DT	28	25	15	1	3	0	11	10	7
		Total	<u>208</u>	<u>161</u>	<u>102</u>	<u>11</u>	<u>12</u>	<u>9</u>	<u>70</u>	<u>67</u>	<u>63</u>
		Total	<u>914</u>	<u>745</u>	<u>463</u>	<u>22</u>	<u>25</u>	<u>15</u>	<u>401</u>	<u>386</u>	<u>377</u>
			=====	=====	=====	=====	=====	=====	=====	=====	=====
1981		<u>Highly technical</u>									
		ET	319	190	135	8	10	2	115	112	109
		DS	85	85	58	2	3	0	53	53	51
		STG	47	47	33	4	1	1	27	26	23
		Total	<u>451</u>	<u>322</u>	<u>226</u>	<u>14</u>	<u>14</u>	<u>3</u>	<u>195</u>	<u>190</u>	<u>183</u>
		<u>Less attractive</u>									
		BT	118	118	62	3	1	3	55	53	52
		EN	87	87	47	4	1	3	39	33	32
		MM	165	145	97	8	7	6	76	68	65
		Total	<u>370</u>	<u>350</u>	<u>226</u>	<u>15</u>	<u>9</u>	<u>12</u>	<u>170</u>	<u>154</u>	<u>149</u>
		<u>Nonbonus</u>									
		YN	154	100	55	14	6	3	32	29	29
		PN	103	61	38	6	4	1	27	27	26
		DT	41	23	15	2	2	1	10	9	8
		Total	<u>298</u>	<u>184</u>	<u>108</u>	<u>22</u>	<u>12</u>	<u>5</u>	<u>69</u>	<u>65</u>	<u>63</u>
		Total	<u>1119</u>	<u>856</u>	<u>540</u>	<u>51</u>	<u>35</u>	<u>20</u>	<u>434</u>	<u>410</u>	<u>395</u>
			=====	=====	=====	=====	=====	=====	=====	=====	=====

Sample group	Fiscal year	Occupation (note a)	Universe	Sample	Responses	Responses not analyzed			Responses analyzed		
						No full-time job	In school	Reenlisted	Other than pay (note b)	Initial civilian pay (note c)	Current civilian pay (note c)
1982 (1st Qtr.)											
Highly technical											
		ET	67	67	44	12	2	0	30	26	23
		DS	30	30	22	2	0	0	20	20	20
		STG	8	8	7	1	1	0	5	4	4
		Total	105	105	73	15	3	0	55	50	47
Less attractive											
		BT	31	31	22	3	0	0	19	16	17
		EN	17	17	11	4	0	0	7	7	6
		MM	48	48	34	3	1	0	30	29	27
		Total	96	96	67	10	1	0	56	52	50
Nonbonus											
		YN	27	27	13	4	3	0	6	5	5
		PN	19	19	10	4	0	1	5	4	4
		DT	5	5	5	2	0	0	3	2	2
		Total	51	51	28	10	3	1	14	11	11
		Total	252	252	168	35	7	1	125	113	108
		TOTAL (all fiscal years)	2,285	1,853	1,171	108	67	36	960	909	880

ABBREVIATIONS

^aBT-boiler technician; DS-data systems technician; DT-dental technician; ET-electronics technician; MM-machinist's mate; PN-personnelman; STG-sonar technician; YN-yeoman.

^bExcludes 25 cases where people did not provide information on initial civilian pay, and 26 cases where initial annual civilian pay was less than \$7,000 or greater than \$60,000.

^cExcludes 5 cases where people had obtained initial civilian jobs but were unemployed at the time they completed our questionnaire, 52 cases where people did not provide information on their current civilian pay, and 23 cases where current civilian pay was less than \$7,000 or greater than \$60,000.00.

ANALYSIS OF RESPONSE RATES

Nonresponse because of the possibility that nonrespondents differ in important ways from respondents.¹ Despite the high response rate in the survey of former Navy enlisted personnel, we tested for differences between respondents and nonrespondents on six types of information:

- age,
- grade,
- length of time in Navy,
- education,
- Armed Forces Qualification Test (AFQT) score, and
- occupational group.

For the data on age, grade, and length of time in the Navy, the issue of similarity between respondents and nonrespondents is best approached through an analysis of variance. For two characteristics--age and months of service--there is no significant difference between respondents and nonrespondents. Respondents have an average age of 27.35 and 96.83 months of service. Nonrespondents have an average age of 27.46 and 97.13 months of service. The difference in the grade of the respondents and nonrespondents was small but statistically significant. Respondents had an average grade of 5.50 while nonrespondents were slightly lower at 5.30.

¹The overall response rate was 63 percent. This rate is slightly above average for mailed questionnaires according to data in Heberlein and Baumgartner, who report an average response rate of 61 percent in a study of 98 mailed surveys. See Thomas A. Heberlein and Robert Baumgartner, "Factors Affecting Response Rates to Mailed Questionnaires: A Quantitative Analysis of the Published Literature," American Sociological Review, Vol. 43 (1978), pp. 447-462.

Analysis of Variance for
Characteristics of Respondents
and Nonrespondents

	<u>Group means</u>		<u>Significance level of F test*</u>
	<u>Respondents</u>	<u>Nonrespondents</u>	
Age	27.35	27.46	.392
Grade	5.50	5.30	<.01
Months of service	96.83	97.13	.732

*F test for one-way analysis of variance.

A two-way analysis of variance was performed to see if the difference in grade changed over the period of our study. The interactions between response/nonresponse and year were also nonsignificant, indicating that the grade differential between respondents and nonrespondents did not change across year of discharge.

Two-Way Analysis of Variance for Grade

<u>Fiscal year separated</u>	<u>Group means</u>		<u>Significance level of F test*</u>
	<u>Respondents</u>	<u>Nonrespondents</u>	
1980	5.55	5.27	
1981	5.46	5.33	.089
1982 (1st qtr.)	5.53	5.31	

*F test for interaction in two-way analysis of variance.

The data on education and AFQT was reported in terms of categories rather than numerical scores; therefore, it was necessary to analyze this data using contingency tables. The information on education and AFQT, along with data on the three occupational groups, is presented on the following page according to the percentage responding. The chi-square statistic is used to test the hypothesis of "no association" between response/nonresponse and education, AFQT, and occupational group.

Percentage Responding to Survey by
Education, AFQT, and Occupational Group

	<u>Number and (percent) responding</u>	<u>Number and (percent) nonresponding</u>	<u>Significance level of chi-square</u>
Education			
Less than high school diploma	61 (47.3)	68 (52.7)	
High school diploma	1061 (63.9)	599 (36.1)	<.01
Education beyond high school	48 (74.4)	17 (25.6)	
AFQT			
Categories IVc-a through IIIb	128 (53.2)	113 (46.8)	
Category IIIa	160 (59.7)	108 (40.3)	<.01
Category II	592 (67.5)	285 (32.5)	
Category I	139 (66.2)	71 (33.8)	
Occupational group			
Nonbonus occupations	271 (59.9)	181 (40.1)	
Less attractive occupations	401 (60.0)	268 (40.0)	<.01
Highly technical occupations	498 (68.0)	234 (32.0)	

People with higher educations, higher AFQT scores, and higher skilled occupations were more likely to complete and return the questionnaires. These differences are statistically significant and are consistent with a large body of survey research literature.

A key question is whether these response rate differentials change across years. If they do change across years, then we would have some reason to suspect that our comparisons across years could be influenced by shifts in nonresponse patterns. To analyze the question of response rate differentials over time, a set of three-way tables was generated:

- Education by response/nonresponse by year.
- AFQT by response/nonresponse by year.
- Occupational group by response/nonresponse by year.

Each of these three tables is analyzed using log-linear models. This technique uses a chi-square statistic to test associations in contingency tables. In each of the three-way tables specified above, there are three pairs of two-way associations and one three-way association. Models of expected values are generated under alternative hypotheses that some (or all) of these associations are equal to zero. If these expected values fit the observed data, then the omitted association is viewed as unnecessary to explain the data.

In the education table, only the education and nonresponse association is significant. There is no association between education and year or between year and nonresponse. The absence of a three-way association (education-nonresponse-year) indicates that the education differentials in response rates do not change across years.

An identical pattern is observed for AFQT. There is an association between AFQT and nonresponse, but no association between AFQT and year or between year and nonresponse. The three-way association (AFQT-nonresponse-year) is not significant indicating that the AFQT differentials in response rates do not change.

The findings for the occupational groups are similar but not identical to those for education and AFQT. There is a significant association between occupational group and nonresponse rate but no association between year and nonresponse. There is

an association between year and occupational group, but the occupational group-nonresponse year association is not significant. This indicates that the association between occupational group and nonresponse does not change across the years.

In summary, this analysis shows that response rate is related to some demographic characteristics (grade, education, AFQT, and occupational group). However, these patterns are similar across years. Thus, there is no evidence to suggest that the earnings estimates for the different years might be biased by differential patterns of nonresponse.

COMPUTATION OF MILITARY PAY

To compare military pay with people's initial civilian pay and current civilian pay at the time they completed the questionnaire (May through August 1982), we computed the military pay, allowances, and in-kind benefits people would have received

--upon reenlisting, assuming they received the same pay entitlements they received at their last duty assignment, and

--as of June 1982, assuming they reenlisted and remained in the Navy, were promoted in average time, and received the same entitlements they received at their last duty assignment.

People's specific duty assignments and pay entitlements change over the years. But, by basing pay entitlements on people's last duty assignments, we can identify a reasonable representation of the proportion of people in that occupational group who would be expected to receive that entitlement.

To compute basic pay, allowance for subsistence, allowance for quarters, tax advantage, and reenlistment bonus amounts, we used grade and months of service data provided by the Defense Manpower Data Center, dependents at separation and bonus eligibility provided on the questionnaires, and Navy pay manuals and supplemental guidance. We used Leave and Earnings Statements provided by the Navy Finance Center to determine whether people were entitled to proficiency pay, sea pay, or career sea pay, and we used Navy pay manuals to determine the amount. We also used Leave and Earnings Statements to determine whether people received variable housing and family separation allowances and the amount. On the average, the Leave and Earnings Statements provided the basis for computing about 3 percent of the total military pay used in the analysis for this report.

Additional information on more complex computations is provided below.

COMPUTATION OF MILITARY PAY IF
THE SAMPLE GROUP HAD REENLISTED

1. Military pay entitlements. We obtained the Leave and Earnings Statements about 6 months prior to discharge for each person in our sample. (In some cases, as

explained below, it was necessary to later obtain Leave and Earnings Statements nearer to the date of discharge.) Navy Finance Center representatives suggested that Leave and Earnings Statements representative of the last duty assignment should be obtained several weeks prior to discharge because the last few pay periods may have contained (a) changes in pay and allowances related to changes in duties or location incident to discharge and (b) numerous pay adjustments. We agreed that pay entitlements 6 months prior to discharge should reasonably represent pay entitlements received at the person's last duty station.

2. Basic allowance for quarters. Using dependency status, grade, and the pay tables applicable at time of separation, we computed the basic allowance for quarters for each person in our sample, except for about 7 percent at sea (i.e., receiving sea pay or career sea pay) and having no dependents. Navy representatives said that it would be difficult to persuade an enlisted person at sea that their living quarters were equal in value to the basic allowance for quarters they would otherwise receive. So we assigned no value for quarters to people at sea with no dependents.
3. Basic allowance for subsistence. We applied the appropriate amount at separation for each person.
4. Variable housing allowance.
 - a. Fiscal year 1980: Not authorized.
 - b. Fiscal year 1981: We used the amount shown on the Leave and Earnings Statement 6 months prior to separation. Inasmuch as many of the Leave and Earnings Statements were from fiscal year 1980 (6 months prior to separation), we obtained statements for a date in fiscal year 1981 to determine whether and how much variable housing allowance was paid.
 - c. First quarter of fiscal year 1982: Inasmuch as Leave and Earnings Statements were all from fiscal year 1981 (6 months prior to separation), we estimated fiscal year 1982 variable housing allowance by increasing or decreasing

the fiscal year 1981 rate. We did this by using the percentage increase or decrease by grade in such payments between the two fiscal years computed from data provided by the Office of the Secretary of Defense.

- d. Government-furnished quarters. From the Leave and Earnings Statement, we identified those people not receiving a basic allowance for quarters. To estimate the value of government-furnished quarters over and above the basic amounts, we calculated an amount for variable housing allowance for fiscal year 1981 and 1982 by using the amounts received by those not in government quarters. For each fiscal year, we computed the average variable housing allowance received--by grade with dependents and by grade without dependents--by dividing the total variable housing allowance which all received by the total number receiving basic allowance for quarters in cash. Using these plot points, we then established an estimate for each fiscal year by grade, with and without dependents, using a least squares regression equation.
5. Selective reenlistment bonus. We computed the annual value of bonuses for individuals in a bonus occupation who answered on the questionnaire that they were eligible.
- a. We computed the annual value of bonuses by applying the established multiplier to the applicable fiscal year basic pay tables.
 - b. For those separating during the first quarter of fiscal year 1982, we computed the bonus by using fiscal year 1981 pay tables, as instructed by Navy representatives, because of such limitation imposed by the continuing resolution governing expenditures during this period.
 - c. We limited the annual bonus values to an equivalent total bonus amount of \$12,000 for fiscal year 1980 and \$16,000 for fiscal years 1981 and the first quarter of 1982. To establish annual limits for each occupation, we divided the maximum bonus amount by the average

years of reenlistment--provided by the Navy--
for each occupation and each fiscal year.

6. Sea pay. If the Leave and Earnings Statement showed that an individual was receiving sea pay, we calculated sea pay for the person's grade at separation. Because of the 6-month lag between the Leave and Earnings Statement and the date of separation, some people who separated in fiscal year 1981 may have become eligible for career sea pay prior to separation. The Navy Finance Center researched 96 such cases and provided data indicating that 22 were eligible for career sea pay. We applied career sea pay to those 22.
7. Career sea pay. If the Leave and Earnings Statement showed that the individual was receiving career sea pay, we computed the appropriate amount based on grade and years of sea duty at separation.
8. Proficiency pay. For those receiving such pay, we determined from the Leave and Earnings Statement whether it was level 1, 2, or 3.

AVERAGE ANNUAL MILITARY PAY IF PEOPLE HAD REENLISTED AT SEPARATION

Occupational group, occupation, and fiscal year separated	Elements of military pay (note a)					
	Regular military compensation (note b)	Selective reenlistment bonus	Proficiency pay	Sea pay and career sea pay	Family separation allowance	Total military pay (note c)
Highly technical occupations:						
Electronics technician						
1980	\$13,482	\$1,889	\$18	\$ 59	\$14	\$15,462
1981	15,265	2,981	54	174	10	18,483
1982 (1st qtr.)	18,380	3,333			14	21,727
34 Data systems technician						
1980	\$13,752	\$1,950		\$ 59	\$10	\$15,771
1981	15,547	3,142		146	14	18,849
1982 (1st qtr.)	18,889	3,166		126	0	22,181
Sonar technician						
1980	\$13,955	\$1,440		\$129	\$14	\$15,538
1981	15,671	2,409		864	28	18,972
1982 (1st qtr.)	20,031	2,500		645	0	23,176
Three occupations combined						
1980	\$13,588	\$1,844	\$12	\$ 67	\$14	\$15,525
1981	15,360	2,957	38	236	12	18,603
1982 (1st qtr.)	18,716	3,200		102	7	22,025

Elements of military pay (note a)

Occupational group, occupation, and fiscal year separated	Regular military compensation (note b)	Selective reenlistment bonus	Proficiency pay	Sea pay and career sea pay	Family separation allowance	Total military pay (note c)
Less attractive occupations:						
Boiler technician						
1980	\$13,673	\$1,985	\$ 42	\$196	\$42	\$15,938
1981	16,261	2,992		769	61	20,083
1982 (1st qtr.)	19,180	3,002		798	67	23,048
Engineman						
1980	\$13,610	\$ 456		\$113	\$12	\$14,191
1981	15,537	409	\$ 91	526	22	16,585
1982 (1st qtr.)	19,072	1,087	257	360	0	20,776
Machinist's mate						
1980	\$13,634	\$1,589	\$ 56	\$147	\$33	\$15,460
1981	15,633	3,008	36	660	32	19,369
1982 (1st qtr.)	18,538	2,988	145	476	12	22,159
Three occupations combined						
1980	\$13,639	\$1,498	\$ 44	\$153	\$32	\$15,366
1981	15,817	2,478	35	668	39	19,038
1982 (1st qtr.)	18,807	2,737	115	560	28	22,247

Elements of military pay (note a)

Occupational group, occupation, and fiscal year separated	Regular military compensation (note b)	Selective reenlistment bonus	Proficiency pay	Sea pay and career sea pay	Family separation allowance	Total military pay (note c)
Nonbonus occupations:						
Yeoman						
1980	\$12,891		\$ 34	\$ 49	\$21	\$12,994
1981	15,418			192		15,610
1982 (1st qtr.)	20,343			300	72	20,715
Personnelman						
1980	\$13,585		\$ 82	\$ 30		\$13,697
1981	15,362		133	98	\$13	15,607
1982 (1st qtr.)	18,004					18,004
Dental technician						
1980	\$13,686					\$13,686
1981	15,810			\$265	\$80	16,155
1982 (1st qtr.)	17,127					17,127
Three occupations combined						
1980	\$13,226		\$ 46	\$ 36	\$11	\$13,319
1981	15,453		57	163	18	15,691
1982 (1st qtr.)	18,908			136	33	19,077
All occupations combined:						
1980	\$13,542	\$1,370	\$ 31	\$ 96	\$20	\$15,059
1981	15,518	2,226	41	353	22	18,159
1982 (1st qtr.)	18,777	2,675	53	316	19	21,840

^aBased on weighted data for 909 people as shown in app. II. For explanation of computations, see app. IV.

^bRegular military compensation includes basic pay, basic allowance for quarters, basic allowance for subsistence, variable housing allowance, and tax advantage.

^cDifferences due to rounding.

AVERAGE ANNUAL MILITARY PAY COMPARED WITH
AVERAGE ANNUAL INITIAL CIVILIAN PAY
BY OCCUPATION

<u>Occupational group, occupation, and fiscal year separated</u>	<u>Military pay</u>	<u>Initial civilian salary</u>	<u>Amount civilian pay is:</u>	
			<u>Higher</u>	<u>Lower</u>
Highly technical occupations:				
Electronics technician				
1980	\$15,462	\$18,170	\$2,708 <u>a/</u>	
1981	18,483	18,679	196 <u>d/</u>	
1982 (1st qtr.)	21,727	18,615		\$3,112 <u>a/</u>
Data systems technician				
1980	\$15,771	\$20,543	\$4,772 <u>a/</u>	
1981	18,849	21,113	2,264 <u>a/</u>	
1982 (1st qtr.)	22,181	22,150		\$ 31 <u>d/</u>
Sonar technician				
1980	\$15,538	\$17,760	\$2,222 <u>a/</u>	
1981	18,972	17,000		\$1,972 <u>b/</u>
1982 (1st qtr.)	23,176 <u>e/</u>	22,500 <u>e/</u>		676 <u>d/</u>
Three occupations combined				
1980	\$15,525	\$18,534	\$3,009 <u>a/</u>	
1981	18,603	18,998	395 <u>d/</u>	
1982 (1st qtr.)	22,025	20,340		\$1,685 <u>b/</u>
Less attractive occupations:				
Boiler technician				
1980	\$15,938	\$18,721	\$2,783 <u>a/</u>	
1981	20,083	19,396		\$ 687 <u>d/</u>
1982 (1st qtr.)	23,048	18,875		4,173 <u>a/</u>
Engineman				
1980	\$14,191	\$16,867	\$2,676 <u>a/</u>	
1981	16,585	16,364		\$ 221 <u>d/</u>
1982 (1st qtr.)	20,776	23,429	2,653 <u>d/</u>	
Machinist's mate				
1980	\$15,460	\$20,011	\$4,551 <u>a/</u>	
1981	19,369	18,971		\$ 398 <u>d/</u>
1982 (1st qtr.)	22,159	17,103		5,056 <u>a/</u>

Occupational group, occupation, and fiscal year separated	Military pay	Initial civilian salary	Amount civilian pay is:	
			Higher	Lower
Three occupations combined				
1980	\$15,366	\$19,210	\$3,844 <u>a/</u>	
1981	19,038	18,582		\$ 456 <u>d/</u>
1982 (1st qtr.)	22,247	18,500		3,747 <u>a/</u>
Nonbonus occupations:				
Yeoman				
1980	\$12,994	\$13,371	\$ 377 <u>d/</u>	
1981	15,610	16,275	665 <u>d/</u>	
1982 (1st qtr.)	20,715	14,800		\$5,915 <u>a/</u>
Personnelman				
1980	\$13,697	\$13,136		\$ 561 <u>d/</u>
1981	15,607	15,815	\$ 208 <u>d/</u>	
1982 (1st qtr.)	18,004 <u>e/</u>	11,750 <u>e/</u>		6,254 <u>a/</u>
Dental technician				
1980	\$13,686	\$20,000	\$6,314 <u>b/</u>	
1981	16,155	19,222	3,067 <u>c/</u>	
1982 (1st qtr.)	17,127 <u>e/</u>	12,000 <u>e/</u>		\$5,127 <u>d/</u>
Three occupations combined				
1980	\$13,319	\$14,150	\$ 831 <u>d/</u>	
1981	15,691	16,523	832 <u>d/</u>	
1982 (1st qtr.)	19,077	13,182		\$5,895 <u>a/</u>
All occupational groups combined:				
1980	\$15,059	\$17,999	\$2,940 <u>a/</u>	
1981	18,159	18,381	222 <u>d/</u>	
1982 (1st qtr.)	21,840	18,796		\$3,044 <u>a/</u>

a/Differences are highly significant.

b/Differences are significant.

c/Difference is marginally significant.

d/Differences are not significant.

e/This figure represents the average of less than 5 observations.

AVERAGE HOURLY MILITARY PAY COMPARED WITH
AVERAGE HOURLY INITIAL CIVILIAN PAY (Note a)

<u>Occupational group, occupation and fiscal year separated</u>	<u>Military pay</u>	<u>Initial civilian pay</u>
Highly technical occupations:		
Electronics technician		
1980 <u>b/</u>	\$5.62	\$ 8.19
1981 <u>b/</u>	7.03	8.44
1982 <u>e/</u> (1st qtr.)	8.40	8.20
Data systems technician		
1980 <u>b/</u>	5.97	9.61
1981 <u>b/</u>	7.82	9.43
1982 <u>b/</u> (1st qtr.)	8.48	10.29
Sonar technician		
1980 <u>b/</u>	5.78	7.76
1981 <u>e/</u>	7.28	7.60
1982 <u>e/</u> (1st qtr.)	9.83 <u>f/</u>	10.82 <u>f/</u>
Three occupations combined		
1980 <u>b/</u>	5.70	8.39
1981 <u>b/</u>	7.20	8.56
1982 <u>d/</u> (1st qtr.)	8.56	9.25
Less attractive occupations:		
Boiler technician		
1980 <u>b/</u>	5.16	8.47
1981 <u>b/</u>	7.22	8.78
1982 <u>d/</u> (1st qtr.)	8.71	8.57
Engineman		
1980 <u>b/</u>	5.33	7.31
1981 <u>b/</u>	5.97	7.22
1982 <u>e/</u> (1st qtr.)	7.92	9.15
Machinist's mate		
1980 <u>b/</u>	5.38	8.90
1981 <u>b/</u>	6.68	8.23
1982 <u>e/</u> (1st qtr.)	7.78	7.98
Three occupations combined		
1980 <u>b/</u>	5.32	8.54
1981 <u>b/</u>	6.71	8.20
1982 <u>e/</u> (1st qtr.)	8.06	8.32

<u>Occupational group, occupation and fiscal year separated</u>	<u>Military pay</u>	<u>Initial civilian pay</u>
Nonbonus occupations:		
Yeoman		
1980 <u>d/</u>	\$5.38	\$6.09
1981 <u>e/</u>	6.44	6.91
1982 <u>b/</u> (1st qtr.)	9.48 <u>f/</u>	6.64 <u>f/</u>
Personnelman		
1980 <u>e/</u>	5.72	5.70
1981 <u>e/</u>	6.49	6.79
1982 <u>b/</u> (1st qtr.)	7.77 <u>f/</u>	5.65 <u>f/</u>
Dental technician		
1980 <u>c/</u>	5.62	9.17
1981 <u>c/</u>	6.13	8.57
1982 <u>b/</u> (1st qtr.)	5.64 <u>f/</u>	3.15 <u>f/</u>
Three occupations combined		
1980 <u>b/</u>	5.52	6.36
1981 <u>b/</u>	6.42	7.12
1982 <u>b/</u> (1st qtr.)	8.29	5.81
All occupational groups combined:		
1980 <u>b/</u>	5.54	8.07
1981 <u>b/</u>	6.91	8.17
1982 <u>e/</u> (1st qtr.)	8.32	8.54

a/We excluded cases where annual civilian pay was less than \$7,000 or greater than \$60,000 and cases where the average weekly civilian or military working hours were less than 32 or greater than 84.

b/Differences are highly significant.

c/Differences are significant.

d/Difference is marginally significant.

e/Differences are not significant.

f/This figure represents the average of less than five observations.

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