

Navy Personnel Research and Development Center

San Diego, California 92152-7250

TR-93-3

March 1993

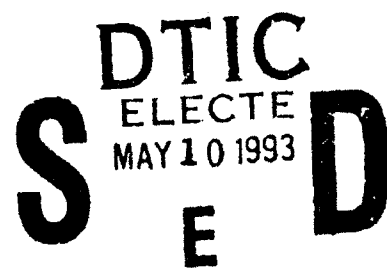


AD-A264 161



Absences of Navy Enlisted Personnel: A Search for Gender Differences

Patricia J. Thomas
Marie D. Thomas
Paul Robertson



DEFENSE TECHNICAL INFORMATION CENTER



9310026

93 5 06 113

Approved for public release; distribution is unlimited.

Absences of Navy Enlisted Personnel: A Search for Gender Differences

Patricia J. Thomas
Marie D. Thomas
Paul Robertson

Reviewed by
Jack E. Edwards

Approved and released by
John D. McAfee
Captain, U.S. Navy
Commanding Officer
and
Richard C. Sorenson
Technical Director, (Acting)

Accession For	
NTIS	CRA&I ☒
DTIC	TAB ☐
Unannounced	☐
Justification	
By	
Distribution /	
Availability Codes	
Dist	Avail and/or Special
A-1	

Approved for public release:
distribution is unlimited.

Navy Personnel Research and Development Center
San Diego, California 92152-7250

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE March 1993		3. REPORT TYPE AND DATE COVERED Final--January 1989-September 1991	
4. TITLE AND SUBTITLE Absences of Navy Enlisted Personnel: A Search for Gender Differences				5. FUNDING NUMBERS Program Element: 0603707N Work Unit: R1770	
6. AUTHOR(S) Patricia J. Thomas, Marie D. Thomas, Paul Robertson					
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Navy Personnel Research and Development Center San Diego, California 92152-7250				8. PERFORMING ORGANIZATION REPORT NUMBER NPRDC-TR-93-3	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Chief of Naval Personnel (PERS-01JJ) Washington, DC 20350-2000				10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES Functional Area: Personnel Systems Product Line: Women and Multicultural Research Effort: Integration of Women					
12a. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.				12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) The purposes of this report were to compare the lost time of Navy enlisted women and men and to determine whether single parents lose more time than other personnel. A secondary goal was to replicate a 1978 study of women's and men's absenteeism behavior. Two separate investigations were conducted. The first relied on work diaries that were completed by immediate supervisors at 50 commands and the second consisted of lost time that was recorded in personnel and medical data tapes (as done a decade earlier). Key findings are: 1. No gender difference in lost time was found in ships, aviation squadrons, and 4 of the 7 types of shore commands in the sample. Women lost an average of 17 minutes more a day (62 hours per year) than men in naval stations, naval air stations/air intermediate maintenance detachments and shore intermediate maintenance activities due to pregnancy and postpartum convalescent leave. 2. Parents lost more time than nonparents in two command types, averaging 11 minutes a day (40 hours per year), to care for the needs of their dependents and for medical reasons. 3. Married personnel lost 10 minutes more a day (37 hours per year) than single personnel in one command and single personnel lost 9 more minutes (33 hours per year) than married personnel in another. 4. Single parents did not have significantly more lost time than married parents. 5. As was found in 1978, men had more recorded days absent than women for disciplinary events. When added to absences for hospitalization, a category where women's rates are higher than men's, the gender difference still was present. 6. Days lost due to disciplinary events are highly related to level of education.					
14. SUBJECT TERMS Absences, pregnancy, single parents, discipline				15. NUMBER OF PAGES 37	
				16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE UNCLASSIFIED	19. SECURITY CLASSIFICATION OF ABSTRACT UNCLASSIFIED	20. LIMITATION OF ABSTRACT UNLIMITED		

Foreword

This report is the fifth in a series of publications that documents the findings of a 3-year research project to investigate the impact of pregnancy and single parenthood on Navy mission accomplishment. The purposes of this report were to compare the lost time of Navy enlisted women and men and to determine whether women's absenteeism behavior has changed over the past decade. The findings and recommendations are for the use of the Chief of Naval Personnel (PERS-00W, PERS-4, and PERS-6).

Two separate samples and approaches were taken in the investigation. The field study phase of this research documented and analyzed absences for all reasons. The recorded lost time study, which consisted of an analysis of absences in medical and personnel tapes, was undertaken because the tasking required that an earlier Navy study of lost time be replicated. There were limitations inherent to that early study, which had been dictated by the 6-month performance period and the year in which it was conducted. Moreover, only two sources of absenteeism had been analyzed—hospitalization and disciplinary absences—because these were the only lost time events that were recorded in Navy data tapes.

The effort was conducted under the sponsorship of the Chief of Naval Personnel (PERS-01JJ) within advanced development Program Element 0603707N, Work Unit R1770. The results should benefit the Navy by providing the information needed to develop policies to manage absenteeism effectively.

The authors would like to thank Darlene Davis Cole, Dina Miyoshi, Virginia McClintock, and Lorama Malone for their assistance in coding and computerizing the lost time data.

JOHN D. McAFEE
Captain, U.S. Navy
Commanding Officer

RICHARD C. SORENSON
Technical Director (Acting)

Previously Published Works of the Lost Time Project

Thomas, M. D., & Lawson, J. (1989). *The effectiveness of sex education in the United States* (NPRDC-TN-89-23). San Diego: Navy Personnel Research and Development Center. (AD A210094)

Thomas, P. J., & Edwards, J. E. (1989). *Incidence of pregnancy and single parenthood among enlisted personnel in the Navy* (NPRDC-TR-90-1). San Diego: Navy Personnel Research and Development Center.

Thomas, M. D., Thomas, P. J., & McClintock, V. (1991). *Pregnant enlisted women in Navy work centers* (NPRDC-TN-91-5). San Diego: Navy Personnel Research and Development Center.

Thomas, P. J., & Thomas, M. D. (1992). *Impact of pregnant women and single parents upon Navy personnel systems* (NPRDC-TN-92-8). San Diego: Navy Personnel Research and Development Center.

Summary

Problem

Pregnant women are perceived to be a problem to their commands, primarily because of the absences that they incur. Single parents are likewise believed to have more absenteeism than other personnel.

Purpose

The purpose of this report is to compare the lost time of Navy enlisted women and men. A secondary goal is to determine whether women's absenteeism behavior has changed over the past decade.

Approach

Two separate investigations were conducted to (1) perform a comprehensive comparison of women's and men's absences and (2) determine whether the findings of an earlier study were still accurate. The first investigation relied on work diaries that were completed by immediate supervisors, who documented the duration and cause for every event that took a subordinate away from the work center. Analyses of variance were conducted to determine the effect of gender, marital status, parental status and their interactions on lost time in 50 commands, aggregated into 12 command types. The second study consisted of an analysis of lost time that is recorded in personnel and medical data tapes. Number of days lost per person year was determined for a sample of women and men who were matched on aptitude and education.

Findings

No gender difference in lost time was found for the diary samples in ships, aviation squadrons, and 4 of the 7 types of shore commands in the sample. Women did lose an average of 17 minutes more a day (62 hours per year) than men in naval stations, naval air stations/air intermediate maintenance detachments, and shore intermediate maintenance activities (SIMAs) due to pregnancy and postpartum convalescent leave. Parents lost more time than nonparents in two command types, averaging 11 minutes a day (40 hours per year). Married personnel lost 10 minutes more a day (37 hours per year) than single in one command and single lost 9 more minutes (33 hours per year) than married in another.

The gender difference in lost time that is recorded in Navy medical and personnel tapes, first reported in 1978, still exists. In comparison to enlisted women, enlisted men matched on aptitude and education incurred more absenteeism, primarily because of disciplinary events. However, the gender gap has narrowed.

Conclusions

1. Hourly absences of women and men generally do not differ significantly, even when pregnancy and convalescent leave are included as sources of lost time.

2. In naval stations, naval air stations, and SIMAs, where gender differences in absenteeism were found, the cause appears to be childbearing.

3. Single parents did not have significantly more lost time than married parents.

4. In comparison to enlisted women, enlisted men of equal aptitude and education had more recorded lost time due to disciplinary events. The gender difference has narrowed over the past decade and women enlisting in 1985 had more time off for discipline than did women enlisting in 1975.

5. Days lost due to disciplinary events are highly related to level of education.

6. Hospitalization absences have decreased over the past decade for both genders, and women still lose more time than men for this reason.

Recommendations

1. Investigate ways of reducing women's absences at naval stations, naval air stations, and SIMAs.

2. Promulgate the findings that, with the exception of a few commands, women do not lose more time than men and the absenteeism of single parents does not differ from that of other personnel.

Contents

	Page
Introduction.....	1
Absenteeism in the Military.....	2
Purpose.....	3
Approach and Results.....	3
Study 1: Field Research	3
Approach	3
Sample	3
Data Collection Instruments	4
Procedure	4
Research Design and Data Analysis	5
Results.....	6
Absences in Ships	6
Absences in Squadrons	6
Absences in Shore Stations.....	8
Summary of ANOVAs.....	8
Personnel on Rotating Shifts.....	9
Pregnancy and Convalescent Leave	10
Study 2: Recorded Lost Time	11
Approach.....	11
Extraction of Samples	11
Procedure for Capturing Absenteeism Data	11
Data Analysis.....	12
Results	12
Educational Levels of the Samples and Populations	12
Absences of Matched Samples	13
Influence of Educational Level on Disciplinary Absences.....	14
Comparison to 1978 Analysis.....	15
Discussion	16
Field Study	16
Recorded Lost Time.....	16

Conclusions.....	18
Field Study.....	18
Recorded Lost Time	18
Recommendations	18
References.....	19
Appendix A—Commands in Work Diary Sample.....	A-0
Appendix B—Data Collection Instruments	B-0
Distribution List	

List of Tables

1. Description of Field Study Sample: Gender, Marital Status, and Parental Status.....	4
2. Personnel on Day- or Eve-Shift.....	7
3. Personnel on Rotating Shifts in Sample.....	7
4. Summary of ANOVAs Performed on Time at Work.....	9
5. Educational Level of Women and Men Entering the Navy (1985 Samples and Populations).....	12
6. Number of Days Absent Due to Hospitalization or Discipline per 100 Person-Years (Fiscal Years 1985-1988).....	13
7. Annual Number of Days Lost for Disciplinary Reasons per 100 Women and Men in Samples.....	14

Introduction

Absence from work is an organizational problem with concomitant high costs. The Bureau of Labor Statistics reported that full-time wage and salaried workers were absent 3.0% of their assigned hours in 1989 (Meisenheimer, 1990), excluding holidays, vacations, labor disputes, and foul weather closings. During an average week, 5.1% of the labor force (4.3 million workers) experienced at least one absence.

After reviewing 104 research studies, Steers and Rhodes (1978) suggested that employee attendance is affected by two factors—attendance motivation and ability to come to work. The first factor is viewed as volitional, while the second is often due to circumstances beyond the control of the employee. Individual employee characteristics, such as age, gender, family size, education, or tenure, have been found to influence both motivation and ability to be at work, although the findings are inconsistent. These inconsistencies led Johns and Nicholson (1982) to postulate that absence (1) is temporal and subject to dynamic change, (2) is not a conscious choice and has causal influences outside the workplace, and (3) means different things to different people at different times in different situations.

Although gender is the personal characteristic that probably has received the most attention in absence research, the results of these investigations are inconclusive (Keller, 1983). For example, Markham, Dansereau, and Alutto (1982) reported that, in a high technology plant, women had more absences than men, particularly during the winter. Conversely, Fitzgibbons and Moch (1980), found that gender was not related to unexcused or sickness absences of nonsupervisory personnel, and that women had more excused absences than men.

Scott and McClellan (1990) suggested that the gender difference in absences may reflect differences in why women and men are absent. They found an interaction between gender and age in absences among school employees. Age was positively related to absence for men, whereas number of dependents was positively related to absences for women. Leigh (1986) studied absence due to illness among over 4,000 employees. He found that employees who were divorced/separated/widowed or had small children experienced more sick time off than employees without these characteristics, but that gender, per se, was unrelated to absence. Naylor and Vincent (1959), in their study of female clerical workers, also found that number of dependents was positively correlated with absence, while age and marital status had no effect. Clegg, Wall, and Kemp (1987) found married women had fewer absences than single women, but age was not related to absences.

In his review of Current Population Survey (CPS) data on hours worked in May 1978, Taylor (1979) found that absenteeism varied by occupation, gender, marital status, age, education, and union membership. More recent CPS data showed that age and marital status had a differential impact upon the absences of women and men (Meisenheimer, 1990). Men's absences were generally low between 25 and 54 years of age but were higher in the 55 and older group. Women's absences were relatively high in the 25- to 34-year-old group and lowest in the 55- to 64-year-old group. Suspecting that childbirth and child rearing may have caused the peak in women's absences, Meisenheimer investigated the effects of marital and parental status on time lost from the job. Mothers of young children had a high absentee rate, but fathers did not. Interestingly, single mothers had an absentee rate that was *lower* than married mothers, perhaps a reflection of their need to retain and progress in their jobs.

The review of the literature highlights the interactive causes of absence. As Johns and Nicholson (1982) emphasized, "absence represents nonwork behavior and is subject to major causal influences from variables that transcend the workplace. . . . When a person is absent from work, he or she is *present* somewhere else, and far too little attention has been paid to the impact of forces outside the workspace" (p. 137).

Absenteeism in the Military

Because many military personnel work until the job is finished or someone else replaces them on duty, they often lack "regular" working hours and formal sick leave. Military personnel do miss work because of illness or for medical care, of course, but no record is kept of such absences except for hospitalization. Personnel also may be excused from work to attend school functions involving their children, get their car licensed, arrange for household goods to be delivered to a new duty station, or take their spouse to a medical clinic. Such undocumented absences are considered reasonable compensation for long hours worked, particularly while geographically distant from home. Thus, while absenteeism affects productivity in the military, it is very difficult to determine how much time is involved.

Concern over women's absences has multiplied as the number of women has grown and policies (e.g., OPNAVINST 6000.1A, Chief of Naval Operations, 1989) have changed to permit or even require that women remain in the services while pregnant. Two years after the Department of Defense mandated (1975 April) that the services cease involuntarily discharging pregnant women, Olson and Stumpf (1978) extracted absence data from personnel and medical data tapes. The lost time appearing in these tapes is due to hospitalization and disciplinary events. Olson and Stumpf's sample consisted of 1,000 women and 1,000 men who had enlisted shortly after the policy change. Women missed fewer days than men, even when hospitalization following child birth was included. A limitation of that study was that it was based on the first 2 years of service, a period when pregnancy rates are relatively low. Periodically, the Armed Forces conduct manpower availability studies to quantify absences and develop compensatory staffing plans. During the 1980s, these studies began to include gender as a potential influencing factor because of the increase in the representation of women in the military and the belief that women have more absences than men. Army researchers (Savell, Rigby, & Zbikowski, 1982) studied 700 soldiers at three bases and reported that women's and men's lost time did not differ. In a later Air Force study (U.S. Air Force Special Study Team, 1985), survey data from almost 12,000 enlisted personnel at 30 bases found that women, on average, were not available for work 24.9 hours per month. By comparison, men were not available for 22.5 hours. The difference was caused by women's more numerous medical absences. A recent Navy study of the absenteeism of over 2,000 officer and enlisted personnel (Thomas, 1987) found that gender, age, marital status, and aptitude level did not correlate with nonavailable time when paygrade was controlled.

In 1987, a Navy study group (Secretary of the Navy, 1987) recommended that the absenteeism of women again be investigated. This group, which had been convened to evaluate the progress of women in the Navy, had heard complaints about lost time due to pregnancy during the many interviews they conducted. Their report noted that "the 1978 study (i.e., Olson & Stumpf, 1978) has limited application today since the number of women in the Navy has grown significantly in the last 9 years, from 24,917 in 1978 to 54,707 in 1987, and the number of women at sea and in aviation squadrons has quadrupled" (pp. 2-48). A 3-year research project was subsequently funded to investigate the lost time of women, in addition to other issues associated with pregnancy and single parenthood. This is the fifth report in that research program, which was sponsored by the Chief of Naval Personnel.

Purpose

The purpose of this report is to compare the lost time of Navy enlisted women and men. A secondary goal was to determine whether women's absenteeism behavior had changed over the past decade. Two separate investigations were conducted to achieve these goals.

Approach and Results

Study 1: Field Research

Approach

The Chief of Naval Personnel defined the types of commands to be included in the field study: destroyer tenders (AD), submarine tenders (AS), oilers (AO), patrol squadrons (VP), reconnaissance squadrons (VQ), and shore commands that support the operational force. He also specified that 10 overseas locations where women are concentrated be included as sites for data collection. Fifty commands were subsequently selected: 9 ships, 13 aviation squadrons, 8 naval stations, 5 naval air stations, 5 communications stations, 4 shore intermediate maintenance activities (SIMAs), and 6 other shore commands. Appendix A lists the specific commands.

The tenders (ADs and ASs) have crews of 1,000 to 1,200 personnel. As auxiliary ships (i.e., noncombatants) they have had women in their crews since 1979. AOs are classified as combat logistic support ships; women did not begin serving in them until 1988. All of the ships were stationed in the continental U.S. (CONUS) or Hawaii when the data were gathered.

VP squadrons are home based on U.S. territory, but regularly deploy for 6 months. None of the VP squadrons was overseas during the data gathering period. Because VQ squadrons are usually forward deployed, all were located outside of CONUS. Although VP and VQ squadrons have had substantial numbers of women assigned to their enlisted force for about a decade, few women officers are in them.

Some of the shore commands in the sample are locations where Navy women have been traditionally assigned (communications stations, naval facilities, hospitals, and support activities), and others have missions that primarily involve nontraditional work (naval stations, naval air stations, SIMAs, and air intermediate maintenance detachments (AIMDs)). Twenty-two of the shore commands were located outside of CONUS and the remaining six commands were in U. S. cities with major fleet concentrations. Thus, all of these shore commands were in support of the operational forces.

Sample

The sample of E-1 through E-6 personnel consisted of 2,285 women and 3,104 men at the 50 commands. Chief petty officers (CPO) were not included because only 2% of all enlisted women were CPOs in 1988. The investigation was limited to enlisted personnel because Navy leaders did not view pregnancy and single parenthood among officers as requiring investigation. Table 1 presents the number of women and men used in the analyses, broken down by parental and marital status. Distributions by paygrade and type of command appear later in the report.

Table 1
Description of Field Study Sample:
Gender, Marital Status, and Parental Status

Marital Status	Parental Status	Women		Men	
		<i>N</i>	%	<i>N</i>	%
Single	No Children	1,120	49	1,480	48
	Children	325	14	154	5
Married	No Children	405	18	500	16
	Children	435	19	970	31
Total		2,285	100	3,104	100

Data Collection Instruments

Work diary booklets were designed for easy recording of daily events. Each booklet contained five to seven (depending on length of the workweek) 24-hour forms that were divided into half-hour increments. The booklet also included a coding sheet so that the recorder could enter codes rather than explanations of activities.

Another form was used to collect information on paygrade, rating, gender, marital status, parental status, and pregnancy for the personnel in the diary sample. Researchers also used this form to monitor the return of the diaries. Both data collection forms appear in Appendix B.

Procedure

Data were collected over a 20-month period that began in January 1989. Approximately 3 months before a command was scheduled for a 10-day site visit, detailed information on the number of E-1 through E-6 women and men in each work center was requested from a point of contact at the command. Work centers then were chosen for inclusion in the command sample based on their gender mix. All female or all male work centers were eliminated from consideration because the research design required that women and men be performing the same jobs. At very large commands, the sample was limited to 400 personnel; whereas at smaller commands, all work centers with both women and men in them were included.

On the first day at the site, the point of contact assembled the first-line supervisors of the selected work centers for a briefing by the researchers. After the purpose of the study and the procedures to be followed were explained, the supervisors completed background forms on the personnel in their work groups. Later, the researchers used service records to verify the status of personnel who were identified as single or dual-military parents. The verification was performed to: (1) determine whether a single parent had a child living in her/his household (a critical distinction for identification as a custodial parent) and (2) search for the Dependent Care Certificate (OPNAV 1740/1) that is supposed to be in the service record of all single and dual-military parents. Determining compliance with this requirement to record contingency plans for the care of dependents was a secondary goal of this research project. The data regarding compliance are presented in another report (P. J. Thomas & M. D. Thomas, 1992a).

Data collection began on the second day at the site. The first set of the completed diaries was available for review on the third day and was scanned by a researcher for completeness. Questionable information was clarified through telephone calls to supervisors. This procedure was followed during the remainder of the period.

The researchers also interviewed the commanding officer, executive officer, command master chief, division heads, local housing officer, director of the Family Service Center, and director of the Child Development Center. The interviews addressed issues concerning pregnant women and single parents and are summarized in two other reports (P. J. Thomas & M. D. Thomas, 1992a; P. J. Thomas & M. D. Thomas, 1992b).

Research Design and Data Analysis

The durations and types of events that resulted in absences from work centers were entered into the computer along with total amount of time spent at the work center. Absences were aggregated into categories representing official travel, temporary active duty (TAD/TDY), leave, organizationally required absences, medical absence, absence for personal reasons, dependent-related absence, absence due to disciplinary reasons, and other absences. Official travel and leave were not included in the analyses. The former represents work away from the command, and the latter is earned time off. Neither of these events should be considered an absence. Absences to perform organizational duties (e.g., attend meeting, work party, and training) were not considered lost time, but were added to time at the work center.

The number of diaries for each member of the sample differed somewhat, although the majority had a full week's complement.¹ Those who had only 1 or 2 days of work documented were removed from the sample. Due to scheduling within work centers that must function 7 days a week, some people were on duty less than 5 days during the on-site data collection period. Supervisors were instructed not to document the time of personnel on the mid watch (usually 2300 - 0700) because many events that cause absences during the daytime hours are nonexistent at that time and the supervisor is typically off duty. As a consequence, personnel on rotating shifts would have had only their day and evening (eve) shifts documented. Because of these irregularities, each category of lost time was analyzed as a proportion of the sum of time on duty and absences, disregarding standing watch. Personnel who were hospitalized, sick in quarters, or on convalescent leave, even if absent the entire week, were included in the sample due to the research emphasis.

Because the mission and Navy Standard Workweek for ships, squadrons, and shore stations differ greatly (Chief of Naval Operations, 1981), separate samples were created for each of the three ship types, two squadron types, and seven shore station types ($N = 12$). Table 2 presents the combined day- or eve-shift samples, which have been collapsed within ships, squadrons, and shore commands.

Personnel whose work hours reflected duty on more than one shift during the data gathering period had been coded as being on a rotating schedule. The majority of such personnel were assigned to the communications commands ($N = 119$). The sample sizes in all ships combined, all squadrons combined, and all other shore stations combined were 16, 31, and 256, respectively. Thus, the ship and squadron samples were too small for further analysis. Table 3 presents the rotating shift sample, which was limited to personnel in shore commands. There was no significant difference in the proportion of women and men on each shift within the commands.

¹The workweek varied. The most frequent pattern was five 8-hour days, but some personnel were on a schedule of four 10-hour days or seven 8-hour days followed by 3 days off.

The primary statistical analyses performed were three-way analyses of variance (ANOVAs). The three independent variables were gender (male, female), marital status (single, married), and parental status (child in home, no child in home). Twelve ANOVAs were calculated for personnel on the day- or eve-shifts—one for each type of ship, squadron, and shore command—and three were calculated for personnel on rotating shifts.

For each type of command, the principal ANOVA used proportion of time in the work center as the dependent variable. If no main effect or interaction was significant (.05 level), no further analysis was performed for that command type. On the other hand, if a significant effect was uncovered, a separate three-way ANOVA was then calculated for each of five reasons for being absent (medical, personal, dependent-related, disciplinary, and other). These analyses were performed to pinpoint the types of absence responsible for group differences in the amount of time spent in the work center.

Independent group *t*-tests were performed whenever significant interactions were found in the ANOVAs to determine which groups differed from each other. In commands where significant gender differences in medical absences were found, the effects of pregnancy and convalescent leave on the lost time of female enlisted also were studied by utilizing independent group *t*-tests.

Results

Absences in Ships

No main effect or interaction significantly affected time at work in the ASs. In the ADs, however, marital status ($F [1, 357] = 7.24, p < .01$) and parental status ($F [1, 357] = 6.26, p < .05$) were significant. Examination of the means revealed that single personnel lost an average of 9 more minutes per day (33 hours per year²) than married personnel, and parents lost 6 more minutes a day (22 hours per year) than nonparents. In the follow-up ANOVAs, absences to care for the needs of dependents were the only cause of the significant effects.

None of the main effects or the 2 two-way interactions involving gender were significant in the AO sample. Because there was only one single parent in the sample, the two-way interaction between marital and parental status and the three-way interaction were not computed.

Absences in Squadrons

In VP squadrons, the main effect of parental status was significant ($F [1, 621] = 5.41, p < .05$). Personnel with children were absent an average of 14 minutes more per day (51 hours per year) than nonparents, and medical absences were the cause. There was also a significant interaction between marital status and parental status ($F [1, 621] = 4.44, p < .05$). However, none of the *t*-tests of paired means for time at work differed significantly (i.e., single parent vs. married parent; single nonparent vs. married nonparent; single nonparent vs. single parent; single nonparent vs. married parent; single parent vs. married nonparent; and married parent vs. married nonparent). A noteworthy finding was the large variance in the proportion of time at work for single parents, suggesting that some single parents had very little absenteeism while others had much more. The means of single parents, however, did not differ significantly from those of other marital/parental groups.

²A work year consists of 220-229 days (depending upon how legislated leave is taken).

In the VQ squadrons, only the interaction between gender and marital status was significant ($F [1, 169] = 5.55, p < .05$). Both single women and married men had more absenteeism than single men. Follow-up ANOVAs did not yield a significant F ratio for any of the five reasons for absence, suggesting that no single cause was responsible for the significant interaction.

Absences in Shore Stations

Data for the shore stations were divided by command type: communications stations, naval facilities, hospitals, naval stations, SIMAs, and a combined naval air station/AIMD. The one naval support activity was analyzed separately.

No main effect or interaction was significant for the communications stations, naval facilities, hospitals, or naval support activity. Gender had a significant effect on absences at the naval stations ($F [1, 1067] = 12.03, p < .01$), naval air stations/AIMDs ($F [(1, 874] = 6.20, p < .05$), and SIMAs ($F [1, 523] = 7.75, p < .01$). In addition, marital status was significant at the air stations ($F [1, 874] = 4.98, p < .05$) only. No interaction was significant at the naval stations, naval air stations/AIMDs, or SIMAs. Each of these three command types is discussed separately in the paragraphs that follow.

At the naval stations, women lost 18 more minutes a day (66 hours per year) than did men. In the follow-up ANOVAs, only medical absences resulted in a significant gender effect. Because the most obvious reason for a gender difference in medical lost time is pregnancy, an ANOVA was run eliminating the data for the 8 women on postpartum convalescent leave and the 45 pregnant women. In this reanalysis, gender no longer had a significant effect on time at work.

At the naval air stations/AIMDs, women lost 10 minutes more a day (37 hours per year) than did men. Despite the significant main effect for gender in total lost time, gender was not significant in any of the five follow-on ANOVAs. These findings of nonsignificance suggest that it was the sum of several reasons that was responsible for the gender effect. Married personnel lost 10 minutes more a day (37 hours per year) than did single personnel; the difference was due to taking more time off for dependent-related needs. The ANOVA for time at work was rerun after eliminating the data on pregnant women ($N = 23$) and women on convalescent leave ($N = 1$). As with the naval stations, the gender effect was no longer significant.

At the SIMAs, women lost 25 minutes more a day (92 hours per year) than did men. Again, medical absence was the only type that showed a significant gender difference. When pregnant women ($N = 32$) and postpartum women ($N = 5$) were removed from the sample, time at work was not significantly influenced by gender of worker.

Summary of ANOVAs

Table 4 summarizes the significant findings of the ANOVAs performed on time at work. The potential existed for 82 (12 command types by 7 effects, minus 2 interactions that could not be computed for the AO sample) significant F -ratios. Nine significant F s were obtained—three for gender, two for marital status, two for parental status, and two interactions (gender by marital and marital by parental).

Table 4
Summary of ANOVAs Performed on Time at Work

Command Type	Gender	Significant Main or Interaction Effects					
		Marital Status	Parental Status	Gender by Marital	Gender by Parental	Marital by Parental	3-way
AD		Single > Married*	Parents > Nonparent*				
AS							
AO						NA	NA
VP			Parents > Nonparent*				
VQ				Single W > Single M** & Married M > Single M*		See Note 2	
Naval Station	Women > Men**						
NAS/AIMD	Women > Men*	Married > Single*					
SIMA	Women > Men*						
Communication							
Naval Facility							
Hospital							
Support Activity							
N of Effect	3 of 12	2 of 12	2 of 12	1 of 12	0 of 12	1 of 11	0 of 11

Notes:

1. AD = destroyer tender, AS = submarine tender, AO = oiler, VP = patrol squadron, VQ = fleet air reconnaissance squadron, NAS/AIMD = naval air station/air intermediate maintenance detachment, SIMA = shore intermediate maintenance activity.

2. Mean amount of time at work did not differ significantly in any paired comparison.

* $p < .05$.

** $p < .01$.

The findings, when significant, for gender and parental status were consistent; women lost more time than men in the three command types and parents lost more time than nonparents. With marital status, at one command type single personnel lost more time than married and at the other command type a reverse pattern was found. The one interaction between gender and marital status was a result of single men having less time away from the work center than either married men or single women.

Personnel on Rotating Shifts

The three-way ANOVAs performed for personnel on rotating shifts in communication commands, naval facilities, and a combined sample of other shore commands did not yield any significant main effects or interactions. Due to the small samples of personnel, however, these analyses are probably low in power. Personnel working these hours tended to have less absenteeism than personnel working a single shift; at the naval facility, the difference was significant ($t [170] = 4.87, p < .01$).

Pregnancy and Convalescent Leave

Pregnancy appears to have been the cause of the gender effect found for naval stations, naval air stations/AIMDs, and SIMAs. To investigate whether the samples in these command types had an unusually high number of women who were on convalescent leave or were pregnant, the rates were examined. These rates were found to range from 0 to almost 22% of the women in the samples. It is important to note that these figures do *not* represent the pregnancy rate at the commands, but only the rate within the work centers that participated in the research. Ships had the lowest rates, as would be expected due to the policy of transferring women ashore prior to the end of the 20th week of their pregnancy. As a consequence, no one was on leave following childbirth. The rates in the samples from the two squadron types varied greatly (8% in VP and 22% in VQ), probably as a function of their missions. VQ squadrons have small deploying detachments, which were not a part of the sample. Thus, duty in VQ squadrons for enlisted women is much like shore duty and is a stable environment where personnel might choose to have a child. VP squadrons deploy for 6 months on a regular schedule.

The percentages of pregnant and postpartum women in the samples from the three shore command types where a significant gender effect was found were compared to the percentages at the four command types without a gender effect. Only the samples from the former commands had women on postpartum convalescent leave during the period when data were gathered. Naval stations, naval air stations/AIMDs, and SIMAs are repositories for women from ships who must be moved ashore by the end of the 20th week of their pregnancy. These are large commands—a fact that increased the probability that data on the 6-week period following childbirth would be captured for some women. These women were absent during the entire period of data gathering and their nonavailability affected the mean amount of lost time of all women at the commands. In addition, naval stations, naval air stations/AIMDs, and SIMAs have a preponderance of billets where industrial work is performed. While women have been assigned to administrative-type billets at these commands for many years, their assignments to the nontraditional billets are relatively recent. By contrast, communication commands and hospitals have had women since the early 1940s and naval facilities since their inception. These three command types have a cadre of female leaders, both officer and enlisted, and almost equal numbers of women and men. Thus, it is possible that familiarity with pregnancy and its limitations, or that the nature of the work performed in communication commands, hospitals, and naval facilities have resulted in day-to-day practices that accommodate pregnant women with the least disruption to time at work.

Another way of looking at the pregnancy absenteeism data is to compare the available time of women who are not pregnant to those that are after eliminating women on convalescent leave who, of course, have zero available time. Mean time at work was computed for these two groups within each of the 11 command types (the two oilers were omitted because none of the crew members was pregnant). When the pairs of means for pregnant and nonpregnant women were tested for differences, only two significant *ts* were obtained ($p < .05$). At SIMAs and in ASs, pregnant women had less at-work time than nonpregnant women.

Study 2: Recorded Lost Time

Approach

The method used in the present study was similar to that used by Olson and Stumpf (1978). The question to be answered was whether women's absences due to disciplinary events and hospitalization had changed since a decade ago. Several major weaknesses in the earlier study were avoided in conducting the present research. Four rather than 2 years of data were analyzed, and a more stringent analysis was performed on the present data. Thus, this study was not a true replication.

Extraction of Sample

Cohorts of women and men who were matched on aptitude and education comprised the sample. Historical personnel data tapes were used to extract the records of all non-prior-service women ($N = 9,246$) enlisting in the Navy in fiscal year 1985. After 1,529 women who lacked scores on the Armed Forces Qualification Test (AFQT)³ were eliminated, the sample size was 7,717.

Over 57,000 men enlisted in the Navy in 1985. The quality (education and aptitude) of women enlisting typically exceeds the quality of men who enlist. Because a negative relationship exists between quality and misconduct (Thomas & Rose, 1979; Conway, 1983), which was one of the two sources of lost time being investigated, the research tasking required matching the men to the women on aptitude and educational level. The sample of men also equaled 7,717.

Procedure for Capturing Absenteeism Data

The social security numbers of the sample were sent to Naval Health Research Center (NHRC), where information on absences due to hospitalization was extracted from Bureau of Medicine (BUMED) data tapes. Outpatient visits are not recorded in BUMED tapes. Also, because BUMED facilities do not perform elective abortions, these medical events are missing.

Lost time due to misconduct and disciplinary reasons was obtained from the Defense Manpower Data Center. Information on specific discipline categories was not available. The data that were obtained represent aggregated lost time due to pretrial confinement, confinement, sick misconduct, unauthorized absence, and confinement in the hands of civil authorities. Days lost due to desertion were obtained from NHRC.

The medical and disciplinary data were merged with information from the enlisted master record to create individual records. These specially created records consisted of gender, AFQT score, educational level, number of days and dates of hospitalization, and number of days and dates of misconduct absences.

³The AFQT is based on four subtests in the Armed Services Vocational Aptitude Battery and is used by the military as a mental screening device. Without these test scores, the process of selecting a group of men, matched to the women on aptitude and education, could not be accomplished.

Data Analysis

Any fiscal year sample of new recruits includes people who entered the Navy between 1 October and 30 September of the following year. As a result, all members of the sample are not "at risk" for a medical absence or a disciplinary absence for an equal number of days during a fiscal year. Date of event for this phase of the research was translated to days since entry to create a common scale. Analyses were performed by year of service, where year represented 365 days from the date of entry into the Navy.

Annual absence rates were computed separately for each sex and category of absence. In addition, absence rates were determined for three levels of educational attainment (no high school diploma, high school diploma, and some college credit). The numerator for these computations was the total number of days lost and the denominator was the number of days a member had served in the Navy. Thus, the denominator would be 365 (days) for personnel who had completed a full year of service or the actual number of days served by someone who had been discharged. The annual absence rates are reported as days per 100 person-years, rather than days per 100 persons in a year.

Results

Educational Levels of the Samples and Populations

The Navy enlists very few women who are not high school graduates and attempts to enlist as many male high school graduates as possible. As a consequence, the proportion of personnel without a high school diploma in the samples was low (about 3%). As Table 5 demonstrates, however, almost 12% of the male input to the Navy in fiscal year 1985 consisted of men without a high school diploma. There also were proportionately fewer men with some college in the population than in the sample. Thus, the men in the sample differed from those in the population in regards to educational attainment, but the women did not.

Table 5
Educational Level of Women and Men Entering the Navy
(1985 Samples and Populations)

		Number	Educational Level		
			No Diploma (%)	High School Diploma (%)	Some College (%)
Men	Sample	7,717	3.7	90.7	5.6
	Population	56,636	11.6	85.6	2.8
Women	Sample	7,717	3.3	91.0	5.7
	Population	9,246	3.5	90.5	6.0

Absences of Matched Samples

Table 6 presents the number of days lost by the matched samples for hospitalization and discipline for each 100 person-years during the first enlistment. Reflective of the gestation period, women incurred very little pregnancy-related hospitalization during their first year of service. During this period, women experienced a high rate of hospitalization for other reasons, both in comparison to men and to women in later years. The diagnosis categories most frequently applied to the hospitalizations of both genders during the first year were mental disorders, followed by diseases of the genitourinary system for women and accident/poisoning/violence for men. Absences were lowest for women in the fourth year for both hospitalization and discipline. This finding is probably due to the separation of problem personnel and the decline in the pregnancy rate that has been noted after the E-3 level (Thomas & Edwards, 1989). For men, fewer days were lost in the first year than at any other time. Because of their relatively high quality, these men were probably in training during much of the year, as were the women, and the prevalence of disciplinary events appears to have been less frequent than in later years.

Table 6
Number of Days Absent Due to Hospitalization or Discipline
per 100 Person-Years (Fiscal Years 1985-1988)

Year	Women			Men	
	Pregnancy Hospitalization	Other Hospitalization	Discipline	Hospitalization	Discipline
First	7.9	111.0	54.8	70.7	72.6
Second	29.4	82.7	144.1	60.5	362.0
Third	48.6	54.3	92.4	50.8	345.9
Fourth	41.0	52.5	29.0	50.3	241.8
Annual Rate	31.7	75.1	80.1	58.1	255.6

Consistent with the findings of Olson and Stumpf (1978), women lost more days for hospitalization than discipline; hospitalization due to pregnancy and other reasons was the cause of 106.8 days lost annually per 100 female-person-years. Men's absences were due primarily to disciplinary offenses, amounting to 255.6 days annually per 100 male-person-years. Women's hospitalization was almost double that of men, and men's disciplinary lost time was more than three times that of women.⁴

The number of days lost in each year for hospitalization and disciplinary offenses combined is displayed in Figure 1. During the first year, women lost 21% more time than the matched sample of men. By the second year, men's absences due to disciplinary events had overtaken women's medical absences. Men lost 65% more time than women in the second year, 103% more in the third year, and 138% more in the final year of enlistment.

⁴The longest period of disciplinary absence for any individual was 169 days.

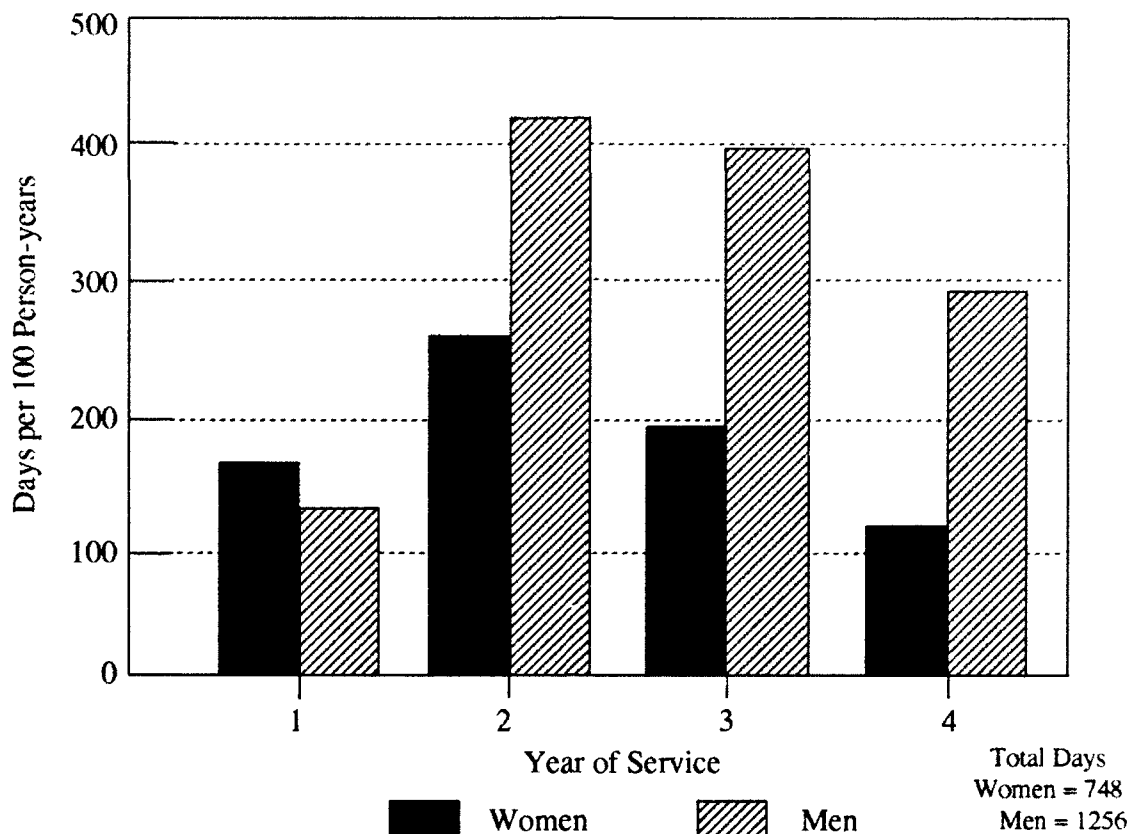


Figure 1. Days lost by matched samples of women and men in their first enlistment for hospitalization and discipline per 100 person-years.

Influence of Educational Level on Disciplinary Absences

The number of days missed was determined for enlistees lacking a high school diploma, those with a diploma, and those who had successfully completed some college courses. Table 7 shows the results of this analysis. For members of both genders, education had a powerful effect on disciplinary lost time. Men without a high school diploma lost an average of 8 days annually for each individual as compared to 2.4 days for those with a diploma. The discrepancy for women was even greater. There was no relationship between educational level and days lost due to hospitalization.

Table 7

Annual Number of Days Lost for Disciplinary Reasons per 100 Women and Men in Samples

Educational Level	Days Lost per 100 Personnel	
	Women	Men
No Diploma	401	799
High School Diploma	75	244
Some College Courses	8	183

If the rates appearing in Table 7 were applied to the population of men who actually entered the Navy in 1985, as distributed by the educational levels shown in Table 5, the number of days lost due to disciplinary offenses would be considerably higher than those found for the male sample. Instead of an annual rate of 256 per 100 person-years (Table 6), the rate would be projected to be 307 days. Because the female sample and population were so similar in regards to educational level, the annual rate would rise only from 80 to 82 days per 100 person-years.

Comparison to 1978 Analysis

Because of the differences in the research designs used for this report and that used by Olson and Stumpf (1978), a direct comparison of the two sets of results is not possible. While the sources of data are the same, there are major differences in both sampling and analysis. With regard to the samples, the 1985 cohorts were matched on quality indicators; the 1975 cohorts were an existing research sample representing the first 1,000 women and first 1,000 men entering recruit training after 1 June 1975. With regard to the analyses, the annual rates in this report are based on 365 days per person, adjusting for the partial years of personnel who left the Navy early.⁵ The 1978 report used the number of people in the Navy at the end of the fiscal year as the denominator in determining annual rates, disregarding the number of days served. As a consequence, the current report is a more accurate representation of days absent per year of service than the Olson and Stumpf report.

Despite the methodological differences, the trends that resulted from the two analyses are the same. In both investigations, men incurred more lost time than women for the two reasons for which data were available. The primary cause of the higher number of lost days of men was behavior that led to discipline. Women had more absences than men due to hospitalization in both data sets. However, the differences between the genders in regards to both medical and disciplinary lost time appears to be narrowing.

The comparison suggests that the 1985 cohorts were hospitalized for fewer days than the 1975 cohorts. This finding is probably a reflection of a trend in the United States to shorten hospital stays and perform more medical procedures on an outpatient basis, rather than a change in morbidity rates among Navy personnel.

It also appears that women in the 1985 sample lost more days due to military offenses than did women in the 1975 cohort. Part of the reason may be due to the quality of women enlisting in 1975, none of whom were non-high-school graduates; 3% of the 1985 women did not have high school diplomas.

Men's disciplinary rates appear to have dropped during the decade. Again, better quality enlisted personnel in the more recent sample account for part of the change. Because of the need to match the 1985 male sample to female enlistees, only 3% of the men were without a high school diploma. In 1975, 12% of the men were non-high-school graduates and this small group was responsible for 31% of the unauthorized absence (Thomas & Rose, 1979). Table 7 demonstrates the influence that education has on disciplinary lost time.

⁵More Navy women than Navy men leave the service prior to completing their first enlistment. For this sample the female attrition rate was 35%, male attrition was 29%.

Discussion

The concern over the absences of military women is based on the assumption that women are absent for the same reasons and duration as men and, in addition, miss work because of pregnancy, childbirth, and postpartum convalescence. This assumption would be reasonable if military women had the same disciplinary rates as men, but they do not. Moreover, because less than 10% of the women in the Navy are pregnant at a time, these conditions do not result in women as a group incurring significantly more absenteeism than men except in a few command types.

Field Study

By collecting data that are not normally documented, the work diary portion of this research project represents the most comprehensive and probably accurate accounting to date of lost time. All reasons for absence from work were considered except legislated leave, holidays, and official travel, all of which should not show a gender difference. These diaries were used to investigate the effect of marital status, parental status, and gender on lost time in a multivariate analysis.

Because work hours and pregnancy regulations differ among ships, air squadrons, and shore commands, the analyses were conducted separately by type of command. Women on day and evening schedules did not lose significantly more time than men in 9 of the 12 command types. Similarly, women and men on rotating shifts lost similar amounts of time in the command types where an analysis could be conducted. By regulation, no women in the three types of ships were in the 21st to 40th week of pregnancy or on convalescent leave following childbirth. The absenteeism of women in ships did not differ significantly from that of men. VP and VQ squadrons and four of the shore command types had women in all stages of pregnancy, yet did not show a gender difference in absenteeism. Only at naval stations, naval air stations, and SIMAs did women lose more time from duty than men. In two of these command types the significant difference was due to time off for medical care.

Parents incurred more absenteeism than nonparents in two command types. Not surprisingly, the reason why they were away from work was to attend to the needs of their dependents. The effect of marital status was mixed. Married personnel lost more time than single in one command type; whereas in another command type, single personnel were responsible for more absenteeism than married. The marital status by parental status interaction was significant in only 1 of the 12 command types, but the means of the groups did not differ. The lack of a significant interaction between gender and parental status and the finding of only one significant interaction between gender and marital status suggests that female and male personnel who are married or single, parents or nonparents behave similarly in regards to time off from work.

Recorded Lost Time

Results from Olson and Stumpf's 1978 study indicated that women have less absenteeism than men. In retrospect, that study was biased in favor of women because it was conducted so soon after the pregnancy policy changed that the opportunity to incur lost time due to pregnancy was restricted. To avoid that error, the present research was not a true replication of Olson and Stumpf's work but, rather, a more accurate representation of gender differences in absence behavior. Yet, the overall conclusions were unchanged. Men still incurred more days of absenteeism than women

for the reasons analyzed. As before, the primary cause of men's absences was disciplinary offenses and for women it was hospitalization. However, the magnitude of the gender differences was less than in the earlier study. It appears that the women who enlisted in fiscal year 1985 lost more time due to disciplinary infractions than women who joined the Navy a decade earlier. Military women are not unique in this respect. Within the United States, arrest rates of women increased in every category except murder and non-negligent manslaughter between 1978 and 1987 (Pollock-Byrne, 1990). Moreover, the Bureau of Labor Statistics reported that the number of women in prisons almost doubled between 1980 and 1985 (Salholz et al., 1990). Although the Navy does not enlist felons, a societal change in regards to women's involvement in criminal activity appears to have occurred and may be reflected in disciplinary rates among Navy women.

The different methods used to select the 1975 and 1985 male samples also help to account for the shrinking of the gender difference and the decrease in men's disciplinary lost time. Because the men in this report were matched to the women on aptitude scores and educational attainment, they were of higher quality than the earlier sample, which consisted of all men entering recruit training during the period of study. By contrast, the women were of somewhat lower quality than those in the earlier sample. This change was due to more than doubling the number of women accepted into the Navy between 1975 and 1985. That is, the selection ratio became less advantageous to the Navy. Regardless, Navy men of equal quality to the population of first-term Navy women had higher rates of discipline than the women. The amount of time that these men lost more than offset the time lost by women for similar reasons plus hospitalization for pregnancy.

The results of the field study and recorded lost time study seem to be contradictory. The authors considered attempting to merge the data, but due to differences in the two samples (e.g., first termers vs. E-1 through E-6; Navy-wide cohort vs. selected commands) and the potential for double counting some of the medical and disciplinary data, this attempt was abandoned. In both analyses, women incurred more absenteeism than men for medical reasons. In the field study, the time involved was insufficient to cause a significant gender difference in lost time at most commands; in the cohort sample, women clearly had more days of hospitalization than men. Since the field study also included hospitalization, an explanation for the discrepancy is needed. One reason for the different finding is the greater maturity of the field study sample; that is, hospitalization rates of Navy personnel decline as paygrade increases (Hoiberg, 1980).

An insignificant amount of time was lost for disciplinary reasons in the diary samples, never consisting of a full day. Thus, possibly by chance, no member of the samples was on unauthorized absence for 8 hours or in custody when the data were gathered. Again, the difference in maturity of the personnel in the two studies had an effect; that is, disciplinary lost days also decline during the first enlistment and, by Navy policy, personnel who were repeat offenders would not have been allowed to reenlist.

Conclusions

Depending upon the data source analyzed, somewhat different conclusions can be drawn. Lost time appearing in Navy data tapes is very limited, whereas the work diaries were comprehensive both in regards to length of time and reason for being absent. Thus, the results of the field study should be given more weight than the recorded data in formulating follow-on actions.

Field Study

1. Hourly absences of women and men do not generally differ, even when pregnancy and convalescent leave are included as sources of lost time.
2. In naval stations, naval air stations, and SIMAs, where significant gender differences in absenteeism were found, the cause appears to be childbearing.
3. Single parents did not have significantly more lost time than married parents.

Recorded Lost Time

1. In comparison to enlisted women, enlisted men of equal quality are absent more days for disciplinary reasons.
2. Days lost due to disciplinary events are highly related to level of educational achievement.
3. The gender difference in disciplinary absences has narrowed over the past decade. Moreover, women enlisting in 1985 lost more time for infractions of military rules than did women enlisting in 1975.
4. Enlisted women are absent more days than men for hospitalization.
5. Hospitalization absences for both women and men have decreased over the past decade.

Recommendations

Based on the results of this research, the following recommendations are made.

1. Investigate ways of reducing women's absences at naval stations, naval air stations/ AIMDs, and SIMAs. These are generally large commands and reductions in lost time have considerable potential cost benefit to the Navy.
2. Promulgate the findings that, with the exception of a few commands, women do not lose more time than men and the absenteeism of single parents does not differ from that of other personnel.

References

- Chief of Naval Operations. (1981). *Manual of Navy total force manpower: Promulgation of* (OPNAVINST 1000.16E). Washington, DC: Author.
- Chief of Naval Operations. (1989). *Management of pregnant service women* (OPNAVINST 6000.1A). Washington, DC: Author.
- Clegg, C., Wall, T., & Kemp, N. (1987). Women on the assembly line: A comparison of main and interactive explanations of job satisfaction, absence and mental health. *Journal of Occupational Psychology*, 60, 273-287.
- Conway, S. W. (1983). *Effects of race and gender on court-martial rates and punishments* (NPRDC-SR-83-20). San Diego: Navy Personnel Research and Development Center.
- Fitzgibbons, D., & Moch, M. (1980). Employee absenteeism: A multivariate analysis with replication. *Organizational Behavior and Human Performance*, 26, 349-372.
- Hoiberg, A. (1980). Sex and occupational differences in hospitalization rates among Navy enlisted personnel. *Journal of Occupational Medicine*, 22 (10), 685-690.
- Johns, G., & Nicholson, N. (1982). The meanings of absence: New strategies for theory and research. *Research in Organizational Behavior*, 4, 127-172.
- Keller, R. T. (1983). Predicting absenteeism from prior absenteeism, attitudinal factors, and nonattitudinal factors. *Journal of Applied Psychology*, 68, 536-540.
- Leigh, J. P. (1986). Correlates of absence from work due to illness. *Human Relations*, 39, 81-100.
- Markham, S. E., Dansereau, F., Jr., & Alutto, J. A. (1982). Female vs. male absence rates: A temporal analysis. *Personnel Psychology*, 35, 371-382.
- Meisenheimer, J. R., II. (1990, August). Employee absences in 1989: A new look at data from the CPS. *Monthly Labor Review*, 113 (8), 28-33.
- Naylor, J. C., & Vincent, N. L. (1959). Predicting female absenteeism. *Personnel Psychology*, 12, 81-84.
- Olson, M. S., & Stumpf, S. S. (1978). *Pregnancy in the Navy: Impact on absenteeism, attrition, and work group morale* (NPRDC-TR-78-35). San Diego: Navy Personnel Research and Development Center.
- Pollock-Byrne, J. M. (1990). *Women, prison, & crime*. Pacific Grove, CA: Brooks/Cole Publishing.
- Salholz, E., Wright, L., Bingham, C., Clifton, T., Carroll, G., Reiss, S., & Chideya, F. (1990, June 4). Women in jail: Unequal justice. *Newsweek*, 115 (23), 37-38, 51.

- Savell, J. M., Rigby, C. K., & Zbikowski, A. A. (1982). *An investigation of lost time and utilization of a sample of first-term male and female soldiers (ARI-TR-607)*. Alexandria, VA: U. S. Army Research Institute for the Behavioral and Social Sciences.
- Scott, K. D., & McClellan, E. L. (1990). Gender differences in absenteeism. *Public Personnel Management*, 19 (2), 229-253.
- Secretary of the Navy (1987). *Navy study group's report on progress of women in the Navy*. Washington, DC: Author.
- Steers, R. M., & Rhodes, S. R. (1978). Major influences on employee attendance: A process model. *Journal of Applied Psychology*, 63, 391-407.
- Taylor, D. E. (1979). *Absent workers and lost hours, May 1978 (Special Labor Force Report 229)*. Washington DC: U.S. Department of Labor, Bureau of Labor Statistics.
- Thomas, P. J. (1987). *The Navy workweek at selected commands in the United States and overseas (NPRDC-TN-89-9)*. San Diego: Navy Personnel Research and Development Center.
- Thomas, P. J., & Edwards, J. E. (1989). *Incidence of pregnancy and single parenthood among enlisted personnel in the Navy (NPRDC-TR-90-1)*. San Diego: Navy Personnel Research and Development Center.
- Thomas, P. J., & Rose, S. J. (1979). *Relationship between mental level and unauthorized absence with a cohort sample of Navy men and women*. Unpublished manuscript.
- Thomas, P. J., & Thomas, M. D. (1992a). *Impact of pregnant women and single parents upon Navy personnel systems (NPRDC-TN-92-8)*. San Diego: Navy Personnel Research and Development Center.
- Thomas, P. J., & Thomas, M. D. (1992b). *Impact of pregnant women and single parents on mission accomplishment*. (Report to DACOWITS). San Diego: Navy Personnel Research and Development Center.
- U.S. Air Force Special Study Team (1985). *An analysis of the effects of varying male and female force levels*. Washington, DC: Author

Appendix A
Commands in Work Diary Sample

Commands in Work Diary Sample

USS PRAIRIE (AD 15)
USS PUGET SOUND (AD 38)
USS YELLOWSTONE (AD 41)

USS DIXON (AS 37)
USS FRANK CABLE (AS 40)
USS EMORY LAND (AS 39)
USS MCKEE (AS 41)

USS MONOGAHELA (AO 178)
USS WILLAMETTE (AO 180)

VP 6
VP 9
VP 10
VP 11
VP 16
VP 23
VP 40
VP 49
VP 50
VP 56

VQ 1
VQ 2
VQ 3

Naval Station, Charleston
Naval Station, Guantanamo Bay, Cuba
Naval Station, Norfolk
Naval Station, Pearl Harbor
Naval Station, Roosevelt Roads, P.R.
Naval Station, Rota, Spain
Naval Station, San Diego

Naval Air Station, Bermuda
Naval Air Station, Guam
Naval Air Station, Guantanamo Bay, Cuba
Naval Air Station, Keflavik, Iceland
Naval Air Station, Sigonella, Sicily

Naval Communications Area Master Station, Guam
Naval Communications Area Master Station, Naples, Italy
Naval Communications Station, Roosevelt Roads, P.R.

Naval Communications Station, Rota, Spain
Naval Communications Station, Yokosuka, Japan

Shore Intermediate Maintenance Activity, Charleston
Shore Intermediate Maintenance Activity, Norfolk
Shore Intermediate Maintenance Activity, Pearl Harbor
Shore Intermediate Maintenance Activity, San Diego

Naval Facility, Bermuda
Naval Facility, Keflavik, Iceland

Naval Hospital, Roosevelt Roads, P.R.
Naval Hospital, Yokosuka, Japan

Air Intermediate Maintenance Detachment, Rota, Spain
Air Intermediate Maintenance Detachment, Sigonella, Sicily

Naval Support Activity, Naples, Italy

Appendix B
Data Collection Instruments

Instructions

Fill out the top of the form, using a new form for each day. Place the names and rates of the personnel you are supervising in the blocks under your name. When each person arrives for duty at the work station, enter A1 in the time block that corresponds to when he/she arrived. When anyone leaves for a period of 20 minutes or more, enter the appropriate code from the list below in the time block that is closest to the actual time of leaving. When he/she returns, enter A2. (see example on back of this sheet.) If the reason for the absence is not listed in the codes below, enter G4 and write in the reason.

Most people will have at least four codes entered: A1, E1, A2, and A3. However, the greater detail you provide on their actual use of time during the day, the more useful the information will be to the Navy. No person will be penalized or reported because of this information. They will not be identified to the command or any representative of the Navy. The reason for listing their names and rates is that we need additional information about them to use in the analysis of the data.

Codes of Daily Activities

A. At Work Center

1. Arrived for duty
2. Returned to duty
3. Went off duty

B. Leave

1. Ordinary/annual
2. Emergency
3. Special liberty/compensatory

C. Organizational Absence

1. TAD/TDY
2. Standing watch
3. Work detail/FOD
4. Meeting/briefing/training
5. Collateral duty/sponsorship
6. Counseling/taking test
7. Inspection/quarters/ceremony

D. Medical/Dental Absence

1. Sick/dental call
2. SIQ/hospitalized/convalescent
3. Limited duty away from work center

E. Personal Absence

1. Lunch
2. Personnel/disbursing office
3. Exchange/uniform shop/haircut
4. Recreation/physical fitness
5. Needs of dependent(s)
6. Associated with PCS move

F. Disciplinary Absence

1. Unauthorized absence
2. Custody/confinement/arrest
3. Mast/court martial/counseling
4. Drug/alcohol rehab

G. Other Absence

1. Regular day off (RDO)
2. RON flight/crew rest
3. Reason unknown
4. Other (please write in)

Your Name & Rate _____ Date _____

Department & Division _____

Command _____

Time Blocks	Name & Rate <i>J03 Jensen</i>	Name & Rate <i>DH2 Retz</i>	Name & Rate <i>PH3 Martin</i>	Name & Rate <i>J02 Obar</i>	Name & Rate
0600		Explanation for J03 Jensen			
0630					
0700	<i>A-1/C-7</i>	Arrived for duty/Personnel Inspection			
0730	<i>A-2</i>	Returned to work center			
0800					
0830					
0900					
0930	<i>E-2</i>	Went to personnel office to check on "C" school assignment			
1000	<i>A-2</i>	Returned to work center			
1030					
1100					
1130	<i>E-1</i>	Went to chow			
1200	<i>A-2</i>	Returned to work center			
1230					
1300					
1330	<i>D-1</i>	Dental appointment			
1400					
1430	<i>A-2</i>	Returned to work center			
1500					
1530	<i>A-3</i>	Went off duty and left base			
1600					
1630					
1700					
1730					

Your Name & Rate Doyle, J01 Date 3-15-89

Department & Division Technical Info/Audio-Visual Division

Command NOSC

Time Blocks	Name & Rate	Name & Rate	Name & Rate	Name & Rate	Name & Rate
0600					
0630					
0700					
0730					
0800					
0830					
0900					
0930					
1000					
1030					
1100					
1130					
1200					
1230					
1300					
1330					
1400					
1430					
1500					
1530					
1600		Note. These explanations are provided on the sample to show you what types of activities should be coded. When you fill out your diary, just enter the codes into the time blocks. The exception is when G-4, Other, is coded. Then, you need to specify what occurred.			
1630					
1700					
1730					

Your Name & Rate _____

Date _____

Department & Division _____

Command _____

Time Blocks	Name & Rate	Name & Rate	Name & Rate	Name & Rate	Name & Rate
1800					
1830					
1900					
1930					
2000					
2030					
2100					
2130					
2200					
2230					
2300					
2330					
2400					
2430					
0100					
0130					
0200					
0230					
0300					
0330					
0400					
0430					
0500					
0530					

Distribution List

Assistant Secretary of the Navy (OASN [M&RA])
Canadian Forces Personnel, Applied Research Unit, Canada
Chief, Bureau of Medicine & Surgery (MED-35)
Chief of Naval Personnel (PERS-00W), (PERS-01JJ), (PERS-2), (PERS-4), (PERS-6), (PERS-00J)
Commanding Officer, Recruit Training Center, Orlando
Defense Technical Information Center (DTIC) (4)
Defense Psychology Unit, Defense HQ, New Zealand (2)
Deputy Chief of Naval Operations (MP) (N1)
Headquarters, Marine Corps (MPP)
Ministry of Defense, Senior Psychologist, Naval, England
Navy Psychology, Australia, (2)
Naval Health Research Center
Superintendent, Naval Post Graduate School
Superintendent, U.S. Coast Guard (DH)