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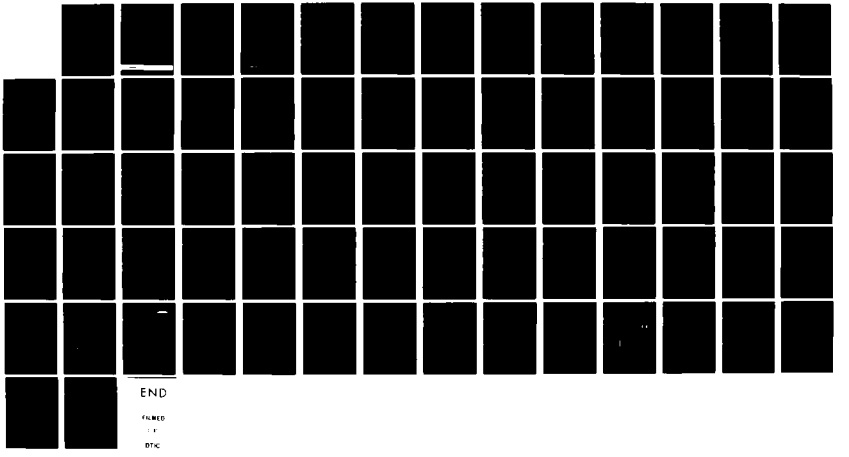

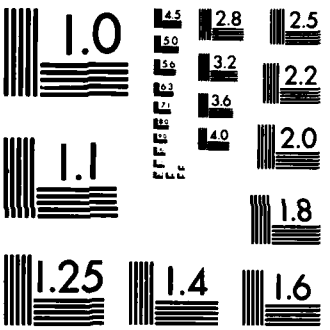

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Analysis of Second-Term Reenlistment Behavior

John R. Hiller

Rand

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John R. Hiller

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This study

Examines the reenlistment intentions of enlisted personnel in their second term of military service. Data were taken from the DoD Survey of Enlisted Personnel, completed in mid-1979. About 2500 enlistees (from all services) met the working definition of having less than one year remaining in their second term, having served six to ten years, and having achieved a pay grade of E3 through E7. A statistical analysis (logistic regression model) was tailored to each service; it related the survey respondent's reenlistment intentions to four types of factors: compensation, promotion, location, and job satisfaction. Compensation and promotion emerged as the key factors, the others assuming varying degrees of importance in different services. As a reenlistment incentive, however, guaranteed location of choice emerged as potentially important, along with bonuses, shorter reenlistment periods, and increased probability of promotion. (See also R-717, R-2935, R-2152, R-2468.)

PREFACE

This report was prepared under Task Order 81-II-1 as part of The Rand Corporation's Manpower, Mobilization, and Readiness Program. This program is sponsored by the Office of the Assistant Secretary of Defense (Manpower, Reserve Affairs, and Logistics)—OASD(MRA&L).

Given the increasing importance of manpower issues in defense planning and budgeting, the Rand program's goal is to develop broad strategies and specific solutions for dealing with present and future defense manpower problems. This necessitates the development of new methods for examining broad classes of manpower problems, as well as research on specific problems.

This report examines the reenlistment behavior of enlistees who are now in their second term of service. The data for the analysis are drawn from the 1978 DoD Survey of Officers and Enlisted Personnel, a survey jointly designed and administered by Rand and the Department of Defense. This work should aid OASD(MRA&L) policymakers in understanding second-term reenlistment behavior and in determining the likely effects of potential reenlistment incentives.

SUMMARY

Retention of enlisted personnel in the career force has been a major problem for defense planners during the past several years, because too few enlistees (particularly those of high quality) have been willing to reenlist into a military career. Little has been known about second-term and career reenlistment behavior, however, since prior research has dealt almost exclusively with first-term reenlistment; researchers have also given only slight attention to nonpay considerations of rotation, job assignment, family separation, and location.

This report establishes an empirical understanding of second-term reenlistment, assessing the role of both pay and nonpay factors in the reenlistment decision. To support the analysis, data were drawn from the 1978 DoD Survey of Officers and Enlisted Personnel; completed during the first half of 1979, the survey included nearly 40,000 enlisted personnel from all services. The group of second-termers selected for study (about 2500) included only those who were in their sixth to their tenth year of service, who had achieved a pay grade of at least E3, and who had less than one year remaining in their second term of service. The typical second-termer in the sample was a 27-year-old, white, married male in his seventh year of service; he had completed high school, achieved a pay grade of E5, and earned a monthly basic pay of about $700. The intended reenlistment probabilities averaged from 40 to 60 percent, depending on year of service and other factors.

A multivariate regression model was used to discover the key determinants of reenlistment intentions. The explanatory variables were of four types: compensation, promotion, location, and job satisfaction. Compensation variables captured current income, potential civilian income, and other aspects of pay. Promotion variables included past and future expected promotion rates, promotion rates relative to peers, and expected time to next promotion. Location variables measured the respondents' attitudes toward location, housing, rotation, and family separation, and also indicated the types of housing and the actual locations. Job satisfaction variables indicated job classification, hours worked, hours on call, and satisfaction with various aspects of the work environment (for example, interest of work, value of training, quality of peers and supervisors, and job discrimination).

In all four services, compensation and promotion variables emerged with central importance. Past and future promotion rates and number of years of service were positively, consistently, and (generally) significantly related to stated reenlistment intentions. Certain of the location and job satisfaction variables also were significant, though their significance varied substantially by service affiliation. This report concludes that compensation and promotion are closely related to the second-term reenlistment decision and that nonpay factors exhibit varying degrees of influence.

The regression analyses determined the importance of factors in the reenlistment decision, but they could not estimate the quantitative effects of changes in those factors or of changes implied by certain reenlistment incentives. Many variables were defined qualitatively and subjectively, as in attitudinal measures. Also, the form of the reenlistment incentive data precluded their use in the regressions. Consequently, little could be said about the magnitude of changes in reenlistment intentions; only the direction and statistical significance of changes could be assessed. Estimating the magnitude of changes required a different approach.

To estimate the effects of reenlistment incentives, the "what if" survey questions were

used. What if the respondent were offered a guaranteed location of choice, or a two-year option, or a $4000 bonus, or a (disincentive) reduction in promotion probability of one-half the expected probability? The first three incentives were associated with various increases in reenlistment rates (as discovered through statistical comparisons of survey answers instead of through models). Bonus elasticities lay in the range of 1.0 to 2.0, indicating that a 1 percent increase in pay (through a bonus) would lead to a 1.0 to 2.0 percent increase in reenlistment rates. Those elasticities are much smaller than the elasticities previously estimated for first-termers. The reduction in promotion probability implied a reduction in reenlistment rates and, if the effect is symmetrical regarding increases and decreases in promotion, a promotion increase would lead to an increase in reenlistment. Those findings are in concert with the regression findings that compensation, promotion, and location are related to the reenlistment decision. They also add a quantitative dimension to the regression results.

It was possible to calculate the monetary equivalents of the incentives using the estimated effect of each, in conjunction with the bonus elasticities. The guaranteed location of choice implied the same improvement in reenlistment rates as a 33 percent increase in regular military compensation (base pay plus allowances for subsistence and quarters). The two-year option and the promotion improvement were equivalent to 14 percent and 25 percent increases in compensation. The estimates varied by year of service and by service affiliation.

The findings on reenlistment incentives are subject to uncertainty. The changes were not estimated in the context of a systematic statistical model where other factors could be controlled. Also, the validity of the "what if" survey questions had not been tested. Still, the results are important in demonstrating that nonpay factors are related to the second-term reenlistment decision, and that reenlistment incentives based on those factors are potentially worthwhile.

ACKNOWLEDGMENTS

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CONTENTS

TABLES

I. INTRODUCTION

Retention of skilled and experienced enlisted personnel has been central to the discussions of military manpower policies for the last several years. Those discussions have focused on the shortages of trained personnel in particular grades and occupational specialties, and on the adequacy or inadequacy of military compensation. Little systematic assessment of enlistees' reenlistment behavior has been undertaken, however, except at the first-term reenlistment point. Further, pay and bonuses have been nearly the only reenlistment incentives considered.

Independent of potential or actual manpower shortages, the services' heavy investments in recruiting, training, and paying enlistees for two terms of service justify examination of second-term reenlistment behavior, especially since the investment is irreversible. If an enlistee separates after the second term, the service will recover no further benefits. Prior-service accessions potentially provide an investment recovery, but they have not been encouraged to a significant extent; therefore, the services cannot replace a senior individual quickly except from within the cohort. The cost to the government of losing a skilled enlistee after the second term may be quite high.

Second-term enlistees are important from still another perspective: They are the transition group from first-termers to careerists. Both first-termers and second-termers with five years of service, however, exhibit low rates of reenlistment. Second-termers with ten years of service exhibit very high rates, similar to those of careerists. Further, in reenlisting for a third term, an enlistee quite likely passes the ten-year point, after which future reenlistment becomes highly probable. It is important to understand reenlistment incentives and the underlying factors that encourage or discourage transition into the career force.

This research has two main objectives: to understand second-term reenlistment behavior and the factors that affect it, and to estimate the effectiveness of particular reenlistment incentives. Section II describes the data base used in the analysis, and considers the reliability of the data in light of prior survey research and in light of the observed response patterns to the 1979 pay raise (which was instituted just after the survey data were collected). Section III develops a definition of the second-term sample group and reviews the characteristics of the individuals in it. It also presents calculations of the reenlistment rates for various subgroups (based on year of service, income, and other factors).

Section IV considers the influential factors of compensation, promotion, location, and working environment. Econometric models based upon those factors are estimated for each service. Section V assesses the potential increases in reenlistment rates deriving from four reenlistment incentives: bonus payments, a guaranteed choice of location, an increase in promotion rate, and a two-year reenlistment option. Further, using the various responses calculated for the incentives, each nonmonetary incentive is given an equivalent bonus value, which indicates how large a reenlistment bonus would have to be in order to achieve a reenlistment effect exactly equal to that achieved by the nonmonetary incentive—for example, how large a bonus would yield the same improvement as a guaranteed location of choice.

II. MEASURING RETENTION BEHAVIOR

The concept of reenlistment behavior is straightforward—an individual either does or does not reenlist at the end of the term of service—but explanation is complex. The researchers must have access to a comprehensive and detailed data base that captures both reenlistment behavior and the main factors behind it. Administrative records include the results of reenlistment decisions, but many of the key factors can be measured only through a survey. If a survey is used, however, the researcher must be assured of the accuracy and consistency of the data, which requires the survey to be designed and administered with care. This section discusses the survey information and reliability problems in the context of reenlistment analysis.

1978 DoD SURVEY OF OFFICERS AND ENLISTED PERSONNEL

The data for this research were drawn from the 1978 DoD Survey of Officers and Enlisted Personnel, administered in the first half of 1979. It is the most recent of a series of surveys by the OASD(MRA&L) aimed at developing policy-oriented and research-oriented information. (Previous DoD personnel surveys were undertaken in 1971, 1973, and 1976.) Over 38,000 enlisted (and 19,000 officer) personnel survey forms were returned and assembled into a data base. Doering et al. (1980, 1981) and Hutzler and Doering (1980) discuss the design, contents, collection procedures, sample, and other technical details of the data. Only a brief overview of the survey, based upon those documents, is provided here.

The 1978 DoD Survey used four survey forms, two for officers and two for enlisted personnel. The data for this analysis come from Form 1, Enlisted Personnel, although data from several other sources are used as well. The questions asked in Form 1 focused upon economic issues, such as military compensation, civilian employment opportunities, household income, debts and assets, and similar topics. The purpose of the questions was to collect data with which to discover the effects of economic and related factors on the decision to reenlist. For example, respondents were asked to estimate their reenlistment probabilities at the time of the survey, under various assumptions: that no reenlistment bonus would be offered, that a specific bonus would be offered, or that a guaranteed location of choice or other inducements would be available. Table 1 summarizes the data content of the form; the questionnaire is reproduced in the appendix.

The enlisted sample was stratified by service affiliation of the enlistee and, within services, by both the year of service (YOS) grouping and the time remaining until the end of term of service (ETS). In addition, there was supplemental sampling of blacks and women in order to provide data for particular analyses. Table 2 summarizes the stratification plan.

The number of usable questionnaires required in each cell, along with response rate estimates and budget considerations, determined the number of fielded surveys in each cell. For Form 1, it was desired to have 1000 completed and usable questionnaires for each service in cells 1 and 3 in order to focus on first- and second-termers with up to one year remaining in their term of service. The target number of questionnaires from the other cells was 500 per cell, except for the supplemental samples. The total required number of Form 1 questionnaires for each service was around 5000. (It differed slightly by service because of varying

Table 1

SUMMARY OF DATA CONTENTS FOR FORM 1

I. Military Specific
   A. Military Background
   B. Military Compensation and Benefits
   C. Reenlistment/Career Intent
   D. Military Training and Work Experiences
   E. Military Retirement System

II. Civilian Comparable
   A. Demographic
   B. Housing
   C. Family Resources
   D. Civilian Labor Force Experience
   E. Civilian Job Perspective

SOURCE: Doering et al. (1980), Table 1.

Table 2

STRATIFICATION OF ENLISTED PERSONNEL SAMPLE

Sample Cell	Years of Service	Year to End of Term of Service (ETS)
1	0-4	Less than one year
2	0-4	One year or more
3	5-8	Less than one year
4	5-8	One year or more
5	9-12	
6	13-16	
7	17+	
	Supplemental Sample	
8		Additional females
9		Additional blacks

SOURCE: Doering et al. (1980), Table 3.

requirements in cells 8 and 9.) The total required number of returned forms, adding up all services and both the officer and the enlisted personnel survey forms, was about 54,400. Of the 90,000 forms sent out, over 57,000 were obtained. The overall response rate was about 62 percent of the fielded forms and 105 percent of the required number of forms. Table 3 lists the numbers of responses for the cells of immediate interest.

To compute population statistics representative of the DoD enlisted population with more than four months of service (five months for the Army) as of 31 March 1979, the data must be adjusted to take account of the unequal probabilities of selection of individuals and the differ-

Table 3

ACTUAL SAMPLE SIZES FOR CELLS 3 AND 4 IN FORM 1

Sample Cell	Years of Service	Time To ETS	Army	Navy	Marine Corps	Air Force	DoD
3	5-8	<1	793	1128	686	811	3418
4	5-8	>1	713	829	593	584	2719
3+4	5-8	all	1506	1957	1279	1395	6137

SOURCE: 1978 DoD Survey of Officers and Enlisted Personnel.

ential response rates across cells. The variables used in developing the adjustment factors (or weights) were simply the stratification variables, along with race and sex. Each enlistee who returned a form was assigned a weight based upon his or her combination of characteristics (as defined by service, YOS, time to ETS, sex, and race), upon the number of respondents with the same characteristics, and upon the total number of such individuals in the aggregate population as of March 31, 1979. Any two enlistees with the same characteristics were assigned the same weight. The sample then was scaled up to the full population (to which it may be generalized) based upon the weights. Table 4 outlines the relationship between the generalizable and the total population as of March 31, 1979.

Table 4

COMPARISON OF GENERALIZABLE POPULATION WITH TOTAL POPULATION

Item	Army	Navy	Marine Corps	Air Force
Total strength	650,890	458,492	167,192	465,550
Generalizable population	613,469	439,734	157,717	446,525
Proportion of generalizable population responding to survey	.015	.026	.060	.019

SOURCE: Doering et al. (1981), Table 7.

RELIABILITY OF DATA ON INTENTIONS

In previous military manpower surveys, it often was possible to test the accuracy of stated reenlistment intentions: Researchers could simply go to the administrative personnel files to see whether the respondents were still in the service after their current term of

enlistment had ended. It was not possible to do that with the 1978 DoD Survey, however, because it did not ask for information that would allow individuals to be identified in the manpower files. The validity of intentions data as predictors of behavior must be assessed in some other way. For the present, two pieces of evidence must suffice: the results from previous studies, and a comparison of pay elasticities as projected from the survey with the actual effects of a pay increase. Both types of evidence strongly suggest that intentions data are reliable predictors of behavior (perhaps with minor statistical adjustment). The findings from the earlier studies have been published by Brunner (1971), and Chow and Polich (1980). The following discussion reviews those reports, comments on other relevant evidence, and draws conclusions for this research.

REENLISTMENT INTENTIONS AS PREDICTORS OF REENLISTMENT BEHAVIOR

Question 20 on Form 1 of the survey is central to the analysis: "How likely are you to reenlist at the end of your current term of service?" That question asked the enlistee to assume that no reenlistment bonus would be offered. The response was given as a probability (0 in 10; 1 in 10; . . . 10 in 10), with verbal cues to guide the answers (e.g., almost sure = 9 in 10). Enlistees who planned to retire or who did not know their preferences were able to respond appropriately. (Only about 2 percent of the second-term respondents fell into those categories.) The stated probabilities then may be examined in light of various monetary, attitudinal, and other factors, as recorded on the survey. In using such data, however, one faces an important question: How closely do intentions match events? If 50 percent of the respondents say they intend to reenlist, do all of them actually do so? This section addresses that issue.[1]

Brunner (1971) examined the reliability of reenlistment intentions for forecasting actual reenlistments. She used the observed intentions-behavior relationship in 1964 to forecast the number of reenlistments in 1969. Intentions data, specified as a yes or no answer to the intentions question, were taken from the Air Force portion of the 1964 DoD Survey and the 1969 Air Force Sample Survey. Actual reenlistment data were gathered from Airmen Retentions and Loss Files. Brunner restricted her analysis to first-term airmen and divided the sample according to the airmen's stated motivations for having enlisted—that is, as true volunteers or as draft-induced volunteers.

In 1964 the true volunteers revealed an intended reenlistment rate of 33.7 percent, but 42.8 percent actually reenlisted. Brunner then adjusted the 1969 intentions data by the ratio of intentions to behavior from that earlier survey in order to account for the understatement of intentions and to make predictions about *behavior* in the 1969 group. She predicted that 14,150 first-term white airmen would reenlist during 1970; 13,973 of those did reenlist—an error of less than 2 percent.

Brunner's quantitative results cannot be applied directly to this research. She focused on first-term, white airmen; this report analyzes second-term enlistees from all services and

[1]Although one cannot validate individual data on the 1978 survey it might be possible to validate grouped data. One need only define certain groups (based on, say, age, YOS, and race). DMDC manpower files may be used to obtain actual reenlistment rates for those groups, which can be compared with the intentions data for the same groups. If the group characteristics capture the key determinants of reenlistment behavior, and if the individual values are not too widely or asymmetrically distributed about the group averages, the test may be reasonable. Further research should consider this possibility.

races and includes both males and females in the sample. Also, she had to deal with the problem of the draft, which is not a problem for this analysis. Regardless of these qualifications, however, two relevant conclusions emerged from her work: Intentions are closely and systematically related to subsequent behavior, and intentions provide accurate quantitative predictors of behavior when small error corrections are applied.

The Chow and Polich (1980) study of first-term reenlistment behavior was based on data from the 1976 DoD Survey of Officers and Enlisted Personnel. Over 9000 first-termers (representing all services) with a time to ETS of less than one year responded to the survey. Since the respondents recorded their Social Security numbers on the survey form, the authors were able to obtain the respondents' personnel records from the DoD Master and Loss Files for March 1977. Reenlistment and separation rates were determined from the files and compared with the intentions statements. The authors used two survey questions to measure reenlistment intentions. One question asked for the reenlistment decision in terms of yes, no, or undecided; the other asked for the probability of reenlistment on a 10-point probability scale. The authors discovered very close relationships between intentions and behavior. For example, of those who answered "no," they would not enlist, only about 5 percent actually did reenlist. For those who answered "yes," the reenlistment rate was over 86 percent. Furthermore, the intentions statements appeared to predict relatively accurately even when probability categories were used instead of simple yes-no verbal groupings, as can be seen in Table 5.

Table 5

ACTUAL REENLISTMENT RATES BY PROBABILITY CATEGORY

Probability Category	Actual Reenlistment Rate (All DoD)
.90 - 1.00	.889
.80	.836
.70	.667
.60	.567
.50	.578
.40	.378
.30	.326
.20	.140
.00 - .10	.051

SOURCE: Chow and Polich (1980), Table 4, p. 11.

The above discussion affirms that intentions are highly correlated with behavior, but it does not indicate what the actual statistical relationship is, nor does it reveal how other variables affect the relationship. One approach to answering those questions is to extend the Chow and Polich analysis by estimating a regression equation using behavior as the dependent variable and intentions and other variables as explanatory factors. If the intentions variable is a good predictor of behavior, it should have a highly significant coefficient and lie close to a value of one. If the other variables do not affect that relationship, they should assume coefficients close to zero and retain no statistical significance. The results in Table 6 bear out those hypotheses. They are based on (weighted) least squares estimates on the Chow

Table 6

REGRESSION RESULTS ON INTENTIONS AND BEHAVIOR

Variable	Variable Description	Coefficient	t-Value
CONSTANT		-.00	(-.20)
INTENT	Intention categories as in Table 5	1.09	(20.21)[a]
ETS:3-6	ETS of 3-6 months	-.00	(-.13)
ETS:GT6	ETS greater than 6 months	-.00	(-.20)
AF	Air Force member	.00	(.55)
NAVY	Navy member	.00	(.70)
R^2		.86	
F		94.90	

SOURCE: Data from 1976 DoD Personnel Survey.
[a]Significant at 1 percent.

and Polich data from the 1976 survey, grouped by intentions category, ETS, and service. (Chow and Polich omitted Marines from the sample because of insufficient data.) No coefficient is significantly different from zero except for the intentions coefficient, which is highly so but not significantly different from one. In addition, the constant term is zero, indicating that the intentions variable is directly proportional to the behavior variable. Finally, as noted in Brunner's study, actual reenlistment rates tend to be higher than the stated intentions, but in a systematic way. Specifically, the ratio of the probability of actual reenlistment to the probability of intended reenlistment is 1.09, independent of the absolute values (since the constant term is zero). This suggests that, as in the Brunner study, a correction factor should be applied. In this case, one would multiply the intentions probabilities by 1.09. (Brunner used a value of 1.27.)

There is also a second piece of evidence regarding the reliability of the survey data. In the fall of 1979, an increase in basic pay was instituted along with an expansion in certain bonuses. Since this increase was applied only a few months after the 1978 DoD Survey was completed, it provides evidence on the reliability of the survey. For example, ignoring all pay increases except the basic pay hike, one calculates a pay elasticity of around 1.6 for all careerists DoD-wide. In Sec. V below, second-term elasticity estimates of 1.3 to 1.7 are obtained. However, the 1.6 estimate for actual behavior is too high, since it ignores part of the true increase in compensation. Thus, the aggregate level elasticity based upon the pay raise falls within the estimates obtained from the survey data. In future work with the 1978 DoD Survey, further analysis of the effects of subsequent pay raises should provide additional insight into the survey reliability issue.

CONCLUSIONS

In an early manpower study, Brunner (1971) found that statements of reenlistment intentions on surveys provided good predictions of behavior when adjusted for error in underestimation. Chow and Polich (1980) also found intentions to be highly correlated to behavior. In all cases, actual reenlistment rates somewhat exceeded the intended rates, suggesting that respondents tended to underestimate their reenlistment probability and that a correction factor therefore should be applied. Regression results based on the Chow and Polich data indicated that a factor of 1.09 should be applied to the first-term intentions data. Since the 1978 DoD Survey data were gathered only a few years later than the Chow and Polich data, one may have confidence that the intentions data, when adjusted by an underestimation factor of 1.09, provide reliable predictors of actual behavior. Finally, preliminary analysis of the 1979 pay raise, which was instituted only months after the survey was completed, indicated that actual, aggregate-level pay elasticities were close to those computed from the survey. The conclusion is that the intentions data appear to be closely and systematically related to the actual reenlistment behavior and may be used in analyzing reenlistment factors.

III. PROFILE OF SECOND-TERM ENLISTED PERSONNEL

This section develops a characteristic profile of the second-term enlisted personnel in each service, examining their marital and dependent status, perceived and actual income, age, education, location, promotion expectations, and other variables. It also examines, in a preliminary way, how reenlistment rates vary with certain personal and career characteristics. First, a working definition of the second-term enlisted personnel group is discussed.

DEFINITION OF SECOND-TERMER

Enlistees were asked to indicate their term of service on the survey questionnaire, but that simple classification was modified in two important ways.[1] First, only those respondents were retained in the sample who indicated that less than one year was left in their second term of service. The choice of one year to ETS was arbitrary, but it follows the example of most reenlistment studies. Second, only those respondents in their sixth through their tenth year of service were retained in the sample. The sample thus excluded any respondent who was in the last year of his or her second term of service but had not completed at least five full years or who had completed more than ten full years. That group accounted for a small fraction of all second-termers in the last year of their enlistment period. The reason for that constraint is that individuals who completed two full terms of service in five years represent an unusual category, as do those who did not complete two terms by the end of ten years. The latter probably asked for an extension after one of their terms, indicating an unwillingness either to reenlist or to separate. In any event, a low percentage of individuals were omitted by establishing the YOS limits of six through ten.

A third restriction limited the sample to enlistees in pay grades E3 through E7. Anyone not reaching E3 by the last year of the second term of service did not represent the typical second-termer. Very few cases were eliminated by this restriction.

In summary, three characteristics defined the sample group:

- Less than one year remaining in their second enlistment term,
- In YOS groups 6 through 10 (i.e., completed at least 5 years but not more than 10), and
- In pay grades E3 through E7.

Those restrictions resulted in a DoD-wide data base of 2481 individual observations. Of course, for particular questions the usable number of observations may be lower because of missing observations.

BACKGROUND CHARACTERISTICS

In the context of the sample restrictions discussed above, the typical second-termer (with one year or less to ETS) is a 27-year-old white male in his seventh year of service. (He has

[1]Extensions of service were not counted in the survey forms as reenlistments, but simply as part of the original enlistment term.

finished six full years but has not completed his seventh.) He has completed high school, attained a pay grade of E5, and receives about $700 in monthly basic pay.

Beyond that basic profile, this section considers what differences exist across services and how certain important characteristics are related to reenlistment rates. The focus is upon five types of background characteristics: demographic, financial, promotion, location, and work environment.

As Table 7 shows, virtually all second-termers have completed high school (or obtained the GED) and roughly one-third have completed one or two years of college. Previous research has shown that first-term attrition rates are highest among individuals lacking high school diplomas. Thus, the second-term group approaching the reenlistment point has a high —perhaps surprisingly high—proportion of high school graduates.

Table 7

BACKGROUND CHARACTERISTICS OF SAMPLE GROUP

(In percent)

Characteristic	Army	Navy	Marine Corps	Air Force
Age group				
21-24	26	13	28	8
25-30	57	80	64	84
Married	68	69	69	76
Dependents[a]				
0	35	38	37	32
1	21	25	23	29
2	27	26	28	26
3	12	7	7	10
4 or more	5	4	12	3
Education				
At least high school	98	97	96	99
1-2 years college	34	32	27	38
Years of service				
6	24	11	18	1
7	37	19	28	16
8	25	31	28	62
9	10	18	16	18
10	4	21	10	3

[a]Does not include spouse.

Little difference exists across the services in the marital status of individuals, with the Air Force having a somewhat higher proportion of married enlistees. Similarly, the dependent status of the second-termers shows little variation, with a third or more of the enlistees having no dependents. The great majority have two or fewer dependents.

The Air Force sample not only has a somewhat greater proportion of married enlistees, but is older and has served longer. Also, the distribution of years of service is much tighter for

the Air Force than for the other services, with a sharp peak at YOS 8. The Navy experiences a similar peak, but with a greater variance in the distribution.

Not displayed in the table is the fact that the populations are overwhelmingly male (ranging from 92 to 98 percent) and mostly white (62 to 78 percent).

BASIC REENLISTMENT RATES

Beyond developing a simple characteristic profile, one must determine the relationship of reenlistment probability to certain characteristics. Of course, simple cross-tabulations can be very misleading since no other variables are held constant. Therefore, the results in this section are developed in light of the econometric results obtained in the next section. They provide an overview and reinforce later results.

Reenlistment rates are known to vary by year of service, increasing into the third term and thereafter continuing at a high level. Table 8 indicates that such variance may be observed within the second term as well. The intended reenlistment rates are higher for enlistees with longer terms of service, especially for the Army. The patterns are different, as are the spreads in rates from low to high; however, the trend toward higher rates is unmistakable. Further, the rates for those in their sixth year of service are not much greater than the first-term rates, while those in the tenth year of service exhibit rates that approximate career reenlistment rates. Many factors are related to YOS, such as age, pay grade, compensation, and so forth; however, even with numerous other factors accounted for through multiple regression analysis, YOS retains a significant relationship to reenlistment rates. Section IV presents those results and discusses the various explanations.

Table 8

REENLISTMENT RATES BY YEAR OF SERVICE

Year of Service	Army	Navy	Marine Corps	Air Force
6	.32[a]	.33	.35	.48
7	.33	.31	.35	.51
8	.46	.29	.38	.44
9	.68	.39	.50	.57
10	.73	.48	.58	.64

[a]As in the other tables, reenlistment rates are calculated as expected values. Stated reenlistment intention probabilities are used to compute the expected number of individuals who reenlist; that number is divided by the total number of individuals. Finally, the computed reenlistment rate is multiplied by 1.09 as a correction factor. The statistical basis for that correction was discussed in Sec. II.

Most personal background variables show little or no systematic relationship to reenlistment rate. Very small differences in those rates were seen when comparing groups based on education, sex, race, marital status, dependents, and age. All such variables were included in the econometric analysis, but still showed little influence on reenlistment behavior.

Chow and Polich found that enlistees were not able to estimate their military pay very accurately, the tendency being to understate actual pay. Table 9 illustrates that result for this sample. Nearly all of the enlistees fall in the basic pay range of $601 to $800, but not more than 85 percent of them perceived their pay to lie in that range. About as many believed they were under that range as believed they were over it.

Table 9

ACTUAL AND PERCEIVED BASIC PAY

(In percent)

Service	Actual Basic Pay $601-800	Perceived Basic Pay		
		$601-800	More than $800	Less than $601
Army	99	72	15	13
Navy	98	85	6	9
Marine Corps	97	75	14	11
Air Force	99	80	8	12

An important question is whether these perceptions are related to reenlistment behavior. Do people who significantly underestimate their basic pay tend to have lower reenlistment rates? To test that possibility, the pay difference was computed for each individual, i.e., annual perceived basic pay minus annual actual basic pay. Table 10 summarizes the results. It does not appear that the extent of over- or underestimation systematically affects reenlistment probability. In the econometric discussion below, the ratio of perceived pay to actual pay is tested as an explanatory variable and, as in Table 10, one finds that it exerts little influence on reenlistment intentions.

In making a reenlistment decision, enlistees' accuracy in estimating their actual pay may be less important than their comparison of their military with their likely civilian pay. Those who believe they could earn much more (less) as civilians should exhibit lower (higher) reenlistment rates. Table 11 confirms that conjecture. Respondents were asked to compare their military pay with their expected civilian pay, should they separate from the service. Those who believed that civilian pay would be much higher had reenlistment rates of 28 percent to 35 percent; those who believed it would be much lower had rates of 49 to 76 percent. Opportunity cost appears to be important, a result obtained in the multivariate analysis of reenlistment behavior.

Although many respondents indicated a concern with the adequacy of their military pay and benefits, nearly half of the sample—45 to 49 percent—believed that their financial positions had improved over the last three years. Roughly 26 to 32 percent reported a worsening, leaving 19 to 29 percent who reported no significant change.

A potentially important factor in the reenlistment decision is the enlistee's satisfaction with location, both the current and the next expected location. Results in Secs. IV and V

Table 10

REENLISTMENT RATES BY DIFFERENCE BETWEEN ACTUAL AND PERCEIVED ANNUAL PAY

Perceived-Actual Difference in $	Reenlistment Rate			
	Army	Navy	Marine Corps	Air Force
-3000+	.25	.00	.28	(a)
-(2000-2999)	.44	.31	.33	.74
-(1000-1999)	.51	.37	.38	.40
-(0-999)	.40	.35	.40	.52
0	.17	.38	.36	.37
1 to 999	.53	.38	.46	.39
1000 to 1999	.48	.27	.53	.58
2000 to 2999	.27	.23	.36	.50
3000+	.29	.53	.51	.37

[a]Too few observations existed in this cell to obtain a reliable value for reenlistment rate.

Table 11

REENLISTMENT RATES BY COMPARISON OF CIVILIAN TO MILITARY COMPENSATION

Civilian Pay vs. Military Pay Seen as:	Reenlistment Rate			
	Army	Navy	Marine Corps	Air Force
Much better	.31	.28	.32	.35
Slightly better	.48	.47	.46	.64
About the same	.55	.43	.51	.73
Slightly worse	.74	.70	.68	.59
Much worse	.76	.74	(a)	.49

[a]Too few observations existed in this cell to obtain a reliable value for reenlistment rate.

confirm that location is important and that a guaranteed location of choice could be a useful reenlistment incentive. Table 12 illustrates the relationship of reenlistment behavior to satisfaction with the current location.

The housing status of the second-termers also is examined, as part of the location situation. Type of housing, ownership, and happiness with housing are considered in the econometric models. For example, 42 percent to 56 percent of the sample population lived in civilian housing. Roughly one-half of the group expressed satisfaction with housing and about one-third expressed dissatisfaction. Although not shown in the table, approximately 14 to 23

Table 12

REENLISTMENT RATES BY SATISFACTION WITH LOCATION

Category	Reenlistment Rate			
	Army	Navy	Marine Corps	Air Force
Very dissatisfied	.36	.28	.27	.38
Dissatisfied	.32	.34	.33	.33
Neutral	.33	.26	.45	.50
Satisfied	.46	.43	.43	.56
Very satisfied	.55	.39	.52	.56

percent of the sample owned their homes and, as indicated later, tended (but without great significance) to have lower than average reenlistment rates, as did those in military housing.

Another potentially important reenlistment factor is the enlistee's likelihood of promotion. Not only does promotion—past and future—reflect military compensation (including retirement income), but it also captures the various advantages and satisfactions that depend upon grade and career success. Relation to peers, job prestige, fulfillment of career aspirations, and other factors make promotion rate a potentially important influence on reenlistment behavior. The respondents were asked what they believed their promotion chances were, as expressed by 11 probability categories. As Table 13 indicates, reenlistment intentions appear to be strongly and positively related to promotion probability, a result confirmed in the multivariate analysis below. On average, 15 to 30 percent of the respondents expected no promotion and expressed very low reenlistment intentions. When asked what their reenlistment intentions would be if their promotion chances were reduced by one-half, nearly 50 percent of the sample indicated no likelihood of reenlistment, as opposed to 35 percent otherwise indicating no reenlistment likelihood.

The final reenlistment influence considered here is the working environment and the enlistee's attitude toward it. One aspect is whether the enlistees work within or outside of their primary military occupational specialty (MOS) (20 to 45 percent of the respondents reported working one-half to most of their time outside of their specific MOS). Another factor is the frequency with which one must change locations. Family separation, a function of the enlistee's work environment, was mentioned by 20 to 40 percent of the sample as a reason they would consider leaving the service. A variety of questions capture other aspects of working environment and job satisfaction. Table 14 summarizes a set of those results. Respondents were asked to compare civilian working conditions with military conditions, including working hours, quality of supervisors, having an input to important decisions, and enjoying challenging and interesting work. As Table 14 illustrates, most respondents believed that civilian jobs would offer better working conditions.

A cross-tabulation of working environment against reenlistment intentions is not presented because of the diffuseness of the concept and its many related variables. However, the econometric analysis indicates that various job environment variables do exert some influence on the reenlistment decision, but the results vary by service.

The results in this section were meant to provide a working definition of second-termer,

Table 13

REENLISTMENT RATES BY EXPECTED PROMOTION PROBABILITIES

Promotion Probability	Reenlistment Rate			
	Army	Navy	Marine Corps	Air Force
0.0	.03	.12	.37	.31
0.1	.29	.34	.15	.51
0.2	.60	.52	.25	.58
0.3	.71	.58	.41	.72
0.4	.61	.47	.47	.59
0.5	.81	.62	.53	.78
0.6	.63	.69	.59	.82
0.7	.73	.71	.50	.80
0.8	.87	.76	.62	.87
0.9	.85	.80	.71	.81
1.0	.77	.63	.85	.86

Table 14

PERCEPTIONS OF MILITARY WORKING CONDITIONS

(In percent)

Civilian Jobs Have Better:	Reenlistment Rate			
	Army	Navy	Marine Corps	Air Force
Working hours	74	78	66	46
Supervisors	59	51	55	44
Decision participation	78	77	74	70
More interesting, challenging work	70	69	70	71

to summarize some of the personal characteristics of the second-term group, and to evaluate basic reenlistment rates for particular groups. The data also highlight the differences across services and suggest that reenlistment behavior should be analyzed at the service level rather than at the aggregate DoD level. For example, notable differences exist in age distributions, marital status, education, and years of service. In addition, reenlistment rate patterns differ across the services. Based upon those factors, Sec. IV develops a systematic analysis of reenlistment intentions.

IV. ANALYZING REENLISTMENT BEHAVIOR

Section III described second-term enlisted personnel according to various financial, career, and background characteristics, and related the basic reenlistment rates to certain key variables. This section formalizes the analysis by setting out a logistic regression model and a strategy for tailoring it to a unique specification for each service.

ANALYTIC APPROACH

The choice between enlisting for a third term and entering the civilian labor market is assumed to reflect the systematic and observable influence of a variety of economic and personal taste factors. Military compensation represents one such factor, along with the nonmonetary factors of location, job assignment, and career advancement. However, the survey data include numerous variables that could reflect the influence of a particular factor. For example, compensation-related variables include basic military pay, cash bonuses and special pay, year of service, perceived civilian pay, and the probability of obtaining a good civilian job after leaving the service. The influence of location factors could be reflected in geographic location (foreign, ship, continental U.S.), family separation, home ownership, and others. Promotion and job satisfaction similarly could be represented by a number of survey variables.

Each reenlistment factor not only finds a variety of related variables, but also may be viewed from several distinct perspectives. For example, current compensation no doubt strongly influences reenlistment behavior. However, prior growth in compensation, future expected growth, and one's civilian opportunities are different, but perhaps equally important, aspects of compensation. Each of those aspects may reflect a different concern in the individual's preference framework and, a priori, one cannot assert that one or another of the aspects should dominate the reenlistment choice. To the extent allowed by the data base, the attempt here is to capture the influence of several perspectives for each variable.

It is accepted as axiomatic that people prefer greater compensation to lesser, faster promotion to slower, and more desirable (in whatever way they define it) locations and jobs to less desirable. However, it is not possible to observe the way in which people actually evaluate those factors. Instead, one observes a certain intended reenlistment behavior and an associated set of economic and personal characteristics.

As Enns and others have noted, one cannot derive a specific form of the relationship between key variables and reenlistment intentions (or behavior). However, the form of that relationship should have one important property: Since reenlistment probability is bounded by 0 and 1, the estimating relationship should be similarly bounded. A functional form that meets that criterion and appears in many such applications—particularly in military manpower studies—is the logistic model.[1] Specifically,

[1]This is not, however, the only framework which one theoretically could employ. One might, for example, begin with a market framework and attempt to estimate a supply equation rather than an individual probability equation. Such an approach would have to deal with the lack of a flexible, equilibrating wage determination process and with the possibility of personnel quality rather than wage rate serving as the equilibrating mechanism. Further, demand (expressed as end strength requirements figures) may not be independent of supply. Thus, a straightforward supply-and-demand approach encounters immediate and significant difficulties.

$$P = \frac{1}{1 + e^{-(b_0 + b_1 X_1 + \ldots b_n X_n)}}, \quad (1)$$

where P is reenlistment probability and the set of variables X_1, ..., X_n captures the key explanatory influences on reenlistment. The set of coefficients b_1, ..., b_n represents the quantitative relationship of each variable to the reenlistment likelihood.

An equivalent form of Eq. (1) is

$$\ell n\,(P/(1-P)) = b_0 + b_1 X_1 + \ldots b_n X_n, \quad (2)$$

where the natural logarithm of each side was taken and the terms were rearranged. (For probability values of 0 and 1, the values .05 and .95 were substituted.)

Nerlove and Press, Chow and Polich, and others have discussed the statistical techniques for estimating those equations. Enns used Eq. (2) for grouped data (which also was weighted) and estimated the coefficients with ordinary least squares. Chow and Polich estimated Eq. (1) with a linear discriminant function and conditional maximum likelihood estimates, and Eq. (2) with ordinary least squares (using individual rather than grouped data). In practice, the estimation techniques did not make a great deal of difference in the significance of the estimated coefficients. Although Chow and Polich found some difference in coefficient estimates, the significance levels were nearly identical. Since the significance levels are of most interest here, either approach is suitable. Ease and economy of estimation suggest using ordinary least squares estimates on individual data for Eq. (2).

Underlying the above approach is the fact that the second-term reenlistment probability is a *conditional* probability, conditioned on first-term reenlistment and on a wide variety of *individual* circumstances. To the extent that those circumstances vary, the probability estimates are conditioned on different circumstances, thus possibly giving biased estimates. An approach with which to overcome that problem is to estimate a *joint* first-term/second-term probability function. Based upon certain characteristics, an individual would be assigned a probability of entering the second term, with both terms and all factors considered simultaneously. However, that work lies outside the scope of the present analysis, leaving one with the inherent limitations of the second-term, conditional probability approach.

REENLISTMENT FACTORS

The choice of which variables to include as explanatory factors arises from prior expectations about reenlistment behavior and from the availability of data on the 1978 DoD Survey. Four sets of factors are considered: compensation, promotion, location, and job satisfaction.

For reasons discussed below, a total compensation variable is not included directly in the regression model. However, year of service (YOS) partially reflects current compensation and partially reflects the present value of the future retirement annuity. The greater the YOS, the greater is that present value, and consequently, the greater is the probability of reenlistment. It is well established, of course, that reenlistment rates increase dramatically through the first several enlistment terms, then remain high through the retirement point. Since the

present value of the lifetime annuity grows as YOS increases (due to a shorter time horizon), the retirement decision may outweigh other considerations. In fact, as one moves from YOS 6 to YOS 10, the present value of the future retirement annuity increases about 10 percent per year, assuming no pay-grade increase. Hence, one expects YOS to be positively and significantly associated with reenlistment probability.

Year of service also may indicate something about one's "taste" for military service. Those with stronger innate preferences for military careers may have reenlisted for longer second terms, causing positive correlations between preferences and years of service. The result would be an intermingling of those correlations with the income and retirement correlations just described. The coefficient of the YOS variable would reflect a combination of the factors. However, two criticisms should be noted. The greater "tastes" for military service may have resulted in higher first-term reenlistment rates instead of in longer reenlistment periods. No evidence is available to argue either side. Furthermore, one cannot demonstrate that an innate "taste" exists independently of the pay and quality-of-life variables in the model, for is it not those qualities of military life which create one's "taste" in the first place? Inclusion of numerous such variables should reflect the influence of personal tastes through the variables that influence (or perhaps even create) tastes.

An enlistee's satisfaction with respect to compensation may be reflected in several survey variables. For example, respondents were asked how their financial situation had changed over the last three years. Presumably, the greater the increase, the more positive the individual is likely to be toward current compensation, and thus the more likely to reenlist. Current short-term financial assets also may be positively related to the adequacy of the level of compensation, greater assets reflecting an income sufficient to accumulate savings. Thus, the respondents' estimates of their net financial assets (savings minus short-term debts) are included. Further, one's satisfaction with compensation may depend upon what one perceives the compensation to be. Chow and Polich found that first-termers tended to underestimate their true pay. The same underestimation (though small in magnitude) was discovered among second-termers, leading to inclusion of the following variable: perceived gross monthly basic pay divided by actual gross monthly basic pay. The greater is that ratio (up to a value of one), the more accurately individuals perceive their base pay, and perhaps the more likely they will be to reenlist.

Dependence upon military compensation and related benefits is indicated by several variables. Respondents estimated the proportion of total household income which their military compensation represents. If that proportion were very low, because, for example, the nonmilitary spouse had a much greater income, military compensation might play a lesser role in the reenlistment decision. A similar dependence measure is the estimate of the percentage of total household food purchased from a commissary. If that percentage is very large, commissary shopping might be viewed as a reenlistment incentive since it will not be available after separation. The survey also asked respondents how many hours they worked each week in a civilian job. Working many civilian hours suggests that military compensation is not adequate from the individual's point of view, and that reenlistment probability is lower than it would be otherwise. Also, additional civilian income makes the entire household less dependent on military compensation. Thus, one expects a negative correlation of civilian hours with reenlistment probability.

The trade-off between cash and in-kind allowances presents another aspect of compensation-related variables. Enlistees who receive cash allowances for housing and subsistence may see it as higher income rather than as a tax-free substitute for direct support in living on the base. Further, the allowances have been discussed previously as if the individual may

choose between an allowance or in-kind support, which is not the case. The allowances represent not simply the cash versus the direct support, but the whole issue of choice and adequacy of housing. For example, those who receive allowances could have a higher reenlistment rate, not because they misunderstand the monetary value, but because they are much happier with their living environment. The fact that they receive an allowance may be a proxy for that attitude toward housing.

Numerous variables relate to civilian employment opportunity. One question asks the respondents to estimate their most likely earnings if they entered the civilian market after their current term of service. Use of such data has not worked well in past studies, however, notably in Chow and Polich (1980). Massell (1975) showed that even the use of the actual experiences of veterans will generally provide upward-biased estimates of civilian opportunities. The alternative is to employ human capital variables as proxies for earnings potential. The work of Massell, Enns, Chow and Polich, and many others supports that approach. Specifically, one includes variables that are determinants of civilian earning potential, rather than including estimates of that potential based on prior experience or respondent estimation. This latter approach is employed in the model. Included are indicator variables for white/nonwhite and male/female. Also included are education level, year of service, age, and promotion rate. Three additional variables from the survey supplement those human capital factors. The respondents were asked whether they had actually received a job offer within the past twelve months, whether they believed their likely civilian pay to be better, worse, or about the same as military pay, and what the probability was that they could get a good civilian job if they did not reenlist.

Warner and Simon (1979) and others have speculated that first-term reenlistment bonuses depress second-term reenlistment rates. The logic is straightforward: A substantial bonus may swing many individuals' decisions toward reenlistment who would not consider the military as a career, but who would be attracted by the bonus. When the career decision comes up at the end of the second term, another bonus may be unlikely to sway them.

A total military income variable is not included, for the following reason: Military income is determined by YOS, pay grade, and number of dependents (the latter affect the tax advantage of certain allowances, not the basic pay rate). In a cross-section of individuals, all pay variation is due to those factors, rather than to changes in basic pay rates over time. Therefore, one cannot estimate a pay elasticity without creating some sort of pay differences among individuals based on other than YOS, pay grade, and dependent status. For example, one might compute—as Chow and Polich did—a present value for the expected income stream over the next few years. Knowing the current pay grade and the regular military compensation (RMC), one need only add in a future income stream based on the respondent's expected probability of promotion, time horizon, and discount rate. Unfortunately, the variance in such a variable is based solely on the expected promotion rate, since time horizon and discount rate are exogenous parameters in their approach. The choices for those two parameters affect the present-value calculation and therefore affect the estimated coefficient. Finally, use of the present-value variable attributes only income changes to the impact of promotion, yet a variety of job- and location-associated effects may be due to promotion. One concludes, then, that a present-value income variable offers no variance that is not already in the promotion expectations variable, and it has a coefficient directly determined by arbitrary assumptions for the discount and time horizon factors. Also, it seemingly attributes all promotion effects to the indirect effect of compensation. However, lacking any time-series variation in compensation, how else can reenlistment pay elasticities be estimated? Indeed, how can the effect of location and other policy instruments be estimated? The following method is suggested.

Question 20 on the 1978 DoD Survey asks for the individual's reenlistment intention assuming that no reenlistment bonus is offered. Question 23 asks for reenlistment intention assuming the offer of a $4000 reenlistment bonus. For each individual or for any group, one can compute the percent change in the base reenlistment rate for the $4000 bonus. Further, one can determine each individual's RMC from the pay scales in force during the survey and use the $4000 bonus to compute percent changes in pay implied by the bonus. Finally, one can compute individual and group bonus elasticities from those calculations. That approach avoids the necessity of building in arbitrary assumptions. However, the procedure assumes that not only are the base reenlistment intentions good predictors of behavior, but also that valid answers are obtained under "what if" types of questions. The analysis is developed in Sec. V.

Table 15 summarizes the variable definitions and their designations. Past and expected future promotion rates reflect both growth in income and career success, with whatever satisfactions and benefits accompany that success. Therefore, a set of variables is developed that is based solely on promotion, recognizing that some of the influence no doubt is due to compensation. As a measure of past promotion, each individual's pay grade is divided by his or her year of service, giving a rough indicator of advancement rate. Though imperfect in many ways, it does give a simple measure based on easily understood variables. For future promotion, several survey variables exist. Respondents were asked to estimate their probability of being promoted to the next pay grade, as well as the expected time until their next promotion. They also indicated the pay grade they expected to have attained upon separation from the service. Respondents were asked whether they expected their next promotion sooner, later, or at the same time as their peers. If such a variable were important, one would conclude that relative, not merely absolute, promotion rates were important. Respondents also compared military promotion with expected civilian promotion. Finally, one question asked the respondents for which reasons they might consider leaving the service. One of the answers they could check was that their advancement opportunities were not adequate. A dummy variable is defined to indicate which individuals answered in that way. Table 16 defines the promotion variables.

Because location-related variables may influence reenlistment attitudes, a variety of such variables have been employed in the location factors. For example, dummy variables indicate foreign location, assignment to ship for Navy (too few Marines were so assigned to use the variable), happiness with current location, and whether the respondent was offered a guaranteed location in prior years. Each person also was asked to estimate the likelihood that his or her next assignment would be in an undesirable location (defined by their preferences). Since housing appears to be an important aspect of location, several housing variables are included. Dummy variables indicate those who live in homes they own, who live in military rather than civilian housing, and who are happy with their present housing arrangements. Attitudinal variables are included that reflect separation from family and frequency of moves as possible reasons for leaving the service. Finally, a dummy variable selects those respondents who indicated a belief that their locations in civilian jobs would be better than in military jobs. Table 17 defines the location variables.

Job satisfaction is the fourth cluster of variables considered in the reenlistment decision. Dummy variables indicate whether the individual would consider any of the following job-related factors as reasons for leaving the service: discrimination, poor quality of personnel, no chance to practice job skills, and undesirable job. Also employed are dummy variables that select out those individuals who believe that civilian jobs would be better than military jobs in terms of supervisors, control of one's environment, interest in work, training, fellow work-

Table 15

COMPENSATION VARIABLES

Variable Name	Variable Description
YOS	Year of service
FIRST-TERM BONUS	First-term reenlistment bonus ($)
FEMALE	Dummy variable for females
NONWHITE	Dummy variable for nonwhites
EDUCATION	Current level of education in years
PERCEIVED PAY BIAS	Perceived pay divided by actual pay
BAQ	Dummy variable for quarters allowance
BAS	Dummy variable for subsistence allowance
COMMISSARY FOOD PURCHASES	Percent of food purchases made at commissary
PAY PERCENT	Military pay as percent of total income
FINANCIAL CHANGE	Change in financial situation over last 3 years
CIVILIAN JOB OFFER	Dummy variable indicating whether job offer was received in last 12 months
PROBABILITY OF CIVILIAN JOB	Perceived probability of finding good civilian job
CIVILIAN PAY BETTER	Dummy variable for belief that civilian pay is better
HOURS ON SECOND JOB	Hours worked weekly in civilian employment

Table 16

PROMOTION VARIABLES

Variable Name	Variable Description
PAST PROMOTION	Pay grade divided by YOS
PROBABILITY OF PROMOTION	Expected probability of promotion to next pay grade
EARLY PROMOTION	Dummy variable--expect promotion earlier than peers
TIME TO NEXT PROMOTION	Expected time to next promotion
NO OPPORTUNITY FOR ADVANCEMENT	Dummy variable--inadequate promotion seen as reason for possible separation from service
EXIT GRADE	Pay grade expected to be attained at exit from service
CIVILIAN PROMOTION BETTER	Dummy variable--civilian promotion seen as better

ers, hours worked, and security of employment. Other dummy variables indicate those who are supervisors, who work mostly within rather than outside of their occupational specialty, and who received guaranteed jobs or guaranteed training as part of their prior reenlistment contract. Finally, total weekly hours worked and total hours on call, on alert status, or on a duty roster are included as independent variables. Table 18 presents the variable definitions.

Table 17

Location Variables

Variable Name	Variable Description
FOREIGN LOCATION	Dummy variable--foreign location
HAPPY WITH LOCATION	Dummy variable--happy with current location
GUARANTEED LOCATION	Dummy variable--location guaranteed at first-term reenlistment
NEXT TOUR UNDESIRABLE	Estimated probability of next tour being in undesirable location
FREQUENCY OF MOVES	Dummy variable--frequent moves seen as reason for leaving service
FAMILY SEPARATION	Dummy variable--family separation seen as reason for leaving service
HAPPY WITH HOUSING	Dummy variable--satisfaction with current housing
MILITARY HOUSING	Dummy variable--military rather than civilian housing
OWN HOME	Dummy variable--ownership of at least one home
CIVILIAN LOCATION	Dummy variable--civilian job location seen as better
SHIP ASSIGNMENT	Dummy variable--present location is aboard ship (for Navy)

Table 18

Job Satisfaction Variables

Variable Name	Variable Description
	Dummy Variables
GUARANTEED TRAINING	Prior reenlistment contract guaranteed training
GUARANTEED JOB	Prior reenlistment contract guaranteed job assignment
DISCRIMINATION	Discrimination seen as reason for leaving
QUALITY OF PERSONNEL	Poor quality personnel seen as reason for leaving
NO PRACTICE OF JOB SKILLS	Lack of job skill practice seen as reason for leaving
BAD JOB	Undesirable job as reason for leaving
SUPERVISOR	Job mostly is supervisory
CIVILIAN BOSSES BETTER	Believes civilian bosses are better
CIVILIAN CONTROL BETTER	Believes control of one's job better as civilian
CIVILIAN INTEREST BETTER	Believes civilian jobs more interesting
CIVILIAN TRAINING BETTER	Believes civilian training better
CIVILIAN WORKERS BETTER	Believes civilian workers to be better
CIVILIAN HOURS BETTER	Believes civilian hours to be better
CIVILIAN SECURITY BETTER	Believes job security higher as civilian
	Non-dummy Variables
HOURS WORKED	Hours worked weekly in military job
HOURS ON CALL	Weekly hours on call, alert status, and duty roster

REENLISTMENT MODELS

Initially, all the foregoing variables are included in a large regression equation for each service. The large equation then is compressed into a smaller, unique equation for each service following a strategy suggested by Theil (1971, pp. 604-605). Theil proposed an iterative approach in which the full model is estimated, all nonsignificant variables are dropped, and the model is reestimated. The iteration continues until all remaining variables attain the specified level of significance. He noted that the significance level should be interpreted loosely, given the uncertainties surrounding the results.

The Theil strategy was followed in a general way. Approximately 50 variables were estimated in the full model for each service. Only the weakest variables were dropped rather than all nonsignificant variables. Further, certain basic variables were retained, regardless of their statistical performance (year of service, age, marital status, and first-term bonus). Finally, the iterations were stopped before all remaining nonsignificant variables had been purged, leaving roughly 20 variables in the final specifications.

In addition to the iterative procedure, several alternative approaches were followed. The full model was estimated for each service by including all relevant variables in the specification (which was necessary anyway to provide a starting point for the iterative process). Second, a compressed model was defined independently of actual results, and was estimated once for each service. That specification was identical for each service. Third, for each service, four separate models were estimated, one each for the location, promotion, compensation, and job satisfaction variables. The strongest variables from each model were combined into a final and unique specification for each service.

As one would expect, the two approaches that derived specifications unique to each service demonstrated the better statistical performance, as judged by F-statistics for the group of independent variables, and by t-statistics for individual variables. Further, the iterative approach performed as the better of the two. However, the most general conclusions that one would draw from the analysis would be the same regardless of which approach was used.

The iterative strategy allows a unique specification to emerge for each service, which is desirable for several reasons. First, the underlying structural relations that determine reenlistment behavior may differ sharply across services. There is no reason that the same final structure should be attributed to all services. Second, even if the underlying structure were the same, survey variables may capture different influences in the context of the different service environments. For example, one survey variable may best reflect civilian opportunity cost in the Army, while a different variable captures the same effect in the Navy. This implies that one's data base and analysis should be stratified by service and perhaps even that different variables be used. The iteration approach allows different variables in different services, based on statistical performance.

A statistical assumption in the use of ordinary least squares estimates is that the error terms are homoskedastic; that is, the differences (error terms) between actual and estimated values of the dependent variables do not vary across values of the independent variable. For example, if the range of variation of the logit expression is wider or narrower at different levels of explanatory variables (such as year of service and promotion probability), the error terms are said to be heteroskedastic. Two problems result. First, the coefficients in the equa-

tion are not estimated efficiently, though the estimates are unbiased. Second, the estimated variances of the coefficients are biased, leading to incorrect plus and minus values for the coefficients. One might misinterpret the statistical significance of a variable by depending upon incorrect statistics. In the present case, the error terms do not appear to be heteroskedastic; however, no rigorous tests were applied. On the other hand, four separate regression strategies were tried, one of which led to several more specifications. The same pattern of significance of variables emerges, giving one confidence in the robustness of the conclusions.

Table 19 presents the regression results for the Army second-termers. The key variables in relation to reenlistment behavior are the expected promotion probability, the YOS, and the receipt of quarters allowance. That those variables are important is not surprising, since promotion captures future expected income (including retirement) and thus represents the expected value of remaining in the military through a third enlistment term. An individual intending to remain in the service through a third term probably is deciding on whether to make the military a career, with the financial and nonfinancial advantages of higher grades providing a key incentive. If those advantages cannot, with a reasonable probability, be obtained, the military career is not so attractive. Past promotion exercises a less significant influence on reenlistment. The partial correlation coefficient (holding all other variables constant) between the past and future promotion variables is -0.27. The faster the rate at which enlistees were promoted, the slower they believed they would be promoted in the future, although the strength of the correlation is relatively low. This reflects the fact that promotion rates tend to decline as one moves to higher pay grades. Since YOS is held constant in the regression, higher PAST PROMOTION means higher pay grade and therefore lower future promotion probability.

The year of service variable, YOS, reflects several influences: current income, present expected value of the retirement income, and perhaps "taste" for military service, as discussed earlier. It also is possible that YOS is related to the type of job that one holds. The strength of YOS is not surprising, and in all services except the Marine Corps it assumes a highly significant coefficient.

Receipt of cash allowances for quarters (BAQ) is associated with higher reenlistment intentions. Since the enlistee cannot choose between cash and military housing, the variable must reflect access to military or civilian housing. One explanation of the positive coefficient on BAQ is that off-base civilian housing is preferred to on-base military housing. Therefore, BAQ would not be valued in itself, but would indicate access to preferred housing by the respondent. This explanation seems preferable to the argument that enlistees erroneously regard the allowance as added income and therefore, believing they have a higher real income than those in military housing, are more likely to reenlist. Similarly, receipt of subsistence allowance (BAS) may reflect preferred circumstances for the individual and thereby be associated with higher reenlistment probabilities. The BAS variable assumes a lower level of significance, however, and has a less clear-cut meaning than BAQ.

Enlistees who work longer hours per week than others have a very mild tendency toward lower reenlistment, but the effect is weak. No other variables exercise much influence. For example, the first-term reenlistment bonus does not exert a significant influence on reenlistment rates. Females and nonwhites indicate virtually no differences in reenlistment rates. A recent econometric study by Parsons (1980) indicated that blacks have virtually the same labor force participation rates as whites, once the appropriate human capital variables have been taken into account. The same result appears to hold in reenlistment behavior.

One concludes that the Army second-termer most likely to reenlist is one who has spent

Table 19

REGRESSION RESULTS FOR ARMY

Variable	Coefficient	t-Value
CONSTANT	-9.03	-2.25
YOS	0.86	2.82*
FIRST TERM BONUS x 10^{-3}	-0.05	-0.87
FEMALE	0.23	0.37
NONWHITE	0.57	1.29
BAQ	1.02	2.12*
BAS	0.89	1.86
FINANCIAL CHANGE	0.46	1.16
PROBABILITY OF CIVILIAN JOB	-1.13	-1.40
FOREIGN LOCATION	0.43	0.94
GUARANTEED LOCATION	0.46	1.18
HAPPY WITH HOUSING	-0.11	-0.27
CIVILIAN LOCATION	0.45	1.07
PAST PROMOTION	4.19	1.80
PROBABILITY OF PROMOTION	2.81	5.02*
CIVILIAN PROMOTION	-0.33	-0.75
HOURS WORKED	-0.02	-1.91
CIVILIAN WORKERS BETTER	-0.16	-0.36
AGE	-0.02	-0.42
MARRIED	-0.51	-0.85
R^2	0.40	
F-VALUE	3.83	

NOTE: Dependent variable is logit of reenlistment probability. Starred t-values are significant at the 5-percent level or higher (two-tailed test).

a longer time in the service, anticipates a higher probability of promotion into the next pay grade, and receives living allowances instead of in-kind support.

Table 20 presents the regression results for the Navy sample. As in the Army model, year of service and probability of promotion assume considerable importance as independent variables. Past promotion also assumes some importance. In addition, those who believe that civilian pay would be better than military pay have a significantly lower reenlistment likelihood. No other opportunity cost variable is significant, although the belief that civilian bosses would be better than military bosses also depresses the reenlistment rate.

First-term reenlistment incentives affect reenlistment intentions in an interesting way. For three services, first-term bonuses are mildly (but not significantly) associated with lower reenlistment rates. However, first-term reenlistment incentives such as training or job assignment often imply a positive influence on reenlistment probability. For the Navy, the impact of guaranteed training on second-term reenlistment is positive and significant. That result is not surprising: If one received a particular training as an incentive to enter the second term, one already is considering career factors. Presumably, after investment in career training, one then is interested in pursuing it, especially if it is not easily transferable to the civilian labor market. Thus, first-term reenlistment incentives that develop an individual's military career potential may have a positive influence on second-term reenlistment.

Table 20

REGRESSION RESULTS FOR NAVY

Variable	Coefficient	t-Value
CONSTANT	-6.52	-1.61
YOS	0.56	2.33*
FIRST-TERM BONUS x 10^{-3}	-0.08	-1.77
PERCEIVED PAY BIAS	-1.78	-1.06
BAQ	-0.72	-1.36
BAS	0.80	1.46
PAY PERCENT	1.44	1.75
CIVILIAN JOB OFFER	-0.58	-1.50
PROBABILITY OF CIVILIAN JOB	-1.04	-1.25
CIVILIAN PAY BETTER	-1.01	-2.95*
NEXT TOUR UNDESIRABLE	-0.20	-0.40
MILITARY HOUSING	-0.34	-0.84
HAPPY WITH HOUSING	0.75	2.03*
OWN HOME	-0.45	-1.13
PAST PROMOTION	5.47	1.96*
PROBABILITY OF PROMOTION	2.13	3.46*
EARLY PROMOTION	-0.99	-2.56*
GUARANTEED TRAINING	1.00	2.36*
SUPERVISOR	0.41	1.21
CIVILIAN BOSSES BETTER	-1.03	-2.65*
CIVILIAN TRAINING BETTER	-0.46	-1.30
CIVILIAN WORKERS BETTER	-0.51	-1.37
AGE	0.03	0.29
MARRIED	-0.02	-0.04
SHIP ASSIGNMENT	0.15	0.31
R^2	0.45	
F-VALUE	4.25	

NOTE: Dependent variable is logit of reenlistment probability. Starred t-values are significant at the 5-percent level or higher (two-tailed test).

Past and future promotion rates reflect both success in a military job and growth in income; therefore, those rates should affect reenlistment rates. Greater past success and greater expected future success lead to higher reenlistment rates. For the Navy, however, an additional aspect enters: The earlier that one expects to be promoted relative to one's peers, the lower is the intended reenlistment probability. Earlier promotion could indicate that the enlistee is more successful and expects faster promotion to the next pay grade. In that case, the expectation of sooner promotion would very likely be positively correlated with past promotion rate and perhaps with expected promotion probability. However, earlier promotion actually is negatively correlated with past promotion (-0.27) and with future promotion (-0.18). Therefore, earlier promotion appears to be an indicator of one's catching up with others who may have been more successful. Even with past and future promotion held constant, the perception of earlier promotion is associated with lower reenlistment intentions, suggesting that the reason for earlier promotion is that one's peers already have been promoted. The important point is that earlier promotion is not a proxy for career success, which would mean in turn that the more successful enlistees were more likely to leave the service.

Satisfaction with current housing—which partially reflects location—significantly influences reenlistment. Those who express greater satisfaction with housing tend to be more likely to reenlist. Those in military housing or aboard ship or who own homes show no less and no more likelihood of reenlistment. Receipt of quarters allowance also yields insignificant results. Finally, bias in pay perception may play a role: Those who have a higher ratio of perceived to actual pay do have lower reenlistment rates; the effect is not significantly different from zero at the 5-percent level but it is different at 10 percent.

The Navy second-termer who is most likely to reenlist is one who has served longer, has experienced a faster promotion rate, expects a faster future promotion rate (but not faster than one's peers), received guaranteed training as part of the first-term reenlistment contract, and is happy with housing. The individual does not believe that civilian pay exceeds military pay or that civilian bosses are better than military bosses. Further, first-term bonuses, sex, race, age, education, marital status, job offers, and cost allowances (as opposed to in-kind direct support) make no difference in the decision.

The regression results for the Marine Corps are presented in Table 21. The anticipated probability of promotion to the next pay grade again becomes important, taking on a highly significant coefficient. The YOS variable has an estimated coefficient quite similar to the other services, but it does not assume as high a level of significance. The t-value of YOS for the Navy sample was 2.33; for the Marine Corps group it reached only 1.84, but is significant at about the 7-percent level.

None of the pay variables other than promotion assume a high level of significance. The first-term bonus variable has a negative but weak coefficient, which is similar to the other services. Those who believe that civilian pay would be better than military pay do not have significantly lower reenlistment intentions.

The location variables also are quite weak, with one exception: Those enlistees who own homes have lower reenlistment rates. That result was obtained in three of the services, but with most significance in the Marine Corps. VA loans with low down payments help buyers, but in years of high mortgage rates and tight markets, the sellers may need relief. Private firms often help employees to sell their homes when the company asks them to transfer. In some cases, firms even buy the homes directly. It is understandable that many people would be hesitant to sell their homes and buy elsewhere, considering the costs, difficulties, and risks of carrying out the transactions. One also might interpret the negative coefficient to mean that enlistees who have purchased a home intend to remain in that location but not reenlist, even if they could sell their home upon reassignment. Other location variables, such as happiness with location or even with housing, exert little influence on reenlistment behavior.

Job satisfaction and working environment variables exert slight influence. Those who believe that civilian training would be better than military training show a significantly lower than average reenlistment rate. Job security poses an additional concern: Those who believe that civilian jobs would be more secure than their military jobs may have somewhat lower reenlistment rates. Other job-related variables, such as working hours and hours on call, show little influence on reenlistment intentions. Guaranteed training and guaranteed job incentives at the first-term reenlistment point show positive but insignificant influences on reenlistment, unlike the bonus incentive, which takes on a negative but also insignificant value.

The typical Marine Corps second-termer who is most likely to reenlist anticipates a high probability of promotion, does not own a home, does not believe that civilian jobs offer greater security or better training than military jobs, and has served a greater number of years. Age, race, sex, marital status, and dependent status are not important.

Table 21

REGRESSION RESULTS FOR MARINE CORPS

Variable	Coefficient	t-Value
CONSTANT	-8.79	-2.19*
YOS	0.61	1.84
FIRST-TERM BONUS $x10^{-3}$	-0.09	-1.35
BAQ	0.03	0.04
BAS	-0.59	-0.88
COMMISSARY FOOD PURCHASES	0.92	1.45
CIVILIAN PAY BETTER	-0.70	-1.71
HAPPY WITH LOCATION	-0.40	-0.97
GUARANTEED LOCATION	0.34	0.86
NEXT TOUR UNDESIRABLE	-0.61	-0.98
MILITARY HOUSING	-0.41	-0.88
HAPPY WITH HOUSING	-0.32	-0.76
OWN HOME	-1.43	-2.56*
PAST PROMOTION	3.46	1.21
PROBABILITY OF PROMOTION	2.16	2.63*
EARLY PROMOTION	0.18	0.34
GUARANTEED TRAINING	0.60	1.19
GUARANTEED JOB	1.10	1.54
HOURS WORKED	0.02	1.36
HOURS ON CALL	-0.01	-0.78
CIVILIAN TRAINING	-1.00	-2.27*
CIVILIAN SECURITY	-1.21	-1.82
AGE	0.04	0.51
MARRIED	1.08	1.60
R^2	0.42	
F-VALUE	2.98	

NOTE: Dependent variable is logit of reenlistment probability. Starred t-values are significant at the 5-percent level or higher (two-tailed test).

The Air Force model is presented in Table 22 and demonstrates the best overall statistical performance among the models. The estimated equation has the largest number of significant coefficients, the largest R-squared values and the largest F-statistic. Further, it has several significant coefficients in each of the main groups of factors.

The pay and promotion variables are strong in the Air Force equation. First-term bonuses are negatively related to second-term reenlistments. Those who are more dependent on military income and those who feel that their financial position has improved over the last three years are significantly more likely to reenlist. As in the other services, those with longer service times have greater reenlistment intentions. Unlike the other services, however, sex is related to reenlistment intentions. Specifically, females have a mildly higher reenlistment rate. Race, education, marital status, age, and whether or not an individual actually received a job offer exert virtually no influence on the reenlistment decision, at least with any high level of probability.

Of the location variables, the coefficient of NEXT TOUR UNDESIRABLE assumes the

Table 22

REGRESSION RESULTS FOR AIR FORCE

Variable	Coefficient	t-Value
CONSTANT	-13.04	-2.76
YOS	1.15	3.21
FIRST TERM BONUS x 10^{-3}	-0.32	-2.83*
FEMALE	1.82	2.65*
NONWHITE	-0.32	-0.69
EDUCATION	-0.16	-0.98
PAY PERCENT	1.60	2.03*
FINANCIAL CHANGE	0.74	2.01*
CIVILIAN JOB OFFER	-0.31	-0.83
HAPPY WITH LOCATION	0.79	1.91
GUARANTEED LOCATION	-0.49	-1.12
NEXT TOUR UNDESIRABLE	-1.80	-2.88*
MILITARY HOUSING	-0.82	-1.92
HAPPY WITH HOUSING	-0.19	-1.69
OWN HOME	-0.70	-1.33
PAST PROMOTION	6.74	2.24*
PROBABILITY OF PROMOTION	1.76	2.36*
EARLY PROMOTION	0.38	0.93
GUARANTEED JOB	0.90	1.11
MOS	1.42	2.64*
CIVILIAN BOSSES BETTER	-1.42	-2.89*
CIVILIAN CONTROL BETTER	-0.55	-1.55
CIVILIAN INTEREST BETTER	-0.42	-1.06
AGE	0.07	0.77
MARRIED	0.86	1.30
R^2	0.58	
F-VALUE	4.33	

NOTE: Dependent variable is logit of reenlistment probability. Starred t-values are significant at the 5-percent level or higher (two-tailed test).

greatest significance. Enlistees who believe they have a higher probability of being assigned to an undesirable location on their next tour also have a lower reenlistment rate than average. In addition, if one currently lives in military housing or is unhappy with current location (or both), one also has a lower reenlistment probability. The coefficients have about 6-percent and 10-percent significance levels, respectively. Home ownership and happiness with current housing exert no significant influence.

Past promotion and expected future promotion are strongly related to reenlistment: The faster is past promotion and the more likely is the next future promotion, the more likely is the individual to reenlist, and very significantly so. The possible financial and nonfinancial advantages of promotion were discussed above.

Several of the working environment variables assume highly significant coefficients. Those who work mostly within their primary military occupational specialty are more likely to reenlist than those who do not. Further, those who believe that civilian bosses (in potential civilian jobs) would be much better than military bosses are less likely to reenlist. Both

effects are highly significant. Two other aspects of job satisfaction—control of one's job and interest of one's work—exert little influence, nor does the fact of having received guaranteed training as a first-term reenlistment incentive make much difference.

In summary, the typical Air Force second-termers who are most likely to reenlist are those with more years of service than average, who did not receive a first-term reenlistment bonus, and who are dependent to a large extent on military income. They believe that their financial situations have improved over the last several years and they do not expect an undesirable location on their next tour of duty. Also, their past promotion rates and future promotion chances (as evaluated by the individual) are more rapid than average. Finally, they work mostly within their primary areas of specialization and do not believe that civilian bosses would be better than military bosses. Age, education, race, and marital status make no difference in the reenlistment decision; however, females exhibit somewhat higher reenlistment rates.

To facilitate cross-service comparisons, Table 23 summarizes the findings for each service, noting the sign and significance of each variable. Variables that do not remain in the final specification of the equation for each service also are noted.

If one were to choose a single variable as a predictor of reenlistment intentions, it should be the enlistee's expectation of promotion to the next pay grade. That result perhaps is not surprising, since the variable reflects a combination of important factors: future income, career success, non-pay benefits of higher pay grade, and so forth. Second to that variable in terms of significance and consistency across services is the enlistee's year of service. As discussed earlier, the present value of the retirement annuity increases at roughly 10 percent compounded per year over the second term; consequently, leaving the service would impose a higher cost on those with more years of service. In addition, past promotion rate consistently and positively affects reenlistment. It reaches the 5-percent significance level in only two services, but is very close to that level in the other two. Further, first-term reenlistment bonuses are related to lower reenlistment rates in all four services, but the relationship is significant only in the Air Force. The significance level in the Navy is about 8 percent. Beyond those variables, the results vary across services. Various job- and location-related variables may be important in a particular service, but not DoD-wide. All services except the Army emerge with significant job and location variables.

Another important feature in Table 23 is the identification of factors that do *not* affect reenlistment. For example, demographic characteristics such as sex, race, education, age, dependents, and marital status exert little influence. Perhaps surprisingly, the relationship of perceived to actual pay also has little influence, as do hours worked in civilian jobs and actual receipt of a job offer. The latter suggests that good information regarding civilian opportunities is not necessarily detrimental to reenlistment. Also, many job satisfaction variables fall out of the models, including concern over discrimination and the quality of personnel, no opportunity to practice skills, having a very undesirable job, hours worked, and hours on call.

The regression analysis discovered the levels of statistical significance of numerous variables in explaining the reenlistment decision. However, the discussion of results did not consider how changes in variables would result in changes in reenlistment intentions; that is, the significance levels rather than the magnitudes of the coefficients were discussed. In most cases, it would be difficult to interpret coefficients since the variables are subjective, attitudinal variables. For example, if happiness with housing is measured on a scale of 1 to 5, one might expect those answering 5 to have different intentions from those answering 1. However, one cannot say that five times the happiness would lead to a certain change in inten-

Table 23

SUMMARY AND COMPARISON OF REGRESSION RESULTS

Variable	Army	Navy	Marine Corps	Air Force
Compensation:				
YOS	+*	+*	+	+*
FIRST-TERM BONUS	-	-	-	-*
FEMALE	+			+*
NONWHITE	+			-
EDUCATION				-
PERCEIVED PAY BIAS			-	
BAQ	+*	-	+	
BAS	+	+	-	
COMMISSARY FOOD PURCHASES			+	
PAY PERCENT		+		+*
FINANCIAL CHANGE	+			+*
CIVILIAN JOB OFFER		-		-
PROBABILITY OF CIVILIAN JOB	-	-		
CIVILIAN PAY BETTER		-*	-	
CIVILIAN HOURS BETTER				
AGE	-	+	+	+
MARRIED	-	-	+	+
Promotion:				
PAST PROMOTION	+	+*	+	+*
PROBABILITY OF PROMOTION	+*	+*	+*	+*
EARLY PROMOTION		-*	+	+
TIME TO NEXT PROMOTION				
NO OPPORTUNITY FOR ADVANCEMENT				
EXIT GRADE				
CIVILIAN PROMOTION BETTER	-			
Location:				
FOREIGN LOCATION	+			
HAPPY WITH LOCATION			-	+
GUARANTEED LOCATION	+		+	-
NEXT TOUR UNDESIRABLE		-	-	-*
FREQUENCY OF MOVES				
FAMILY SEPARATION				
MILITARY HOUSING		-	-	-
OWN HOME		-	-*	-
CIVILIAN LOCATION BETTER	+			
SHIP ASSIGNMENT		+		
HAPPY WITH HOUSING	-	+*	-	-
Job Satisfaction:				
GUARANTEED TRAINING		+*	+	
GUARANTEED JOB			+	+
DISCRIMINATION				
QUALITY OF PERSONNEL				
NO PRACTICE OF JOB SKILLS				
BAD JOB				
SUPERVISOR		+		

Table 23—continued

Variable	Army	Navy	Marine Corps	Air Force
MOS				+*
CIVILIAN BOSSES BETTER		-*		-*
CIVILIAN CONTROL BETTER				-
CIVILIAN INTEREST BETTER				-
CIVILIAN TRAINING BETTER		-	-*	
CIVILIAN WORKERS BETTER	-	-		
CIVILIAN HOURS BETTER				
CIVILIAN SECURITY BETTER			-	
HOURS WORKED	-		+	
HOURS ON CALL			-	
R^2	0.40	0.45	0.42	0.58
F-VALUE	3.83	4.25	2.98	4.33

NOTE: Dependent variable is logit of reenlistment probability. Starred t-values are significant at the 5-percent level or higher (two-tailed test).

tions, without having a clear and objective measure of happiness. Also, it is not possible to compare levels of happiness among respondents in any meaningful way. The problem is similar in interpreting perceived promotion rates, perceived civilian job probabilities, and such other subjective variables. Even the objectively defined data (age, marital status, year of service, education, and others) do not have coefficients where the magnitudes are of great interest. However, even if the variables were appropriately defined and the data were in the right form, there are hazards in trying to infer cohort, time-series effects from cross-sectional data. Kreps and Clark (1975) demonstrated that the actual cohort, life-cycle effects on female labor force participation are much different from what one would infer from cross-sectional data. Kessler and Greenberg (1981) draw similar conclusions in their work on panel analysis. In the present case, one might discover that people with more years of service behave differently from those with fewer, but one has confidence in the result because prior time-series studies reveal the same pattern. To conclude: Because of data and variable definition problems, and because of inherent potential changes in cross-sectional analyses, the results focus upon which variables are related to reenlistment probabilities (and how significantly they are related) but they do not focus upon the quantitative changes in reenlistment as related to changes in the variables. Section V uses a different approach to determine the magnitude of changes induced by certain reenlistment questions, as expressed by the "what if" questions on the survey. That section focuses upon magnitudes of changes, but lacks the regression results. The results, then, are complementary: The regression analyses include a wide range of variables in a tight statistical framework, determining levels of significance but not magnitudes of effects. Section V focuses on magnitudes, but for only a few variables and without a framework that holds other factors constant. Only if the survey data were in a different form could the results be combined into a single model.

CONCLUSIONS

Of the entire set of survey variables, the pay and promotion variables are most consistently and significantly related to reenlistment intentions. Expected probability of promotion, year of service, and (to some extent) past promotion are the key factors. Other financial, location, and job satisfaction variables have varying degrees of importance in the reenlistment decision. Although those results indicate which factors are most significantly related to reenlistment intentions, they do not clearly indicate the effects of changes in the key variables, for reasons discussed above. The problem of estimating changes is taken up in Sec. V.

V. EFFECTS OF REENLISTMENT INCENTIVES

To assess policy alternatives, this section develops an analysis of four reenlistment incentives: a reenlistment bonus, a guaranteed location of choice on next assignment, a two-year reenlistment period, and a 50-percent change in the chance of promotion. The likely change in reenlistment rates due to each of these policies is estimated, both service-wide and for certain groups within each service. The following types of questions are addressed: How do bonus elasticities vary by time in service? How does the enlistee's responsiveness to nonmonetary incentives vary by family status? What are the trade-offs among monetary and nonmonetary reenlistment incentives? What level of bonus would yield the same improvement in reenlistment rates as a guaranteed location of choice? Does the effect of guaranteed location vary either by year of service or by dependent status?

EFFECTS OF POLICY ON REENLISTMENT RATES

Respondents to the 1978 DoD Survey were asked to estimate their reenlistment probabilities assuming that no reenlistment bonus (or other incentive) would be offered. The questionnaire then asked their reenlistment probabilities under the assumption that a $4000 bonus would be offered. Using those data, one can calculate the percentage change in reenlistment induced by that bonus. Further, using the pay tables in force at the time of the survey, one can determine what percentage change of income the $4000 bonus represented for each person. Dividing the percentage change in reenlistment rate by the percentage change in current, annual income represented by the bonus, one can compute the aggregate bonus elasticity.

Enns reviewed a large number of bonus elasticity studies and found the estimates to range from about 1.6 to just over 5.0, the mean lying at 2.8. However, Simon and Warner and others have speculated that second-term pay and bonus elasticities are lower than the first-term estimates discussed by Enns. One might argue, for example, that the first-term reenlistment point serves as a screen for those with greater or lesser tastes for military service. The reenlistees have a narrower distribution of tastes, with fewer marginal people who would be swayed by a bonus. Thus, the bonus elasticity could decline. One might consider people with 16 years of service, looking toward retirement after their fourth or fifth term. The benefits of reenlisting and the costs of leaving are then so great, and so many of those with no taste for military service have already separated, that a bonus seems unlikely to have much effect.

The results in Table 24 are consistent with the speculation that bonus elasticities decline as an individual matures through the career life-cycle. Enns estimated a first-term bonus elasticity of 2.0, which was below the average of nearly 3.0 for the several dozen studies he reviewed. Chow and Polich estimated income elasticities of nearly 4.0 for first-termers. In contrast, only a few of the computed elasticities for the $4000 bonus fell into the 2.0 and above range. Overall, one finds average elasticities of 1.3 to 1.7. (The statistical distributions of data are tight enough and include enough observations that the confidence intervals for those mean values are very small. One may conclude that all values are significantly below 2.0.)

The argument that bonus elasticities decline over time implies that one might observe a

Table 24

BONUS ELASTICITIES BY SERVICE, PAY GRADE, AND YEAR OF SERVICE

Group	Bonus Elasticity			
	Army	Navy	Marine Corps	Air Force
Aggregate	1.3	1.3	1.7	1.3
E-3	(a)	2.8	1.3	--
E-4	2.6	1.5	1.4	1.8
E-5	1.4	1.7	2.0	1.3
E-6	1.0	0.9	1.6	--
E-7	--	2.2	2.1	0.1
YOS 6	2.0	1.3	2.5	2.0
YOS 7	1.7	2.0	1.9	1.3
YOS 8	1.0	1.2	1.7	1.5
YOS 9	0.7	1.1	1.4	0.8
YOS 10	0.1	1.3	1.1	1.7

[a]Based on $4000 bonus; missing entries reflect too few data in the particular category.

decline not only from one enlistment term to another, but also from one year of service to another, the latter serving as a proxy for maturity of career. In fact, Table 24 does suggest such an effect. Except perhaps for the Navy, the second-term, YOS 6-10 period appears to be the transition interval: Enlistees enter that period with bonus elasticities very high, even similar to those of first-termers, but exit with much lower elasticities. The change is most dramatic for the Army, least for the Air Force, and questionable for the Navy. One concludes that not only do aggregate bonus elasticities decline from first term to second term, but that they generally (but not consistently) decline even within the second term for those with greater years of service.

A second but less direct indicator of military career cycle is pay grade, which reflects a combination of time in service and past promotion rate (or career success). Table 24 indicates a highly mixed result by service. The trend is consistent for the Army, but questionable for the other services.

Several conclusions emerge from the bonus elasticity calculations. First, second-term elasticities are smaller than those discovered by other researchers for first-term enlistees. The aggregate estimates lie between 1.0 and 2.0, while first-term estimates average nearly 3.0 and go as high as 5.0. Second, the elasticities decline somewhat by YOS within the second term, being quite similar to first-term estimates for those in YOS 5, but declining substantially for those in YOS 10. They show some relationship to pay grade, but it is neither strong nor entirely consistent. Third, bonus elasticities vary somewhat by service, and the relationship of bonus to YOS varies notably across services. A policy that sought to maximize the effect of reenlistment bonuses probably would have different YOS guidelines in different

services. Finally, an important caveat should be observed: Those results are largely preliminary and suggestive. They were not developed systematically in a model, but were calculated as differences in answers to survey questions. They crucially depend on the validity of "what if?" types of questions, yet one has no evidence on the reliability of such data. Thus, the results are more valid for pointing out the direction for further policy research than for developing policy proposals. (Those limitations apply to all of the results in this section.)

A potentially important nonmonetary reenlistment incentive is guaranteed location of choice. For many enlistees, such an option might be very desirable. For example, spouse employment, children's education, ownership of fixed assets (house or property), cultural preference for a particular region or country, or perhaps avoidance of a very undesirable location are factors that could make location an important reenlistment concern. Although it would be useful to consider which factors render a particular location more or less desirable, it is first necessary to ascertain whether it is a potentially influential incentive. The econometric results included several location-related variables indicating that location could be important. However, the effect of a guaranteed location of choice cannot be tested directly in the model, for reasons discussed earlier. Instead, the same approach as that employed in calculating bonus elasticities must be used: Compare the survey responses for the intentions question that assumes that no reenlistment incentives will be offered, with the intentions question which assumes that a guaranteed location of choice (but no other incentives) will be offered. The final step is to calculate the percentage change in the base reenlistment rate due to the incentive. Table 25 presents the results.

A clear-cut assessment of the guaranteed location of choice responses across services, YOS, or family status cannot be offered. In general, location of choice appears to be a potentially useful incentive. The Army has a greater selection of locations than the Navy, but enlistees may have stronger opinions about particular Navy locations. Regarding time in service, younger and less family-attached enlistees may be more responsive to location choices, since moving may be easier for them than it is for people with roots in a community. On the other hand, a guaranteed location may be appealing to older enlistees with families, because they could reenlist without incurring the many costs and problems of moving, such as selling or renting houses, changing schools, and giving up jobs held by spouses.

The results in Table 25 are similar in trend to those for bonus elasticities. Enlistees further advanced in YOS are uniformly less responsive to a guaranteed location of choice than those less advanced. Also, aggregate-level responses vary across services, with the Marines exhibiting the largest effect and the Army the smallest. Consequently, the range of locations may be much less important than the quality of locations. It also is notable that the aggregate responses are large in magnitude, ranging from over 30 percent to nearly 60 percent. A group with a base reenlistment rate of 40 percent would increase that figure to 52 to 64 percent upon offer of a guaranteed location of choice.

A potentially important concern in location is the enlistee's family status. As discussed above, one could make a plausible argument in either direction: Greater family attachments and responsibilities could imply a greater or a lesser responsiveness to location. The results indicate that enlistees with fewer attachments will respond more strongly to a location incentive; those with more dependents are much less likely to increase their reenlistment intentions upon offer of a guaranteed location. This effect partly reflects YOS, of course, since those with more dependents possibly have served longer. However, because the partial correlation coefficient between those two variables does not reach even 10 percent for any service, the dependent relationship does appear to be important. Nevertheless, a multivariate analysis would be appropriate.

Table 25

EFFECT OF GUARANTEED LOCATION ON REENLISTMENT RATES

(In percent)

Group	Army	Navy	Marine Corps	Air Force
Aggregate	35.4	49.0	59.1	39.1
E-3	(a)	----	47.7	----
E-4	58.9	61.5	28.3	44.4
E-5	36.6	58.9	76.3	39.1
E-6	29.7	38.6	51.7	----
E-7	----	66.7	51.8	----
YOS 6	42.6	47.0	79.6	----
YOS 7	47.9	72.3	70.5	42.2
YOS 8	27.9	47.4	59.7	42.9
YOS 9	21.7	45.4	46.9	30.6
YOS 10	21.9	41.5	33.8	28.5
Dep 0[b]	40.0	52.3	75.1	49.2
Dep 1	42.9	58.7	47.4	37.0
Dep 2	33.4	47.7	53.3	28.0
Dep 3	27.3	28.2	65.6	32.8
Dep 4	8.6	8.1	35.0	----
Dep 5	30.6	----	----	----
Dep 6	5.3	----	5.5	----

[a]Missing entries reflect too few data points in the particular category.
[b]Single or married with no other dependents.

The sizes of the location responses are perhaps surprising. The average, service-wide effects of 35 to 60 percent are several times the potential effect of a 10 percent (of RMC) bonus. One way to compare the bonus and location incentives is to compute the monetary equivalent of the location responses by asking: What level of bonus would yield the same effect on reenlistment rates as a guaranteed location of choice? Dividing the location responses by the $4000 bonus elasticities, one finds that the bonus equivalents (as a percentage of RMC) of a guaranteed location of choice are: 27.2 percent (Army), 37.7 (Navy), 34.8 (Marine Corps), and 30.1 (Air Force), assuming that bonus elasticities are constant over different sizes of bonus. Thus, location of choice appears to be equally effective as a bonus amounting to roughly one-third of annual pay. That tradeoff illustrates the potential value of location policies (subject to the caveats noted above) and suggests that it may be highly cost-effective to emphasize such a policy for a select group of people. Indeed, if applied only to enlistees up to and including YOS 7, the potential benefit would be even greater.

The analysis also considered the effect of changing the required reenlistment period to two years (or more). Instead of a four-year contract, the enlistee could ask for a two-year contract, perhaps followed by a second two-year contract. This gives the enlistee two opportunities to decide not to continue into a subsequent term, but if the increase in reenlistment at

the end of the second term is great enough, it will offset the losses at the end of the two-year period, yielding a net gain over the straight four-year contract. How large is the likely effect of such an incentive, and how does it compare with other incentives? Table 26 displays the results.

Table 26

EFFECT OF TWO-YEAR REENLISTMENT OPTION ON REENLISTMENT RATES

(In percent)

	Effect on Reenlistment Rate			
Group	Army	Navy	Marine Corps	Air Force
Aggregate	24.1	18.3	16.1	16.7
E-3	(a)	44.7	-12.4	----
E-4	82.5	3.1	13.9	31.2
E-5	25.3	30.8	20.3	14.1
E-6	12.4	10.4	14.0	----
E-7	----	58.3	22.2	0.0
YOS 6	44.7	21.1	24.6	-30.2
YOS 7	30.1	35.4	21.9	16.7
YOS 8	16.6	16.9	18.1	24.6
YOS 9	9.9	12.0	15.0	0.0
YOS 10	- 0.3	13.4	- 4.7	0.1

[a]Missing entries reflect too few data points in the particular category.

Except for the Army, the percentage changes in the base reenlistment rate are less than one-half as large as those associated with guaranteed location of choice. Further, while the Navy and Marine Corps were most responsive to location, the Army is most sensitive to enlistment period, with little difference arising among the other services. The monetary equivalents for each service (i.e., what size bonus—as a percentage of RMC—would provide the same improvement in reenlistment rate as the two-year option) are the following: Army, 18.5 percent; Navy, 14.1; Marine Corps, 9.5; and Air Force, 12.8. Guaranteed location was found to be the equivalent of approximately a 33 percent bonus, but the two-year option is the equivalent of roughly a 14 percent bonus. The two-year option has the advantage of being easier to administer, however, and—unlike guaranteed location—it could be offered to all second-termers. This suggests the possibility that guaranteed location could be used for strong leverage among a narrow, select group and that the two-year option could be used widely as an overall improvement factor.

As in the previous cases, the influence of such an option probably declines over time in service. Retirement annuities and long-term career decisions become more important than immediate cash payments, choice of location, or length of enlistment period. The enlistee who has decided to make the military a career might even prefer longer periods to shorter. As in the previous cases, the responsiveness exhibits a downward trend but varies considerably

among services. If the trends could be extrapolated backward from YOS 6 and forward from YOS 10, the second-term year group might be seen to be an important turning point. Enlistees enter the period with considerable sensitivity to certain reenlistment incentives but exit the period at YOS 10 with much less sensitivity. The importance of correctly applying the existing (or new) incentives in the first-term and second-term periods is clear.

The last incentive considered is promotion. Section IV suggested that expected promotion is very important in the reenlistment decision. However, that variable reflects both income and career development, and perhaps other factors as well—factors that respondents to the survey question may have had in mind. (That limitation applies to this section as well as to the econometric estimates.) The respondents also were asked what their reenlistment probability would be if their promotion chances were cut 50 percent. The analysis proceeded under two strong assumptions: that a 50 percent increase in those chances would have a symmetrical, positive effect, and that the effect is independent of the initial reenlistment rate.

Table 27 tabulates the effects of a 50 percent reduction. The absolute magnitudes of the effects are substantially greater than those of the two-year enlistment option, but somewhat below the location of choice option. The Navy and Marine Corps show noticeably greater responses to location of choice than to 50 percent changes in expected promotion; the Army shows the same trend, but the difference is not very large. The Air Force, however, shows a greater responsiveness to promotion—more so than the other services, and the effects are stronger than those of the other incentives. The monetary equivalents of a 50 percent increase in promotion (*assuming* that the effect of the increase is opposite in sign but identical with the effect of the decrease) are: Army, 22.8 percent; Navy, 27.2; Marine Corps, 18.8; and Air Force, 37.0. Those values average about 26 percent, as compared with 14 percent for the two-year option and over 30 percent for guaranteed location of choice.

Table 27

EFFECT OF A 50 PERCENT REDUCTION IN PROMOTION CHANCES ON REENLISTMENT RATES

(In percent)

Group	Army	Navy	Marine Corps	Air Force
Aggregate	-29.6	-35.4	-31.9	-48.1
E-3	(a)	-22.1	-30.0	----
E-4	8.0	-22.3	-55.7	-36.6
E-5	-32.9	-35.4	-33.0	-50.9
E-6	-31.2	-38.0	-30.3	----
E-7	----	8.3	-16.7	-41.2
YOS 6	- 9.8	-26.0	-22.7	15.5
YOS 7	-27.3	-36.3	-31.1	-48.7
YOS 8	-44.7	-26.8	-36.5	-45.3
YOS 9	-29.6	-39.4	-33.6	-52.5
YOS 10	-25.5	-42.6	-31.8	-75.9

[a]Missing entries reflect too few data points in the particular category.

It is uncertain how promotion responsiveness might vary over YOS. In the previous cases, monetary and nonmonetary compensation became less important, perhaps because of the increasing present value of the retirement annuity and the long-term, career-oriented perspective that one is likely to take in deciding on reenlistment. To the extent that promotion represents compensation, one expects the same result; but promotion also represents career advancement and success, as well as the expected income from a retirement annuity. Therefore, expected promotion may become more important over time, instead of less. The data in Table 27 support the latter argument. From YOS 7 onward, promotion responsiveness increases somewhat, and certainly does not turn down. The policy implications of that finding are interesting: Whereas bonus, location, and two-year enlistment are relatively more important incentives in the earlier years, promotion is relatively more important in later years. In developing YOS guidelines for eligibility for particular reenlistment incentives, such findings are directly relevant.

SUMMARY AND CONCLUSIONS

Table 28 summarizes the effects of each reenlistment incentive, and Table 29 summarizes the bonus-equivalent evaluations for each incentive. The Marine Corps is most responsive to both location and bonuses in Table 28. The bonus equivalent of location is highest in in the Navy (Table 29); that is, Navy personnel would require the largest bonus as an equal offset to choice of location, even though location would have a somewhat lower effect on reenlistment rates.

Table 28

SUMMARY OF INCREASES IN REENLISTMENT RATES

(In percent)

Incentive	Increase in Reenlistment Rate			
	Army	Navy	Marine Corps	Air Force
Location of choice	35	49	59	39
Two-year enlistment option	24	18	16	17
50% promotion increase[a]	30	35	32	48
10% bonus[b]	13	13	17	13

[a]Absolute values of survey estimates used.
[b]Based on $4000 bonus elasticity.

In general, location appears to be a key incentive. Further, the influence of all incentives except promotion declines for those people further along in their service career. The latter finding argues for a policy that emphasizes different incentives at different career points. It also argues that the second-term period in 6 to 10 years of service may be an important transitional phase for the enlistee. Responsiveness to the shorter-run incentives, such as cash bonuses and location, is high coming into the period but very low going out (and at the same time, reenlistment rates increase over the period). The only incentive whose influence in-

Table 29

BONUS EQUIVALENTS OF REENLISTMENT INCENTIVES

(In percent)

Incentive	Bonus Equivalent			
	Army	Navy	Marine Corps	Air Force
Location of choice	27	38	35	30
Two-year enlistment option	18	14	9	13
50% promotion increase[a]	23	27	19	37

[a]Absolute values of earlier estimates used.

creases during the second term is promotion—which is a career-success proxy and an indicator of retirement income, not a short-term incentive. One must conclude that the response behavior of second-termers with 6 or 7 years of service is much closer to that of first-termers, while those with 8, 9, or 10 years of service behave more like careerists. After the 10-year point—which often is thought to be an important psychological barrier—career issues such as job promotion and retirement annuity may begin to equal and even outweigh the shorter-term concerns.

Reenlistment incentives also can be classified as to whether they are flexible or inflexible in coverage. Location and promotion obviously must be applied narrowly. The two-year option is flexible, as is the bonus incentive (although the latter tends to be widely applied). Combined with the earlier results, this suggests that location policy be applied to a small, critical group up to about YOS 7. Considerable leverage for a small group would be obtained. Two-year enlistment—perhaps with some additional incentive for a four-year enlistment—could be applied widely during the same career years. Financial inducements could be used widely or narrowly to influence particular groups (as they already are). Promotion rates could be employed somewhat later in the career for a select group. (Of course, even though the response estimates are substantial, the man-year effects may be low if applied to a very narrow group.)

The following conclusions regarding second-term reenlistment incentives emerge from the analysis:

- Bonus elasticities range from 1.0 to 2.0, which are about one-half the value for first-termers.
- Bonus elasticities vary across services and decline with increasing years of service.
- The potential increase in second-term reenlistment rates due to a guaranteed location of choice is substantial, varies by service, and declines with time in service. The effect of guaranteed location appears to be the equivalent of a substantial (33 percent) reenlistment bonus. Enlistees with lesser family responsibilities are more responsive to the location offer.
- The potential effect of a two-year reenlistment option is the smallest of the increases, taking on a monetary equivalent of a 13 to 14 percent reenlistment bonus; as in the other cases, the responsiveness to this incentive declines with years of service.

- A large change in expected promotion rate significantly affects reenlistment behavior, implying a monetary equivalent of approximately 26 percent (for a 50 percent change in promotion probability).
- The influence of promotion on reenlistment increases for enlistees with longer years of service, while that of other incentives decreases.
- The YOS 6-10 period appears to be an important transition period; enlistees who approach their second-term reenlistment decision at YOS 6 have bonus elasticities nearly equal to those of first-termers, but enlistees who approach their second-term decision at YOS 10 have very low elasticities.

All the conclusions entail several caveats. The results depend upon "what if?" questions from the survey, but the validity of those data have not been tested. Also, the results were obtained without using a statistical model that takes account of numerous other factors. Therefore, the results are more strongly indicative of where future policy research could be directed, than of where policies should be changed.

Appendix

1978 DoD SURVEY OF ENLISTED PERSONNEL

RCS• DD-M (OT) -7840
ENLISTED FORM 1

MANPOWER, RESERVE AFFAIRS AND LOGISTICS

1978 Department of Defense
SURVEY OF ENLISTED PERSONNEL

The Department of Defense is conducting a survey of military personnel from the Army, Navy, Marine Corps and Air Force. You have been selected to participate in this important survey. Please read the instructions below before you begin the questionnaire.

NOTICE

This survey is anonymous. Please do not write your name on either your questionnaire or return envelope. Be sure to destroy the mailing envelope which contains your name and other identification.

Your participation in this survey is voluntary. You are encouraged to provide complete and accurate information, but you are not required to answer any question you consider objectionable.

Your responses to this survey will be combined with similar information from other military personnel and used to prepare a statistical report. The Rand Corporation, a non-profit research company, is under contract to the Assistant Secretary of Defense – Manpower, Reserve Affairs and Logistics and has primary research and analysis responsibility.

If you would like a summary report of the results of this survey, please mail the enclosed postcard.

INSTRUCTIONS FOR COMPLETING THE SURVEY

- Please use a No. 2 pencil.
- Make heavy black marks that fill the circle for your answer.

Example: Your pay grade is: (Mark one)

○E1 ○E2 ○E3 ○E4 ○E5 ●E6 ○E7 ○E8 ○E9

If your answer is E6, then just fill in the proper circle as shown.

- Sometimes you will be asked to "MARK ALL THAT APPLY." When this instruction appears you may mark more than one answer.

Example: Check the list below and mark each location where you have been assigned for six months or longer. (Mark ALL That Apply)

● Alaska ● Philippines
○ Hawaii ○ None of the above
○ Italy

If your answer is Alaska and the Philippines, then fill in two circles.

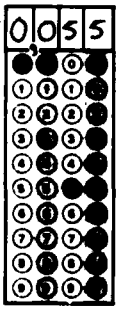
- Please do not make stray marks of any kind.

INCORRECT MARKS ⊘⊙⊗◉ CORRECT MARK ○○●○

- If you are asked to give numbers for your answer, please record as shown below.

If your answer is 55 . . .

- Write the numbers in the boxes, making sure that the last number is always placed in the right-hand box.
- Fill in the unused boxes with zeros.
- Then, mark the matching circle below each box.



S805A-2372-ODF-54321

I. MILITARY BACKGROUND

1. **Record time began, enter military hour:**

Time began: ☐☐☐☐

2. **In what month are you completing this survey?**

- ◯ January 1979
- ◯ February 1979
- ◯ March 1979
- ◯ April 1979
- ◯ May 1979
- ◯ June 1979

3. **In what service are you now serving?**

- ◯ Army
- ◯ Navy
- ◯ Marine Corps
- ◯ Air Force

4. **What is your present pay grade?**

- ◯ E1
- ◯ E2
- ◯ E3
- ◯ E4
- ◯ E5
- ◯ E6
- ◯ E7
- ◯ E8
- ◯ E9

5. **Are you currently assigned to a ship?**

- ◯ Yes
- ◯ No

6. **Where is your present permanent post, base or duty station? If you are on board ship, indicate the location of your home port.** Mark the state or country in the list below.

STATES

- ◯ 01 Alabama
- ◯ 02 Alaska
- ◯ 03 Arizona
- ◯ 04 Arkansas
- ◯ 05 California
- ◯ 06 Colorado
- ◯ 07 Connecticut
- ◯ 08 Delaware
- ◯ 09 District of Columbia (D.C.)
- ◯ 10 Florida
- ◯ 11 Georgia
- ◯ 12 Hawaii
- ◯ 13 Idaho
- ◯ 14 Illinois
- ◯ 15 Indiana
- ◯ 16 Iowa
- ◯ 17 Kansas
- ◯ 18 Kentucky
- ◯ 19 Louisiana
- ◯ 20 Maine
- ◯ 21 Maryland
- ◯ 22 Massachusetts
- ◯ 23 Michigan
- ◯ 24 Minnesota
- ◯ 25 Mississippi
- ◯ 26 Missouri
- ◯ 27 Montana
- ◯ 28 Nebraska
- ◯ 29 Nevada
- ◯ 30 New Hampshire
- ◯ 31 New Jersey
- ◯ 32 New Mexico
- ◯ 33 New York
- ◯ 34 North Carolina
- ◯ 35 North Dakota
- ◯ 36 Ohio
- ◯ 37 Oklahoma
- ◯ 38 Oregon
- ◯ 39 Pennsylvania
- ◯ 40 Rhode Island
- ◯ 41 South Carolina
- ◯ 42 South Dakota
- ◯ 43 Tennessee
- ◯ 44 Texas
- ◯ 45 Utah
- ◯ 46 Vermont
- ◯ 47 Virginia
- ◯ 48 Washington (State)
- ◯ 49 West Virginia
- ◯ 50 Wisconsin
- ◯ 51 Wyoming

FOREIGN COUNTRIES

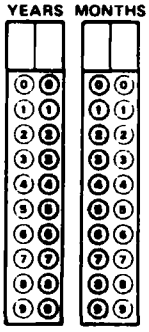
- ◯ 52 Africa
- ◯ 53 Belgium
- ◯ 54 Caribbean
- ◯ 55 Diego Garcia
- ◯ 56 East Asia
- ◯ 57 Eastern Europe
- ◯ 58 Germany
- ◯ 59 Greece
- ◯ 60 Guam
- ◯ 61 Iceland
- ◯ 62 Iran
- ◯ 63 Italy
- ◯ 64 Japan or Okinawa
- ◯ 65 Near East
- ◯ 66 Netherlands
- ◯ 67 Panama Canal Zone
- ◯ 68 Philippines
- ◯ 69 Portugal
- ◯ 70 South Korea
- ◯ 71 Spain
- ◯ 72 Turkey
- ◯ 73 United Kingdom
- ◯ 74 Other overseas location not listed above

7. **How do you feel about your current location?** Please mark the number which shows your opinion on the line below. For example, people who are Very Satisfied with their current location would mark 7. People who are Very Dissatisfied with their current location would mark 1. Other people may have opinions somewhere between 1 and 7.

VERY DISSATISFIED — ① — ② — ③ — ④ — ⑤ — ⑥ — ⑦ — **VERY SATISFIED**

8. **To the nearest year and month, how long have you been on active duty?** (If you had a break in service, count current time and time in previous tours.)

YEARS MONTHS



9. **In which enlistment period are you serving?** If you received an EXTENSION to your current enlistment period, do not count this as a new enlistment period.

- ○ 1st **If this is your first enlistment, go to Q14** →
- ○ 2nd
- ○ 3rd
- ○ 4th
- ○ 5th or more

CONTINUE with Q10

10. **Which of the following did you receive as part of or since your last reenlistment contract?** (Mark all that apply)

- ○ Proficiency Pay
- ○ Guaranteed Location of Duty Station
- ○ Guaranteed Length of Assignment
- ○ Guaranteed Training or Retraining in a new MOS/RATING/AFSC
- ○ Guaranteed Job Assignment
- ○ Improved Promotion Opportunity
- ○ None of tne above

11. **Which of the following reenlistment bonuses did you receive at your last enlistment?** (Be sure to mark all that apply)

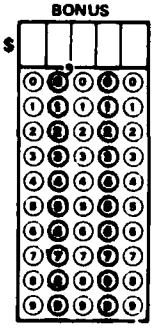
- ○ I did not receive a reenlistment bonus.
- ○ Regular Reenlistment Bonus (RRB)
- ○ Selective Reenlistment Bonus (SRB)
- ○ Variable Reenlistment Bonus (VRB)
- ○ Other Reenlistment Bonus (Record type below)

[redacted] A REENLISTMENT [redacted] TO Q14

12. **What is the total amount, before taxes and other deductions, that you will receive from reenlistment bonuses during your current enlistment?**

TOTAL REENLISTMENT BONUS

$

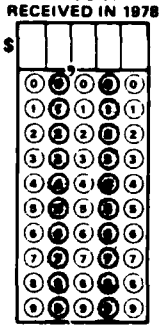


13. **How much of this reenlistment bonus payment did you receive DURING 1978?**

○ None

AMOUNT RECEIVED IN 1978

$



14. **How soon will you complete your current enlistment INCLUDING ANY EXTENSIONS YOU HAVE NOW?**

- ○ Less than 3 months
- ○ At least 3 months but less than 6 months
- ○ At least 6 months but less than 9 months
- ○ At least 9 months but less than 12 months
- ○ At least 1 year but less than 2 years
- ○ At least 2 years but less than 3 years
- ○ At least 3 years or more

II. REENLISTMENT/CAREER INTENT

15. **When you finally leave the military, how many total years of service do you expect to have?**

NO. OF YEARS

16. **When you finally leave the military, what pay grade do you think you will have?** (Mark one)

ENLISTED GRADES:		WARRANT GRADES:
○ E1	○ E6	○ W1
○ E2	○ E7	○ W2
○ E3	○ E8	○ W3
○ E4	○ E9	○ W4
○ E5		

17. **When you finally leave the military, do you plan to join a National Guard or Reserve unit?** (Mark one)

- ○ Definitely Yes
- ○ Probably Yes
- ○ Probably No
- ○ Definitely No
- ○ Don't Know/Not Sure

18. Suppose there was a new military program that service personnel could participate in after they leave the military. The program requires that you must keep the military informed of your address and you could be recalled to service in the event of a national emergency. However, you would not be required to attend drills or serve on active duty, unless there was an emergency.

If you were given a bonus of $200 for each year you participated in this program, how many years would you be willing to stay in this program?

- ◯ None
- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5
- ◯ 6 or more

19. What are the chances that your next tour of duty will be in an undesirable location? (Mark one)

- ◯ Does not apply, I plan to retire.
- ◯ (0 in 10) No chance
- ◯ (1 in 10) Very slight possibility
- ◯ (2 in 10) Slight possibility
- ◯ (3 in 10) Some possibility
- ◯ (4 in 10) Fair possibility
- ◯ (5 in 10) Fairly good possibility
- ◯ (6 in 10) Good possibility
- ◯ (7 in 10) Probable
- ◯ (8 in 10) Very probable
- ◯ (9 in 10) Almost sure
- ◯ (10 in 10) Certain
- ◯ Don't know where I'll be assigned next.

20. How likely are you to reenlist at the end of your current term of service? Assume that no Reenlistment Bonus Payments will be given, but that all other special pays which you currently receive are still available. (Mark one)

- ⊙ Does not apply, I plan to retire. **(Go to Q26, page 5)**
- ◯ (0 in 10) No chance
- ◯ (1 in 10) Very slight possibility
- ◯ (2 in 10) Slight possibility
- ◯ (3 in 10) Some possibility
- ◯ (4 in 10) Fair possibility
- ◯ (5 in 10) Fairly good possibility
- ◯ (6 in 10) Good possibility
- ◯ (7 in 10) Probable
- ◯ (8 in 10) Very probable
- ◯ (9 in 10) Almost sure
- ◯ (10 in 10) Certain
- ◯ Don't know.

21. Think for a minute about the different reenlistment options that are currently available to personnel in your service. If you decided to reenlist at the end of your current term of service, which reenlistment period would you sign up for? (Mark one)

- ◯ 2 years
- ◯ 3 years
- ◯ 4 years
- ◯ 5 years
- ◯ 6 years

[redacted]

22. How likely would you be to reenlist at the end of your current term if you were guaranteed a choice of location for your next tour? Assume that no Reenlistment Bonus Payments will be given but that all other special pays which you currently receive are still available. (Mark one)

- ◯ (0 in 10) No chance
- ◯ (1 in 10) Very slight possibility
- ◯ (2 in 10) Slight possibility
- ◯ (3 in 10) Some possibility
- ◯ (4 in 10) Fair possibility
- ◯ (5 in 10) Fairly good possibility
- ◯ (6 in 10) Good possibility
- ◯ (7 in 10) Probable
- ◯ (8 in 10) Very probable
- ◯ (9 in 10) Almost sure
- ◯ (10 in 10) Certain
- ◯ Don't know.

23. How likely would you be to reenlist at the end of your current term if military personnel in your career field received a $4,000 bonus? (Mark one)

- ◯ (0 in 10) No chance
- ◯ (1 in 10) Very slight possibility
- ◯ (2 in 10) Slight possibility
- ◯ (3 in 10) Some possibility
- ◯ (4 in 10) Fair possibility
- ◯ (5 in 10) Fairly good possibility
- ◯ (6 in 10) Good possibility
- ◯ (7 in 10) Probable
- ◯ (8 in 10) Very probable
- ◯ (9 in 10) Almost sure
- ◯ (10 in 10) Certain
- ◯ Don't know.

24. How likely would you be to reenlist at the end of your current term of service if military personnel in your career field received an $8,000 bonus? (Mark one)

- ◯ (0 in 10) No chance
- ◯ (1 in 10) Very slight possibility
- ◯ (2 in 10) Slight possibility
- ◯ (3 in 10) Some possibility
- ◯ (4 in 10) Fair possibility
- ◯ (5 in 10) Fairly good possibility
- ◯ (6 in 10) Good possibility
- ◯ (7 in 10) Probable
- ◯ (8 in 10) Very probable
- ◯ (9 in 10) Almost sure
- ◯ (10 in 10) Certain
- ◯ Don't know.

25. How likely would you be to reenlist at the end of your current term of service if a Two Year Reenlistment Period were available? Assume that no Reenlistment Bonus Payments will be given, but that all other special pays which you currently receive are still available. (Mark one)

- ◯ (0 in 10) No chance
- ◯ (1 in 10) Very slight possibility
- ◯ (2 in 10) Slight possibility
- ◯ (3 in 10) Some possibility
- ◯ (4 in 10) Fair possibility
- ◯ (5 in 10) Fairly good possibility
- ◯ (6 in 10) Good possibility
- ◯ (7 in 10) Probable
- ◯ (8 in 10) Very probable
- ◯ (9 in 10) Almost sure
- ◯ (10 in 10) Certain
- ◯ Don't know.

26. In what month and year were you promoted to your present pay grade?

MONTH
- ◯ January
- ◯ February
- ◯ March
- ◯ April
- ◯ May
- ◯ June
- ◯ July
- ◯ August
- ◯ September
- ◯ October
- ◯ November
- ◯ December

YEAR
19 [ ][ ]

27. What do you think your chances are of being promoted to the next higher pay grade? (Mark one)

- ◯ Does not apply, I plan to retire.
- ◯ Does not apply, I plan to leave the service soon.
- ◯ Does not apply, I do not expect any more promotions.
- ◯ (0 in 10) No chance
- ◯ (1 in 10) Very slight possibility
- ◯ (2 in 10) Slight possibility
- ◯ (3 in 10) Some possibility
- ◯ (4 in 10) Fair possibility
- ◯ (5 in 10) Fairly good possibility
- ◯ (6 in 10) Good possibility
- ◯ (7 in 10) Probable
- ◯ (8 in 10) Very probable
- ◯ (9 in 10) Almost sure
- ◯ (10 in 10) Certain
- ◯ Don't know.

28. Think for a minute about other military personnel who have the same total years of service that you have. Which of the following statements best describes when you expect your next promotion?

- ◯ Does not apply, I plan to retire.
- ◯ Does not apply, I plan to leave the service soon.
- ◯ Does not apply, I do not expect any more promotions.
- ◯ EARLIER than most people who have the same total years of service.
- ◯ AT ABOUT THE SAME TIME as most people who have the same total years of service.
- ◯ LATER than most people who have the same total years of service.

29. How soon do you expect your next promotion? (Mark one)

- ◯ Does not apply, I plan to retire.
- ◯ Does not apply, I plan to leave the service soon.
- ◯ Does not apply, I do not expect any more promotions.
- ◯ Less than 1 year
- ◯ At least 1 year but less than 2 years
- ◯ At least 2 years but less than 3 years
- ◯ At least 3 years but less than 4 years
- ◯ At least 4 years but less than 5 years
- ◯ At least 5 years but less than 6 years
- ◯ 6 or more years
- ◯ Don't know.

30. Suppose you knew that your chances of being promoted to the next higher pay grade were reduced by 50% because of reduced manpower requirements. How likely would you be to reenlist at the end of your current term of service if you knew that your promotion opportunity was reduced?

- ◯ Does not apply, I plan to retire.
- ◯ (0 in 10) No chance
- ◯ (1 in 10) Very slight possibility
- ◯ (2 in 10) Slight possibility
- ◯ (3 in 10) Some possibility
- ◯ (4 in 10) Fair possibility
- ◯ (5 in 10) Fairly good possibility
- ◯ (6 in 10) Good possibility
- ◯ (7 in 10) Probable
- ◯ (8 in 10) Very probable
- ◯ (9 in 10) Almost sure
- ◯ (10 in 10) Certain
- ◯ Don't know.

31. Below are some reasons military personnel may have for leaving the Armed Forces. If you have considered leaving the service at the end of your current term, *please mark the three most important reasons why you would leave the service.*

- ○ Does not apply, I have not considered leaving the service. (Go to Q32)
- ○ Does not apply, I plan to retire at the end of my current term. (Go to Q32)

REASONS FOR LEAVING THE SERVICE (Mark only three answers)

- ○ Not eligible to reenlist.
- ○ Dislike location of my assignments.
- ○ Frequency of PCS moves.
- ○ Dislike being separated from my family.
- ○ My family wants me to leave the service.
- ○ Disagree with personnel policies.
- ○ Discrimination against military personnel based on race, sex, or rank.
- ○ Not enough opportunity for advancement.
- ○ Low pay and allowances.
- ○ Better civilian job opportunities.
- ○ Reduction in military benefits.
- ○ Decline in quality of military personnel.
- ○ Unable to practice my job skills.
- ○ Bored with my job.
- ○ Don't like my job.
- ○ Plan to continue my education/ use G.I./VEAP benefits.

III. MILITARY WORK EXPERIENCE

32. Follow the instructions below for your service:

ARMY: Record your current Primary MOS and the first Primary MOS that you received when you entered active duty. Use the first four entries of your MOS. For example, MOS 11B20 would be marked as 11B2.

NAVY: **Record your current Primary Rating and the first Primary Rating that you received when you entered active duty. Use all four entries of your Rating. For example, GMM3 would be marked as GMM3. BMSN would be marked as BMSN.**

MARINE CORPS: Record your current Primary MOS and the first Primary MOS that you received when you entered active duty. Use all four numbers of your MOS. For example, MOS 0311 would be marked 0311.

AIR FORCE: **Record your current Primary AFSC and the first Primary AFSC that you received when you entered active duty. Use the first four numbers of your AFSC – DO NOT USE LETTERS. For example, AFSC A43130C would be marked as 4313.**

INSTRUCTIONS: *Write ONE number or letter in each box.* **Then, mark the matching circle below each box.**

A. My current Primary MOS/Rating/AFSC is:

FIRST LETTER/ NUMBER	SECOND LETTER/ NUMBER	THIRD LETTER/ NUMBER	FOURTH LETTER/ NUMBER
A N 0	A N 0	A N 0	A N 0
B O 1	B O 1	B O 1	B O 1
C P 2	C P 2	C P 2	C P 2
D Q 3	D Q 3	D Q 3	D Q 3
E R 4	E R 4	E R 4	E R 4
F S 5	F S 5	F S 5	F S 5
G T 6	G T 6	G T 6	G T 6
H U 7	H U 7	H U 7	H U 7
I V 8	I V 8	I V 8	I V 8
J W 9	J W 9	J W 9	J W 9
K X	K X	K X	K X
L Y	L Y	L Y	L Y
M Z	M Z	M Z	M Z

○ I don't know my current Primary MOS/Rating/AFSC.

B. My first Primary MOS/Rating/AFSC at entry was:

FIRST LETTER/ NUMBER	SECOND LETTER/ NUMBER	THIRD LETTER/ NUMBER	FOURTH LETTER/ NUMBER
A N 0	A N 0	A N 0	A N 0
B O 1	B O 1	B O 1	B O 1
C P 2	C P 2	C P 2	C P 2
D Q 3	D Q 3	D Q 3	D Q 3
E R 4	E R 4	E R 4	E R 4
F S 5	F S 5	F S 5	F S 5
G T 6	G T 6	G T 6	G T 6
H U 7	H U 7	H U 7	H U 7
I V 8	I V 8	I V 8	I V 8
J W 9	J W 9	J W 9	J W 9
K X	K X	K X	K X
L Y	L Y	L Y	L Y
M Z	M Z	M Z	M Z

○ I don't know my first Primary MOS/Rating/AFSC.

33. Which of the following best describes the kind of work that you do now? (Mark one)

- ◯ Most of my time is spent SUPERVISING people.
- ◯ Most of my time is spent PERFORMING my work skills.

34. LAST MONTH, how much of the time did you work in jobs outside your current Primary MOS/Rating/AFSC?

- ◯ Most of the time
- ◯ About half of the time
- ◯ Some of the time
- ◯ Very little of the time
- ◯ None of the time

NOW A FEW QUESTIONS ABOUT YOUR WORK SCHEDULE DURING THE LAST SEVEN DAYS. RECORD YOUR ANSWERS IN CHART NO. 1 BELOW.

During the last 7 days, how many hours did you spend . . .

35. . . . working during regular daytime hours—that is, 6:00 a.m. to 6:00 p.m., Monday through Friday?

36. . . . working during hours OTHER THAN regular daytime hours? Please count hours worked during the EVENINGS, AT NIGHT, ON WEEKENDS AND OTHER HOURS NOT INCLUDING 6:00 a.m. to 6:00 p.m., Monday through Friday.

37. Please add the number of hours listed in Q35 and Q36 and enter in the boxes below for Q37.

CHART NO. 1

35. HOURS WORKED DURING REGULAR DAYTIME HOURS		36. HOURS WORKED OTHER THAN REGULAR DAYTIME HOURS		37. TOTAL HOURS WORKED LAST WEEK
⓪⓪ ①① ②② ③③ ④④ ⑤⑤ ⑥⑥ ⑦⑦ ⑧⑧ ⑨⑨	+	⓪⓪ ①① ②② ③③ ④④ ⑤⑤ ⑥⑥ ⑦⑦ ⑧⑧ ⑨⑨	=	⓪⓪ ①① ②② ③③ ④④ ⑤⑤ ⑥⑥ ⑦⑦ ⑧⑧ ⑨⑨

38. Please check: is the number you entered in Q37 the TOTAL NUMBER OF HOURS THAT YOU WORKED DURING THE LAST WEEK? IF NOT, PLEASE CORRECT THE ANSWERS IN THE PRECEDING BOXES FOR Q35, Q36, AND Q37.

39. In the last seven days, how many hours were you on call/on alert status/on a duty roster?

- ◯ None

⓪⓪ ①① ②② ③③ ④④ ⑤⑤ ⑥⑥ ⑦⑦ ⑧⑧ ⑨⑨

IV. INDIVIDUAL CHARACTERISTICS

40. Are you male or female?

◯ Male ◯ Female

41. How old were you on your last birthday? → AGE LAST BIRTHDAY

⓪⓪ ①① ②② ③③ ④④ ⑤⑤ ⑥⑥ ⑦⑦ ⑧⑧ ⑨⑨

42. When you FIRST ENTERED ACTIVE SERVICE, how old were you? → AGE AT ENTRY

⓪⓪ ①① ②② ③③ ④④ ⑤⑤ ⑥⑥ ⑦⑦ ⑧⑧ ⑨⑨

43. When you FIRST ENTERED ACTIVE SERVICE, did you receive an Enlistment Bonus?

- ◯ Yes
- ◯ No
- ◯ I don't remember.

44. What do you consider to be your main racial or ethnic group? (Mark one)

- ◯ Afro-American/Black/Negro
- ◯ American Indian/Alaskan Native
- ◯ Hispanic/Puerto Rican/Mexican/Cuban/Latin/Chicano/Other Spanish
- ◯ Oriental/Asian/Chinese/Japanese/Korean/Filipino/Pacific Islander
- ◯ White/Caucasian
- ◯ Other (Specify): →

45. When you FIRST ENTERED ACTIVE SERVICE, what was your marital status?

- ○ Married
- ○ Separated
- ○ Widowed
- ○ Single, never married
- ○ Divorced

46. What is your marital status NOW?

- ○ Married
- ○ Separated
- ○ Widowed
- ○ Single, never married
- ○ Divorced

*** IF YOU ARE NOT MARRIED NOW, GO TO Q51. ***

47. How many years have you been married to your current spouse?

NO. YEARS MARRIED

○ Less than 1 year

48. How old was your spouse on his or her last birthday?

49. Has your SPOUSE ever served on active duty in the military service? (Mark all that apply)

- ○ No, my spouse has never served.
- Yes, my spouse is CURRENTLY SERVING as an:
  - ○ Enlistee
  - ○ Officer
- Yes, my spouse PREVIOUSLY SERVED as an:
  - ○ Enlistee
  - ○ Officer

50. What is the highest grade or year of regular school or college that your spouse has completed and gotten credit for? (Mark one)

ELEMENTARY GRADES		HIGH SCHOOL GRADES	COLLEGE-YEARS OF CREDIT	
○ 1st	○ 5th	○ 9th	○ 1	○ 5
○ 2nd	○ 6th	○ 10th	○ 2	○ 6
○ 3rd	○ 7th	○ 11th	○ 3	○ 7
○ 4th	○ 8th	○ 12th (include GED)	○ 4	○ 8 or more

51. When you FIRST ENTERED ACTIVE SERVICE, what was the highest grade or year of regular school or college you had COMPLETED and GOTTEN CREDIT for? (Mark one)

ELEMENTARY GRADES		HIGH SCHOOL GRADES	COLLEGE-YEARS OF CREDIT	
○ 1st	○ 5th	○ 9th	○ 1	○ 5
○ 2nd	○ 6th	○ 10th	○ 2	○ 6
○ 3rd	○ 7th	○ 11th	○ 3	○ 7
○ 4th	○ 8th	○ 12th (include GED)	○ 4	○ 8 or more

52. AS OF TODAY, what is your highest education level? (Mark one)

ELEMENTARY GRADES		HIGH SCHOOL GRADES	COLLEGE-YEARS OF CREDIT	
○ 1st	○ 5th	○ 9th	○ 1	○ 5
○ 2nd	○ 6th	○ 10th	○ 2	○ 6
○ 3rd	○ 7th	○ 11th	○ 3	○ 7
○ 4th	○ 8th	○ 12th (include GED)	○ 4	○ 8 or more

53. Do you have a GED Certificate or a High School Diploma?

- ○ I have a GED Certificate.
- ○ I have a High School Diploma.
- ○ I do not have a GED Certificate or High School Diploma.

54. How many dependents do you have? Do not include yourself or your spouse.

○ None	○ 4	○ 8
○ 1	○ 5	○ 9
○ 2	○ 6	○ 10 or more
○ 3	○ 7	

IF NONE, GO TO Q57 BELOW

55. How many of your dependents are children, including stepchildren and adopted children, who are UNDER 14 YEARS OLD?

○ None	○ 4	○ 8
○ 1	○ 5	○ 9
○ 2	○ 6	○ 10 or more
○ 3	○ 7	

56. How many of your dependents are children, including stepchildren and adopted children, who are 14 YEARS OR OLDER?

○ None	○ 4	○ 8
○ 1	○ 5	○ 9
○ 2	○ 6	○ 10 or more
○ 3	○ 7	

57. How many people, including your spouse, are living with you now at your current location?

○ None	○ 4	○ 8
○ 1	○ 5	○ 9
○ 2	○ 6	○ 10 or more
○ 3	○ 7	

V. CURRENT HOUSING ARRANGEMENTS

58. In what type of housing do you currently live? (Mark one)

- ◯ I live in civilian housing.

I live in the following type of military quarters:

- ◯ On Board Ship
- ◯ Open Bay/Troop Barracks
- ◯ Bachelor Enlisted Quarters (BEQ)
- ◯ On-Base Military Family Housing
- ◯ Off-Base Military Family Housing, including leased and rental guaranteed housing

59. How do you feel about your current housing? (Mark one number on the line below)

VERY DISSATISFIED — 1 — 2 — 3 — 4 — 5 — 6 — 7 — VERY SATISFIED

*** IF YOU LIVE IN CIVILIAN HOUSING, GO TO Q61 ***

60. Suppose you had to rent civilian housing at your current location – How much do you think you would have to pay PER MONTH, including utilities, for civilian housing in this area? Please give your best estimate.

$,

*** IF YOU LIVE IN MILITARY HOUSING, GO TO Q64 ***

61. Which of the following best describes your main reason for living in civilian housing? (Mark one)

- ◯ I am not eligible to live in military housing.
- ◯ I'm waiting to be assigned to military housing.
- ◯ Military housing was not available.
- ◯ I prefer civilian housing.
- ◯ I have other reasons.

62. Is the CIVILIAN HOUSING that you live in now –

- ◯ Owned or being bought by you or someone in your household?
- ◯ Rented for cash?
- ◯ Occupied without payment of cash rent?

*** IF YOU OWN YOUR CURRENT RESIDENCE, GO TO Q64 ***

63. LAST MONTH, what did you pay for rent and utilities for the civilian housing that you live in now?

$,

64. How many homes do you own?

- ◯ None
- ◯ One
- ◯ Two
- ◯ Three or more

***IF YOU DO NOT OWN ANY HOMES, GO TO Q69, PAGE 10 ***

THE NEXT FEW QUESTIONS ARE ABOUT THE HOME YOU OWN. IF YOU OWN MORE THAN ONE HOME, ANSWER THE FOLLOWING QUESTIONS ABOUT YOUR MAIN RESIDENCE.

65. In what year did you get this home?

19

66. What was the purchase price of this home?

$,

67. LAST MONTH, what was your monthly mortgage payment for this home?

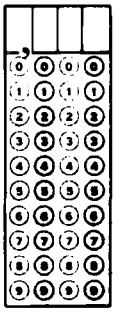
$,

68. Were real estate taxes included in the mortgage payment listed in Q67?

- Yes
- No

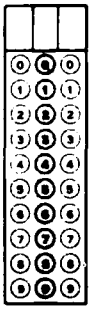
VI. MILITARY COMPENSATION AND BENEFITS

69. **What is the amount of your MONTHLY basic pay before taxes and other deductions?** If you don't know the exact amount, please give your best estimate.

$ 

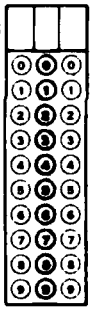
70. **What is the amount of your MONTHLY Basic Allowance for Quarters (BAQ)?** BAQ is a cash payment for housing. If you don't know the exact amount, please give your best estimate.

◯ I do not receive a BAQ.

$ 

71. **What is the amount of your MONTHLY Basic Allowance for Subsistence (BAS)?** BAS is a cash payment for food. If you don't know the exact amount, please give your best estimate.

◯ I do not receive a BAS.

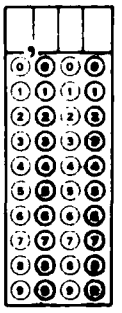
$ 

72. **Which of the following special monthly pays or allowances do you currently receive?** (Be sure to mark all that apply)

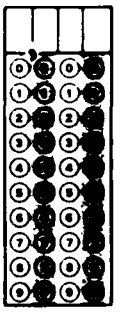
- ◯ I don't receive any special monthly pays.
- ◯ Jump Pay
- ◯ Sea Pay
- ◯ Submarine Pay
- ◯ Flight Pay
- ◯ Foreign Duty Pay
- ◯ Pro Pay
- ◯ COLA (Overseas Cost of Living Allowance)
- ◯ Overseas Special Housing Allowance
- ◯ Other Special Pays or Allowances (Specify Below):

IF YOU DO NOT RECEIVE ANY SPECIAL MONTHLY PAYS, GO TO Q74

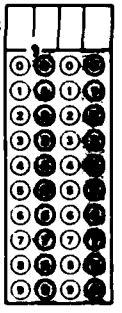
73. **How much money do you currently receive each month, before taxes and other deductions, from the special monthly pays and allowances listed in Q72?**

$ 

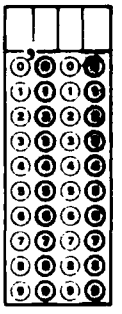
74. **On the average, about how much money do you, your spouse or your dependents spend each month in the military exchanges (e.g. PX, BX, Ship Store, etc.)?** Please give your best estimate.

$ 

75. **About how much money do you, your spouse or your dependents spend each month in military commissaries?** Please give your best estimate.

$ 

76. **About how much money do you, your spouse or your dependents spend each month at civilian grocery stores?** Please give your best estimate.

$ 

77. Suppose you are assigned to a duty station where Military Medical Services, Military Commissaries and Military Exchanges are not available. At that duty station you would be paid three additional monthly allowances to make up for the lack of these services.

A. How much of an additional monthly allowance do you think would be fair to make up for the lack of MILITARY MEDICAL SERVICES at such a location?

$ ___

FAIR MONTHLY ALLOWANCE FOR MEDICAL SERVICES →

B. How much of an additional monthly allowance do you think would be fair to make up for the lack of MILITARY COMMISSARIES at such a location?

$ ___

FAIR MONTHLY ALLOWANCE FOR MILITARY COMMISSARIES →

C. How much of an additional monthly allowance do you think would be fair to make up for the lack of MILITARY EXCHANGES at such a location?

$ ___

FAIR MONTHLY ALLOWANCE FOR MILITARY EXCHANGES →

78. How much money do you currently contribute each month to the Veteran Education Assistance Program (VEAP)?

- ◯ I am not eligible to participate in VEAP.
- ◯ I am eligible, but I do not participate in VEAP.
- ◯ $50 per month
- ◯ $55 per month
- ◯ $60 per month
- ◯ $65 per month
- ◯ $70 per month
- ◯ $75 per month

79. During 1978, how much money did your service contribute to pay for your educational expenses at a civilian school?

$ ___

◯ None

80. AS OF TODAY, how many unused official military leave days do you have?

___

◯ None

81. In the past 5 years—that is from 1974 to now, how many military leave days did you turn in for a cash payment at the time you reenlisted?

___

◯ Does not apply, I did not reenlist in the past 5 years

◯ None

VII. MILITARY RETIREMENT SYSTEM

82. Currently, all military personnel who retire after 20 or more years of service are given retirement benefits which begin immediately upon retirement and continue for life. People who leave the service with 20 years of service receive 50% of their basic pay as retirement benefits.

Suppose you retired with 26 years of service—under the current retirement system, what percent of your basic pay would you receive as retirement pay?

___ %

83. Suppose you retired with 20 years of service at an E-7 pay grade and you had to choose the way in which your retirement benefits would be paid. Which of the following would you choose? The payments listed below would be the initial payment schedule; however, your future payments would be adjusted for inflation and taxed in the same way as the current retirement system. (Mark one)

- ◯ $5,800 a year for a lifetime
- ◯ $6,600 a year for 20 years
- ◯ $9,140 a year for 10 years
- ◯ $14,810 a year for 5 years
- ◯ $32,350 a year for 2 years
- ◯ A lump sum of $56,150 at the time of retirement

---

84. Suppose the Armed Forces had a different retirement plan in effect at the time you first entered active service. Under this new plan, people who remain in the military for 10 or more years would receive the following two benefits:

- A special lump sum bonus at the time they leave the service. This bonus would be taxed.

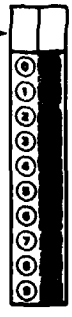
  AND

- Retirement pay.

If the benefits shown in the chart to the right had been available at the time you first entered active service, how many total years would you have planned to serve in the military? Enter your answer in A. below.

A. Under this plan, I would have planned to serve:

EXPECTED YEARS OF SERVICE: →



DESCRIPTION OF DIFFERENT RETIREMENT PLAN

Years of Service	Amount of Lump Sum Bonus You Would Receive At The Time You Retired	Amount of Basic Pay You Would Receive As Retirement Pay	Approximate Value of Retirement Pay
Less than 10	$ 0	0%	[illegible]
10	8,000	20.0%	[illegible]
11	10,000	22.5%	[illegible]
12	12,000	25.0%	[illegible]
13	14,000	27.5%	[illegible]
14	16,000	30.0%	[illegible]
15	20,000	32.5%	[illegible]
16	24,000	35.0%	[illegible]
17	28,000	37.5%	[illegible]
18	32,000	40.0%	[illegible]
19	36,000	42.5%	[illegible]
20	40,000	45.0%	[illegible]
21	43,000	48.0%	[illegible]
22	46,000	51.0%	[illegible]
23	49,000	54.0%	[illegible]
24	52,000	57.0%	[illegible]
25	54,000	60.0%	[illegible]
26	56,000	63.0%	[illegible]
27	58,000	66.0%	[illegible]
28	60,000	69.0%	[illegible]
29	62,000	72.0%	[illegible]
30	64,000	76.0%	[illegible]

B. If you had served the number of years you entered in Q84A, what pay grade do you think you would have had when you left the military? (Mark one)

ENLISTED GRADES	WARRANT GRADES
◯ E1	◯ W1
◯ E2	◯ W2
◯ E3	◯ W3
◯ E4	◯ W4
◯ E5	
◯ E6	
◯ E7	
◯ E8	
◯ E9	

85. If you had a choice, which military retirement plan would you choose? (Mark one)

- ◯ Military Retirement Plan Described in Question 84
- ◯ Current Military Retirement Plan

VIII. CIVILIAN LABOR FORCE EXPERIENCE

86. During 1978, how many hours a week did you spend on the average working at a civilian job or at your own business during your off-duty hours?

AVERAGE NO. HOURS PER WEEK

○ None (Go to Q88)

87. Altogether in 1978, what was the total amount that you earned, before taxes and other deductions, for working during your off-duty hours?

$

*** IF YOU ARE NOT MARRIED, GO TO Q91 ***

88. Last week, was your SPOUSE working full-time or part-time, going to school, keeping house, or doing something else? (Mark all that apply)

My Spouse was:

- ○ In the Armed Forces.
- ○ Working full-time in civilian job.
- ○ Working part-time in civilian job.
- ○ Self-employed in his or her own business.
- ○ With a job, but not at work because of TEMPORARY illness, vacation, strike, etc.
- ○ Unemployed, laid off, looking for work.
- ○ Retired.
- ○ In school.
- ○ Keeping house/responsible for child care.
- ○ Other.

89. In 1978, how many weeks did your SPOUSE work for pay, either full- or part-time, at a civilian job, not counting work around the house? Include weeks that your spouse was on paid vacation and paid sick leave.

WEEKS

○ None (Go to Q91)

90. Altogether in 1978, what was the total amount, before taxes and other deductions, that YOUR SPOUSE earned from a civilian job or his or her own business?

CIVILIAN EARNINGS OF SPOUSE IN 1978

$

○ None

IX. FAMILY RESOURCES

91. During 1978, did you or your spouse receive any income from the following sources? MARK 'YES' OR 'NO' FOR EACH ITEM.

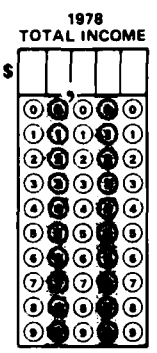
	YES	NO
Social Security or Railroad Retirement?	○	○
Supplementary Security Income?	○	○
Public Welfare or Assistance?	○	○
Government Food Stamps?	○	○
Unemployment Compensation or Workmen's Compensation?	○	○
Interest and Dividends on Savings, Stocks, Bonds, or other Investments?	○	○
Pensions from Federal, State or Local Government Employment?	○	○
Pensions from Private Employer or Union?	○	○
Alimony, Child Support or other Regular Contributions from persons not Living in Your Household?	○	○
Anything else not including earnings from wages or salaries?	○	○

92. During 1978, how much did you or your spouse receive from the sources listed in Q91? Do not include earnings from wages or salaries in this question. Just give your best estimate.

$

○ No income from sources in Q91

93. What was your family's TOTAL INCOME, before taxes and other deductions, from all military and civilian sources for all of last year—1978? Please include civilian earnings that you listed in Q87, Q90 and Q92, your yearly military earnings and any other income received in 1978.



94. As of today, what is your estimate of the total amount of outstanding debts that you may have? Exclude any mortgage. (Mark one)

- ◯ No debts
- ◯ $1 – $499
- ◯ $500 – $1,999
- ◯ $2,000 – $4,999
- ◯ $5,000 – $9,999
- ◯ $10,000 – $14,999
- ◯ $15,000 or more

95. What would you say is the total value of any savings accounts, checking accounts or cash, U.S. Savings Bonds, stocks or securities that you may have right now? (Mark one)

- ◯ $0
- ◯ $1 – $499
- ◯ $500 – $1,999
- ◯ $2,000 – $4,999
- ◯ $5,000 – $9,999
- ◯ $10,000 – $14,999
- ◯ $15,000 or more

96. Compared to three years ago, is your financial situation now—

- ◯ a lot better than 3 years ago?
- ◯ somewhat better than 3 years ago?
- ◯ about the same as 3 years ago?
- ◯ somewhat worse than 3 years ago?
- ◯ a lot worse than 3 years ago?

X. CIVILIAN JOB SEARCH

97. In the past 12 months, did you receive any job offers for a civilian job which you could take if you leave the service?

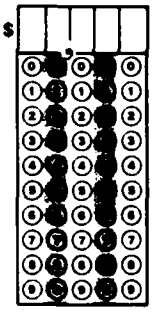
- ◯ Yes
- ◯ No

98. If you were to leave the service NOW and try to find a civilian job, how likely would you be to find a good civilian job? (Mark one)

- ◯ (0 in 10) No chance
- ◯ (1 in 10) Very slight possibility
- ◯ (2 in 10) Slight possibility
- ◯ (3 in 10) Some possibility
- ◯ (4 in 10) Fair possibility
- ◯ (5 in 10) Fairly good possibility
- ◯ (6 in 10) Good possibility
- ◯ (7 in 10) Probable
- ◯ (8 in 10) Very probable
- ◯ (9 in 10) Almost sure
- ◯ (10 in 10) Certain
- ◯ Don't know.

99. If you left the service right NOW, how much would you expect to earn PER YEAR in wages and salary if you took a full-time civilian job? DO NOT INCLUDE FRINGE BENEFITS.

- ◯ I don't know what I can earn in civilian life.



100. Suppose you were to leave the service NOW and try to find a civilian job. How likely would you be to find a civilian job that uses the skills in your military career field?

- ◯ (0 in 10) No chance
- ◯ (1 in 10) Very slight possibility
- ◯ (2 in 10) Slight possibility
- ◯ (3 in 10) Some possibility
- ◯ (4 in 10) Fair possibility
- ◯ (5 in 10) Fairly good possibility
- ◯ (6 in 10) Good possibility
- ◯ (7 in 10) Probable
- ◯ (8 in 10) Very probable
- ◯ (9 in 10) Almost sure
- ◯ (10 in 10) Certain
- ◯ Don't know.

101. Again, suppose that you were to leave the service NOW to take a civilian job. In what state or country would you probably live? PLEASE CHECK THE LIST OF STATE AND FOREIGN COUNTRY CODES IN QUESTION 6 ON PAGE 2 AND RECORD THE NAME OF THE LOCATION AND ITS TWO-DIGIT CODE NUMBER BELOW.

CODE NO.

○ I never thought about a location.

○ I'd go wherever I could find a job.

NAME OF STATE/COUNTRY

102. If you were to leave the service NOW and take a civilian job, how do you think that job would compare with your present military job in regard to the following work conditions?

WORK CONDITIONS	Civilian Job Would Be A Lot Better	Civilian Job Would Be Slightly Better	About The Same In A Civilian And Military Job	Civilian Job Would Be Slightly Worse	Civilian Job Would Be A Lot Worse
The immediate supervisors	○	○	○	○	○
Having a say in what happens to me	○	○	○	○	○
The retirement benefits	○	○	○	○	○
The medical benefits	○	○	○	○	○
The chance for interesting and challenging work	○	○	○	○	○
The wages and salaries	○	○	○	○	○
The chance for promotion	○	○	○	○	○
The opportunities for training	○	○	○	○	○
The people I work with	○	○	○	○	○
The work schedule and hours of work	○	○	○	○	○
The job security	○	○	○	○	○
The equipment I would use on the job	○	○	○	○	○
The location of the job	○	○	○	○	○

103. Suppose you left the service NOW. How do you think the total military compensation you are receiving now (pay and benefits) would compare with the total compensation (pay and benefits) you would receive in a civilian job? (Mark one)

○ A lot more in the military

○ A little more in the military

○ About the same in a military and civilian job

○ A little more in civilian life

○ A lot more in civilian life

○ I have no idea what I could earn in civilian life.

NOW, A FEW QUESTIONS ON A DIFFERENT TOPIC

104. How much do you agree or disagree with each of the following statements about military life?

	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
Life in the military is about what I expected it to be	○	○	○	○	○
Military personnel in the future will not have as good retirement benefits as I have now	○	○	○	○	○
My military pay and benefits will not keep up with inflation	○	○	○	○	○
My family would be better off if I took a civilian job	○	○	○	○	○

105. Now, taking all things together, how satisfied or dissatisfied are you with the military as a way of life? (Mark the number which shows your opinion)

VERY DISSATISFIED — VERY SATISFIED

① ② ③ ④ ⑤ ⑥ ⑦

106. Record the time now—enter military hour:

107. How long did it take you to complete this questionnaire?

NO. OF MINUTES

108. Did you complete this survey during a group administration where other people were taking the same survey?

◯ Yes
◯ No

109. Did you complete this survey on your <u>own (off-duty) time</u> or while <u>on-duty</u>?

◯ Off-Duty
◯ On-Duty
◯ Part while on-duty and part while off-duty

110. We're interested in any comments or recommendations you would like to make about military policies—whether or not the topic was covered in this survey. Do you have any comments?

◯ Yes—Specify in the space below.
◯ No

COMMENTS

THANK YOU VERY MUCH FOR ANSWERING THIS QUESTIONNAIRE. PLEASE <u>SEAL</u> THE QUESTIONNAIRE IN THE ENVELOPE PROVIDED.

OFFICE USE ONLY

◯ AR
◯ NA
◯ MC
◯ AF

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