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MILITARY COMPENSATION

Selected Occupational Comparisons With Civilian Compensation

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The Honorable Pete Wilson
Chairman, Subcommittee on Manpower
and Personnel
Committee on Armed Services
United States Senate

Dear Mr. Chairman

This report is in response to a request by the Subcommittee that we study the relationship between military and civilian compensation for similar occupations, skill levels, experience, and responsibilities.

Although our review demonstrates that some compensation comparisons between military and civilian jobs can be made, this type of comparison is of limited use because

- comparisons for some military positions will never be possible because they have no civilian counterparts, nor are they currently feasible for some other military positions because existing pay surveys do not cover civilian counterparts for these positions;
- pay surveys cannot account for the unique aspects of military life, nor do existing surveys include fringe benefits;
- military and private-sector organizations are different in terms of missions, goals, and objectives, and thus may require different pay-setting approaches; and
- the extent to which pay differences affect military retention has not been clearly established.

ome Comparisons Not ossible; Others Not urrently Feasible

Because of the unique nature of certain military positions and the coverage of current pay surveys, some compensation comparisons are not possible, while others are not currently feasible.

While overall, approximately 15 percent of the military's enlisted force are in occupations designated as combat specialties, more than 25 percent of the Army and the Marine Corps enlisted positions are combat specialties. These occupations would be directly involved in the conduct of actual fighting, and do not have civilian counterparts with which they could be readily compared. The President's Commission on an All-Volunteer Armed Force in 1970 pointed out that deciding what civilian position is comparable to operating a submarine sonar or firing a mortar

is at best a subjective exercise fraught with such inherent difficulties that for all practical purposes it is not possible.

In addition, surveys of wages for civilian occupations that are periodically conducted by the Department of Labor's Bureau of Labor Statistic (BLS) and the Department of Defense's (DOD's) Wage Fixing Authority (WFA) for pay-setting purposes do not cover all civilian occupations for which there is a military counterpart. In 1976, the Center for Naval Analysis estimated that a survey to supplement BLS's existing surveys t cover all civilian occupations for which there was a military counterpar would cost about $5 million.

Limitations of Pay Surveys

Pay surveys cannot assign a monetary value to those unique aspects of military life which have been termed the "X-factor." In a negative context, the X-factor refers to the hardships and unusual demands of military service which are not normally found in civilian employment. In a positive context, the term refers to the more attractive aspects of military service—such as travel, training, job security, educational benefits and on-base recreational facilities. In addition, existing pay surveys do not include the value of fringe benefits, which are an important aspect of compensation, especially for the military.

Military and Private-Sector Views of Compensation Differ

The military and the private sector differ in the way they view compensation. The military emphasizes an "institutional approach," viewing individuals of the same grade and seniority as equally important to the military defense mission, regardless of the occupational specialty to which they are assigned. Accordingly, military compensation is based primarily on grade and years of service. Occupational differences are taken into account through special and incentive pays, and the use of enlistment and reenlistment bonuses for those occupations in which recruiting and retention problems exist. In contrast, private-sector compensation is more likely to be based on the "market approach," where labor supply and demand for a particular occupation are more important determinants of the amount of compensation that a particular occupation will receive at any given time.[1]

[1] Military Compensation Key Concepts and Issues (GAO/NSIAD 86-11, Jan 10, 1986) contains a mor detailed discussion of these two approaches to compensation

Pay Differences May Not Affect Military Retention

Although it would seem that the differences between military and civilian pay would have a pronounced effect on military retention, the evidence is not clear that they do. A 1984 review of studies and analyses on retention submitted to the House Committee on Armed Services by the then Assistant Secretary of Defense, Manpower, Installations and Logistics, points out that several studies have found that pay differentials play a minor role in retention, while civilian unemployment plays a major one. The DOD study hypothesizes that pay differences of the size that existed when these studies were done were of little importance for some service members who have a strong preference for the military way of life.

Results of GAO's Comparisons

With the help of federal officials involved in collecting occupational-pay data, we were able to match a small number of military and civilian occupations and compare compensation (excluding fringe benefits). These comparisons covered about 4 percent of the enlisted force. For this small percentage of the enlisted force, our comparisons show the pay for most military occupations to be lower, but the positions we were able to compare were mostly in computer-related or other highly skilled occupations—occupations for which pay in the private sector tends to be above average. Our findings differ from the results of other studies that are based on an "age-earnings" approach. The "age-earnings" approach matches individual characteristics such as age, sex, and education level to the wages individuals earn. For example, our recently issued report Military Compensation: Comparisons with Civilian Compensation and Related Issues (GAO/NSIAD-86-131), which used an "age-earnings" methodology, found that military compensation generally exceeded civilian workers' compensation. However, results from the age-earnings approach should also be used cautiously since military compensation may have been higher because service members, overall, (1) are in a different mix of occupations than their civilian counterparts, and (2) have had a continuous work history, whereas civilian workers may be underemployed or have experienced periods of unemployment.

Agency Comments

In its comments on a draft of this report, DOD stated that it had no objections to the report and that the report's findings were consistent with those found in studies conducted by DOD, using similar methodologies.

Appendix I provides further detail on the results of our occupation comparisons, and appendix II describes our objectives, scope, and methodology. Appendix III contains our detailed comparisons of civilian and military compensation, by service, for selected occupations. Appendix IV contains DOD's comments.

Copies of this report are being sent to the Chairmen, House and Senate Committees on Appropriations, Armed Services, and the Budget; Senate Committee on Governmental Affairs; and House Committee on Government Operations; the Secretaries of Defense, the Army, the Navy, and the Air Force; the Director, Office of Management and Budget; and other interested parties.

Sincerely yours,

Frank C. Conahan

Frank C. Conahan
Director

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Abbreviations

AWS	Area Wage Survey
BLS	Bureau of Labor Statistics
DOD	Department of Defense
FWS	Federal Wage Historical Survey Data System
IND	Industry Wage
OPM	Office of Personnel Management
OSD	Office of Secretary of Defense
PATC	Professional, Administration, Technical and Clerical Pay Survey
RMC	Regular Military Compensation
WFA	Wage Fixing Authority

Occupational Comparisons

The focus of our review was to determine to what extent military and civilian occupations could be compared and to identify the difference between military and civilian compensation for those occupations which could be compared. We defined "military compensation" as Regular Military Compensation plus, where applicable, reenlistment bonuses. Regular Military Compensation consists of basic pay, allowances for subsistence and quarters, and the federal income tax advantage on these allowances. Because Regular Military Compensation is usually considered to be equivalent to civilian salaries, we did not include in our computations of military compensation the several special and incentive pays—such as sea pay, flight pay, and hazardous-duty pay—that service members receive. Nor did we include the value of military benefits, such as free medical care and commissary and exchange privileges. We also excluded initial enlistment bonuses primarily because we matched journeyman-level jobs. We compared only straight-time compensation for both the military and the private sector.

We reviewed 156 of the approximately 2,000 military occupations that appeared to be related to known civilian or federal job titles and tried to match them with job descriptions used in federal surveys of civilian pay by the Department of Labor's Bureau of Labor Statistics (BLS) and the Department of Defense's (DOD's) Wage Fixing Authority (WFA). We also reviewed the military's air-traffic-controller positions and tried to match them with the Office of Personnel Management's (OPM's) federal standards for civilian air-traffic controllers.

Officials from the federal survey agencies and occupational representatives from the military services assisted us in matching the military occupations with the civilian job descriptions.We then conducted extensive field interviews to determine whether the matches were valid in view of the work actually being performed. Experts from the federal survey agencies reviewed our tentative matches and the records of our interviews.

Neither BLS nor WFA conduct pay surveys of air-traffic-control occupations, most of which are staffed with civilian federal workers. However because the enlisted force includes air-traffic controllers, we compared 15 military air-traffic-control jobs in three services with the job-grading standards that the OPM has established for federal civilian air-traffic controllers.

See appendix II for a more detailed description of our objectives, scope, and methodology.

Results of GAO's Comparisons

We were able to match 86 of the 156 military occupations we reviewed to one or more of 48 BLS or WFA job descriptions. In addition, we matched 6 military air-traffic-control occupations to 4 OPM descriptions of air-traffic-control occupations—for a total of 52 job matches.[1] Since a military occupation can cover several skill levels, while each of the civilian job descriptions covers only one specific skill level within an occupation, we were sometimes able to match a military occupation to more than one civilian job description. For example, the military computer-programmer occupation matched five civilian job descriptions. Conversely, we sometimes matched one civilian job to more than one military occupation. For example, the civilian job description for electronics technician I matched several military electronics occupational specialties. We were also able to match 15 military air-traffic-control occupations and skill levels to OPM's federal standards for civilian air-traffic controllers.

The matches included both white-collar and blue-collar occupations, with civilian pay ranging from $11,850 for accounting clerk I to $39,354 for programmer/programmer analyst V. However, over 75 percent of our matches were in blue-collar occupations. Most of these occupations were at the journeyman level since the BLS and WFA survey few blue-collar apprentice-level or supervisory-level jobs.

Military and Civilian Compensation Differ

Table I.1 shows the average military and civilian compensation for each of the 52 jobs covered by our matches and the difference between the two. Appendix III compares military and civilian compensation on a service-by-service basis.

[1]Within the 52 jobs matched, we made 141 skill-level matches—126 to the BLS and WFA surveys, and 15 to OPM's standards for air-traffic-control positions—and averaged these matches within the 52 jobs to obtain the differences between military and civilian pay for those jobs

Table I.1: Comparison of Military and Civilian Compensation for 52 Occupations

Job no.	Survey type[a]	Title of civilian job	Compensation		
			Military[b]	Civilian[c]	Differenc
1	PATC	Accounting Clerk I	$11,673	$11,850	$ −17
2	PATC	Computer Operator I	16,308	13,231	+3,07
3	PATC	Personnel Clerk/Assistant I	13,944	13,546	+39
4	PATC	Accounting Clerk II	14,094	14,236	−14.
5	AWS	Guard II	15,242	16,227	−98
6	PATC	Personnel Clerk/Assistant II	15,655	16,362	−70
7	PATC	Computer Operator II	16,285	16,541	−25
8	PATC	Accounting Clerk III	16,480	16,734	−25
9	AWS	Shipper-Receiver	16,485	17,232	−74
10	AWS	Electronic Technician I	19,359	17,851	+1,50
11	PATC	Personnel Clerk/Assistant III	18,198	18,497	−29
12	AWS	Warehouseman	15,409	18,917	−3,50
13	PATC	Computer Operator III	18,432	19,990	−1,55
14	PATC	Programmer/Programmer Analyst I	15,828	20,049	−4,22
15	PATC	Buyer I	18,846	20,478	−1,63
16	PATC	Accounting Clerk IV	19,980	20,497	−51
17	PATC	Personnel Clerk/Assistant IV	21,997	22,103	−10
18	PATC	Programmer/Programmer Analyst II	15,881	23,100	−7,21
19	AWS	Maintenance Painter	17,733	24,230	−6,49
20	FWS	Welder	19,790	24,886	−5,09
21	AWS	Electronic Technician II	22,390	24,931	−2,54
22	PATC	Buyer II	21,468	24,984	−3,51
23	AWS	Maintenance Carpenter	17,907	25,084	−7,17
24	AWS	Motor Vehicle Mechanic	16,881	25,346	−8,46
25	AWS	Computer System Analyst I	23,272	25,696	−2,42
26	FWS	Central Office Telephone Repairer	20,497	25,714	−5,21
27	AWS	Stationary Engineer	17,878	26,178	−8,30
28	FWS	Electronic Test Equipment Repairer	21,594	26,319	−4,72
29	AWS	Maintenance Machinist	18,394	26,417	−8,02
30	FWS	Air Conditioning Mechanic	19,444	26,629	−7,18
31	FWS	Equipment Mechanic	21,589	26,744	−5,15
32	FWS	Automotive Mechanic	18,310	26,812	−8,50
33	AWS	Electronic Technician III	21,373	26,899	−5,52
34	IND	Airline Passenger Agent	15,846	27,115	−11,26
35	FWS	Heavy Mobile Equipment Mechanic	17,017	27,173	−10,15
36	AWS	Maintenance Electrician	15,655	27,183	−11,52
37	PATC	Programmer/Programmer Analyst III	17,181	27,498	−10,31

ob no.	Survey type[a]	Title of civilian job	Compensation		
			Military[b]	Civilian[c]	Difference
8	IND	Electrical Line Worker	16,995	27,553	−10,558
9	IND	Airline Freight Agent	17,878	28,660	−10,782
0	FWS	Electronics Mechanic	17,010	29,067	−12,057
1	AWS	Computer Systems Analyst II	26,898	30,288	−3,390
2	PATC	Buyer III	25,872	30,993	−5,121
3	FWS	Heavy Mobile Equipment Operator	18,389	31,143	−12,754
4	PATC	Programmer/Programmer Analyst IV	22,965	32,328	−9,363
5	IND	Aircraft Mechanic	19,827	33,411	−13,584
6	AWS	Computer Systems Analyst III	26,898	35,346	−8,448
7	IND	Aircraft Inspector	22,144	35,804	−13,660
8	PATC	Programmer/Programmer Analyst V	30,135	39,354	−9,219
9	OPM	Air Traffic Control Trainee	12,293	17,138	−4,845
0	OPM	Air Traffic Control Apprentice	15,678	23,578	−7,900
1	OPM	Air Traffic Control Journeyman Tower Operator	20,129	31,304	−11,175
2	OPM	Air Traffic Control Radar Terminal Journeyman	21,555	32,443	−10,888

[a]Legend PATC—BLS Professional, Administrative, Technical and Clerical Pay Survey AWS—BLS Area Wage Survey—Occupational Earnings in All Metropolitan Areas, July 1983 FWS—WFA Historical Survey Data System IND—BLS Industry Surveys OPM—OPM Position Classification Standards

[b]Military compensation is the weighted average for all the services' military jobs we matched to each civilian job

[c]The Department of Labor's Employment Cost Index was used to adjust the civilian pay surveys, which have various as-of dates, to the common as-of date assumed for military pay, June 1984

These comparisons cannot be projected to other military occupations for two major reasons. First, we did not take a random sample of occupations but selected those military occupations that initially appeared to be related to the civilian or federal job descriptions. Second, many of the positions we were able to compare were in computer-related occupations or in highly skilled and unionized occupations. These occupations command higher private-sector pay than many others. Approximately 79 percent of the civilian positions and skill levels we reviewed had median monthly cash pay levels that were above the most recent national median monthly earnings of all full-time wage and salary workers aged 16 and over.

SD Compensation Study

To date, the only occupation-matching comparison of military and civilian total compensation (meaning the sum of salary, bonuses, other pays and allowances, and benefits) has been A Comparative Study of Total Compensation for Selected Military and Civilian Occupations. This

was prepared by the Office of the Secretary of Defense (OSD) in July 1985 for the Senate Appropriations Committee. This study compared total compensation for 22 military and civilian occupations (representing about 6 percent of the enlisted force).

OSD defined "military compensation" not only as the Regular Military Compensation elements of pay and allowances, but also as special and incentive pays, reenlistment bonuses (but not enlistment bonuses), discount shopping, federal tax savings, retirement pay, insurance, pay for time not worked, disability income continuation, and survivor benefits However, it made no attempt to include a monetary value for the military X-factor.

OSD matched 22 civilian job descriptions for which compensation data was available from the BLS with descriptions of equivalent enlisted positions in the military services. It based the matching, in part, on the results of an earlier study, which analyzed and classified military skills by job content and grouped them according to the same occupational codes and job descriptions as those used by BLS. A pay-and-classificatio expert also helped select the occupations and validate the comparisons. OSD conducted no field interviews to verify whether actual work performed was the same as that contained in job descriptions

OSD extracted military pay information directly from individual pay records and civilian pay data from BLS surveys. It developed a standard military-benefit package for the military population, assuming full participation for each member and the entire family when appropriate. It based its valuation of the civilian-benefit package upon the probability of participation and the related employer cost for the various plan elements

Neither the military- nor the civilian-compensation packages included overtime. However, OSD extracted workweek hours for the military fro a 1978 self-reported survey of officer and enlisted personnel, which compared military work hours to civilian scheduled work hours as reported in the BLS survey. OSD maintained that this was the best workweek data available, but it also recognized the weaknesses in using self-reported data. The report, therefore, showed results for military compensation based on both a 40-hour workweek and for a workweek base on the reported number of hours worked

Because of its limited scope, the OSD study acknowledged that its result were not necessarily representative of the entire military force. OSD

examined no officer occupations, and most of the enlisted positions it compared were in computer-related occupations and highly skilled craft and unionized occupations—such as electrician, plumber, carpenter, and mechanic positions. Approximately three-fourths of the civilian positions and skill levels it examined had median monthly cash pay levels above the most recent national median monthly earnings of all full-time wage and salary workers aged 16 and over.

In the 22 occupations compared, military pay exceeded civilian pay in 2 of 8 apprentice comparisons, in 6 of 21 journeymen comparisons, but in none of the 4 master level comparisons. When military pay was adjusted for the workweek hours reported in the 1978 survey and compared to pay for the 40-hour civilian workweek, the military received less pay per hour than the civilians in all the comparisons.

OSD has an expanded study currently underway which will include additional enlisted occupations and a few officer occupations.

Observations

Both our comparison and OSD's comparison of military and civilian compensation show that some comparisons are feasible. However, the current usefulness of such comparisons is very limited. Present wage surveys cover only certain occupations. They never will cover those military positions that have no civilian counterparts. Furthermore, they do not cover many civilian occupations that have military counterparts.

Our matches and OSD's matches together covered only about 208,000 of the 2.2 million (or about 9 percent) active-duty end strength for fiscal year 1986. Since existing surveys were not designed to cover military occupations, they do not cover as many compatible civilian occupations and skill levels as would be needed for a comprehensive evaluation of what the services' competition in the private sector pays employees who do comparable work. To obtain adequate data, DOD would need to work extensively with the survey agencies (primarily BLS) to determine the scope of occupation-and-pay comparisons needed

Objectives, Scope, and Methodology

The objectives of this study, made at the request of the Chairman, Subcommittee on Manpower and Personnel, Senate Committee on Armed Services, were to

- determine the feasibility of using existing or expanded surveys of civilian occupational pay as a basis for establishing a link between military and civilian compensation, and
- compare military compensation for selected military occupations with that of civilian employees who work in comparable occupations at equivalent levels of skill and responsibility.

We made our review in accordance with generally accepted government auditing standards, except that we did not review DOD's controls for its data-processing systems that produced certain military manpower data we used in the review. That information included data on assigned strength by military occupation, grade level, and years of service, which we used in computing military compensation in the occupations reviewed

During the initial phase of this review, we considered including both officers and enlisted occupations in our comparisons. However, we decided to limit our detailed comparisons to enlisted occupations—which comprise about 86 percent of the total active-duty military force—because we wanted to ensure the credibility of our occupational matches. Since enlisted personnel are more likely than officers to spend most of their military service working in one occupational area, comparisons of enlisted occupations to related civilian occupations are more straightforward.

Occupational Comparisons

We considered two methods for comparing military and civilian occupations: (1) job-evaluation methods, such as those used by OPM and by the private-sector firm of Hay Associates, and (2) job matching, such as those performed by BLS in conducting occupational pay surveys of civilian employers

We eliminated the job-evaluation method because

- it requires more subjective judgments than the job-matching method and could, consequently, make the results less credible; and
- the data available on job-evaluation-type surveys of civilian pay for the types of blue-collar occupations prevalent among the enlisted force are insufficient

In determining the best way to pursue the job-matching alternative, we reviewed several occupational-pay survey reports and discussed job-matching methods with officials at two job survey agencies—BLS and WFA. Both agencies conduct civilian occupational-pay surveys that cover a wide range of occupations and have wide geographic coverage. Agency officials noted that the occupations their agencies survey include many relevant to enlisted occupations and that the job descriptions they use in the civilian pay surveys could be used in matching military jobs to the civilian survey jobs. They also stressed that credible job matching requires visiting employer officials or representatives who are knowledgeable about the jobs being surveyed. Such contacts would be necessary because merely comparing job descriptions does not provide enough information to make valid job-matching determinations.

We decided to use the BLS and the WFA job descriptions in matching occupations and to use the related pay-survey reports on civilian pay to compare compensation. To help ensure that we were matching jobs properly, we (1) received training from experts in the survey agencies, (2) observed BLS personnel conducting initial job-matching sessions with military occupational managers, and (3) had BLS review our job-matching determinations. The military occupational managers with whom we conducted the job-matching sessions participated in the job-matching determinations and concurred with the job matches used in our study.

The particular surveys we used in the job-matching work included WFA's Federal Wage System survey of blue-collar occupations (used in setting pay for federal blue-collar workers) and the following BLS surveys:

- Professional, Administrative, Technical, and Clerical Pay (PATC) survey,
- Area Wage Survey (AWS), which covers white-collar and blue-collar occupations in metropolitan areas, and
- Industry Wage (IND) surveys of Certificated Air Carriers and Electric and Gas Utilities.

Generally, only one of the surveys covered a particular military occupational specialty and skill-level combination that we reviewed.

Air-Traffic-Control Occupations

As the basis for our comparison of air-traffic-controller positions, we used OPM's job-grading standards for air-traffic-controller occupations. Under the OPM standards, grade levels are established separately for each air-traffic-control facility, with the amount of air traffic and the

complexity of the control environment being the principal factors in grade-level determinations. The OPM standards include apprentice, developmental, and journeyman skill-level categories and grade levels.

The services do not grade their air-traffic-controller positions on the basis of traffic density or a control area's complexity. Instead, military pay grades for these positions are based largely on time in service and time in the occupational specialty. All military air-traffic controllers must be federally certified as proficient in each controller position at an air-traffic facility before they can hold that position at the facility without being under the constant supervision of a qualified controller.

Even though OPM and the services differ on how they grade air-traffic controllers, we were able to compare the jobs in terms of how the military grade-level structure for air-traffic controllers compares with OPM civilian grade-level standards for comparable jobs and skill levels. Our comparisons cover airport-tower and radar-terminal controllers.

Selection of Enlisted Occupations

We selected enlisted occupations that were potential matches to the survey occupations by reviewing service occupational specialty listings and descriptions and compared them to the occupations covered by the wage surveys. That initial review resulted in a selection of 156 military occupational specialties, which were then analyzed in detail for their comparability to 74 skill-level and occupation combinations from the BLS and WFA surveys. The detailed analysis included (1) reviewing the military and survey job descriptions,[2] (2) meeting with occupational experts designated by the services to discuss the military jobs in detail and to determine whether any military workers met the survey job-description requirements, and (3) having the survey agencies review our job-matching work papers to evaluate whether we had obtained sufficient information and correctly applied the survey job descriptions.

We selected all the military occupations that appeared to be likely matches to a survey occupation, except where the services had numerous occupational specialties covering the same basic occupation. This primarily concerned the electronics technician occupation. In such cases, we selected just a few military occupational specialties—generally those with the largest number of people assigned.

[2]We used the military occupation descriptions in Army Regulation 611-201, Navy Manual NAVPERS 18068D, Air Force Regulation 39-1, and Marine Corps Manual MCO P1200 7D

In several cases, we matched more than one of a service's occupational specialties to a survey job. In those cases, we computed a weighted-average for all of a service's specialties matched to one survey job and then compared the weighted average to the civilian survey pay.

nited Review of White-lar Occupations

We were able to review only a few white-collar jobs. BLS officials agreed that, because of the complexity of the related survey job descriptions, credible job matching in most of the white-collar survey occupations would require work by experienced surveyors. BLS initially provided senior survey technicians to accompany us to some military work sites and conduct some job matching in those occupations. With that assistance, we were able to cover 38 white-collar survey occupations or skill levels in at least one service. However, BLS was unable to continue its assistance, and we were unable to acquire the services of a qualified consultant who BLS acknowledged as an expert in such job matching. We did not consider ourselves qualified to continue job matching in those occupations without such assistance and, therefore, did not further review enlisted white-collar occupations.

Because we selected military occupations in the manner described and not by a random sample, our job-matching and pay-comparison results are not projectable beyond the approximately 110,000 enlisted people covered by our job matches.

entifying the Work rce Represented by e Matched Jobs

We considered many factors in determining which worker groups met the survey job-description requirements. Those factors included length of technical-school training, length of on-the-job training, passing of skill-qualification tests, complexity of tasks performed without direct supervision, and the number of years of experience.

mputations and mparisons of mpensation

The BLS and WFA list civilian compensation data in terms of straight-time wages or salary for the employees' standard-length workweek—generally about 40 hours. These surveys do not include overtime and special pays. We computed military compensation on the basis of the services' standard, stateside, peacetime workweek—40 hours. However, we also computed Navy compensation on the basis of the Navy's standard sea-duty workweek of 60 hours. We did not include military special or situational pays such as sea pay, flight pay, or hazardous-duty pay, although we did include selective reenlistment bonuses. Since the civilian surveys do not include the value of employee fringe benefits, we did not include

fringe benefits in the compensation comparisons. In our recent report which compared pay using the age-earnings approach, we found that military fringe benefits were much larger than civilian fringe benefits primarily because of earlier military retirement.

Computing Military Compensation

We defined "military compensation" as regular military compensatior which includes basic pay, quarters allowance, subsistence allowance, variable housing allowance, and the federal income tax advantage on the allowances. We also included reenlistment bonuses prorated over reenlistment period where applicable We did not include any special and incentive pays members may receive

We used the military pay table entitled "Assume All Cash RMC Pay Grade Averages,"[3] which includes DOD-computed averages for variabl housing allowance payments. We obtained data applicable to each occ pation reviewed and used the pay-table section—which is structured grade level and years of service—appropriate for each group.

In most cases, data was available on the average years of service for t military personnel in the positions we matched to a private-sector survey job. Where such data was unavailable for more specific descri tions we had—such as for aircraft mechanics who work as crew chief or vehicle mechanics who work in a certain type of repair shop, we us the average years of service for everyone in that grade and occupatio specialty.

Where a job match involved more than one military grade level, we cc puted a weighted average pay for all those involved in the match on t basis of the number in each grade. In addition, we computed a weight average pay for all of a service's occupational specialties that we matched to the same survey job, again using the number of people as basis for weighting

Reen istment Bonuses

The services pay reenlistment bonuses in occupations where personne retention is a significant problem. The bonus amount is a multiple of monthly pay times the number of years of enlistment. The services

[3]Department of Defense, Selected Military Compensation Tables January 1984 Pay Rates, Washington, D C Office of the Assistant Secretary of Defense-Manpower, Reserve Affairs and Logistic Directorate of Compensation

divide the multiples into three "zones," with each zone covering a different years-of-service range. Bonuses are paid only in the zones where retention problems exist, and the highest multiple is in the zone involving the greatest retention problem

We estimated the bonus amounts applicable to the jobs we reviewed by multiplying the basic-pay portion of military compensation by the zone multiple applicable to the average years of service for the group of military people whom we matched to the survey job. Where the job matches covered more than one military pay grade, we computed bonus pay for each grade separately, based on the average years of service for that grade

The services revise their bonus schedules periodically as their retention situation changes. We used the bonuses applicable during fiscal year 1984, but these varied by service according to the effective date of the bonus schedules obtained from each service We believe that our bonus estimates are reasonable approximations of bonus pay, although estimates made at different times or using different average years of service for the groups of people covered would produce different results. Although we used the same average years of service for bonus-computation purposes as we did for Regular Military Compensation purposes, some of the people included in the matches would likely be in different years-of-service zones where a different bonus multiple would apply

rkweek Pay Conversions

The pay surveys we used vary in reporting pay on an hourly, weekly, monthly, or annual basis. Since the reports show that civilian workweeks were very close to 40 hours, we converted all the private-sector data to an annual basis, assuming 2,080 hours, or 52 weeks, or 12 months in a work year. The military services' standard peacetime workweek is 40 hours—except for Navy sea-duty work, with this one exception, military and civilian workweeks are comparable The Navy's sea-duty workweek for basic occupational (Navy rating) work is 60 hours (not including watch standing duties) Therefore, we also computed a sea-duty pay adjusted to a 40-hour week so we could compare it to civilian pay. We computed sea-duty pay for 40 hours work at two-thirds the pay received for working the full 60-hour workweek

Adjusting Pay Surveys to Same Data

We used the Department of Labor's employment cost index to adjust pay surveys, which have various as-of dates, to the common as-of da assumed for military pay, June 1984 The as-of dates for the surveys were

- PATC, March 1984;
- AWS, July 1983;
- FWS, June 1982 (average);
- BLS Gas and Electric Utility Industry, February 1978; and
- BLS Air Carrier Industry, September 1980

Locations Visited During Review

We visited the following locations

- Office of Assistant Secretary of Defense, Force Management and Per sonnel, Washington, DC;
- United States Army Headquarters, Washington, DC;
- Army Ordnance Center and School, Aberdeen Proving Ground, MD;
- Army Signal Center and School, Fort Gordon, GA;
- Army Missile and Munitions Center and School, Redstone Arsenal, A
- Army Aviation Center, Fort Rucker, AL;
- Army Quartermaster Center, Fort Lee, VA;
- Army Aviation Logistics School, and Army Transportation School, F Eustis, VA;
- Army Engineer Center, Fort Belvoir, VA,
- Soldier Support Center, Fort Benjamin Harrison, IN;
- United States Navy Headquarters, Arlington, VA,
- United States Air Force Headquarters, Washington, DC;
- Strategic Air Command Headquarters, Offutt Air Force Base, NE;
- 1110th Security Police Squadron, Bolling Air Force Base, VA;
- Engineering and Services Center, Tyndall Air Force Base, FL;
- United States Marine Corps Headquarters, Arlington, VA;
- Bureau of Labor Statistics Headquarters, Washington, DC;
- DOD Wage Fixing Authority Headquarters, Alexandria, VA;
- Defense Manpower Data Center, Arlington, VA; and
- Office of Personnel Management, Washington, DC.

Military Occupations Reviewed

Tables II.1 through II.8 list the occupational codes and titles of each the military occupations we reviewed Occupational codes are referr to as "Military Occupational Specialties" in the Army and the Marine Corps, "Ratings" in the Navy, and "Air Force Specialty Codes" in the Air Force

ble II.1: Army Occupational ecialties Matched to a Survey Job

Occupational Codes	Title
21L	Pershing Electronics Repairer
24H	Improved Hawk Fire Control Repairer
24J	Improved Hawk Pulse Radar Repairer
26L	Tactical Microwave Systems Repairer
35L	Avionic Communications Equipment Repairer
35M	Avionic Navigation/Flight Control Equipment Repairer
35R	Avionic Special Equipment Repairer
44E	Machinist
51R	Interior Electrician
52G	Transmission and Distribution Specialist
62E	Heavy Construction Equipment Operator
63H	Track Vehicle Repairer
63W	Wheel Vehicle Repairer
66	Aircraft Technical Inspector
67G	Utility/Cargo Airplane Repairer
67H	Observation Airplane Repairer
67N	Utility Helicopter Repairer
68B	Aircraft Powerplant Repairer
76J	Medical Supply Specialist
76V	Materiel Storage and Handling Specialist
76X	Subsistence Supply Specialist
93H	Air Traffic Control Tower Operator
93J	Air Traffic Control Radar Controller

Table II.2: Army Occupational Specialties Reviewed but Not Matched

Occupational Codes	Title
31E	Field Radio Repairer
34C	DAS3 Computer Repairer
34F	Digital Subscriber Terminal Equipment Repairer
34H	Automatic Digital Message Switch Equipment Repairer
34K	IBM 360 Repairer
35C	Automatic Test Equipment Repairer
35K	Avionic Mechanic
44B	Metal Worker
51B	Carpentry and Masonry Specialist
52C	Utilities Equipment Repairer
62H	Concrete and Asphalt Equipment Operator
62J	General Construction Equipment Operator
63B	Light-Wheel Vehicle Mechanic
63S	Heavy-Wheel Vehicle Mechanic
63Y	Track Vehicle Mechanic
64C	Motor Transport Operator
68D	Aircraft Powertrain Repairer
68G	Aircraft Structural Repairer
68H	Aircraft Pneudraulics Repairer
73C	Finance Specialist
73D	Accounting Specialist

le II.3: Navy Occupational cialties Matched to a Survey Job

Occupational Codes	Title
AD6412	J-79 Jet Engine CER/IMA Technician
AD6418	T-56 Turbo Fan Jet Engine IMA Technician
DP2703	Computer System Operator (WWMCCS)
DP2704	LHA Computer System Operator
DP2706	ASWOC Data Processing Technician
DP2707	NCCS ADP Operator
DP2741	Computer Programmer (Assembler Language)
DP2742	Computer Programmer (Cobol)
DP2743	Computer Programmer (Fortran)
DP2747	Application Programmer (WWMCCS)
DP2751	System Analyst
DP2752	Application System Analyst (WWMCCS)
ET	Electronics Technician
FTB	Fire Control Technician (Ballistic Missile Fire Control)
FTG	Fire Control Technician (Gun Fire Control)
FTM	Fire Control Technician (Surface Missile Fire Control)
MM	Machinist Mate
MM4291	Centrifugal Air Conditioning Mechanic
MM4294	Refrigeration and Air Conditioning Mechanic
MR	Machinery Repairman
PN	Personnelman
PN2612	Classification Interviewer

Table II.4: Navy Occupational Specialties Reviewed but Not Matched

Occupational Codes	Title
AME	Aviation Structural Mechanic (Safety Equipment)
AMH	Aviation Structural Mechanic (Hydraulics)
AMS	Aviation Structural Mechanic (Structures)
BT4515	Pressure-Fired Boiler Operator
CE	Construction Electrician
CE5642	Central Office Exchange Technician
CN	Constructionman
DP2753	NWSS System Support Analyst
DS	Data Systems Technician
EA	Engineering Aid
EO	Equipment Operator
FT	Fire Control Technician
HT	Hull Maintenance Technician
IC4711	Interior Voice Communications Systems Maintenance Technician
STG	Sonar Technician (Surface)
STS	Sonar Technician (Submarine)
UT6102	Shore Based Boiler Controls Technician
NEC9545	Security Guard

e II.5: Air Force Occupational cialties Matched to a Survey Job

Occupational Codes	Title
272X0	Air Traffic Control Operator/Technician
303X1	Air Traffic Control Radar Specialist/Technician
304X1	Navigational Aids Equipment Specialist/Technician
316X2	Missile Electronic Equipment Specialist/Technician
321X2	Weapon Control Systems Mechanic/Technician
324X0	Precision Measuring Equipment Specialist/Technician
325X0	Automatic Flight Control Systems Specialist/Technician
328X1	Avionic Navigation Systems Specialist/Technician
328X3	Electronic Warfare Systems Specialist/Technician
362X1	Telephone Central Office Switching Equipment Technician
426X2	Jet Engine Mechanic/Technician
427X4	Metals Processing Specialist/Technician
472X0	Base Vehicle Equipment Mechanic
472X1	Special Vehicle Mechanic
472X2	General Purpose Vehicle Mechanic
545X0	Refrigeration and Cryogenics Specialist/Technician
545X2	Heating Systems Specialist/Technician
552X0	Carpentry Specialist
552X4	Protective Coating Specialist/Technician
602X1	Freight Traffic Specialist
605X0	Air Passenger Specialist
811X0	Security Specialist

e II.6: Air Force Occupational cialties Reviewed but Not Matched

Occupational Codes	Title
305X4	Electronic Computer and Switching Systems Specialist/ Technician
362X4	Telephone Equipment Installation and Repair Specialist/ Technician
431X0	Helicopter Mechanic/Technician
431X1	Tactical Aircraft Maintenance Specialist/Technician
431X2	Strategic Aircraft Maintenance Specialist/Technician
542X0	Electrician/Electrical Technician
542X1	Electric Power Line Specialist/Technician
551X1	Construction Equipment Operator
552X2	Metal Fabricating Specialist/Technician
602X2	Packaging Specialist
603X0	Vehicle Operator/Dispatcher
645X1	Materiel Facilities Specialist

Table II.7: Marine Corps Occupational Specialties Matched to a Survey Job

Occupational Codes	Title
0121	Personnel Clerk
1161	Refrigeration Mechanic
1341	Engineer Equipment Mechanic
1345	Engineer Equipment Operator
2161	Repair Shop Machinist
2814	Central Office Installer-Repairer
2822	Electronic Switching Equipment Technician
2871	Test Measurement and Diagnostic Equipment Technician
2874	Metrology Technician
3044	Purchasing and Contracting Specialist
3051	Warehouse Clerk
3073	Computer Systems Operator (SUADPS-EU)
3111	Freight Operations Clerk
3451	Accounting Technician
3522	Intermediate Automotive Mechanic
4034	Computer Operator
4063	Programmer (Cobol)
5954	Air Traffic Control Communications Technician
6024	Aircraft Power Plant Mechanic (J-79)
6416	Aircraft Navigation Systems Technician (IMA)
6492	Aviation PME Calibration Technician
6493	Aviation PME and ATE Repair Technician
7311	Air Traffic Controller—Trainee
7312	Air Traffic Controller--Tower
7322	Air Traffic Controller—Radar

le II.8: Marine Corps Occupational cialties Reviewed but Not Matched

Occupational Codes	Title
1141	Electrician
1142	Electrical Equipment Repair Specialist
1316	Metal Worker
1371	Combat Engineer
2811	Telephone Technician
2861	Radio Technician
3052	Packaging Specialist
3521	Organizational Automotive Mechanic
3524	Fuel and Electrical Systems Mechanic
3531	Motor Vehicle Operator
3533	Tractor-Trailer Operator
4641	Photographer
5977	Tactical General Purpose Computer Technician
6014	Aircraft Mechanic (F-4/RF-4)
6016	Aircraft Mechanic (KC-130)
6017	Aircraft Mechanic (F/A-18)
6112	Helicopter Mechanic (CH-46)
6314	Aircraft Command/Naval Systems Technician (RF-4/F-4)
6354	Aircraft Weapons Systems Specialist (F-4J/S)

Comparison of Civilian and Military Compensation

Tables III 1 and III.2 compare civilian and military compensation for F survey jobs.

Table III.1: Comparison of Civilian and Army and Navy Compensation

	Civilian		Army		Navy		
Survey job no.	Survey occupation	Compensation	Occupational specialty	Compensation	Occupational specialty	Compensation Shore	
1	Accounting Clerk I	$11,850 00					
2	Computer Operator I	$13,231 00			DP2703/4/6/7	$16,307 91	$10,87
3	Personnel Clerk/Assistant I	$13,546 00			PN	$14,188 78	$ 9,46
4	Accounting Clerk II	$14,236 00					
5	Guard II	$16,227 00					
6	Personnel Clerk/Assistant II	$16,362 00			PN	$15,655 17	$10,44
7	Computer Operator II	$16,541 00			DP2703/4/6/7	$18,091 44	$12,06
8	Accounting Clerk III	$16,734 00					
9	Shipper Receiver	$17,232 00					
10	Electronic Technician I	$17,851 00	21L 24H/J 26L	$14,519 32	ET FTB/G/M	$20,822 77[a]	$13,88
11	Personnel Clerk/Assistant III	$18,497 00			PN	$18,065 52	$12,04
12	Warehouseman	$18,917 00	76V/X/J	$15,191 45			
13	Computer Operator III	$19,990 00			P2703/6/6/7	$18 091 44	$12,06
14	Programmer/Analyst I	$20,049 00			P2741/2/3/7	$18,055 57	$12,04
15	Buyer I	$20,478 00					
16	Accounting Clerk IV	$20,497 00					
17	Personnel Clerk/Assistant IV	$22,103 00			PN2612	$21,996 85	$14,67
18	Programmer/Analyst II	$23,100 00			DP2741/2/3/7	$18,055 57	$12,04
19	Maintenance Painter	$24,230 00					
20	Welder	$24,886 00					
21	Electronic Technician II	$24 931 00	21L 24H/J 26L	$18,059 41	ET FTB/G/M	$24,163 69[a]	$16,11
22	Buyer II	$24,984 00					
23	Maintenance Carpenter	$25,084 00					
24	Maintenance Mechanic Vehicle A	$25,346 00	63H	$16,644 24			
25	Computer Systems Analyst I	$25,696 00			DP2741/2/3/7	$23,271 53	$15,52
26	Central Office Telephone Repair	$25 714 00					
27	Stationary Engineer	$26,178 00					

Key no.	Civilian		Army		Navy		
	Survey occupation	Compensation	Occupational specialty	Compensation	Occupational specialty	Compensation Shore	Compensation Sea
	Electronic Test Equipment Repair	$26,319 00					
	Maintenance Machinist	$26,417 00	44E	$17,507 17	MR	$18,488 82	$12,332 04
	Air Conditioning Mechanic	$26,629 00			MM4291/4294	$21,470 82[a]	$14,321 04[a]
	Equipment Mechanic	$26,744 00			MM	$21,588 65[a]	$14,399 63[a]
	Maintenance Mechanic Vehicle W	$26,812 00	63W	$18,309 65[a]			
	Electronic Technician III	$26,899 00	21L 24H 26L	$20,127 17			
	Airline Passenger Agent	$27,115 00					
	Heavy Mobile Equipment Mechanic	$27,173 00	63H	$16,644 24			
	Maintenance Electrician	$27,183 00	51R	$15,655 17			
	Programmer Analyst III	$27,498 00					
	Electrical Line Worker	$27,553 00	52G	$16,995 19			
	Airline Freight Agent	$28,660 00					
	Electronics Mechanic	$29,067 00	35L 35R 35M	$17,060 40			
	Computer Systems Analyst II	$30,288 00			DP2751–2752	$26,898 00	$17,940 97
	Buyer III	$30,993 00					
	Heavy Mobile Equipment Operator	$31,143 00	62E	$18,643 60[a]			
	Programmer Analyst IV	$32,328 00					
	Aircraft Mechanic	$33,411 00	67G/H/N 68B	$18,113 50[a]	AD6412/6418	$18,321 04	$12,220 13
	Computer Systems Analyst III	$35,346 00			DP2751–2753	$26,898 00	$17,940 97
	Aircraft Inspector	$35,804 00	66 Series	$22,144 35			
	Programmer Analyst V	$39,354 00					
	Air Traffic Control (ATC) Trainee	$17,138 00	93H/J	$12,801 72			
	ATC Apprentice	$23,578 00	93H/J	$13,553 15			
	ATC Journeyman Tower Operator	$31,304 00	93H	$17,295 44			
	ATC Radar Terminal Journeyman	$32,443 00	93J	$17,934 44			

[a]Figure includes reenlistment bonus

Table III.2: Comparison of Civilian and Air Force and Marine Corps Compensation

	Civilian		Air Force		Marine Corps	
Survey job no.	Survey occupation	Compensation	Occupational specialty	Compensation	Occupational specialty	Compensa
1	Accounting Clerk I	$11,850 00			3451	$11,67
2	Computer Operator I	$13,231 00				
3	Personnel Clerk/Assistant I	$13,546 00			121	$13,54
4	Accounting Clerk II	$14,236 00			3451	$14,09
5	Guard II	$16,227 00	811x0	$15,242 11[a]		
6	Personnel Clerk/Assistant II	$16,362 00			121	$15,65
7	Computer Operator II	$16,541 00			3073/4034	$15,50
8	Accounting Clerk III	$16,734 00			3451	$16,47
9	Shipper Receiver	$17,232 00			3111	$16,48
10	Electronic Technician I	$17,851 00	[b]	$15,414 03[a]	5954/6416	$16,43
11	Personnel Clerk/Assistant III	$18,497 00			121	$18,84
12	Warehouseman	$18,917 00			3051	$16,67
13	Computer Operator III	$19,990 00			3073/4034	$18,69
14	Programmer/Analyst I	$20,049 00			4063	$12,87
15	Buyer I	$20,478 00			3044	$18,84
16	Accounting Clerk IV	$20,497 00			3451	$19,98
17	Personnel Clerk/Assistant IV	$22,103 00				
18	Programmer/Analyst II	$23,100 00			4063	$15,11
19	Maintenance Painter	$24,230 00	552X4	$17,733 16		
20	Welder	$24,886 00	427X4	$19,790 27		
21	Electronic Technician II	$24,931 00	[b]	$18,428 64[a]	5954/6416	$18,84
22	Buyer II	$24,984 00				$21,46
23	Maintenance Carpenter	$25,084 00	552X0	$17,907 40		
24	Maintenance Mechanic-Vehicle-A	$25,346 00	472X2	$17,994 50	3522	$16,60
25	Computer Systems Analyst I	$25,696 00				
26	Central Officer Telephone Repair	$25,714 00	362X1	$20,611 22	2814/2822	$19,75
27	Stationary Engineer	$26,178 00	545X2	$17,878 35		
28	Electronic Test Equipment Repair	$26,319 00	324X0	$21,934 33	6492/3 2871/4	$19,84
29	Maintenance Machinist	$26,417 00			2161	$20,10
30	Air Conditioning Mechanic	$26,629 00	545X0	$18,432 44[a]	1161	$17,34
31	Equipment Mechanic	$26,744 00				
32	Maintenance Mechanic Vehicle-W	$26,812 00				
33	Electronic Technician III	$26,899 00	[b]	$21,523 67[a]		
34	Airline Passenger Agent	$27,115 00	605X0	$15,846 25		
35	Heavy Mobile Equipment Mechanic	$27,173 00	472X0/1	$17,994 50	1341	$16,61

	Civilian		Air Force		Marine Corps	
ey no.	Survey occupation	Compensation	Occupational specialty	Compensation	Occupational specialty	Compensation
	Maintenance Electrician	$27,183 00				
	Programmer Analyst III	$27,498 00			4063	$18,028 90[a]
	Electrical Line Worker	$27,553 00				
	Airline Freight Agent	$28,660 00	602X1	$17,878 35		
	Electronics Mechanic	$29,067 00			5954/6416	$16,978 33
	Computer Systems Analyst II	$30,288 00				
	Buyer III	$30,993 00			3044	$25,871 52
	Heavy Mobile Equipment Operator	$31,143 00			1345	$17,791 88
	Programmer Analyst IV	$32,328 00			4063	$22,964 97
	Aircraft Mechanic	$33,411 00	426X2	$21,650 29	6024	$18,845 70
	Computer Systems Analyst III	$35,346 00				
	Aircraft Inspector	$35,804 00				
	Programmer Analyst V	$39,354 00			4063	$30,134 64
	Air Traffic Control (ATC) Trainee	$17,138 00	272X0	$11,673 05	7311	$13,319 15
	ATC Apprentice	$23,578 00	272X0	$15,514 67[a]	7312/7322	$18,693 28[a]
	ATC Journeyman Tower Operator	$31,304 00	272X0	$20,623 96[a]	7312	$20,095 46[a]
	ATC Radar Terminal Journeyman	$32,443 00	272X0	$22,267 27[a]	7322	$22,662 65[a]

[a]Figure includes reenlistment bonus

[b]Air Force Electronic Technician Occupational Specialties 303X1, 304X1, 316X2, 321X2, 325X0, 328X1, and 328X3

April 30, 1986, Letter From the Assistant Secretary of Defense, Force Management and Personnel

FORCE MANAGEMENT
AND PERSONNEL

ASSISTANT SECRETARY OF DEFENSE

WASHINGTON D C 20301 4000

30 APR 1986

Mr. Frank C. Conahan
Director, National Security and
International Affairs Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Conahan:

The Department of Defense (DoD) has reviewed your draft report entitled, "Comparison of Military and Civilian Compensation," dated March 24, 1986, (GAO Code 967121), OSD Case 6974.

The findings contained in the report are consistent with those found in studies conducted by DoD using similar methodologies. Accordingly, DoD has no objection to the draft report. Technical comments were provided orally to members of your staff.

Sincerely,

Chapman B. Cox

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