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Factors Affecting Reenlistment of Reservists

Spouse and Employer Attitudes and Perceived Unit Environment

David W. Grissmer, Sheila Nataraj Kirby,
Man-bing Sze

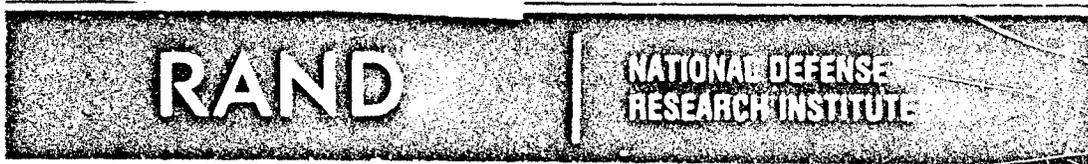
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Prepared for the
Assistant Secretary of Defense (Reserve Affairs)

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PREFACE

This report presents findings from research that analyzes the reenlistment behavior of Selected Reservists who are making early to mid-career reenlistment decisions. Low reenlistment rates imply a loss of the training investment made during the first term and higher accession and training costs for reserve forces. Low reenlistment rates also have a direct impact on the experience level of personnel in reserve units, and, therefore, on the readiness of the units, although, of course, the level of training and readiness in the units may well have an impact on reenlistment.

Predicted reenlistment rates are also an important input into determining accession requirements and the associated planning of recruiting and training resources. The research will support better predictions of reenlistment by identifying the factors important in reenlistment decisions and the magnitude of their effects. In contrast to the more traditional moonlighting models that emphasize the relationship between economic variables (primary wage rate, hours worked on the primary job, moonlighting wage, etc.) and the decision to moonlight, this analysis highlights the importance of attitudinal variables as well as the unit environment in the reenlistment decision.

This research on reserve reenlistment is part of a larger project on Selected Reserve attrition, retention, and management that was undertaken for the Office of the Assistant Secretary of Defense (Reserve Affairs). The research is being conducted by the Defense Manpower Research Center, part of RAND's National Defense Research Institute, a federally funded research and development center sponsored by the Office of the Secretary of Defense and the Joint Staff.

SUMMARY

STUDY BACKGROUND

The last ten years has seen an enormous increase in the size of the Selected Reserve—an increase of almost 40 percent. This growth was needed both to bring unit manning levels to full strength after declines in the early 1970s and to allow the reserve to accept new mission requirements. For example, the Army now depends on the Army Reserve components for over one-half of its total force manpower. In addition, there has been a marked change in the role that the reserve components are expected to play in the event of a major mobilization. Where earlier the reserve was seen primarily as a source of force augmentation, the new policy would require reserve units to mobilize and deploy almost immediately alongside active duty units in the event of a major mobilization.

Future reserve force size is uncertain because of the force restructuring that will result from the reduced NATO threat and budgetary pressures. Reductions in the NATO threat and increased warning times may well favor reserve over active forces, and many expect a shift to a richer mix of reserve forces. However, this shift does not imply more reserve force growth, since it could occur through large declines in the active force and stable or more slowly declining reserve forces. The President's Budget for Fiscal Year 1993 and the DoD program would maintain the active component—Selected Reserve mix at about the same rate that was reached by the end of the 1990s.

However, in spite of the Persian Gulf conflict experiences, there is some noticeable and enduring uneasiness about the extent of reliance on reserve forces, particularly in the Army and Navy. This uneasiness arises from the perceived low readiness levels of many reserve units. This low readiness level often involves shortages of personnel or low levels of training readiness. Low training readiness can arise from a variety of sources: low occupational qualification levels, insufficient training time to achieve crew and unit training proficiency, lack of equipment to use in training, and poor access to good training facilities and exercises.

The retention of reservists is an important component of the issue of force sizing, force readiness, and force costs. Even if the Selected Reserve force size declines, higher retention might still be desirable to reduce turnover and its associated costs and to raise the skills of reservists by raising average experience levels. The readiness and

the costs of reserve forces depend partly on the levels of experience of individuals in the reserve and in specific skills. Higher reenlistment rates mean higher levels of experience and, generally, higher productivity and higher readiness. However, a more experienced force also means higher costs for pay and retirement outlays.

The present experience mix of the reserve force finds unusually large cohorts with 10–20 years of service; the high retention rate during this career stage has been an important reason why force expansion has been so rapid. Current 15-year projections show strong increases in the number of reservists with greater than 15 years of service. For instance, the number of enlisted reservists reaching retirement eligibility (i.e., with 20 good years of service) is expected to double between FY85 and FY99. It becomes important then to maintain experience in the more junior force to prevent a drastic drop in experience as these retirements take place. This means keeping reenlistment rates high among those with 4–12 years of service.

This report examines the reenlistment decisions of early to mid-career reservists and the forces affecting those decisions. The major contribution of this report is its examination of factors such as attitudinal variables and unit environment that are generally ignored or overlooked in the more traditional moonlighting models. The reserve job, as we show below, is unique among the set of moonlighting jobs, both in terms of its nonpecuniary benefits and its capacity for conflict with family and civilian employer demands. As such, we argue that economic variables tend not to be the most important determinants of the decision to participate or continue in the reserve; they are overshadowed by the degree of support the reservist receives from his spouse and employer as well as the perceived unit environment. The latter, although a product of the level of reenlistment, can in turn affect reenlistment. Units perceived as low in readiness because of equipment shortages or poor access to training facilities or grounds may have lower reenlistment rates. In this research we study the relationship between several measures of unit environment and organizational climate and its impact on reenlistment.

The main objective of the report was to analyze the reenlistment behavior of reservists, using the rich and complex data collected through the 1986 Reserve Components Survey of Enlisted Personnel. In particular, these data allowed us to extend earlier reenlistment estimates in several important directions. These include:

- Developing a reenlistment model with reservists from all six components to measure the impact of component-specific influences;

- Measuring the influence of perceived spouse attitude on reenlistment and contrasting this with a similar measure of perceived employer attitude;
- Measuring the influence of the training and unit environment on reenlistment.

This report focuses on those making early to mid-career decisions: those with 4–12 years of service. In addition, we limited the analysis sample to enlisted reservists who were facing reenlistment decisions during the study period (i.e., were at the end of their enlisted term of service (ETS) between June 1986 and September 1987). The reason for limiting our analysis to these individuals was because we were primarily interested in *voluntary* decisions to stay in the reserve. Among this group, decisions to leave at non-ETS points tend to be involuntary and generally because of family moves—factors that policies can do little to influence. The major source of data for the analysis is the 1986 Survey of Enlisted Personnel, fielded during the spring of 1986. We tracked reservists forward in time through the Reserve Components Common Personnel Data System to see whether or not they stayed in the reserve.

BENEFITS AND COSTS OF RESERVE SERVICE

In making the reenlistment decision, a reservist must weigh the benefits of reserve service, broadly defined to include both reserve pay, nonpecuniary benefits, retirement pay, etc., against the cost of reserve service, both monetary and nonmonetary.

Most reservists in our analysis sample hold civilian jobs in addition to their reserve jobs. Obviously, there are important aspects of civilian jobs that affect the ability of reservists to meet reserve obligations. Individuals whose civilian jobs require more time probably run into more conflicts with reserve obligations and family obligations. Over one-third of reservists employed in the private sector regularly work more than 40 hours a week. The incidence is even higher for those who are self-employed. About 30 percent of those working in local governments also regularly work over 40 hours a week.

Quite apart from the time constraint when the reservist routinely works more than 40 hours per week at the primary civilian job, the reservist may face another cost that may tend to exacerbate problems with reserve service. This occurs when some of this overtime work is paid at premium wages, the loss of which, because of reserve

obligations, can add up to a substantial cost to the reservist. Half the employees in private firms as well as over 40 percent of local government employees face this loss.

Another nonmonetary cost of reserve service can be unfavorable supervisor attitudes. These can result in lower promotion opportunities, unpleasant work environments, and even job discrimination. Approximately 15–20 percent of supervisors have somewhat or very unfavorable attitudes toward their employees' reserve service. Although the proportion of incidence is not overly large, it is equally distributed among all types of employers, with the highest incidence being for local government employees.

The net income that reservists earn from their reserve service depends greatly on their employers' pay policies during absence for annual training (AT). There are great differences among employers regarding their pay policies. Almost three-quarters of employees of small firms lose all civilian pay during AT, as do over half of those working for large private firms.

Turning now to family conflicts, we find that younger reservists are much more at risk than older reservists. Over a fifth of younger reservists report that their spouses were somewhat or very unfavorable to their reserve participation.

The main source of employer and family problems appears to be the time required for AT and the extra time spent on the reserve job, rather than drills. For most reservists, AT is more likely than drills to cause them to miss work and to cause greater strain on the family because of the length of time involved. One other source of problems may be related to pay. Net reserve pay during AT is much lower than for drills. This is because hourly gross reserve pay for drills can approach twice that for AT, and civilian pay is more often lost during AT.

These data support our contention that traditional models of moonlighting need to be extended to include the effects of spouse and employer attitudes on people's decisions to participate in the reserve. The reserve job, because of its inflexible time demands, is inherently likely to cause more conflicts with family and the primary job and it is important to factor these into models that attempt to analyze reserve reenlistment. Yet another factor that usually appears to be overlooked is the reservist's perception of unit training and environment; although these may not be important in civilian moonlighting jobs, we have ample evidence that camaraderie, unit morale, the usefulness of training during drills and AT all play a large role in attracting and keeping reservists in the Selected Reserve.

FINDINGS

We present evidence regarding the relationship between variables hypothesized to affect reenlistment and the likelihood of reenlistment based on both simple bivariate tabulations and the multivariate models. Simple bivariate relationships are useful in analyzing the gross effects of a variable on reenlistment. They show how reenlistment varies with the particular variable and all other factors that are correlated with that variable. For example, differences in reenlistment across paygrades are also likely to capture differences by age or marital status.

The multivariate analysis, based on a logistic model of reenlistment, was carried out separately for reservists with 4-6 years of service and those with 7-12 years of service. In addition, because data on the type of unit were available only for the two Army components, we estimated a separate model for the above two groups including only reservists in the Army Reserve and Army National Guard.

The independent variables included (a) service-related variables (paygrade, active duty service, component, satisfaction with training and morale of the unit, eligibility for bonus and in the case of the Army regressions, the type of unit), (b) economic variables (employment status, type of employer, civilian wage, net reserve wage, number of hours worked on the civilian job, availability of overtime, perceived attitude of the civilian supervisor), and (c) demographic variables (age, marital status, working status of the spouse, dependents, perceived attitude of the spouse).

The Effects of Attitudinal Variables

The bivariate relationships and to a somewhat lesser degree, the multivariate results underscore the importance of attitudinal variables in models of reenlistment. We must make clear that what we measure is the reservist's *perception* of the attitudes of his spouse and civilian supervisor toward his reserve participation. If his perception is inaccurate or reflects his own feelings about the reserve, then our results will not hold. It is clear that there is some interdependence among these variables. However, the correlation between the reservist's reported level of overall satisfaction with the Guard/Reserve (a separate question on the survey) and his perception of his spouse/employer's attitudes is not very high, suggesting that we are indeed measuring some dimension other than the reservist's own attitude.

Reservists with more favorable employer attitudes (as perceived by the reservist) have significantly higher reenlistment rates (79 percent) than those with very unfavorable attitudes (68 percent). It should be noted here that the degree of favorableness/unfavorableness appears to matter. Going from an employer with a neutral attitude to one with a somewhat favorable attitude raises reenlistment rates by 9 percent. Spouse attitude toward reserve participation (again as perceived by the reservist) appears to have an even more significant influence on reenlistment rates than employer attitudes. The variation in reenlistment rates by spouse attitude is astonishingly wide. For example, reservists with spouses who are very favorably disposed toward reserve participation have a reenlistment rate of 85 percent as compared with the 42 percent rate among those with spouses who have a very unfavorable attitude. Again, differences in degree appear important, suggesting that it may be important to design family and spouse interventions that address the full range of spouse attitudes.

We find that in general the net effects of all the variables in the multivariate models are rather small in magnitude compared with those relating to the marital status/dependents/spouse attitude variables. The presence of dependents raises the probability of reenlistment by about 10 percent. Married reservists are much less likely to reenlist, particularly if the spouse is working full-time. The perceived attitude of the spouse turns out again to have the largest effect on reenlistment. Having a spouse with a favorable attitude toward Guard/Reserve participation increases the probability of reenlistment by about 13–25 percent; having a spouse with an unfavorable attitude can lower it drastically. The larger results are found in the Army Selected Reserve model, although the coefficients are highly significant in all the models.

The civilian supervisor's attitude—independent of other employer-related factors in the regression—makes some difference, although not as much as in the cross-tabulations reported above. Having a favorably disposed supervisor raised the reenlistment probability anywhere from 6–14 percent, depending on the model. Again, the larger and more significant effects are found for the Selected Army Reserve component model.

The Effects of Unit Environment

Dissatisfaction with training, equipment, and morale of the unit also appears to have a fairly significant impact on reenlistment. Reenlistment rates are lower for individuals who are dissatisfied with unit training, drill training, equipment, and the morale of personnel in their unit. The patterns in the multivariate models are similar, although the effects tend to be small and in general insignificant. We find that the probability of reenlistment decreases by about 3-6 percent among those dissatisfied with unit training or equipment. However, being dissatisfied with unit morale has a fairly large and significant impact in the 4-6 years of service (YOS) Army model—these individuals tend to have a 10 percent lower probability of reenlistment than those who are not dissatisfied. These results support the widely held belief of reserve unit commanders that the quality of training and equipment influences reenlistment.

For the two Army components, we were able to obtain data that allowed us to categorize the type of unit in which the reservist was serving as a combat, combat support, or combat service support unit. Those in combat units have the lowest reenlistment rates and those in combat service support have the highest rates. These differences may be partially explained by the difference in the age and experience mix of the personnel in these units.

The bivariate relationships were reinforced by the multivariate results. We found that reenlistment probabilities in combat support and combat service support units are significantly higher (by between 4-12 percent) than in combat units, even controlling for other factors.

Other Variables

We find that reenlistment rates vary in expected ways by grade and years of service. Those in lower paygrades and with less experience have much lower reenlistment rates. The higher rates for more experienced reservists are attributable to their much greater investment in reserve service, their promotion and advancement, and the increased value of retirement benefits.

We were able to estimate the effect of a bonus only indirectly; respondents were asked whether they were eligible for a reenlistment bonus. We do not know how accurate these perceptions are; in addition, targeted bonuses change frequently. We do find some small differences with those who were uncertain or felt that they were eligible for a bonus being 3-6 percent more likely to reenlist.

The characteristics of reservists' civilian jobs appear to have small effects on the probability of reenlistment, thus highlighting the importance of revising and extending the more traditional moonlighting models when examining reserve participation decisions.

POLICY IMPLICATIONS

If our data do indeed measure spouses' attitudes and are not merely a reflection of reservists' own attitudes, our results suggest that the reserve emphasis on family-related problems and on designing effective interventions is well placed. These might be, for example, implementing support groups, training reservists in communication skills, making commanders aware of these issues, and perhaps implementing social activities to help the family feel a part of the reserves. Marital status, presence of dependents, and the working status of the spouse also are strong predictors of reenlistment.

Indeed, family issues may remain more hidden than employer issues because of the greater social acceptability of leaving because of employer problems. Evidence in this survey—given the caveat above—indicates that spouse attitude and family make-up exert a far stronger influence than employer attitude. Because family problems remain more covert, and perhaps are more complex, it is important to do some detailed case studies of family issues. These would involve discussion with family members about reserve service and with unit commanders regarding attitudes toward family problems.

Our findings have three implications for the current programs oriented toward employer support. The first is that employer support remains an issue for many reservists, but it is much smaller than the family support issue. This may reflect the success of current programs. The second implication is that both local governments and private employers need to be targeted for support programs. Perhaps because of fire and police participation in the reserves and their common scheduling conflicts, local governments appear to have far less favorable attitudes toward the reserves than either state or federal employers. The third implication is that the degree of perceived attitude matters. Thus it would appear that employer support programs should continue to work to improve support of all employers, including those already supportive of the reserve participation of their employees.

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1. INTRODUCTION

In the last ten years, Selected Reserve strength has grown dramatically. In fiscal year 1980, it stood at approximately 850,000; by FY89, total Selected Reserve strength had increased to a little under 1.2 million—an increase of over 40 percent. The increase was especially marked in the Army. In FY80, 42 percent of the Army's total force manpower was in the Selected Reserve; by FY89, this proportion had increased to 51 percent. In 1988, the Department of Defense (DoD) reported to the Congress that for the first time since World War II, the Army Selected Reserve would exceed the strength of the Active Army. This growth was needed both to bring unit manning levels to full strength after declines in the early 1970s and to allow the reserve to accept new mission requirements.

This reserve growth reflects policy in the early 1980s to increase the "tooth to tail" ratio in the Active Army. At that time the Army shifted more combat support and combat service support missions to the reserve to allow room for more active combat units—the light divisions. However, Congressional policy to limit active duty end-strength to achieve budgetary savings also contributed to reserve growth. Reserve forces are perceived as a less expensive way to achieve additional force structure.

Future reserve force size is uncertain because of the force restructuring that will result from the reduced NATO threat as well as budgetary pressures. Reductions in the NATO threat and increased warning times could favor reserve over active forces, and many expect a shift to a richer mix of reserve forces. However, this shift does not imply more reserve force growth, since it could occur through declines in the active force and stable or more slowly declining reserve forces. Current plans would maintain, in aggregate, about the same ratio of active and reserve forces for the DoD as a whole.

However, there is some noticeable and enduring uneasiness about the extent of current reliance on reserve forces, particularly in the Army. This uneasiness arises from the perceived low readiness levels of many reserve units. Low readiness levels often involve shortages of personnel or low levels of training readiness. Low training readiness can arise from a variety of sources: low occupational qualification levels, insufficient training time to achieve crew and unit training proficiency, lack of equipment to use in training, and poor access to good training facilities and exercises.

The retention¹ of reservists is an important component of the issues of force sizing, force readiness, and force costs. Even if force expansion does not continue, or if the force size declines, higher retention might still be desirable to reduce turnover and its associated costs and to raise the skills of reservists by raising average experience levels. In this case the force reductions would come primarily from accessions. On the other hand, force downsizing may require lower reenlistment rates. Then, good predictions of reenlistment under various conditions are needed to plan appropriate resources for accession and retention to meet the reduced force size targets over time. This report analyzes the reenlistment decisions of early to mid-career reservists, using data from the 1986 Reserve Components Survey of Enlisted Personnel. Although the model we use is based on the traditional moonlighting theory first developed by Shishko and Rostker (1976), our conceptual framework extends the model and emphasizes the importance of taste, attitudinal variables, and unit environment in the decisionmaking process. The reserve job is unique among other part-time jobs and its inflexible nature and occasional full-time demands are likely to cause conflicts with the family as well as the civilian job. On the other hand, it offers a number of benefits not available in the more usual moonlighting opportunities. All these need to be factored into the reenlistment decision.

The readiness and the cost of reserve forces depend partly on the levels of experience of individuals in the reserve and in specific skills. Higher reenlistment rates at first term and in mid-career mean higher levels of experience. Since productivity generally increases with experience at this point in the career, provided reservists stay in the same skills, then more experience means higher productivity and higher readiness.² However, more experience also means higher costs—for pay and for retirement outlays. Thus, more experience should be encouraged in those skills where training time and costs are high.

¹It might be helpful to make the nomenclature clear at the outset. Continuation refers to whether the individual continues from year to year; reenlistment refers to whether the individual is at the end of his enlisted term of service (ETS) and facing the decision as to whether to reenlist for another term; retention is a more generic term that encompasses both these concepts.

²There is an important caveat that must be mentioned here. We assume that higher retention does not mean delayed or slower promotion for those who remain. If this is not true (and it well may not be, as greater numbers of more senior and more experienced reservists come up against a fixed rank structure), then the beneficial effects of higher retention on training readiness and productivity may well be offset by its adverse effect on morale and motivation.

Although the level of retention can affect readiness by changing the experience mix, it is also true that readiness can affect retention—a traditional chicken-and-egg problem. Units low in readiness because of equipment shortages or poor access to training facilities or grounds may have lower retention rates. In this research we study the relationship between several measures of training readiness and organizational climate and its impact on reenlistment. If this relationship between training readiness and reenlistment can be empirically verified, then readiness improvements would be less expensive than previously thought. This is because additional outlays for equipment or improved training may also bring the benefit of higher reenlistment with reduced levels of reenlistment bonuses.

Our objective is to analyze the reenlistment behavior of reservists, using the rich and complex data collected through the 1986 Reserve Components Survey of Enlisted Personnel. As mentioned above, these data allow us to extend earlier reenlistment estimates in several important directions. These include:

- Developing a reenlistment model with reservists from all six components to measure the impact of component-specific influences;
- Measuring the influence of perceived spouse attitude on reenlistment and contrasting it with a similar measure of perceived employer attitude;
- Measuring the influence of the training and unit environment on reenlistment.

The second section of this report presents the conceptual framework and the data sources for the study. We discuss the benefits and costs of reserve service that might enter the decision calculus. The third section describes in detail some background data on the reservists in our analysis sample, their civilian occupations, and how frequently they work overtime; it also presents some evidence on the pecuniary and nonpecuniary costs of reserve participation. These data are important in that they suggest some plausible reasons for the lower reenlistment propensities among junior personnel. We also present reenlistment rates for different groups of reservists. The fourth section presents the results of multivariate analyses of reenlistment behavior as opposed to the simple bivariate relationships presented in the earlier section. This allows us to measure the net effect of different characteristics, controlling for other characteristics.

The models are estimated for two groups of reservists, categorized by years of service: those with 4–6 years of service and those with 7–12

years of service. Our main hypothesis was that the two groups would differ in their motivations and in the factors that entered the decision calculus. A separate subsection examines reenlistment behavior in the Army components only; this allows us to test for differences in reenlistment propensities among different types of units—the Army components being the only two for which we were able to obtain information on the type of units in which the reservist was enlisted. Section 5 presents conclusions. The actual logit coefficients for the models are given in App. A, and the survey questionnaire is included as App. B.

2. THEORY, CONCEPTUAL FRAMEWORK, AND REVIEW OF PREVIOUS RESEARCH

THE DECISION TO PARTICIPATE IN THE RESERVE¹

For most enlisted reservists, participation in the Selected Reserve is essentially a decision to hold two jobs. Table 2.1 shows that the overwhelming majority of enlisted personnel are employed in the civilian sector either full-time or part-time.² Indeed, the table makes evident that three-quarters of all enlisted reservists hold full-time civilian jobs in addition to participating in the reserve.

The initial conceptual framework that guided our empirical work has, as its underpinning, the traditional moonlighting labor market theory (Shishko and Rostker, 1976). This theory portrays individuals as making decisions about their allocation of time among primary jobs,

Table 2.1

Current Civilian Employment Status
of Part-Time Reserve Members,
All Reserve Components, 1985

Status	Enlisted (Percent of Total)
Full-time job	73
Part-time job	10
Self-employed	3
Unemployed	7
Not in labor force	6

SOURCE: 1986 Reserve Components
Member Survey, Q. 3, 93M.

¹Throughout the section, we use the term "moonlighting" to refer to part-time occupations that are held in addition to the primary one. The term is a technical one and is widely recognized in the economic literature. There is no derogatory connotation to the term.

²We exclude from consideration here individuals who hold full-time positions with the reserve components. These include civilian technicians, Active Guard/Reserve Reservists (AGRs), and Navy full-time personnel (TARS). These individuals must hold part-time reserve positions as a condition of their full-time employment. However, their motivation and the calculus of their participation decisions will be very different than for those employed outside the reserve system. These individuals are referred to as "full-timers" and those not holding full-time positions with the reserve are called part-timers. Full-time personnel constitute about 12 percent of enlisted reserve personnel. In this report we include only part-timers in our study of reenlistment.

secondary or moonlighting jobs, family, leisure, and schooling. The theory outlines the conditions under which individuals would accept secondary or moonlighting jobs.

The fundamental tenet of moonlighting labor market theory is that individuals or households make systematic assessments of the likely net monetary and nonmonetary benefits from moonlighting and make systematic decisions throughout their careers to enter, stay, or leave a moonlighting occupation.

However, such a theory—which was developed to explain moonlighting in civilian jobs—offers only a limited perspective when analyzing decisions to participate in the reserve, because the reserve job is unlike civilian moonlighting jobs. One critical difference is the need to participate full-time in Initial Active Duty Training (IADT), Annual Training (AT), or in training required for promotion or skill retraining. IADT lasts a minimum of three months full-time and must be completed for those entering without military experience. Depending on the skill training, it can last a year or more. AT lasts a minimum of two weeks full-time annually. In addition, full-time training is sometimes required for promotion into senior positions. These full-time demands directly conflict with civilian jobs and are likely to cause more conflicts with civilian employers than civilian moonlighting jobs normally held outside the normal full-time work schedule. Since both AT and IADT usually require absence from home, family conflict can also arise.

Another difference is the inflexible nature of the reserve work schedule. A reservist cannot decide when to perform work on his reserve job but must conform to a prearranged work schedule. This schedule calls for weekend drills once a month and two weeks of annual full-time training. This lack of flexibility means that reserve service can conflict with important family events or with voluntary or mandatory overtime opportunities from civilian jobs. Both of these can exacerbate conflicts between reserve service and the family and primary employer.

Counterbalancing these demands is a set of positive benefits not usually found in civilian moonlighting jobs. These include training investments normally associated only with full-time civilian jobs. Reservists obtain the same initial training as do those entering the active force, and this training represents a substantial investment. Training costs associated with initial skill training have been estimated at \$5,000 for shorter training times to over \$20,000 to teach more complex skills. Such investments are usually not associated with moonlighting jobs because of the limited return.

Another key difference is the potential longevity and job security that reserve service can provide. Reservists who perform satisfactorily can be assured of job security over a 20- or 30-year period. This job security partly flows from the transferability of the reserve job skills if the reservist moves from one place to another. Reserve units are located throughout the nation, and rank and pay are usually preserved when transferring from one unit to another.

Another difference is the presence of retirement benefits—almost never available in civilian moonlighting jobs—for reservists completing 20 years of satisfactory service. Thus, reserve service is structured to be a “career moonlighting job,” complete with portability of pension and pay benefits as the reservist moves from place to place.

Finally, the reserve offers a number of nonpecuniary benefits that may be highly valued by those considering the participation decision. These include a sense of patriotism from serving one’s country and community and a sense of camaraderie from being part of a small, mission-oriented, cohesive group that meets regularly.

Our conceptual framework and the model that we estimate emphasizes the importance of several factors that more traditional models do not encompass. Although variables such as unit environment, the support of the family, and the general attitude of the civilian employer are hard to quantify, we feel nonetheless that they are an important part of the decision calculus and, indeed, may to a large extent outweigh the effects of economic variables, such as wages or hours worked. It is useful to consider the full panoply of costs and benefits associated with reserve participation when examining both the participation and the reenlistment decisions.

Benefits of Reserve Service

Current Pecuniary Benefits. The monetary benefits include the stream of likely *net* income resulting from moonlighting. Net income rather than gross income should be used, since moonlighting income can be substantially reduced through payment of taxes at marginal rates and certain fixed costs of participation such as transportation.³ Gross reserve income for part-timers is determined primarily by the individual’s grade and years of military service. Bonus payments at

³The definition of net income and the details of the calculation of net income are more fully covered in Grissmer, Buddin, and Kirby (1989).

enlistment or reenlistment can add to gross pay. To compute net reserve income, the following must be subtracted from gross pay:

- Federal, state, and FICA taxes;
- Forgone civilian income resulting from attendance at annual training;
- Transportation costs to attend reserve drills and annual training; and
- Value of the time spent in traveling to drills and annual training.

Individual decisions to join or stay in the reserve will be made on the basis of net—not gross—income. This difference would be relatively unimportant if there were not substantial differences among reservists in the ratio of net to gross income. Previous analysis indicates that net income is approximately 45–60 percent of an employed reservist's gross income (Grissmer, Buddin and Kirby, 1989).

For senior enlisted personnel, the most important decrement from gross reserve income is taxation (federal, state, and FICA) at marginal tax rates. Taxes subtract approximately one-third to almost one-half from gross pay. The amount subtracted depends on the amount of the civilian income and the state of residence. For junior reservists, loss from forgone civilian income is the largest factor subtracting from gross reserve income. The loss from forgone civilian income depends on both the civilian wage and the employer military leave policy. Some employers provide full pay for reservists for military leave during annual training; others provide no pay. The difference in net pay for reservists receiving full civilian pay compared with those getting no pay can be substantial, especially for reservists with higher civilian incomes. For lower-ranking reservists, full civilian pay can add 25–40 percent to net reserve income.

Transportation costs—both direct and indirect—can also reduce reservist's net income. These costs can reduce net income by about 10 percent for typical reservists and tend to be slightly higher for more senior personnel.

Future Pecuniary Benefits. The present value of future retirement benefits must certainly play an important role in decisions to reenlist, particularly as the individual accrues more years of service in the reserve.⁴ The effect of retirement benefits can most easily be

⁴Retirement benefits begin at age 60 and are based on the years of military service and rank at retirement; they derive from the pay table in effect at age 60. Since most

seen among individuals with more than 12 years of service: Their year-to-year continuation rates exceed 90 percent. Retirement exerts less effect on personnel with fewer years of service, since the present value is a much smaller proportion of total compensation. However, it is important to control for differences in the present value of potential retirement annuities in analyzing mid-career reenlistment. These differences mainly arise from the years of completed service, current rank, and the presence of prior active service. Thus, these variables are included in our reenlistment model.

Nonpecuniary Benefits. Nonpecuniary benefits of reserve service include the job satisfaction that arises from realistic training, accomplishing useful work, and meeting mission requirements. These benefits are likely to vary from unit to unit and are likely to vary both by type of mission and quality of unit leadership. Social benefits can arise from group camaraderie and cohesion and may be more likely to arise from smaller units and from units with good leadership and high morale. In our analysis, we include variables associated with unit morale, training quality, and quality of training equipment.

Costs of Reserve Service

Moonlighting labor market decisions are complex partly because they often require a commitment of time to work—time that has several other demands on it. These are the opportunity costs of reserve service, and there are both monetary and nonmonetary aspects of these costs. For a typical reservist with a family and a full-time civilian job, hours spent on the reserve job mean fewer leisure hours and less time available to spend with the family, on the regular job, on another moonlighting job, or in school. This requires a careful balancing of the benefits of a moonlighting job against the value placed on additional time spent in other pursuits.

reservists retire at a much earlier age, use of the pay table at age 60 provides almost full protection from inflation. Annuities are proportional to accumulated retirement points. One point is given for each active day of service to a maximum of 365 a year. For reserve service, individuals can accumulate a maximum of 60 points a year for drills and other activities. Additional points are awarded for annual training and other full-time duty. The reservist who meets the minimum annual requirement will receive about 75 points. Thus annuities can be significantly increased through full-time active duty service. For example, a nonprior service reservist serving 20 years would accumulate a minimum of 1,500 points, whereas an individual serving 10 years of active duty and 10 years of reserve duty would accumulate at least 4,400 points. The latter pension would be about 3 times the former. Typical current retirement annuities for enlisted personnel are \$2,000 to \$7,500 annually. See Grissmer, Buddin, and Kirby (1989).

Monetary Opportunity Costs. The monetary opportunity costs arise because the reserve job may involve forgoing the opportunity to work overtime hours on the regular civilian job or to work at another moonlighting job. For those who make premium wages for overtime, this loss can be significant.

Reserve service may also affect promotion opportunities on the civilian job: However, it might either increase or decrease this opportunity. Some employers feel that the time and effort spent on reserve service means that individuals cannot put in the extra time needed for more senior positions. On the other hand, skills learned in reserve service and possibly professional contacts could actually enhance promotion opportunities.

Another opportunity cost from reserve service is loss of vacation time. Employers are legally bound to provide up to 15 days of military leave for reserve annual training; however, despite this, not all reservists receive military leave and some use vacation time to fulfill reserve obligations.

Yet another opportunity cost that needs to be factored in is the income that could be earned in other moonlighting jobs. It is important to note that the reserve is but one of many employers competing for labor in the secondary job market; it helps emphasize that policies aimed at improving reserve recruiting and retention need to be structured carefully to take account of current and future economic conditions. For example, the youth cohort size will become increasingly smaller in the next four years, and the tightness in the youth labor market combined with the increased demand from the service sector will produce increasing competition for such workers. There is also evidence that the edge that military wages have enjoyed relative to civilian wages will gradually be eroded over this time. This edge was established partly because the civilian earnings of young workers actually declined substantially in real terms between 1976 and 1984, whereas military wages kept pace with inflation. However, this decline was partly due to the large numbers of workers available as the baby boomers passed through the 16-24 age group. As the number of these workers declines, then youth wages will begin to rise and be more competitive with military wages. If these trends are true for part-time wages as well, then the recruiting environment could become much more difficult for the military.

Nonpecuniary Costs of Reserve Service. For many reservists, a more important component of cost is the decrease in time available to spend with their families or in leisure pursuits. These costs will vary depending on marital status and family size. For single reservists

time spent on reserve service will conflict only with leisure time. For married reservists, conflict with both family and leisure may result from reserve service. Other things equal, family conflict might be expected to vary depending on family size and age of children. We include in our analysis as measures of the potential family conflict the marital status, number of children, and perceived attitude of the spouse toward reserve service. Of course, such conflict is not unique to reserve service but is a concomitant of any secondary job.

An enumeration of both pecuniary and nonpecuniary costs that must be considered in any computation of the real net return to reserve service is provided in Table 2.2. Wherever possible, we have incorporated these factors in our empirical model.

Table 2.2
Estimating Total Costs of Reserve Participation

Element	Description
Federal, state, and FICA taxes	Taxed at higher marginal rate because reserve pay is generally "over-and-above" civilian pay
Forgone civilian income	Three components: 1. From attendance at AT. This could result from employer policies that: a. pay only the difference between civilian and reserve wages during this time (forgone income - reserve AT pay) b. pay no civilian income (forgone income - civilian income for this period) 2. From lost overtime either during AT or drills 3. From alternative moonlighting jobs
Transportation costs	Two components: 1. "Out-of-pocket" costs 2. Opportunity costs of driving time, equal to the value of this time if spent in an alternative activity
Other costs related to the civilian job, both monetary and nonmonetary	Several interrelated aspects: 1. Loss of or reduced chance of promotion 2. Unfavorable attitudes of supervisors 3. Conflicts with time demands (obtaining leave for AT, drills, extra time spent on reserve work) 4. Increased chance of dismissal
Other nonmonetary costs	Two components: 1. Family conflicts, because of extended time spent at AT, weekend drills, forgone civilian income, forgone vacation time, etc. 2. Decrease in own leisure time

REVIEW OF PRIOR RESEARCH

Prior relevant research includes both research on reserve retention as well as that on early attrition. It is important to examine early attrition because it determines the self-selected group that stays until the first-term reenlistment decision. For nonprior service reservists, the original term of commitment is usually six years; however, fewer than one-half of those entering remain continuously in service until the first-term reenlistment decision at the sixth year. Among prior service individuals, most enter with one- or three-year terms. These individuals will enter with 2-10 years of active service. Self-selection also plays a role here as many will leave before making a reenlistment decision.

Research on reserve compensation levels has sought to identify ways in which the compensation system could be better structured to help address reserve readiness problems. Among other things, this research has focused on the role of compensation in producing personnel shortages and low skill qualification levels. As such, it has developed definitions of net and gross reserve compensation and has placed compensation within the larger set of costs and benefits of reserve service.

Research on Reserve Retention

In 1978, an experiment was carried out that offered a \$1,800 bonus to those reenlisting for six years and \$900 to those reenlisting for three years with one-half being paid up-front and the remainder spread out in equal amounts over the term of service. Only nonprior service individuals with fewer than eight years of service were eligible for the bonus. This experiment allowed both a determination of the effectiveness of bonus payments and development of a model to determine other factors important in this reenlistment decision (Burrigh, Grissmer, and Doering, 1982; Grissmer, Doering, and Sachar, 1982; Grissmer et al., 1982).

The results showed the strong effects of promotion and longevity. Those with higher pay grades and those who had previously reenlisted were significantly more likely to reenlist. These variables were the strongest predictors of reenlistment. Their strong influence is attributable to the increasing influence of the retirement system on more senior reservists, as well as to a stronger taste for reserve military service as evidenced by previous reenlistments.

The models also showed the strong effect of draft motivation. The group reenlisting in 1978 consisted mainly of personnel who enlisted in 1972—the last year of the draft. These individuals could be divided into those with low lottery numbers (mainly draft motivated) and those with high lottery numbers (not draft motivated). The former group reenlisted at less than half the rate of the latter group.

The effect of the economic variables was generally in the expected direction, although small in magnitude. Those with higher civilian income and more civilian working hours were only slightly less likely to reenlist. Elasticities for these variables were statistically significant at the 1 percent level. The civilian wage elasticity was estimated at 0.21, and the civilian hours worked was 0.26. Higher reserve wages did increase reenlistment but again by relatively small amounts. The reserve gross wage elasticity was significant only at the 10 percent level and estimated at 0.18.

The strongest civilian employer variable was the perceived attitude of the civilian employer toward reserve service. This attitude was measured on a five-point scale going from very favorable to very unfavorable. It was statistically significant at the 0.1 percent level. This variable appeared to capture most of the employer effects. Neither the size of employer nor the type of employer was statistically significant in the estimation. The latter variables included dummies for federal, state, and county employers, as well as large, medium, and small civilian employers. A variable measuring the frequency of overtime opportunity was statistically significant at the 5 percent level and showed a small decrease in reenlistment with more overtime opportunity. The loss of vacation time for reserve service also showed a negative reenlistment effect but was not statistically significant.

Several demographic characteristics showed moderately strong effects in the model. Age was strongly significant at the 1 percent level and had an elasticity of 1.1. Being older increased reenlistment significantly. This may be attributable to the more stable family and job circumstances of older reservists as well as to the effects of self-selection. Those who have stayed in the reserve likely have employers and families more favorably inclined toward reserve service. Higher reenlistment was also associated with being female, black, and less educated. All were statistically significant. Marital status and size of household were not significant. Urban, suburban, and rural dummies were not significant.

Finally the type of reserve job was statistically significant at the 1 percent level. Those in combat jobs reenlisted less frequently than those in other jobs.

Of particular interest was the effect that the bonus had on reenlistment. The presence of the bonus increased reenlistment rates only slightly from 38 to 40 percent. On the other hand, the bonus extended the term of service for most reenlistees from one year to three or six years.

A follow-up of bonus and nonbonus reenlistees showed that 3-1/4 years later, there was a 25 percent increase in man-years for the bonus over the nonbonus group (Grissmer and Hiller, 1983). The results showed the importance of using the bonus as a way of extending the term of commitment. Its major effect was not to switch the decision of individuals who were not going to reenlist, but to change the decision of those reenlisting from one-year terms to three or six years. These longer terms resulted in significantly more man-years of service.

Data collected on surveys during the test showed that family and employer conflicts were the main reasons given for not reenlisting. However, only the employer attitude was measured in a way that allowed it to be included in the reenlistment model. A comparable spouse attitude variable was not included in the survey. We were also not able to test the effects of training environment and other factors of unit leadership in reenlistment decisions, although anecdotal evidence suggests that camaraderie, training quality, and learning new skills are important in the decision to participate. Moreover, the experiment was limited to the Army components only, and to non-prior service personnel, which limited the usefulness of the analytical results. The experiment was also carried out in 1978, a period when the reserve components were at the lowest point of strength and unit readiness.

This report attempts to update and extend the earlier analysis by using data from the 1986 Reserve Components Survey of Enlisted Personnel. The survey captures data from all six Selected Reserve components, and we include both nonprior and prior service personnel. An improved survey design also contained similar attitudinal variables capturing the attitudes of civilian supervisors and spouses (as perceived by the reservists) as well as the perceptions of the reservists regarding the training environment and morale of the unit.

Review of Research on Early Attrition

Retention research on the reserves has been complemented by research on attrition, the reverse side of the picture. Several studies have examined early attrition among nonprior service reservists.

Grissmer and Kirby (1985) show that individuals without prior military experience enlisting in the two Selected Reserve Army components leave at high rates before completing their six-year term of enlistment (often referred to as "unprogrammed attrition"). Indeed an analysis of the FY80 entrance cohort showed separation rates during the first two years of 30.6 percent for the Army National Guard and 39.5 percent for the Army Reserve. Early research also showed that women tended to have significantly higher attrition risks than men with similar characteristics, and that for both men and women, less education and lower aptitude scores led to much higher attrition risks.

Attrition patterns such as these convinced the services to put increased emphasis on recruiting more highly educated individuals with higher aptitude scores. Despite this, however, we find that two-year attrition rates continued to rise for the FY81 and FY82 entrance cohorts, both of which were of significantly higher quality than the FY80 cohort (Grissmer and Kirby, 1988). This analysis attempts to distinguish between "attrition to civilian life" and "transfers," with the former being defined as attrition to civilian life and the latter as separations that ended with a return to active service or enlistment in a reserve component. Thus, if the individual later returned to a reserve component or joined the active force, he was not included in the civilian attrition statistics. Our main emphasis was on civilian attrition primarily because unlike transfers, such attrition results in no recoupment of the training investment.

We find that civilian attrition rates during the first two years of service rose from 25.4 to 31.6 percent for the Army National Guard and from 28.3 to 37.7 percent for the Army Reserve.

We can offer several possible explanations for such a finding. Attrition discharge policies and training and performance standards may change from one year to the next as services respond to an easier recruiting environment by tightening standards and "creaming" the best from any cohort regardless of cohort quality. In addition, rising unemployment and increased recruiter resources and emphasis may bring in recruits with unmeasured characteristics that increase attrition.

The results from the FY81 and FY82 cohorts tend to support the FY80 results with respect to the relative attrition risks of different groups. Once again, the characteristic that makes the largest consistent difference is gender, followed by education and aptitude category.

These studies have not been able to examine the effect of civilian employment and family variables on attrition, however, nor have they been able to measure the effect of changing economic conditions on reserve attrition.

Companion research on prior service individuals (who constitute a little over half of all enlisted accessions into the Selected Reserve each year) also examined the FY80-FY82 entrance cohorts but the data allowed us to track these individuals forward through FY85 (Marquis and Kirby, 1989). A primary objective of this research was to measure the effect of reserve compensation and other economic factors on attrition, and similar to the nonprior service research, to identify high-risk individuals. Like the research on attrition among nonprior service reservists, this research focused on attrition to civilian life as well. However, unlike the nonprior attrition research which examined *early* attrition (i.e., attrition before the end of the enlisted term of service), this research examined all separations to civilian life, whether they occurred during or at the end of the enlisted term of service.

About 20 percent of prior service personnel joining the Army Reserve leave within the first year and half leave within the first two years. Attrition is lower among Guardsmen; about 40 percent leave within the first two years. The lower attrition in the National Guard can be partly explained by the difference in the demographic composition of the accession cohorts. The Guard tends to enlist a higher proportion of older enlistees and those with more years of prior service; both of these characteristics tend to decrease attrition.

In the multivariate model, we find that increases in military pay significantly reduce the rate of attrition at any point in time; for example, a 10 percent increase in average drill pay reduces attrition by about 4.5 percent in the Guard and by 9.5 percent in the Army Reserve. Both civilian pay and unemployment are significant and of the expected sign, although the effects are rather small. The results on bonuses are mixed; the affiliation bonus for prior active duty personnel is associated with lower attrition but the effect is not statistically significant. The preponderance of evidence suggests that reenlistment bonuses do not significantly affect attrition. However, it must be noted that eligibility for bonuses had to be imputed because these data were not available.

Age and education were the strongest predictors of attrition. Older individuals (36 years and older) have attrition rates that are 30-40

percent lower than attrition rates for those age 25 or younger. Differences in education have large, significant effects on attrition, after controlling for other variables.

3. RETENTION/REENLISTMENT PATTERNS

HISTORICAL RETENTION PATTERNS

It might be helpful, at this point, to clarify the terminology that we are using in this report. Continuation rates refer to whether the individual stays from year to year. Some of the data below are based on continuation rates. However, *reenlistment* refers to decisions made at the end of the enlisted term of service (ETS). Our main analysis and our models examine only individuals who were facing ETS decisions between June 1986 and September 1987. Retention is a more generic term that encompasses both continuation and reenlistment decisions.

Reserve retention rates at the first term have risen dramatically between FY78 and FY84 (Fig. 3.1). For instance, continuation rates at year of service (YOS) six—the point at which most reservists make first-term reenlistment decisions—rose between FY78 and FY84 from 37.3 percent to 63.1 percent for DoD enlisted personnel. Subsequently the rate has fallen slightly and stands at around 60 percent.

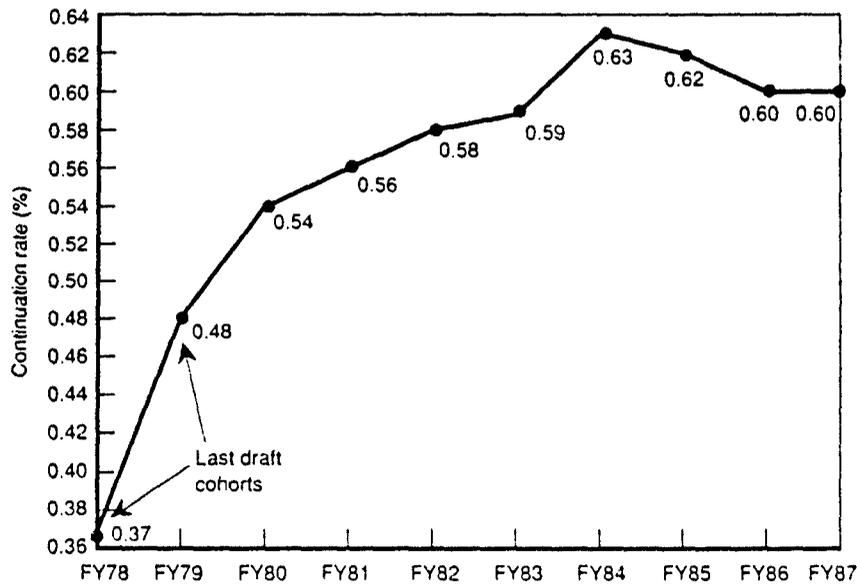


Fig. 3.1—Continuation rates at YOS 6 by fiscal year

This increase in first-term retention, which was a major contributing factor to the reserve force expansion, was caused by a combination of factors. The primary factor was the change from draft-motivated cohorts reenlisting before FY79 to volunteer cohorts in FY79 and after. Other factors that improved retention included reenlistment bonus payments initiated in FY78, higher military pay in FY80 and FY81, and expanded educational benefits in FY84.

There are large variations in retention at YOS six by component with the two Air Force components having the highest continuation rates and the Marine Corps Reserve having the lowest rates. However, for all components, there was a general upward trend between FY78 and FY84, and except for the Marine Corps, a slight downward trend between FY84 and FY88. This difference in retention between components has not been explained by previous research. It might be attributable to component characteristics or differing individual characteristics among component personnel. We address this issue below.

RETENTION PATTERNS OVER THE CAREER

Individuals entering either as prior service or nonprior service accessions have very high loss rates during their initial term of service. We find separation rates of between 30–40 percent for nonprior service individuals in the Army Reserve and Army National Guard during the first two years after enlistment (Grissmer and Kirby, 1988). Only about 30–40 percent of nonprior service accessions in the Army components will survive to make a first-term reenlistment decision. Early loss rates for prior service personnel appear equally high (Marquis and Kirby, 1989). However, annual continuation rates improve between 6–20 years of service (not surprisingly) as individuals with more commitment and taste for service stay and as retirement eligibility draws closer.

Although losses before reaching first-term reenlistment are the largest and most serious category of reserve losses, significant losses also occur at and after first-term reenlistment (Fig. 3.2). Moreover, these losses are among individuals who have significant reserve experience and who presumably have proven that they can perform effectively as reservists. As is evident from Fig. 3.2, continuation rates vary sharply among these groups, rising from 60 percent for those with five years of service to about 90–95 percent for the more senior career force. It is evident that the reserve retirement system makes

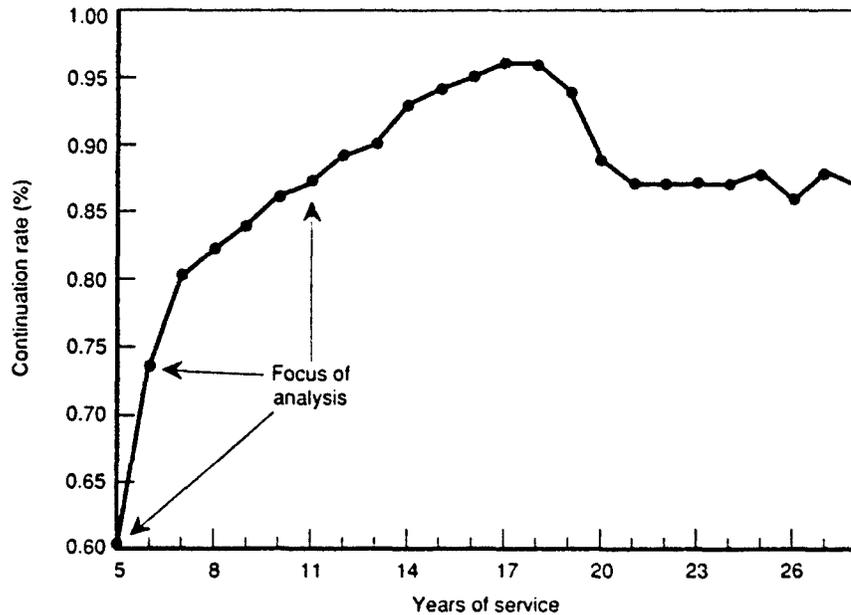


Fig. 3.2—Continuation rates by years of service

continuation rates very high after about 12 years of service. As a result, the focus of our analysis is on those with 4–12 years of service, i.e., those making first-term or early to mid-career reenlistment decisions.¹ During this career stage, we find that only about one-third to one-half of reservists remain.

¹An alternative analysis would be to examine the decision to continue in the Selected Reserve during the time period under study, rather than limiting it to those who are making a *reenlistment* decision at or near the end of their enlisted term of service. We felt that such an analysis would be of little interest primarily because for the groups of interest to us—those with 4–12 years of service—the continuation rate among those *not* facing ETS decisions is very high. For example, it is 94 percent among those with 4–6 years of service and even higher—96 percent—among those with 7–12 years of service. This suggests that most attrition among this group is *involuntary*—perhaps resulting from geographical or job mobility. We are interested in *voluntary* decisions to stay or attrit and these are best captured at the end of the term of service—understanding the factors that affect such decisions can help us design policies that could help improve such retention rates.

DATA SOURCES FOR THE CURRENT ANALYSIS

The primary data source for the analysis presented here is the 1986 Reserve Components Survey of Enlisted Personnel that was fielded in the spring of 1986. The survey population consisted of officer and enlisted personnel who were attending drills. This excluded nonprior service personnel at Initial Active Duty Training (IADT). The basic stratification variable was the reserve component. Within each component, personnel were classified by reserve category (unit members, nonunit members such as Individual Mobilization Augmentees, military technicians, and full-time support personnel). In most strata, the survey design provided for a 10 percent sample. In addition to the basic sample, approximately 13,000 Army Reservists and Guardsmen belonging to specific units from the 1979 Reserve Forces Survey were surveyed. The total enlisted survey sample was 24,500 unit members.²

Data³ were collected on characteristics of civilian employment including hours worked, civilian wage, and type of employer. Reservists were also asked whether they had lost opportunities for overtime or extra pay because of reserve obligations and about the attitudes of their civilian supervisors toward reserve participation. Along with the more usual questions regarding family status and demographics, respondents were asked about their spouses' attitudes toward their participation. An entire series of questions, many repeated from the 1979 survey, focused on their perceptions of problems facing their units and their satisfaction with unit activities. They were also asked about their intentions to reenlist. As is evident, these data are uniquely suited to modeling reenlistment decisions.

To see whether the stated intention to reenlist tracked actual reenlistment behavior, we followed these reservists forward in time through September 1987 using the Reserve Components Common Personnel Data System (RCCPDS) maintained by the Defense Manpower Data Center. One problem with matching the survey data to the September 1987 data is that we are unsure whether the attitudes of spouses and employers or perceptions of unit morale and the unit environment as reported by the reservists are still germane. In some instances, we may be seeing an 18-month lapse between the survey and the time of the reenlistment decision and this may possibly

²We eliminated a number of groups from our analysis sample: the Coast Guard, officers, full-time reservists, and reservists with fewer than four years of service or greater than 12 years of service. Also eliminated were those in paygrades E-1 to E-2.

³The survey questionnaire is included as App. B.

weaken the relationship between reported employer attitudes, for example, and the likelihood of reenlistment.

For the two Army components, we were also able to obtain data (through a matching of the Unit Identification Codes (UIC) of the units of which the reservists were current members) that enabled us to characterize the units as combat, combat support, and combat service support units and to test for differences in the rate of reenlistment in such units.

The sample sizes for the analyses are shown in Table 3.1.

DEFINITION OF THE DEPENDENT VARIABLE

We had originally hoped to use the self-reported intention to reenlist as the dependent variable in the model. However, when we compared intentions to reenlist with actual behavior of reservists in this group, we found some marked discrepancies. The intentions question asked the reservists to estimate their probability of reenlisting on an 11-point scale ranging from 0 to 10. The reservist was asked to rate his or her chance of reenlisting as 0 in 10, 1 in 10, 2 in 10, and so on; that allowed us to translate this into a probability of reenlistment. We then compared the actual reenlistment rate for each intentions group (see Fig. 3.3). We find that almost all individuals underestimated their probability of staying, with the exception perhaps of those who were almost certain to stay. Particularly for those with very low probabilities, the discrepancy between the subjective probability and the actual is quite large. For instance, those who stated their probability of reenlistment to be 0.10 had an actual reenlistment rate of 0.57 (Fig. 3.3).

Table 3.1

**Sample Sizes for the
Reenlistment Models**

Components and Years of Service	Sample Size
All, 4-6 YOS	2,828
All, 7-12 YOS	2,559
Army, 4-6 YOS	2,019
Army, 7-12 YOS	1,655

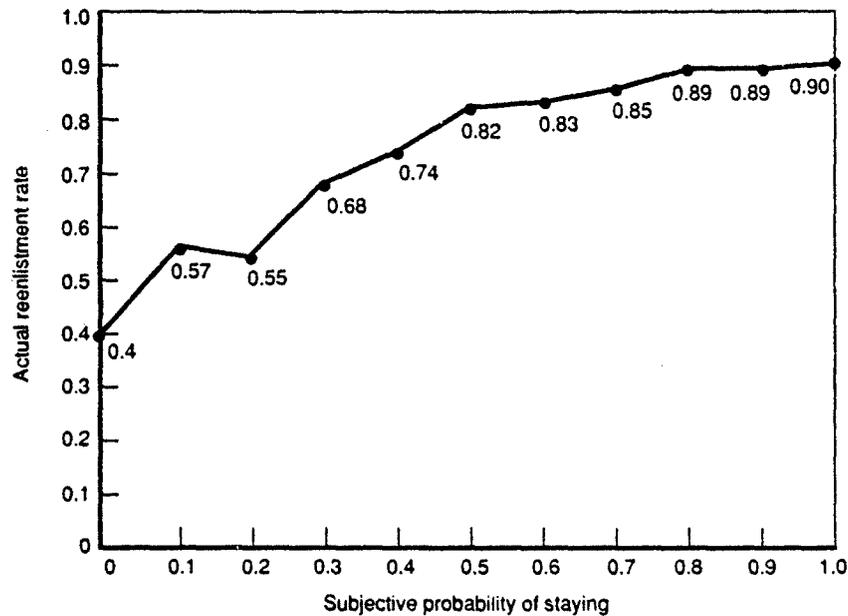


Fig. 3.3—Comparing intentions and behavior

We can offer several hypotheses for this phenomenon.

- Given that 3–18 months lapsed between the time of the survey and the actual reenlistment decision, it is likely that some of the factors negatively influencing the intention to reenlist may have changed for the better (employer or spouse conflicts, problems with the unit, etc.).
- The reserves may offer some very effective intervention or counseling at the actual time the decision is made, so that individuals who are disgruntled are persuaded to stay.
- The data may reflect a “protest effect,” where individuals with serious complaints against the system may underestimate their reenlistment probability; however, at the time of the actual decision, other factors may outweigh the negative ones.

Because of this discrepancy between intentions and behavior, we decided to focus on the actual decision of the reservist as evidenced by the RCCPDS data, not on the intention to stay measured by the survey.

With this much of a background, we would like to reiterate briefly the major objective of the present analysis, i.e., to measure the effect of several variables on the reenlistment rate. The unique contribution this report makes to the literature is the inclusion of perceived spouse and employer attitudes among the explanatory variables as well as the more usual civilian job characteristics, civilian and reserve compensation, and demographic variables. In addition, we measure differences among components and the effect of perceptions of unit training environment on reenlistment. Last but not least, for the two Army components our data allow us to examine the effect of type of unit on the likelihood of reenlistment. These variables are discussed in some detail in the next section.

CHARACTERISTICS OF RESERVISTS AND PATTERNS OF REENLISTMENT

We present evidence in this subsection on the characteristics of the civilian jobs held by reservists, family attitudes, and net return to reserve service, all of which are likely to influence the reenlistment decision. We also show how actual reenlistment rates differ by some of these characteristics.

Characteristics of Civilian Jobs Held by Reservists

The 1986 survey asked respondents about their civilian occupations and to categorize their employers according to public or private sector and relative size of organization. The results are presented in Fig. 3.4.

The figure shows that a little under a quarter of the reservists in our analysis sample work for the government. Almost 60 percent work for private employers with the majority working in small- to medium-sized firms, and another .9 percent are self-employed. Approximately 6.5 percent were not employed in 1985.

As stated above, there are important aspects of civilian jobs that have an impact on the ability of reservists to meet reserve obligations. Individuals whose civilian jobs require more time probably run into more conflicts with reserve obligations and family obligations. Over one-third of reservists employed in the private sector regularly work more than 40 hours a week (Fig. 3.5). The incidence is even higher for those who are self-employed. About 30 percent of those working in local governments also regularly work over 40 hours a week. This

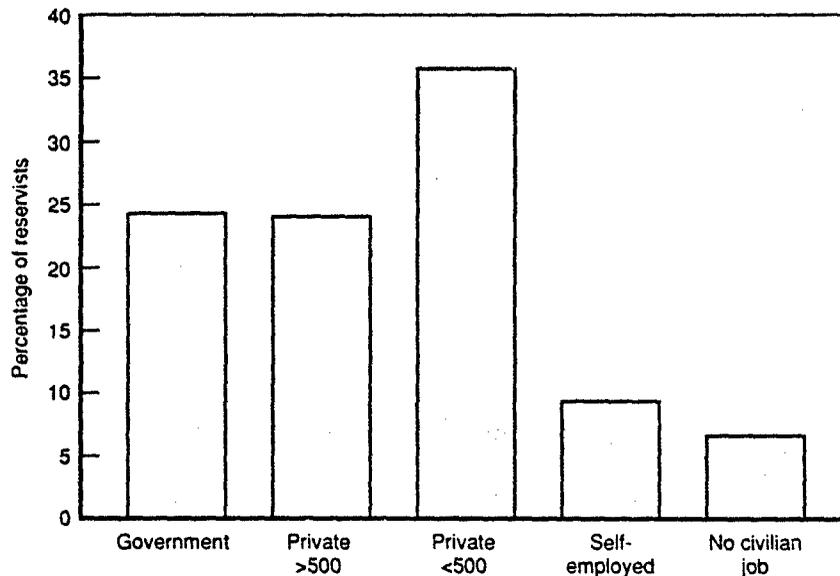


Fig. 3.4—Enlisted reservists by employment status and type of employer

group consists predominantly of teachers, police, and fire personnel. State and federal workers much less frequently work over 40 hours a week.

Quite apart from the time constraint when the reservist routinely works more than 40 hours per week at the primary civilian job, the reservist may face another cost that may tend to exacerbate problems with reserve service. This occurs when some of this overtime is paid at premium wages, the loss of which because of reserve obligations can add up to a substantial cost to the reservist. When asked whether the reservist had lost opportunities for overtime or extra pay because of reserve duty, surprisingly large proportions of them answered that this happened frequently or occasionally (Fig. 3.6). Notice that this is not confined to the employees in private firms, where well over half had faced this cost. Indeed, over 40 percent of the local government employees fall in this category.

Another nonmonetary cost of reserve service can be the unfavorable attitude of the civilian supervisor toward reserve participation. This can result in lower promotion opportunities, unpleasant work

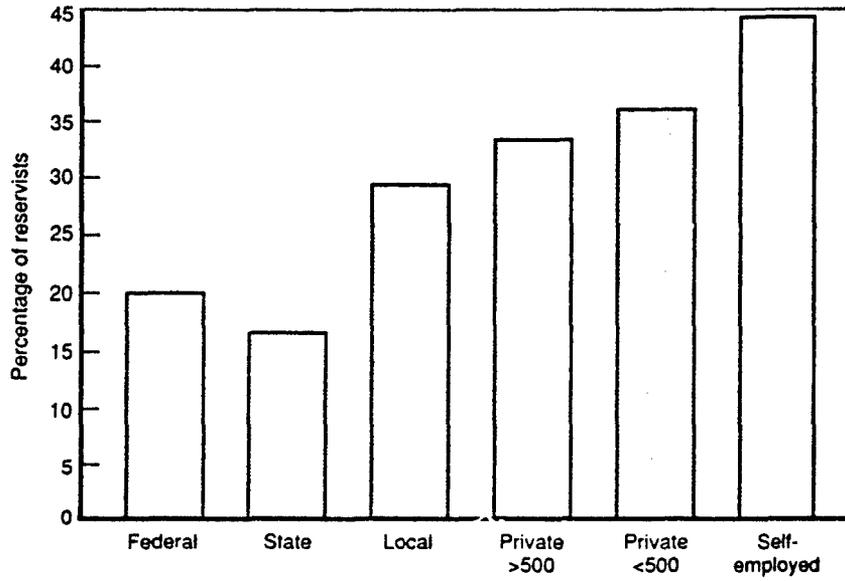


Fig. 3.5—Frequency of working more than 40 hours per week

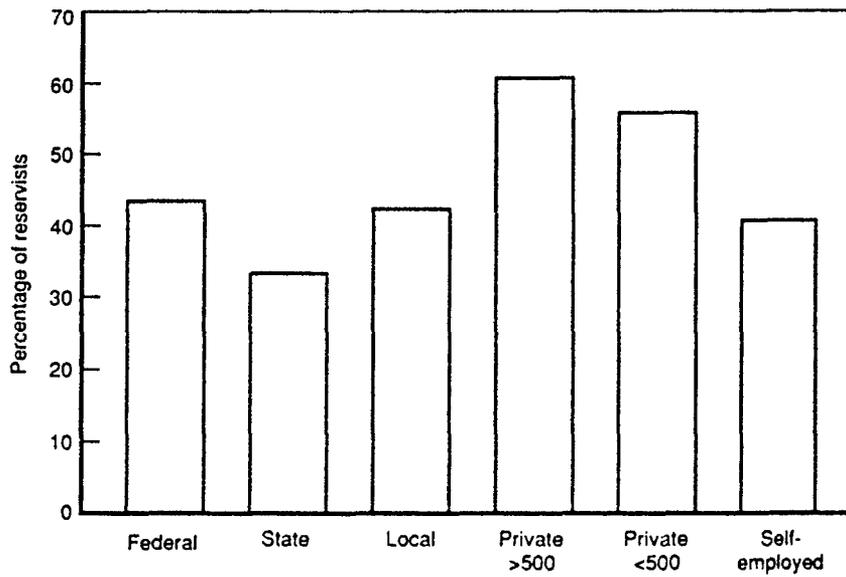


Fig. 3.6—Frequency of lost overtime/extra pay because of reserve obligations

environments, and even job discrimination. We should make it clear that the supervisors themselves were not surveyed; the data we have here represent the *perceived* attitude of the civilian supervisor on the part of the reservist. However, we would argue that the perception itself may be as important in this case as reality. After all, if the reservist believes that the supervisor views his reserve duties with disfavor, this may lead him to reconsider reserve participation.

Approximately 15–20 percent of supervisors have somewhat or very unfavorable attitudes toward their reserve service (Fig. 3.7), as perceived by the reservist. Although the proportion of incidence is not overly large, it is equally distributed among all types of employers. Note that the highest incidence occurs for local government employees, probably because of the difficulty in scheduling that police and fire personnel (who frequently work weekends) face.

Problems with supervisors appear to be slightly more pronounced for junior personnel but are present among all paygrades (Fig. 3.8). The higher levels for junior personnel provide some evidence that employer problems result in separation from reserve service. One

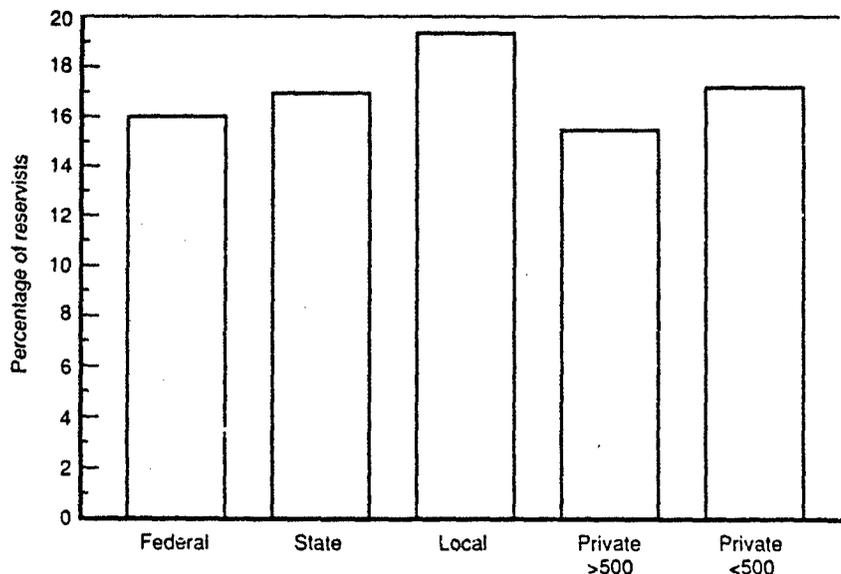


Fig. 3.7—Proportion of civilian supervisors with perceived unfavorable attitudes toward reserve participation

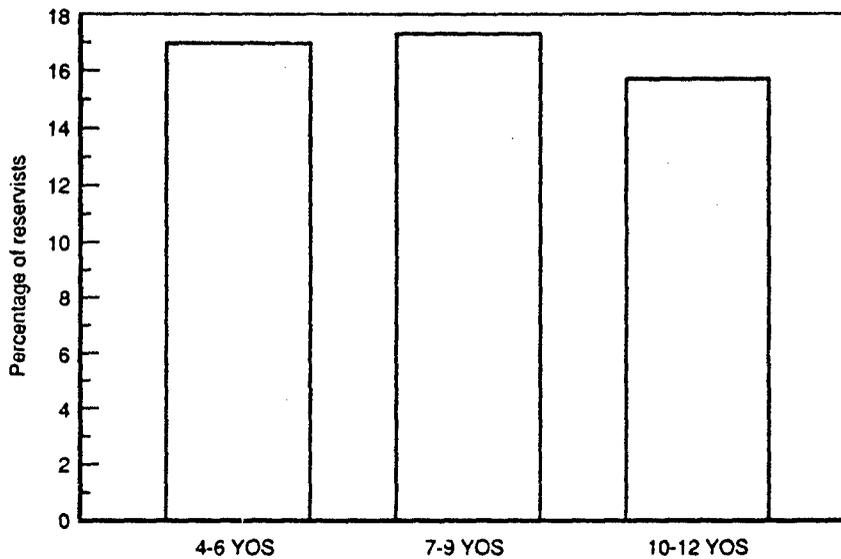


Fig. 3.8—Proportion of civilian supervisors with perceived unfavorable attitudes by years of service of reservists

explanation for the slight drop in unfavorable attitudes between 4–9 years of service and 10–12 years of service may be that reservists with hostile supervisors simply do not reenlist. In exploring the causes of unfavorable attitudes, we found a strong correlation between such attitudes and nonavailability for overtime.

Family Attitudes Toward Reserve Participation

Turning now to family conflicts, we find that younger reservists are much more at risk than older reservists (Fig. 3.9). Over a fifth of younger reservists report that their spouses had somewhat or very unfavorable attitudes toward their reserve participation. Once again, we must stress that these are data reported by the *reservist* regarding the attitude of their spouses.⁴ The pronounced drop in unfavorable

⁴These data may be reflecting some of the reservist's own feelings regarding reserve participation—it is likely that the reservist's own attitude will have a bearing on the spouse's attitude, or at least the *perceived* attitude of the spouse. If so, then this variable is not really independent and may be acting as a proxy for other factors as well. However, we examined the correlation between the reservist's overall attitude toward reserve participation (which was another question on the survey) and his perception of

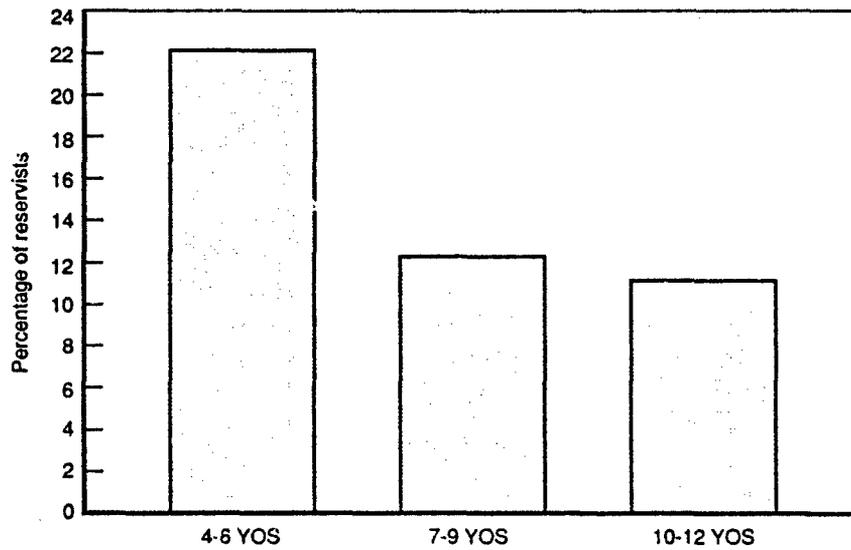


Fig. 3.9—Proportion of spouses with perceived unfavorable attitudes toward reserve participation

attitude between 4–6 years of service and 7–12 years of service probably comes about because reservists with unfavorable spouse attitudes do not reenlist.

NET RETURN TO RESERVE SERVICE

The net income that reservists earn from their reserve service depends greatly on their employers' pay policy during their absence for annual training. Employers' pay policies show great differences (Fig. 3.10). Almost three-quarters of employees of small firms lose all civilian pay during annual training, as do over half of those working for large private firms. The proportion of government employees not paid civilian pay during annual training is surprisingly large, given the fact that federal law authorizes all federal government workers to receive up to 15 days of paid military leave. However, over 80 percent of those working for the federal and state government do indeed

his spouse's attitude. Although the two were correlated, the extent of the correlation was not very high, leading us to believe that this variable is indeed capturing some other dimension important in the reenlistment calculus.

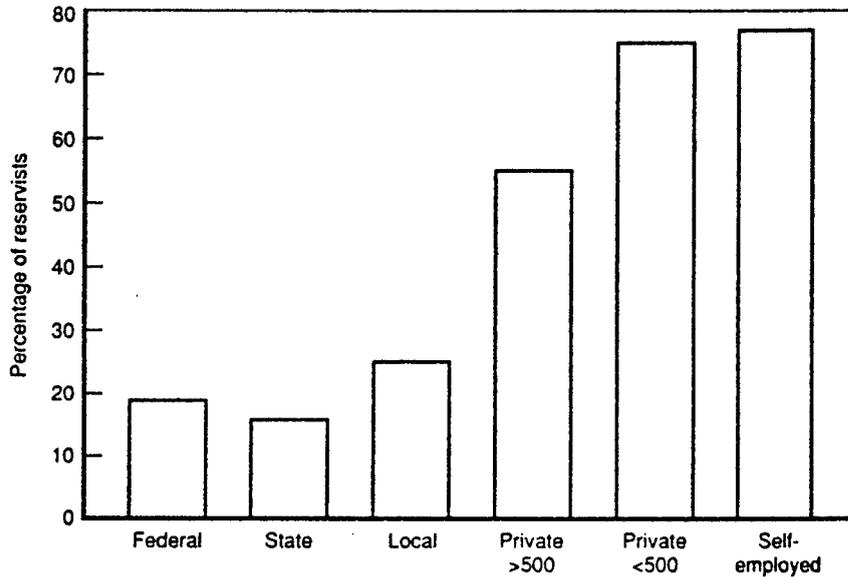


Fig. 3.10—Percentage of reservists receiving no civilian pay for annual training by type of employer

receive civilian pay which boosts their effective reserve income; the proportion is somewhat lower among those working for local governments. The response to this question appears to reflect practice rather than what is authorized.

We had, in Sec. 2, outlined the steps necessary to compute net reserve pay from gross reserve income. This more accurately measures the return to reserve service and is calculated by deducting from gross annual reserve pay taxes, forgone civilian income during annual training, and transportation costs. Gross and net reserve income are shown in Fig. 3.11 for the different paygrades. The figure makes quite clear that reservists net less than one-half of their gross pay.

Loss of overtime pay is not included in our net pay variable because the survey did not ask the amount of pay lost. However, it is our estimate that, if included, it would depress net reserve pay for younger reservists probably to about 40 percent of gross pay.

We also computed a net hourly reserve wage by making certain assumptions regarding the number of hours worked by typical reservists. For full-time workers, the increase in working hours is assumed

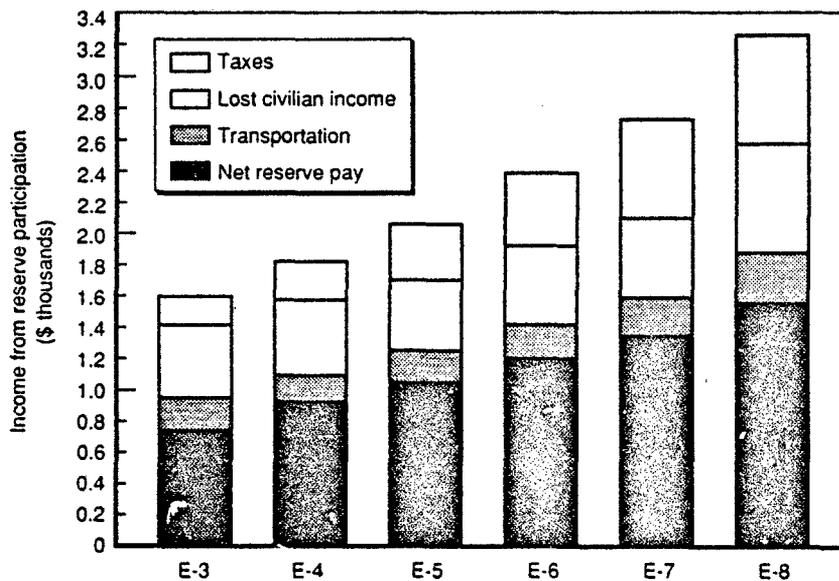


Fig. 3.11—Gross and net reserve income by paygrade

to be all drill time (48 drills, each four hours long = 192 hours), plus four days of annual training (32 hours), totaling 224 hours. The remaining annual training time (ten days) is assumed to substitute for civilian work time. For part-time and unemployed individuals, we assume net additional working hours as the difference between average civilian hours and full-time hours in two weeks.

SOURCES OF EMPLOYER AND FAMILY PROBLEMS

Turning now to the source of employer and family problems, we find that the major factors appear to be the time required for annual training as well as extra time spent on the reserve job, rather than drills (Fig. 3.12). AT is more likely than drills to cause reservists to miss work. In addition, being away for two weeks rather than two days is likely to be much more of a strain on the family. One other explanation may be pay-related. Net reserve pay during AT is much lower than for drills. This is because hourly gross reserve pay for drills is higher than that for AT, and civilian pay is more often lost during AT. This may also contribute to the greater disfavor with which AT is viewed by the family.

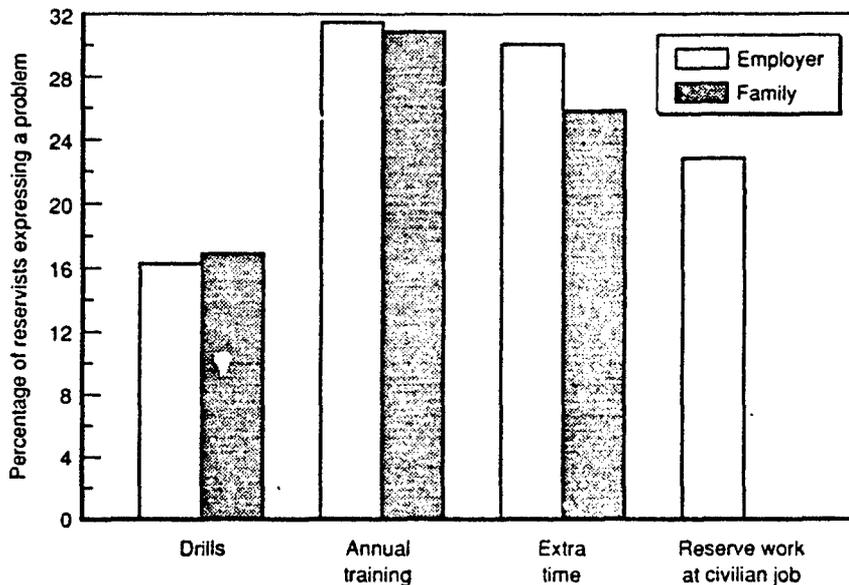


Fig. 3.12—Source of employer and family problems

Reenlistment Rates

In this subsection we present bivariate relationships and show how actual reenlistment rates vary across different groups. We should be careful to note here that what we present are *not* causal relationships—all the data show is how the two variables vary and the pattern of that relationship. From the data, we cannot assume that one is dependent on the other; however, our conceptual framework does point out that several of these factors are indeed hypothesized to affect reenlistment and are included in the multivariate model. Once again, the data in this section concern only those facing ETS decisions between June 1986 and September 1987.

Figure 3.13 shows that reenlistment rates vary in expected ways by grade and years of service. Those in lower paygrades and with less experience have much lower reenlistment rates. The higher rates for more experienced reservists are attributable to their much greater investment in reserve service, their promotion and advancement, and the increased value of retirement benefits.

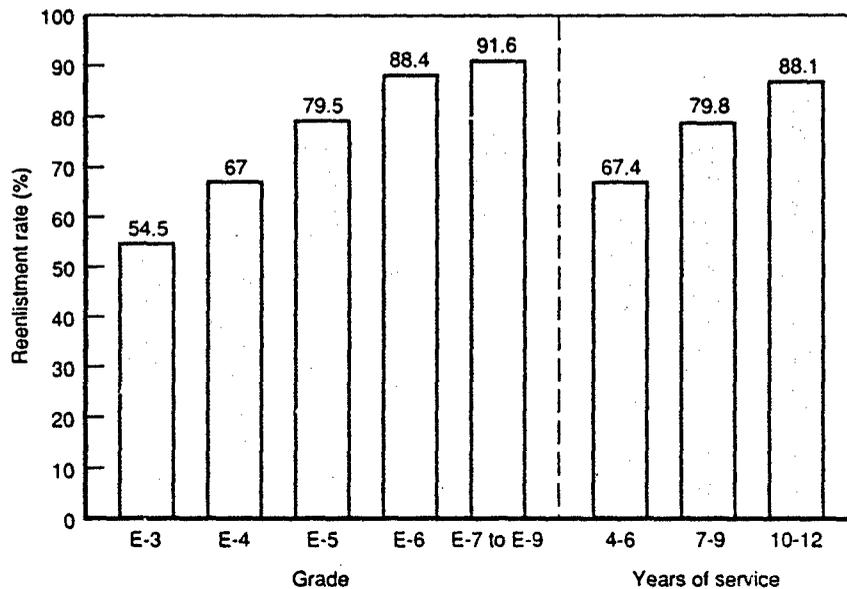


Fig. 3.13—Reenlistment rates by grade and years of service

When we examine differences by component, as shown in Fig. 3.14, we find that reenlistment rates for this sample are lowest for the Army National Guard and Marine Corps. This may be due to inherent differences in the components attributable to mission or structure or to the different experience mix of individuals across components.⁵ For example, the Army Guard and Marine Corps generally have a higher proportion of younger personnel, and these personnel will more often be making first-term decisions when reenlistment rates tend to be low. Conversely, the Air, Naval, and Army Reserve have more senior personnel making later reenlistment decisions.

Differences in reenlistment rates by employer are shown in Fig. 3.15. Those working for the government have higher reenlistment rates than those working for the private sector. Among those in the private sector, those working for larger firms have somewhat lower reenlistment rates than those working for smaller firms. Higher rates for government employees may simply be because more senior reservists—who have higher reenlistment rates—are employed by the

⁵It is certainly true that the different experience mix itself may be a function of differing propensities to reenlist or continue.

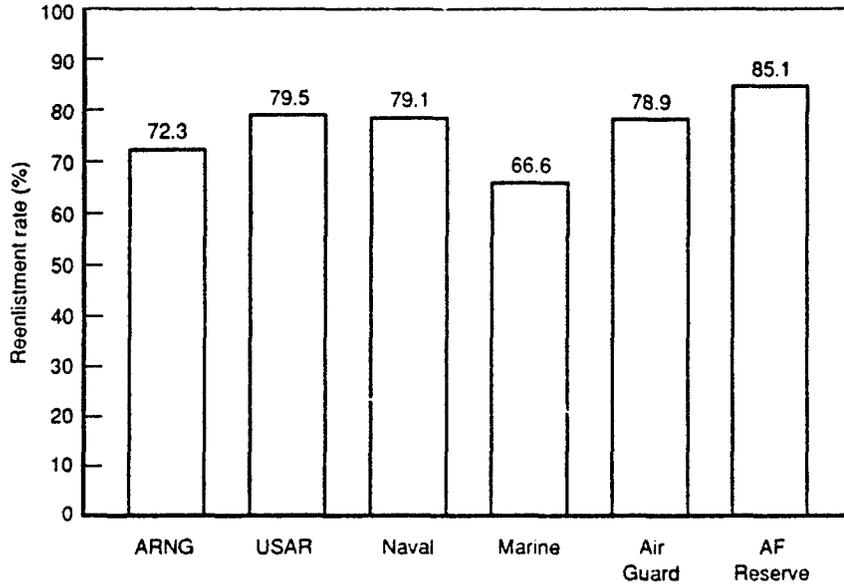


Fig. 3.14—Reenlistment rates by component

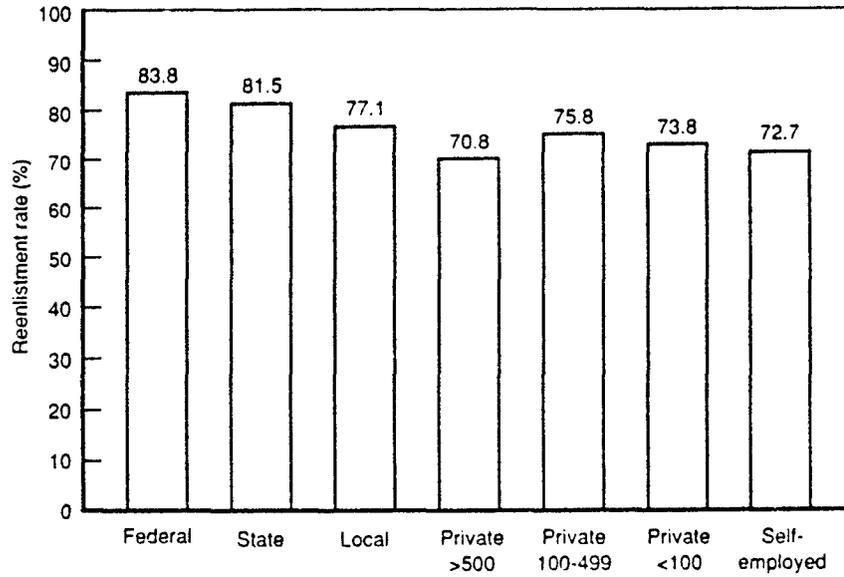


Fig. 3.15—Reenlistment rates by type of employer

government. It is important to investigate whether the differences in reenlistment rates we see here by employer are really attributable to other factors.

Figures 3.16–3.19 underscore the importance of attitudinal variables in models of reenlistment. Once again, we should reiterate that what we measure here is the *perception* of the reservist regarding his civilian supervisor's and spouse's attitudes. If these perceptions are inaccurate or shaped by the reservist's own attitude, our inferences and recommendations based on these data are likely to prove incorrect as well.

Figure 3.16 shows that reservists with more favorable employer attitudes have significantly higher reenlistment rates (79 percent) than those with very unfavorable attitudes (68 percent). It should be noted here that the degree of favorableness/unfavorableness appears to matter. Going from an employer with a neutral attitude to one with a somewhat favorable attitude raises reenlistment rates by 9 percent. Provided these perceptions are accurate, it may be important for the components to work on the attitude of all kinds of supervisors and employers, even those who are not actively hostile to reserve participation.

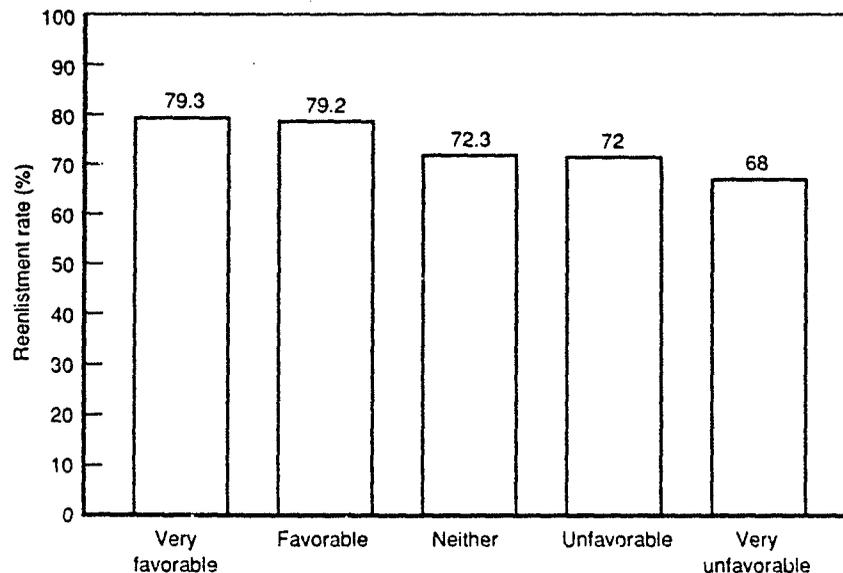


Fig. 3.16—Reenlistment rates by attitude of civilian supervisor

Perceived spouse attitude toward reserve participation (Fig. 3.17) appears to have an even more significant influence on reenlistment rates than employer attitude.⁶ The variation in reenlistment rates by spouse attitude is astonishingly wide. For example, reservists with spouses who are very favorably disposed toward reserve participation have a reenlistment rate of 85 percent compared with the 42 percent rate among those with spouses who have a very unfavorable attitude. Again, differences in degree appear important, suggesting that it may be important to design family and spouse interventions that address the full range of spouse attitudes.

Dissatisfaction with training, equipment, and morale of the unit also appears to have a fairly significant impact on reenlistment. Reenlistment rates are lower for individuals who are dissatisfied with unit training and drill training (Fig. 3.18). We do not know whether

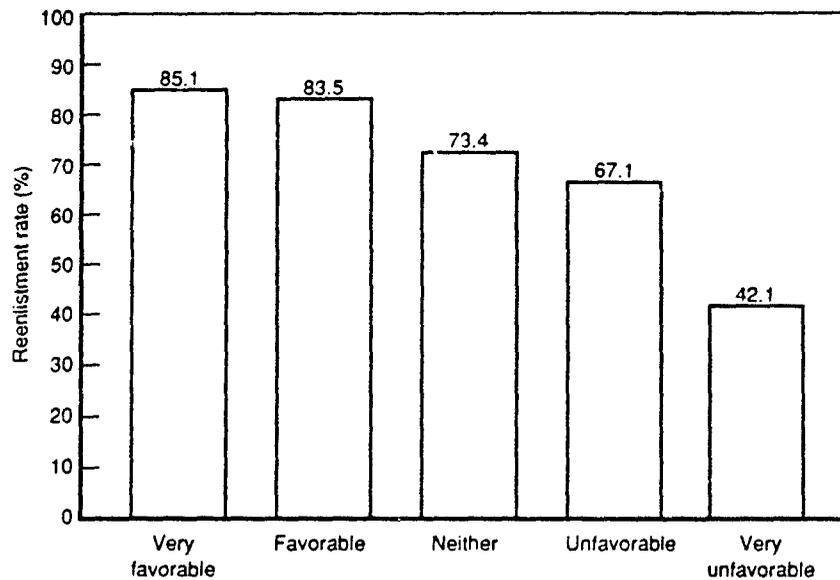


Fig. 3.17—Reenlistment rates by attitude of spouse

⁶We mentioned above the possibility that a reservist may be reporting here a reflection of his own attitude. It seems plausible that a reservist who is unhappy with his reserve participation may perceive his spouse to be unhappy as well. However, although the two appear to be correlated to some extent, the correlation is small enough to reassure us that we are measuring an independent variable here.

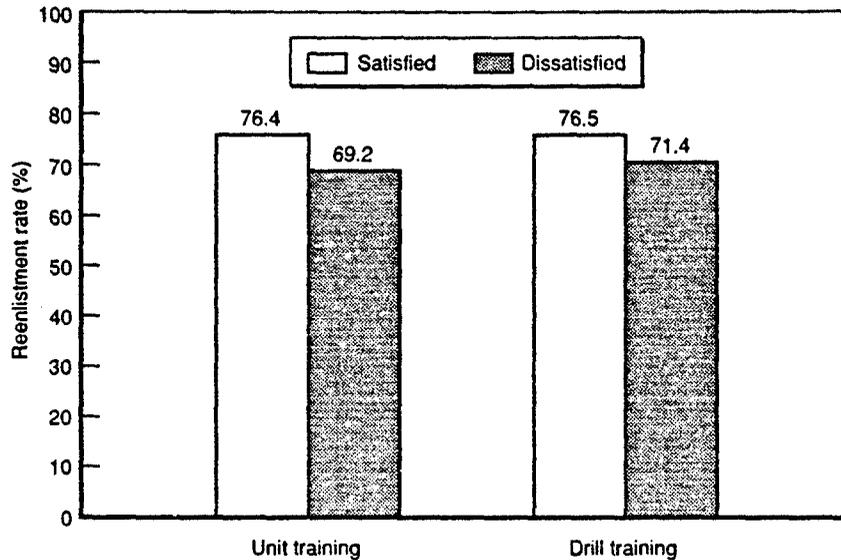


Fig. 3.18—Reenlistment rates by level of satisfaction with training

dissatisfaction is a direct cause of lower reenlistment rates or a way of rationalizing a decision to separate made for other reasons.⁷

Figure 3.19 shows that reenlistment rates are also lower for those who are dissatisfied with the condition of their equipment and for those unhappy with the morale of the personnel in their unit. The magnitude of the difference seen here is approximately the same as that seen in Fig. 3.18. These results support the widely held belief of reserve unit commanders that the quality of training and equipment influences retention and reenlistment.

We mentioned above that for the two Army components, we had obtained data that allowed us to categorize the type of unit in which the reservist was serving as a combat, combat support, or combat service support unit. Figure 3.20 shows reenlistment rates for individuals in these various types of units. Those in combat units have the lowest reenlistment rates and those in combat service support have the highest rates. These differences may be partially explained by the difference in the age and experience mix of the personnel in these

⁷This point is equally true with respect to the reported unfavorable attitudes of employers and spouses.

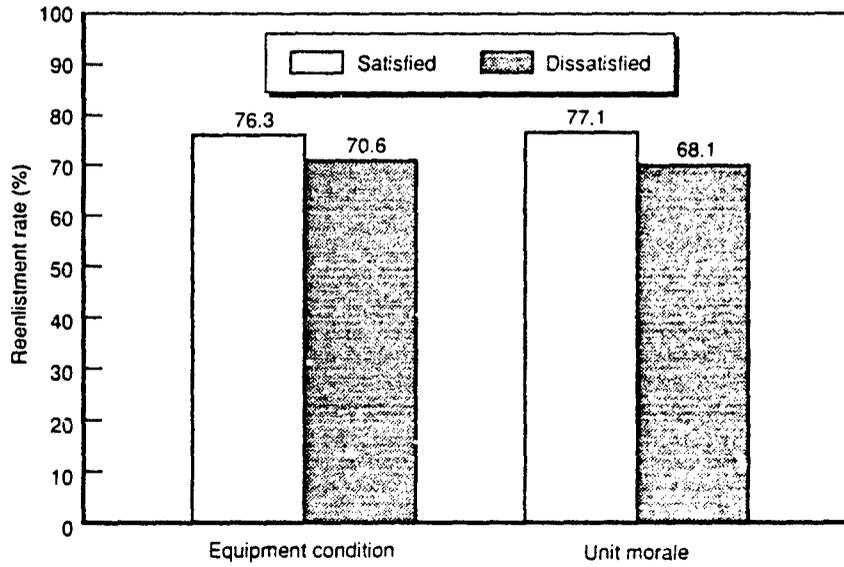


Fig. 3.19—Reenlistment rates by level of satisfaction with equipment and morale of unit personnel

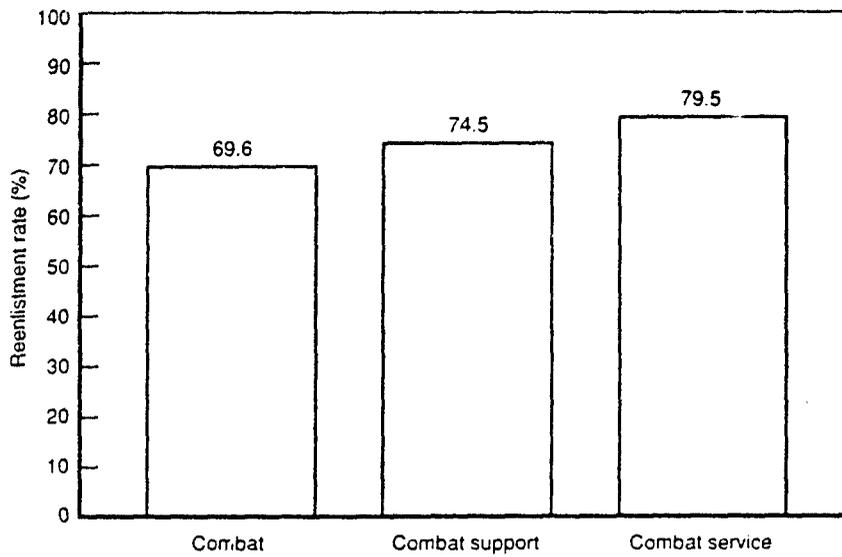


Fig. 3.20—Reenlistment rates by type of unit—Army Reserve and Army National Guard

units (although, of course, these are likely themselves to depend on the differing propensities to reenlist or continue in such units).

In this section, we have defined and identified several variables hypothesized to be related to reserve reenlistment. Several of these show strong one-way correlations with the reenlistment variable. In the next section we test these variables in the context of a multivariate model to determine their individual contribution—other variables held constant—to raising or lowering the likelihood of reenlistment.

4. MULTIVARIATE MODELS OF REENLISTMENT

The multivariate models allow us to measure the net effect of different variables on reenlistment, that is, the effect of a particular factor on reenlistment while controlling for the effects of other variables. Empirically, the reenlistment decision is summarized by a dichotomous dependent variable that categorizes individuals as stayers or leavers. The outcome variable is defined as:

$$Y_{it} = 0, \text{ if individual } i \text{ separated during time period } t, \\ = 1, \text{ if individual } i \text{ stayed during time period } t.$$

Because our sample is restricted to those facing ETS decisions during the time period under study, we assume that the individual reenlisted if he was still a reservist as of September 1987.¹ If he is not on the RCCPDS file, we assume that he separated from the reserve and, therefore, did not reenlist.

The logistic regression (logit) model is an appropriate choice for the functional form, since it restricts the value of the predicted probability to between zero and one. This model relates the reenlistment decision of the i^{th} individual, Y_i , to a vector of characteristics for that individual, X_i . The assumed relationship is:

$$Y_i = p(x_i) + \varepsilon_i, \\ p(x_i) = P[Y_i = 1 | x_i] \\ = \frac{1}{1 + e^{-(\beta_0 + \sum \beta_j X_{ij})}}$$

where $P(X_i)$ = probability of reenlistment of a specific reservist i ,
 X_{ij} = values of the explanatory variable j for reservist i ,
 β_j = estimated coefficients for the X_j ; and
 β_0 = estimated constant term.

¹We do not make a distinction here, as is made in the active force, between an extension (a one-year extension of the original contract) and a reenlistment (signing up for a longer term of service under a new contract). Because a one-year term is perfectly valid in the reserves, reservists can *reenlist* for a one-year term.

As mentioned above, we estimated models of reenlistment separately for reservists with 4-6 years of service and for those with 7-12 years of service. Separate models were also estimated for all components and for the two Army components only. This latter was to allow us to test for the effect of type of unit on reenlistment (these data were available for the Army Reserve and Army National Guard only). The logistic regression coefficients are given in App. A. However, because these coefficients sometimes do not have an easy interpretation, we have transformed them into reenlistment probabilities. These probabilities are calculated from the regression coefficients using the equation shown above and represent a convenient and useful summary of the regression model effects.

RESULTS: ALL COMPONENTS

Table 4.1 presents estimation results for the reenlistment models estimated for reservists in all components. The table entries are estimated reenlistment probabilities for an individual with the designated characteristics. In this and the subsequent table, a reference individual is defined and the reenlistment probability calculated for that individual. Reenlistment probabilities are then calculated for an individual who differs from that reference individual in *one* characteristic, *holding all others constant at the reference category values*.

4-6 YOS Model

The reenlistment probability of the reference individual based on the 4-6 YOS model is 0.70. The reference reservist is an E-5, with 4-6 years of total military service, with no active service, serving in the Army Guard, male, 26 years old, single, with no dependents. He is employed in a large private firm with 500 or more employees, with a civilian supervisor who has a neutral attitude toward his reserve participation, and who does not lose overtime opportunities because of reserve obligations. He works 38.9 hours a week and earns the mean net hourly civilian wage for the sample, about \$5.09, and a net reserve wage of \$4.28. He is neither overly satisfied nor dissatisfied with the training, equipment, or the morale of the unit. He believes he is not eligible for a bonus, should he reenlist.²

²This variable measuring eligibility for a reenlistment bonus is based on self-reported data from the survey. It is an unsatisfactory measure of real eligibility or indeed receipt of a bonus; unfortunately, it is all we have.

Table 4.1
Reenlistment Among Reservists: All Components,
4-6 and 7-12 Years of Service

Characteristic	4-6 YOS	7-12 YOS
Average reenlistment probability ^a	0.70	0.90
Paygrade		
E-3	0.55*	0.62*
E-4	0.67	0.77*
E-5 ^b	0.70	0.90
E-6	0.72	0.92
E-7 to E-9	—	0.91
Component		
Army Reserve	0.74	0.92
Army National Guard ^b	0.70	0.90
Naval Reserve	0.68	0.94
Marine Corps Reserve	0.71	0.85
Air National Guard	0.70	0.90
Air Force Reserve	0.76	0.92
Years of service		
7-9 years total	—	0.87*
10-12 years total ^b	—	0.90
No active service ^b	0.70	0.90
1-4 years of active service	0.73	0.89
5 or more years of active service	—	0.88
Satisfaction with unit/reserve		
Not dissatisfied with training during drills ^b	0.70	0.90
Dissatisfied with training during drills	0.66	0.90
Not dissatisfied with mechanical condition of equipment ^b	0.70	0.90
Dissatisfied with mechanical condition of equipment	0.65	0.89
Not dissatisfied with morale of unit personnel ^b	0.70	0.90
Dissatisfied with morale of unit personnel	0.66	0.83*
Perceived bonus eligibility		
Not eligible ^b	0.70	0.90
Uncertain	0.72	—
Eligible	0.74	—
Demographic characteristics		
Male ^b	0.70	0.90
Female	0.74	0.87
Age (years) ^c	0.70*	0.90
High school nongraduate	0.66	0.86
High school graduate ^b	0.70	0.90
Some college education	0.68	0.88

Table 4.1—continued

Characteristic	4-6 YOS	7-12 YOS
<i>Single</i> ^b	0.70	0.90
Married	0.63	0.89
Spouse working full-time	0.58	0.88
Spouse working part-time	0.64	0.91
<i>No dependents</i> ^b	0.70	0.90
One dependent	0.77*	0.93*
Two or more dependents	0.77*	0.93
Spouse attitude very favorable	0.77*	0.91
Spouse attitude somewhat favorable	0.79*	0.90
<i>Spouse attitude neither favorable nor unfavorable</i> ^b	0.70	0.90
Spouse attitude somewhat unfavorable	0.61	0.83
Spouse attitude very unfavorable	0.27*	0.71*
Civilian job		
Not working in 1985	0.65	0.89
<i>Working in 1985</i> ^b	0.70	0.90
Attending school at time of survey (1986)	0.66	0.89
Not working at time of survey (1986)	0.70	0.91
<i>Working at time of survey (1986)</i> ^b	0.70	0.90
Net hourly reserve wage (\$) ^c	0.70	0.90
Average hourly civilian wage (\$) ^c	0.70	0.90
Weekly hours worked on civilian job (hours) ^c	0.70	0.90
<i>No overtime available</i> ^b	0.70	0.90
Availability of overtime	0.67	0.90
<i>Given time off for annual training</i> ^b	0.70	0.90
Used vacation days for annual training	0.70	0.89
Civilian supervisor attitude very favorable	0.75	0.91
Civilian supervisor attitude somewhat favorable	0.77*	0.92
<i>Civilian supervisor attitude neither favorable nor unfavorable</i> ^b	0.70	0.90
Civilian supervisor attitude somewhat unfavorable	0.70	0.90
Civilian supervisor attitude very unfavorable	0.73	0.87
Federal government	0.71	0.93
State government	0.75	0.92
Local government	0.71	0.88
<i>Large firm (500 or more employees)</i> ^b	0.70	0.90
Medium firm (100-499 employees)	0.69	0.92
Small firm (1-99 employees)	0.70	0.91
Self-employed	0.68	0.90

*Significant at 0.05 level.

^aOf the reference individual.^bReference characteristic.

Service-Related Variables. Service-related variables appear to have small and generally insignificant effects on reenlistment—a somewhat unexpected finding. For example, there is little difference in the probability of reenlistment of similar individuals across components and what differences there are are not statistically significant. An individual in the Army Guard, in the 4–6 YOS group (the reference individual), has a reenlistment probability of 0.70; a similar individual serving in the Naval Reserve has a slightly lower probability of reenlisting—0.68. Individuals in the Army Reserve and the Air Force Reserve appear to have the highest probabilities of reenlistment, 0.74 and 0.76. These small reenlistment differences must be attributed to characteristics of the components themselves, since all other characteristics are the same. It is important to remember that these differences are for a given individual described above (an E-5, single, 26 years old, etc.). If components differ substantially in age or experience mix, then we would need to factor in these other variables before we could obtain an overall component reenlistment probability.

We find expected differences in the probability of reenlistment by grade and years of service, although again these are generally not significant. This runs counter to the large differences we had found in the reenlistment rates reported in Sec. 3, suggesting that differences in characteristics of individuals who make up the different grades and Years of Service groups may account for a large proportion of the variance in reenlistment rates. In particular, different employer and spouse attitudes across years of service because of self-selection may be important in accounting for these smaller differences. The only significant difference that we find here is between an E-3 who has a reenlistment probability of 0.55 and an E-5, the reference individual with a probability equal to 0.70—a difference of over 20 percent.

We included a number of variables that attempted to capture the individual's satisfaction with the training environment and unit morale. These variables have a small, although insignificant, effect on the propensity to reenlist. For example, if an individual is dissatisfied with the training received during drills, his reenlistment probability falls to 0.66 as compared with 0.70 for those who are satisfied with unit training, a decrease of a little over 5 percent. We perceive effects of the same magnitude with respect to the other variables. Between 15 to 20 percent of the sample are dissatisfied with these various aspects of the unit.

As mentioned above, we were able to estimate the effect of a bonus only indirectly. Respondents to the survey were asked whether they were eligible for a bonus at the reenlistment point. We do not know how accurate these perceptions are and to compound the problem, bonuses that are targeted toward certain skills or units change frequently. We find a small difference in the expected direction, with individuals who were uncertain or felt they were eligible for a bonus being 3–6 percent more likely to reenlist than those who claimed not to be eligible for a bonus. If this variable is highly correlated with actual eligibility or receipt, then the difference does measure the effect of a reenlistment bonus.

Demographic Characteristics. Females, who make up about 13 percent of the analysis group, have a slightly higher probability of reenlistment but the difference is not statistically significant. Nor are there significant differences among reservists with different levels of education although both those with a higher educational attainment and those with a lower educational attainment than a high school degree have a *lower* probability of reenlistment.

Age has an important, although small, effect on reenlistment with older individuals more likely to reenlist. Note that this effect is obtained even after controlling for all other variables. The elasticity of the probability of reenlistment with respect to age is 0.22. In other words, a 10 percent increase in age would increase the probability of reenlistment by 2.2 percent, from 0.70 to 0.72.

The importance of treating the reenlistment decision as a joint decision made by the family comes out clearly in the table. We find that—other things equal—married reservists in general have lower probabilities of reenlistment although these differences appear not to be statistically significant.

The presence of dependents³ clearly is an important motivating factor in reenlistment. The reenlistment probability for individuals with dependents is about 10 percent higher than for those without dependents.

The perceived attitude of the spouse turns out to have the largest effect on reenlistment. There are very large differences evident here. We compare these reenlistment probabilities with those of a married individual, rather than the reference individual. Having a spouse who has a favorable attitude toward reserve participation raises

³Dependents do not include spouses—see Q.89 in the attached survey questionnaire in App. B.

reenlistment probabilities to 0.79, an increase of 13 percent, whereas having a spouse with a very unfavorable attitude reduces it to 0.27, a decrease of over 60 percent. (It must be noted that only about 9 percent of spouses in our sample had unfavorable or very unfavorable attitudes.) The large difference that exists in the probability of reenlistment between reservists who had spouses who were favorable and those whose spouses were neither favorable or unfavorable suggests that—provided that this variable is indeed measuring spouse attitudes correctly and is not merely a reflection of the reservist's own attitude—programs that are effective in changing spouse attitudes could be very effective at raising reenlistment rates.

Civilian Job Characteristics. We tested a number of variables having to do with whether the individual was employed during the year before the survey or in 1986, the year of the survey. We find that individuals who were unemployed the previous year are less likely to reenlist whereas individuals who were unemployed at the time of the survey are more likely to do so, presumably because the reserve offers some level of income—again these differences are not significant.

For those working, the economic variables such as net reserve wage and primary hours worked on the civilian job have the expected effect, although the effect is rather small and insignificant. For example, a 10 percent increase in the net reserve wage would increase the average reenlistment probability by 0.2 percent; a 10 percent increase in the number of hours worked on the civilian job would reduce it by -0.9 percent. The relationship between net civilian wage and reenlistment is, somewhat surprisingly, positive, although again the effect is very small. For example, a 10 percent increase in the net civilian wage would increase the probability of reenlistment by 0.08 percent. Having to lose overtime opportunities reduces the probability of reenlistment by about 4 percent, but electing to take vacation days for AT, by itself, does not seem to have any effect on reenlistment. We would note that, while the reservist who elects to use vacation time for annual training sacrifices time, compensation is equivalent to paid military leave in this respect.

The civilian supervisor's attitude—independent of other employer-related factors in the regression—makes some difference, but certainly not as much as simple cross tabulations show. Having a favorably disposed supervisor appears to increase the reenlistment rate by 10 percent; on the other hand, the effect of having a negatively disposed supervisor also increases the probability of

reenlistment by a little over 4 percent. Three things must be kept in mind when looking at these results. First, we have already controlled for working hours, type of employer, and the loss of overtime opportunities. So the effect of these on reenlistment and differences in attitudes that might be related to these variables have been already taken into account. Second, the data on supervisors' attitudes were collected at the time of the survey. However, by the time of actual reenlistment, a considerable time had elapsed for some of these individuals and it is likely that jobs, supervisors, or circumstances had changed. Third, as we pointed out above, this variable measures the perception of the individual with respect to his civilian supervisor's attitude, not the attitude itself. If the individual was incorrect in his perception or was reporting a reflection of his own feelings at the time of the survey, then we might obtain such inconsistent results.

The differences in reenlistment probabilities by type of employer tend to be rather small, once other factors are held constant. These small differences indicate that the model has captured most of the employer-related reenlistment factors, and the remaining characteristics tend to have small effects.

7-12 YOS Model

The average reenlistment probability for the reference individual in this model is, as one would expect, considerably higher: 0.90. The reference individual has the same characteristics of the reference individual in the model described above, but for the continuous variables. He is older, 34 years old, earns slightly more per hour in both his reserve job (\$4.91) and in his civilian job (\$6.49) and works slightly longer hours (41 hours).

Service-Related Variables. The results here mirror those we found earlier, with reservists in the lower paygrades being much less likely to reenlist. For example, the reenlistment probabilities for those in paygrades E-3 and E-4 are between 12-30 percent lower than for an E-5 with exactly similar characteristics. However, the Naval Reserve, unlike what we found earlier, tends to have the highest probability of reenlistment, with the Marine Corps Reserve having the lowest. We find that those with 7-9 years of service have reenlistment probabilities that are 3 percent lower than those with 10-12 years of service, perhaps reflecting either self-selection or the effect of increased vesting in the retirement system. A little surprisingly, those who had active duty experience tend to have slightly lower reenlistment probabilities, although these effects are very small.

We find that the variables measuring dissatisfaction with unit training and equipment have little or no effect, whereas the variable measuring dissatisfaction with the morale of the unit has a rather large and significant effect. Being unhappy with unit morale tends to decrease the probability of reenlistment by about 8 percent.

Demographic Characteristics. The effects of age, education, marital status, and presence of dependents mirror those in the 4-6 YOS model. Having dependents raises the reenlistment probability by a little over 3 percent. Negative spouse attitudes again prove important. Having a spouse who is unfavorably disposed toward the Guard/Reserve reduces the reenlistment probability by 8 percent; for those whose spouse is very negatively disposed toward the Guard/Reserve, the difference is even larger: 21 percent.

Civilian Job Characteristics. By and large, these effects reflect what we found earlier. The economic variables have very small effects on reenlistment and generally work in the expected direction. The availability of overtime has, surprisingly, little or no effect on reenlistment. The attitude of the civilian supervisor has a small effect on reenlistment, although those with an unfavorably disposed supervisor tend to have a lower probability of reenlistment.

As regards the type of employer, it is interesting to note that reservists working for local governments do have a slightly lower probability of reenlistment. As mentioned earlier, these tend to be firemen and policemen whose schedules often conflict with reserve obligations.

Some Examples of Cumulative Effects

We have discussed the problems of showing net effects, controlling for all other variables and changing only one or at the most two characteristics at a time. Just as an example, we have calculated reenlistment probabilities for some typical individuals in the two samples. These are shown in Table 4.2. The range that emerges provides a clearer picture of the total effect on reenlistment of these variables. For example, having dependents and a favorable employer raises the average probability of reenlistment from 0.70 to 0.82, an increase of 17 percent. If the reservist faces loss of overtime because of reserve obligations, then his probability would fall slightly to 0.81. On the other hand, a single reservist facing negative attitudes at work and loss of overtime would have a much lower probability of reenlistment (0.67). The range for married reservists is even wider. A married reservist, with dependents and having a supportive spouse and

employer, whose spouse is not working, has a much higher probability of reenlistment—0.88, compared with 0.63 for a married reservist whose spouse and employer are neutrally disposed toward his reserve obligations and who does not have any dependents. The presence of a spouse who works full-time depresses the reenlistment probability in all cases. In the worst case scenario, a married reservist, with no dependents, with a spouse and an employer who view his reserve obligations with disfavor, will have a reenlistment probability of only 0.57. If he, in addition, faces the loss of overtime, then the probability drops even further to 0.53. If the spouse does not work, holding the other characteristics constant, we find the comparable probabilities of reenlistment to be 0.62 and 0.58. The range is indeed, quite wide.

RESULTS: ARMY SELECTED RESERVE COMPONENTS

We obtained data that allowed us, for the two Army components, to characterize the individual's type of unit at the time of reenlistment. The sample sizes for this group are a little over 2,019 individuals for the 4-6 YOS model and 1,655 for the 7-12 YOS model. Table 4.3 presents the results for this group. The reenlistment probability for the reference individual in the 4-6 YOS model is almost the same as seen above in the all components, 4-6 YOS model: 0.69, although somewhat lower in the 7-12 YOS model, 0.87 compared with 0.90 in the all components model. The reference individuals in the respective models have the same characteristics as those described in the all components models except that in these models, the individual is serving in a combat unit.

Because these results are so similar to those discussed above, we limit our discussion to results that are either different or new.

The effect of education appears to be more pronounced in these models than in the all components models. For example, having some college education reduces the probability of reenlistment by between 7-9 percent in the two models compared with 2-3 percent in the all components model. The differences are statistically significant in the Army models.

Satisfaction plays the same kind of role in these models that we saw above: being dissatisfied with training or equipment reduces the probability of reenlistment in a combat unit by about 3-6 percent. Being dissatisfied with the morale of unit personnel has a marked effect on reenlistment in the 4-6 YOS model: We find a difference of about 10 percent between the reenlistment probability of those who were satisfied with the morale of the unit and those who were not.

Table 4.3
Reenlistment Among Reservists: Army Components,
4-6 and 7-12 Years of Service

Characteristic	4-6 YOS	7-12 YOS
Average reenlistment probability ^a	0.69	0.87
Paygrade		
E-3	0.46*	0.35*
E-4	0.64	0.72*
E-5 ^b	0.69	0.87
E-6	0.67	0.89
E-7 to E-9	—	0.89
Component		
Army Reserve	0.72	0.87
Army National Guard ^b	0.69	0.87
Years of service		
7-9 years total	—	0.81
10-12 years total ^b	0.69	0.87
No active service ^b	0.69	0.87
1-4 years of active service	0.72	0.84
5 or more years of active service	—	0.85
Satisfaction with unit/reserve		
Not dissatisfied with training during drills ^b	0.69	0.87
Dissatisfied with training during drills	0.68	0.85
Not dissatisfied with mechanical condition of equipment ^b	0.69	0.87
Dissatisfied with mechanical condition of equipment	0.64	0.86
Not dissatisfied with morale of unit personnel ^b	0.69	0.87
Dissatisfied with morale of unit personnel	0.62*	0.82
Type of Unit		
Serving in combat unit ^b	0.69	0.87
Serving in combat support unit	0.72	0.92*
Serving in combat service support unit	0.77*	0.91*
Perceived bonus eligibility		
Not eligible for bonus ^b	0.69	0.87
Uncertain whether eligible for bonus	0.68	—
Eligible for bonus	0.73	—
Demographic characteristics		
Male ^b	0.69	0.87
Female	0.70	0.82
Age (years) ^c	0.69*	0.87
High school nongraduate	0.65	0.79
High school graduate ^b	0.69	0.87
Some college education	0.63*	0.81*

Table 4.3—continued

Characteristic	4-6 YOS	7-12 YOS
<i>Single</i> ^b	0.69	0.87
Married	0.60*	0.86
Spouse working full-time	0.58	0.85
Spouse working part-time	0.62	0.89
<i>No dependents</i> ^b	0.69	0.87
One dependent	0.79*	0.92*
Two or more dependents	0.75	0.90
Spouse attitude very favorable	0.75*	0.89
Spouse attitude somewhat favorable	0.76*	0.89
<i>Spouse attitude neither favorable nor unfavorable</i> ^b	0.60	0.87
Spouse attitude somewhat unfavorable	0.57	0.76
Spouse attitude very unfavorable	0.22*	0.58*
Civilian job		
Not working in 1985	0.63	0.87
<i>Working in 1985</i> ^b	0.69	0.87
Attending school at time of survey (1986)	0.66	0.83
Not working at time of survey (1986)	0.75	0.87
<i>Working at time of survey (1986)</i> ^b	0.69	0.87
Net hourly reserve wage ^c	0.69	0.87
Average hourly civilian wage ^c	0.69	0.87
Weekly hours worked on civilian job ^c	0.69	0.87
<i>No overtime available</i> ^b	0.69	0.87
Availability of overtime	0.66	0.87
<i>Given time off for annual training</i> ^b	0.69	0.87
Used vacation days for annual training	0.70	0.89
Civilian supervisor attitude very favorable	0.75	0.90
Civilian supervisor attitude somewhat favorable	0.79*	0.92*
<i>Civilian supervisor attitude neither favorable nor unfavorable</i> ^b	0.69	0.87
Civilian supervisor attitude somewhat unfavorable	0.73	0.88
Civilian supervisor attitude very unfavorable	0.76	0.87
Federal government	0.69	0.89
State government	0.73	0.88
Local government	0.69	0.85
<i>Large firm (500 or more employees)</i> ^b	0.69	0.87
Medium firm (100-499 employees)	0.67	0.90
Small firm (1-99 employees)	0.70	0.88
Self-employed	0.68	0.88

*Significant at 0.05 level.

^aOf the reference individual.^bReference characteristic.^cReference value for continuous variables is the mean.

There are significant and large differences in the probabilities of reenlistment of individuals serving in different types of units. For example, in the 4-6 YOS model, reenlistment probabilities in combat support and combat service support units are significantly higher by about 4-12 percent than in combat units. In the 7-12 YOS model, this difference is a little over 6 percent. These results suggest that there are inherent differences in the relative attractiveness of units and these differences are related to the type of unit and presumably the types of jobs available in those units. Combat support and combat service support unit jobs, for example, are likely to have a higher degree of civilian transferability. In any case, these results lend support to the idea that some kind of targeted bonuses might be useful in compensating for the inherent differences among units.

5. CONCLUSIONS AND POLICY IMPLICATIONS

Perhaps the most important conclusion one can draw from this analysis of reenlistment behavior is the importance of the set of family variables in influencing reenlistment decisions. The perceived attitude of the spouse, for example, is the single most important predictor of reenlistment probability. We need to caveat these results to some extent. If the variable that we have included in our models does not really reflect the attitude of the spouse but rather is a reflection of the individual's own satisfaction/dissatisfaction with the reserve, then our findings are not as clear-cut. However, there is some evidence, from the question in the survey regarding the individual's own overall level of satisfaction/dissatisfaction with his Guard/Reserve participation (Q.125 in the survey, App. B), that the perceived attitude of the spouse is indeed an independent variable or at least is measuring a dimension other than the reservist's own feelings.

The results suggest that the emphasis that the reserves have placed on family-related problems and on designing effective interventions is well placed. Interventions can include implementing support groups, training reservists in communication skills, making commanders aware of these issues, and perhaps implementing social activities to help the family feel a part of the reserves. Marital status, presence of dependents, and the working status of the spouse also are strong predictors of reenlistment.

Indeed, family issues may remain more hidden than employer issues because of the greater social acceptability of leaving due to employer problems. Evidence in this survey indicates that spouse attitude exerts a far stronger influence than employer attitudes. However, employer-related issues constitute not only supervisor attitudes but also unfavorable leave policies, lost overtime, schedule conflicts, and reduced promotion opportunity. Although spouse attitude may more fully reflect family effects, employment-related issues are only partially captured by supervisor attitude. So efforts to influence employers should be more broadly based. Because the family problems remain more covert, and perhaps are more complex, it is important to do some detailed case studies of family issues. These would involve discussion with family members about reserve service and with unit commanders regarding attitudes toward family problems.

Our findings have three implications for the current programs oriented toward employer support (NCESGR). The first is that employer support remains an issue for many reservists, but it is much broader than supervisor attitudes. The second implication is that local governments need to be targeted as well as private employers for support programs. Perhaps because of fire and police participation in the reserves and their common scheduling conflicts, local governments appear to have a far less favorable attitude toward the reserves than either state or federal employers. The third implication is that the degree of perceived attitude matters. The program should not only target "problem" employers but should attempt to influence neutral or somewhat favorable employers into the very favorable region.

Our research highlights the importance of understanding the underlying causes of the problems that reserve participation causes employers and families; a way of doing this might be through surveys. Without more evidence on this issue, programs and policies designed to alleviate negative feelings might well miss the mark.

One finding of this analysis is that family and employer problems are exacerbated much more during annual training and when extra time is required for the reserve job than for drill participation. Besides the length of annual training, part of the conflict may occur because net compensation for annual training time is quite low compared with that for drill participation. Restructuring compensation to provide more compensation for annual training and certainly higher hourly compensation for additional annual training time will be required to minimize losses. At present, many reservists actually lose income when at annual training because their reserve hourly rate is less than their civilian hourly rate.

We have seen that reservists in higher paygrades are much more likely to reenlist than those in lower paygrades, suggesting that retirement benefits along with promotion opportunity play a large role in reenlistment decisions. Our evidence for the effectiveness of bonus payments is positive but weak. This is perhaps because we used an indirect measure of bonus eligibility and because many reservists did not know whether they would be eligible for bonus payments. There appeared to be much uncertainty concerning whether bonus payments would be available at reenlistment.

Our evidence also suggests that unit training and environment are important determinants in the reenlistment decision. In particular, the perceived morale of unit personnel appeared to have a significant effect on the reenlistment probability, lending support to our

hypothesis that nonpecuniary characteristics of the reserve job are an important factor in reserve participation.

One other important finding is the difference in the probability of reenlisting in combat, combat support, and combat service support units. This suggests that there are inherent differences in the relative attractiveness of these units, perhaps related to the types of jobs available in these units and the transferability of these skills to civilian life. The finding also suggests that some kind of targeted bonuses might be useful in compensating for these differences.

In conclusion, our models point to the importance of attitudinal and unit environment variables in the reenlistment decisions of early to mid-career reservists, as contrasted with the emphasis that traditional moonlighting models place on economic variables. The reserve job is unique and the motivations and factors underlying the decision to participate in the reserve tend to be somewhat different from those underlying a decision to moonlight in the civilian sector. Models of reserve participation or reenlistment need to take these differences into account, as shown in this report.

Appendix A

LOGISTIC REGRESSION COEFFICIENTS

Table A.1

**Logistic Regression Coefficients for the Reenlistment Model:
All Components, 4-6 and 7-12 Years of Service**

Independent Variable	4-6 Years of Service		7-12 Years of Service	
	Coef.	t-stat.	Coef.	t-stat.
Constant	0.30	—	1.47	—
E-3	-0.66	2.96*	-1.74	3.19*
E-4	-0.15	1.44	-0.91	5.15*
E-6	0.08	0.26	0.21	1.45
E-7 to E-9	—	—	0.15	0.50
Army Reserve	0.20	1.61	0.22	1.37
Naval Reserve	-0.10	0.39	0.46	1.79
Marine Corps Reserve	0.06	0.41	-0.50	1.72
Air National Guard	-0.03	0.17	-0.00	0.01
Air Force Reserve	0.30	1.29	0.27	1.24
7-9 years of total service	—	—	-0.30	2.36*
1-4 years of active service	0.13	1.14	-0.12	0.79
5 or more years of active service	—	—	-0.25	1.22
Female	0.19	1.32	-0.30	1.40
Age (years)	0.03	2.44*	0.02	1.94
High school nongraduate	-0.20	1.05	-0.42	1.31
Some college education	-0.10	0.94	-0.22	1.70
Not working in 1985	-0.26	0.91	-0.15	0.33
Not working at time of survey (1986)	0.12	0.77	-0.05	0.21
Married	-0.34	1.95	-0.17	0.75
Spouse working full-time	-0.19	1.33	-0.06	0.39
Spouse working part-time	0.05	0.25	0.29	1.31
Attending school at time of survey (1986)	-0.18	1.60	-0.16	1.03
One dependent	0.37	2.91*	0.42	2.26*
Two or more dependents	0.34	2.50*	0.31	1.84
Used vacation days for annual training	-0.01	0.01	0.03	0.16

Table A.1—continued

Independent Variable	4-6 Years of Service		7-12 Years of Service	
	Coef.	t-stat.	Coef.	t-stat.
Spouse attitude very favorable	0.70	3.86*	0.30	1.49
Spouse attitude somewhat favorable	0.79	4.19*	0.15	0.74
Spouse attitude somewhat unfavorable	-0.05	0.22	-0.46	1.53
Spouse attitude very unfavorable	-1.51	5.66*	-1.12	2.75*
Net hourly reserve wage	0.02	0.73	0.05	1.62
Average hourly civilian wage	0.01	0.59	0.01	0.62
Weekly hours worked on civilian job	-0.01	1.57	-0.01	0.86
Availability of overtime	-0.15	1.53	-0.07	0.53
Civilian supervisor attitude very favorable	0.25	1.89	0.12	0.72
Civilian supervisor attitude somewhat favorable	0.34	2.50*	0.30	1.66
Civilian supervisor attitude somewhat unfavorable	0.01	0.02	-0.01	0.02
Civilian supervisor attitude very unfavorable	0.12	0.49	-0.31	0.97
Federal government	0.10	0.46	0.34	1.52
State government	0.24	1.22	0.21	0.89
Local government	0.03	0.15	-0.24	1.05
Medium firm (100-499 employees)	-0.03	0.23	0.23	1.15
Small firm (1-99 employees)	-0.02	0.14	0.14	0.74
Self-employed	-0.12	0.69	-0.06	0.21
Dissatisfied with training during drills	-0.12	1.69	0.01	0.09
Dissatisfied with mechanical condition of equipment	-0.19	1.74	-0.12	0.69
Dissatisfied with morale of unit personnel	-0.22	1.52	-0.60	3.63*
Uncertain whether eligible for bonus	0.07	0.55	—	—
Eligible for bonus	0.18	1.41	—	—

* Significant at 0.05 level.

Table A.2

**Logistic Regression Coefficients for the Reenlistment Model:
Army Components, 4-6 and 7-12 Years of Service**

Independent Variable	4-6 Years of Service		7-12 Years of Service	
	Coef.	t-stat.	Coef.	t-stat.
Constant	0.22	—	1.75	—
E-3	-0.97	3.44*	-2.48	3.89*
E-4	-0.23	1.75	-0.91	4.37*
E-6	-0.13	0.38	0.24	1.27
E-7 to E-9	—	—	0.21	0.59
Army Reserve	0.11	0.77	0.03	0.18
7-9 years of total service	—	—	-0.29	1.82
1-4 years of active service	0.13	0.90	-0.18	0.98
5 or more years of active service	—	—	-0.14	0.52
Female	0.01	0.05	-0.38	1.32
Age (years)	0.03	1.97*	0.01	0.86
High school nongraduate	-0.19	0.93	-0.54	1.59
Some college education	-0.28	2.04*	-0.44	2.63*
Not working in 1985	-0.30	0.90	0.05	0.09
Not working at time of survey (1986)	0.28	1.57	-0.01	0.02
Married	-0.42	2.01*	-0.02	0.08
Spouse working full-time	-0.10	0.58	-0.08	0.37
Spouse working part-time	0.07	0.25	0.29	1.04
Spouse attitude very favorable	0.71	3.22*	0.25	0.97
Spouse attitude somewhat favorable	0.73	3.22*	0.23	0.89
Spouse attitude somewhat unfavorable	-0.15	0.54	-0.67	1.84
Spouse attitude very unfavorable	-1.65	5.22*	-1.53	3.12*
Attending school at time of survey (1986)	-0.16	1.08	-0.28	1.39
One dependent	0.50	3.31*	0.54	2.29*
Two or more dependents	0.25	1.54	0.30	1.42
Used vacation days for annual training	0.05	0.29	0.21	1.06
Net hourly reserve wage	0.01	0.30	0.04	1.03
Average hourly civilian wage	-0.00	0.03	0.01	0.47
Weekly hours worked on civilian job	-0.01	0.83	-0.01	1.44
Availability of overtime	-0.17	1.36	0.02	0.12
Civilian supervisor attitude very favorable	0.26	1.38	0.35	1.55
Civilian supervisor attitude somewhat favorable	0.50	3.05*	0.53	2.36*
Civilian supervisor attitude somewhat unfavorable	0.20	0.94	0.10	0.36
Civilian supervisor attitude very unfavorable	0.32	1.13	0.04	0.11

Table A.2—continued

Independent Variable	4-6 Years of Service		7-12 Years of Service	
	Coef.	t-stat.	Coef.	t-stat.
Federal government	0.00	0.00	0.25	0.81
State government	0.19	0.75	0.12	0.40
Local government	-0.00	0.00	-0.14	0.48
Medium firm (100-499 employees)	-0.10	0.54	0.31	1.21
Small firm (1-99 employees)	0.03	0.17	0.09	0.40
Self-employed	-0.08	0.38	0.15	0.45
Dissatisfied with training during drills	-0.08	0.58	-0.11	0.56
Dissatisfied with mechanical condition of equipment	-0.23	1.55	-0.08	0.35
Dissatisfied with morale of unit personnel	-0.35	2.43*	-0.38	1.88
Serving in combat support unit	0.14	0.94	0.55	2.54*
Serving in combat service support unit	0.41	2.88*	0.48	2.45*
Uncertain whether eligible for bonus	-0.07	0.41	—	—
Eligible for bonus	0.18	1.10	—	—

* Significant at 0.05 level.

Appendix B

1986 RESERVE COMPONENTS SURVEY OF ENLISTED PERSONNEL

FORM 2
RCS RA (OT) 1720



1986 Reserve Components SURVEY OF ENLISTED PERSONNEL

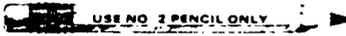
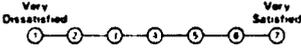
The National Guard and Reserve components are conducting a survey of Guard/Reserve personnel. You have been selected to participate in this important survey. Please read the instructions on the next page before you begin the questionnaire.

Your survey instrument will be treated as confidential. All identifiable information will be used only by persons engaged in and for the purposes of the survey. It will not be disclosed to others or used for any other purpose. Only group statistics will be reported.

NOTICE Your participation in the survey is voluntary. Failure to respond to any questions will not result in any penalty. However, your participation is encouraged so that the data will be complete and representative.

**TO ENSURE THE CONFIDENTIALITY OF YOUR RESPONSES,
PLEASE SEPARATE THIS FRONT COVER FROM THE QUESTIONNAIRE AND DESTROY THE FRONT COVER AFTER
READING THE INSTRUCTIONS.**

INSTRUCTIONS FOR COMPLETING THE SURVEY

<p>• Please use a No. 2 pencil.</p> 	<p>• Answers to some of the questions will be on a SEVEN-POINT SCALE.</p> <p>Example: How satisfied are you with the opportunities you have for promotion in your unit?</p>
<p>• Make heavy black marks that fill the circle for your answer.</p> <p>• Please do not make stray marks of any kind</p> <p>INCORRECT MARKS CORRECT MARK</p> 	 <p>-If you are "Very Dissatisfied," you would mark 1</p> <p>-If you are "Very Satisfied," you would mark 7</p> <p>-If your opinion is somewhere in between, you would mark 2 or 3 or 4 or 5 or 6.</p>
<p>• Sometimes you will be asked to "Mark ALL that apply." When this instruction appears you may mark more than one answer.</p> <p>Example: In which components have you served? Mark ALL that apply.</p> <ul style="list-style-type: none"> <input type="radio"/> Active Army (USA) <input type="radio"/> Army National Guard (ARNG) <input type="radio"/> Army Reserve (USAR) <input type="radio"/> Active Navy (USN) <input type="radio"/> Naval Reserve (USNR) <input checked="" type="radio"/> Active Air Force (USAF) <input checked="" type="radio"/> Air National Guard (ANG) <input checked="" type="radio"/> Air Force Reserve (USAFR) <input type="radio"/> Active Marine Corps (USMC) <input type="radio"/> Marine Corps Reserve (USMCR) <input type="radio"/> Active Coast Guard (USCG) <input type="radio"/> Coast Guard Reserve (USCGR) <p>If your answer is "Active Air Force" and "Air Force Reserve," then mark two circles clearly</p>	<p>• If you are asked to give numbers for your answer, please record as shown below.</p> <p>Example: In all, to the nearest year, how long have you served in the Guard/Reserve?</p> <p>If your answer is 4 . . . →</p>  <p>• Write the numbers in the boxes, making sure the last number is always placed in the right-hand box.</p> <p>• Fill in the unused boxes with zeros.</p> <p>• Then, mark the matching circle below each box.</p>
<p>• Sometimes you will be asked to "Mark one." When this instruction appears mark the answer that best applies.</p> <p>Example: Of which Reserve Component are you a member? Mark one.</p> <ul style="list-style-type: none"> <input type="radio"/> Army National Guard <input type="radio"/> Army Reserve <input checked="" type="radio"/> Naval Reserve <input type="radio"/> Marine Corps Reserve <input type="radio"/> Air National Guard <input type="radio"/> Air Force Reserve <input type="radio"/> Coast Guard Reserve <p>If your answer is "Naval Reserve," then just mark one circle as shown.</p>	<p>TO ENSURE THE CONFIDENTIALITY OF YOUR RESPONSES, PLEASE SEPARATE THIS FRONT COVER FROM THE QUESTIONNAIRE AND DESTROY THE FRONT COVER AFTER READING THE INSTRUCTIONS. →</p>

9. Have you served in more than one component of the military?

- Yes. (answer 10 below)
- No. GO TO QUESTION 11

10. In which components have you served? Mark all that apply

- Active Army (USA)
- Army National Guard (ARNG)
- Army Reserve (USAR)
- Active Navy (USN)
- Naval Reserve (USNR)
- Active Air Force (USAF)
- Air National Guard (ANG)
- Air Force Reserve (USAFRI)
- Active Marine Corps (USMC)
- Marine Corps Reserve (USMCR)
- Active Coast Guard (USCG)
- Coast Guard Reserve (USCGR)

11. In all, to the nearest year, how long have you served in the Guard/Reserve? DO NOT include active duty years

- Less than 1 year

YEARS	
No. of Years Served	<input type="radio"/> 0 <input type="radio"/> 0
	<input type="radio"/> 1 <input type="radio"/> 1
	<input type="radio"/> 2 <input type="radio"/> 2
	<input type="radio"/> 3 <input type="radio"/> 3
	<input type="radio"/> 4 <input type="radio"/> 4
	<input type="radio"/> 5 <input type="radio"/> 5
	<input type="radio"/> 6 <input type="radio"/> 6
	<input type="radio"/> 7 <input type="radio"/> 7
	<input type="radio"/> 8 <input type="radio"/> 8
	<input type="radio"/> 9 <input type="radio"/> 9

12. In all, to the nearest year, how long did you serve in the Active Force/on active duty? Do not include your initial active duty training for the Guard/Reserve. Include service as FTS-AGR/TAR

- I have never served in the Active Force
- Less than 1 year

YEARS	
No. of Years Served	<input type="radio"/> 0 <input type="radio"/> 0
	<input type="radio"/> 1 <input type="radio"/> 1
	<input type="radio"/> 2 <input type="radio"/> 2
	<input type="radio"/> 3 <input type="radio"/> 3
	<input type="radio"/> 4 <input type="radio"/> 4
	<input type="radio"/> 5 <input type="radio"/> 5
	<input type="radio"/> 6 <input type="radio"/> 6
	<input type="radio"/> 7 <input type="radio"/> 7
	<input type="radio"/> 8 <input type="radio"/> 8
	<input type="radio"/> 9 <input type="radio"/> 9

13. When you finally left the Active Force/active duty, what was your pay grade? Mark one

- | Enlisted Grades | | Officer Grades | | |
|---------------------------|---------------------------|---------------------------|---------------------------|------------------------------------|
| <input type="radio"/> E-1 | <input type="radio"/> E-6 | <input type="radio"/> W-1 | <input type="radio"/> O-1 | <input type="radio"/> O-5 |
| <input type="radio"/> E-2 | <input type="radio"/> E-7 | <input type="radio"/> W-2 | <input type="radio"/> O-2 | <input type="radio"/> O-6 |
| <input type="radio"/> E-3 | <input type="radio"/> E-8 | <input type="radio"/> W-3 | <input type="radio"/> O-3 | <input type="radio"/> O-7 or above |
| <input type="radio"/> E-4 | <input type="radio"/> E-9 | <input type="radio"/> W-4 | <input type="radio"/> O-4 | |
| <input type="radio"/> E-5 | | | | |

- I have never served in the Active Force/on active duty

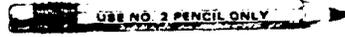
II MILITARY PLANS

14. At the time of your enlistment or your most recent reenlistment (or extension) in the Guard/Reserve, how many years of Selected Reserve service did you sign up for? Mark one

- 1 year or less
- 2 years
- 3 years
- 4 years
- 5 years
- 6 years
- 7 years
- 8 years

15. At the time of your enlistment or most recent reenlistment, did you receive a bonus? Mark one

- No
- Yes Enlistment
- Yes Reenlistment



16. If you were eligible to reenlist this year, would you receive a bonus for reenlisting?

Yes
 No
 Don't know

17. In what month and year will you complete your current term of service (or extension) in the Selected Reserve (ETS)?

(A) MONTH	(B) YEAR												
<input type="radio"/> January	19 <table border="1"><tr><td>0</td></tr><tr><td>1</td></tr><tr><td>2</td></tr><tr><td>3</td></tr><tr><td>4</td></tr><tr><td>5</td></tr><tr><td>6</td></tr><tr><td>7</td></tr><tr><td>8</td></tr><tr><td>9</td></tr><tr><td>0</td></tr><tr><td>0</td></tr></table>	0	1	2	3	4	5	6	7	8	9	0	0
0													
1													
2													
3													
4													
5													
6													
7													
8													
9													
0													
0													
<input type="radio"/> February													
<input type="radio"/> March													
<input type="radio"/> April													
<input type="radio"/> May													
<input type="radio"/> June													
<input type="radio"/> July													
<input type="radio"/> August													
<input type="radio"/> September													
<input type="radio"/> October													
<input type="radio"/> November													
<input type="radio"/> December													

18. How likely are you to REENLIST OR EXTEND at the end of your current term of service? Assume that all 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

19. If required drills were increased an additional two (2) four-hour drills per month, how likely would you be to reenlist or extend in the Guard/Reserve beyond any current service obligation?

(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

20. If annual training/ACDUTRA was increased by an additional 5 days, how likely would you be to reenlist or extend in the Guard/Reserve beyond any current service obligation?

(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

21. How many good years of service (50 points or more) do you have toward Guard/Reserve retirement? Give your best estimate

NUMBER OF GOOD YEARS

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

I don't know

22. Do you plan to stay in the Guard/Reserve long enough to qualify for retired pay?

- I have already qualified
- Yes
- No
- Don't know/am not sure

23. Do you plan to elect the Reserve Components Survivor Benefits Plan when eligible?

- Does not apply. I don't plan to remain until 20 years
- I have already elected to participate
- I have already elected not to participate
- Yes, upon receipt of my 20-year letter
- Yes when I am 60 years old
- No
- Uncertain, am not aware of the plan at all
- Uncertain, I don't understand the plan clearly

24. The questions below are about your preparedness. Mark one answer for each item

	Yes	No	Don't Know	Does Not Apply
Do you have a current written will?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does anyone currently hold your power-of-attorney?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do you have life insurance other than SGLI/VGLI?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you filled out a record of emergency data?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your spouse or next of kin know where to find your papers?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

25. In the next year, I plan to: Mark one

- Retire
- Leave the Guard/Reserve (before retiring)
- Transfer to an Active Force
- Apply for the FTS-AGR/TAR program
- Transfer to another Guard/Reserve component
- Transfer to IMA program (if now in unit)
- Transfer to Individual Ready Reserve (IRR)/Inactive National Guard (ING)
- Transfer to unit (if now in IMA program)
- Remain in my current status

26. People participate in the Guard/Reserve for many reasons. How much have each of the following contributed to your most recent decision to stay in the Guard/Reserve? Mark one for each item

	Major Contribution	Moderate Contribution	Minor Contribution	No Contribution
Serving the country	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using educational benefits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Obtaining training in a skill that would help get a civilian job	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Serving with the people in the unit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Getting credit toward Guard/Reserve retirement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Promotion opportunities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Opportunity to use military equipment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Challenge of military training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Needed the money for basic family expenses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wanted extra money to use now	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Saving income for the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Travel/"get away" opportunities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Just enjoyed the Guard/Reserve	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pride in my accomplishments in the Guard/Reserve	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



III MILITARY TRAINING, BENEFITS AND PROGRAMS

27. How were you trained for your current Primary MOS/Rating/Specialty? Mark all that apply

- In a formal service school
- On-the-job-training (OJT) in a civilian job
- In a formal civilian school
- On-the-job-training (OJT) in the active service
- On-the-job-training (OJT) in a Guard/Reserve unit
- Correspondence course(s)

28. For all of 1985, what percentage of your time was spent working in your Primary MOS/Rating/Specialty?

- None
- 1-24%
- 25-49%
- 50-74%
- 75-99%
- 100% (All)

29. Is your current Primary MOS/Rating/Specialty the same MOS/Rating/Specialty you had while on active duty?

- Does not apply, I don't have prior active duty service
- Yes
- No

30. How similar is your civilian job to your Guard/Reserve duty?

- Does not apply, I don't have a civilian job
- Does not apply, I am a Guard/Reserve technician
- Very similar
- Similar
- Somewhat similar
- Not similar at all

31. In calendar year 1985, in which of the following did you participate in/perform? Mark all that apply

- Federal mobilization
- State mobilization
- Local call-up
- Annual Training/ACDUTRA
- Active duty
- Initial or extended active duty for training
- Guard/Reserve work at home or on my civilian job

32. In 1985, how many days of Annual Training/ACDUTRA did you attend? Do not include school unless used to satisfy your Annual Training/ACDUTRA requirement

NO. OF DAYS

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

Did not attend 1985 Annual Training/ACDUTRA

33. Did you attend 1985 Annual Training/ACDUTRA a few days at a time, a week or more at a time, or all at once?

- Did not attend 1985 Annual Training/ACDUTRA
- A few days at a time, several times over the year
- A week or more at a time
- All at once

34. In calendar year 1985, how many paid "Mandays," in addition to any regular drill days and Annual Training/ACDUTRA did you serve?

None

PAID MANDAYS

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

35. In an average month in 1985, how many unpaid hours did you spend at your drill location (piece of regular duty)?

None

NO. UNPAID HOURS PER MONTH

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

36. For all of 1985, what was your total Guard/Reserve income BEFORE taxes and deductions? Include any pay from drills, Annual Training/ACDUTRA, Bonuses and any call-ups or other active duty or active duty for training. Do not include earnings as a Guard/Reserve technician. Please give your best estimate.

- Record the amount in the boxes.
- Round to the nearest whole dollar.
- Fill in the unused boxes with zeros. (For example, if your answer is \$1,503.75, enter 01504.)
- Then, mark the matching circle below each box.

TOTAL GUARD/RESERVE INCOME

\$

					0	0
0	0	0	0	0	0	0
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9

37. Altogether in 1985, what was the total amount that you and your family spent in military exchanges (e.g., PX, BX)? Please give your best estimate. Mark one.

- \$0 (None)
- \$1 - 99
- \$100 - 199
- \$200 - 399
- \$400 - 599
- \$600 - 999
- \$1,000 - 1,999
- \$2,000 or more
- Don't know/am not sure

38. Did you participate in the 1984-1985 Selected Reserve Commissary Test (conducted in the Los Angeles, San Antonio, New England areas from 1 Jan 1984 to 30 Sept 1985)?

- Yes
- No
- Don't know

39. Altogether in 1985, what was the total amount that you and your family spent in military commissaries? Please give your best estimate.

- \$0 (None)
- \$1 - 99
- \$100 - 199
- \$200 - 399
- \$400 - 599
- \$600 - 999
- \$1,000 - 1,999
- \$2,000 or more

40. Are you now eligible for educational benefits as a result of military service? Mark all that apply.

- No. GO TO QUESTION 42
- Yes. State Benefits for my Guard/Reserve service
- Yes. Selected Reserve GI Bill
- Yes. Active Force benefits (VEAP, GI Bill)
- Don't know/am not sure

41. Which educational benefits are you now using? Mark all that apply.

- None
- State Benefits for Guard/Reserve
- Selected Reserve GI Bill
- Active Force benefits (VEAP, GI Bill)

42. Which of the following medical/hospitalization coverages do you have? Mark all that apply.

- Guard/Reserve coverage
- Active duty military coverage
- Veterans Administration coverage
- My civilian employer
- My spouse's civilian employer
- Other private coverage
- None



43. How much of a problem is each of the following for your unit in meeting your unit's training objectives? Please mark the number which shows your opinion on the lines below. For example, people who feel that an item is Not a Problem would mark 7. People who feel that an item is A Serious Problem would mark 1. Others may have opinions somewhere between 1 and 7. Mark one for each item.

	A Serious Problem			Not a Problem				Don't Know
	1	2	3	4	5	6	7	
A. Out-of-date equipment/weapons	<input type="radio"/>							
B. Poor mechanical condition of equipment/weapons	<input type="radio"/>							
C. Being below strength in Grades E-1 - E-4	<input type="radio"/>							
D. Being below strength in Grades E-5 - E-9	<input type="radio"/>							
E. Not enough staff resources to plan effective training	<input type="radio"/>							
F. Low attendance of unit personnel at <u>Unit Drills</u>	<input type="radio"/>							
G. Low attendance of unit personnel at <u>Annual Training/ACDUTRA</u>	<input type="radio"/>							
H. Ineffective training during <u>Annual Training/ACDUTRA</u>	<input type="radio"/>							
I. Shortage of MOS/Rating/Specialty qualified personnel	<input type="radio"/>							
J. Low quality of personnel in low grade unit drill positions	<input type="radio"/>							
K. No enough drill time to practice skills	<input type="radio"/>							
L. Not enough time to plan training objectives and get all administrative paperwork done	<input type="radio"/>							
M. Lack of access to good training facilities and grounds	<input type="radio"/>							
N. Lack of good instruction manuals and materials	<input type="radio"/>							
O. Lack of supplies, such as ammunition, gasoline, etc.	<input type="radio"/>							

PLEASE CHECK: HAVE YOU MARKED ONE NUMBER FOR EACH ITEM?

44. How do you usually get to the place of regular military duty or drill meetings?

Mark one

- Drive myself
 Driven by spouse
 Driven by another family member
 Car pool
 Military air transportation
 Other military transportation
 Public transportation
 Taxi
 Walk

45. How long does it usually take you to get from home to the place where your unit meets/drills?

Mark one

- 0-19 minutes
 20-39 minutes
 40-59 minutes
 1-2 hours
 2-3 hours
 3-6 hours
 6 hours or more

USE NO. 2 PENCIL ONLY

55. How long have you been in your present unit?

 Less than 1 yearNO. YEARS
IN PRESENT UNIT

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

56. If mobilized, would you mobilize with your present unit?

Yes
 No
 Don't know

57. If mobilized, would your military duties be the same as your current duties when attending Annual Training/ACDUTRA?

Yes
 No
 Don't know

58. Are you a military technician, i.e., a civilian employee of the Army or Air Force National Guard or Reserves?

No GO TO QUESTION 61, Section IV below
 Yes

59. How long have you been employed as a military technician?

 Less than 1 yearNO YEARS
EMPLOYED AS TECHNICIAN

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

60. Do you drill with the same unit that you work in as a technician?

Yes
 No

IV INDIVIDUAL AND FAMILY CHARACTERISTICS

61. Are you male or female?

Male
 Female

62. How old were you on your last birthday?

AGE LAST
BIRTHDAY

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

63. Where were you born?

In the United States
 Outside the United States to military parents
 Outside the United States to nonmilitary parents

64. Are you an American citizen?

Yes
 No, resident alien
 No, not a resident alien

65. Are you:

American Indian/Alaskan Native
 Black/Negro/Afro-American
 Oriental/Asian/Chinese/Japanese/Korean/
 Filipino/Pacific Islander
 White/Caucasian
 Other

66. Are you of Spanish/Hispanic origin or descent?

- No (not Spanish/Hispanic)
- Yes, Mexican/Mexican-American/Chicano
- Yes, Puerto Rican
- Yes, Cuban
- Yes, Central or South American
- Yes, other Spanish/Hispanic

67. Do you speak English as your main language at home?

- Yes, GO TO QUESTION 69
- No

68. The main language I speak at home is:

- | | |
|--------------------------------|-----------------------------------|
| <input type="radio"/> Spanish | <input type="radio"/> Vietnamese |
| <input type="radio"/> French | <input type="radio"/> Chinese |
| <input type="radio"/> German | <input type="radio"/> Other Asian |
| <input type="radio"/> Japanese | <input type="radio"/> Slavic |
| <input type="radio"/> Korean | <input type="radio"/> Italian |
| <input type="radio"/> Thai | <input type="radio"/> Other |

69. AS OF TODAY, what is the highest grade or year of regular school or college that you have completed and gotten credit for? Mark one.

ELEMENTARY GRADES	HIGH SCHOOL GRADES	COLLEGE YEARS OF CREDIT
<input type="radio"/> 1st <input type="radio"/> 5th	<input type="radio"/> 9th	<input type="radio"/> 1 <input type="radio"/> 5
<input type="radio"/> 2nd <input type="radio"/> 6th	<input type="radio"/> 10th	<input type="radio"/> 2 <input type="radio"/> 6
<input type="radio"/> 3rd <input type="radio"/> 7th	<input type="radio"/> 11th	<input type="radio"/> 3 <input type="radio"/> 7
<input type="radio"/> 4th <input type="radio"/> 8th	<input type="radio"/> 12th	<input type="radio"/> 4 <input type="radio"/> 8
	(include GED)	or more

70. AS OF TODAY, what is the highest degree or diploma that you hold? Do not include degrees from Technical, Trade or Vocational schools. Mark one.

- DEGREE NOW**
- No Degree or Diploma
 - GED Certificate
 - Certificate of Completion/Attendance
 - Home Study Diploma
 - High School Diploma
 - Associate/Junior College Degree
 - Bachelor's Degree (BA/BS)
 - Master's Degree (MA/MS)
 - Doctoral Degree (PhD/MD/LLB)
 - Other degree not listed above

71. If you are now attending a civilian school, what kind of school is it? Mark all that apply.

- Does not apply, I don't attend school
- Vocational, trade, business, or other career training school
- Junior or community college (two years)
- Four year college or university
- Graduate or professional school
- Other

72. What is the highest grade or year of regular school or college that you think you will complete in the future? If your highest grade will be a GED certificate, mark 12th grade. Mark one.

- Not applicable, I don't plan to attend school in the future

ELEMENTARY	HIGH SCHOOL	YEARS OF COLLEGE CREDIT
<input type="radio"/> 1st	<input type="radio"/> 9th	<input type="radio"/> 1
<input type="radio"/> 2nd	<input type="radio"/> 10th	<input type="radio"/> 2
<input type="radio"/> 3rd	<input type="radio"/> 11th	<input type="radio"/> 3
<input type="radio"/> 4th	<input type="radio"/> 12th	<input type="radio"/> 4
<input type="radio"/> 5th	(include GED)	<input type="radio"/> 5
<input type="radio"/> 6th		<input type="radio"/> 6
<input type="radio"/> 7th		<input type="radio"/> 7
<input type="radio"/> 8th		<input type="radio"/> 8 or more

73. What is the highest grade or year of regular school or college that your MOTHER (or FEMALE GUARDIAN) and FATHER (or MALE GUARDIAN) completed and gotten credit for? Mark your best estimate.

	MOTHER	FATHER
ELEMENTARY GRADES		
1st	<input type="radio"/>	<input type="radio"/>
2nd	<input type="radio"/>	<input type="radio"/>
3rd	<input type="radio"/>	<input type="radio"/>
4th	<input type="radio"/>	<input type="radio"/>
5th	<input type="radio"/>	<input type="radio"/>
6th	<input type="radio"/>	<input type="radio"/>
7th	<input type="radio"/>	<input type="radio"/>
8th	<input type="radio"/>	<input type="radio"/>
HIGH SCHOOL		
9th	<input type="radio"/>	<input type="radio"/>
10th	<input type="radio"/>	<input type="radio"/>
11th	<input type="radio"/>	<input type="radio"/>
12th (include GED)	<input type="radio"/>	<input type="radio"/>
COLLEGE-YEARS OF CREDIT		
1	<input type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input type="radio"/>
3	<input type="radio"/>	<input type="radio"/>
4	<input type="radio"/>	<input type="radio"/>
5	<input type="radio"/>	<input type="radio"/>
6	<input type="radio"/>	<input type="radio"/>
7	<input type="radio"/>	<input type="radio"/>
8 or more	<input type="radio"/>	<input type="radio"/>
Don't know/unsure	<input type="radio"/>	<input type="radio"/>



74. Have your parents (or guardians), brothers or sisters (include step-brothers and sisters) served in or retired from the military? (Include Guard/Reserve) Mark all that apply

	Father	Mother	Brother(s)	Sister(s)
Never served	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Currently serving in the military	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Served less than 8 years and separated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Served for more than 8 years (but not retired)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Retired from the military	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

75. Are you currently:

- Married for the first time
- Remarried
- Widowed. GO TO QUESTION 89
- Divorced. GO TO QUESTION 89
- Separated. GO TO QUESTION 89
- Single, never married. GO TO QUESTION 89

76. Has your current spouse ever served in the U.S. Armed Forces, either on active duty or in the Reserves? Mark all that apply

No, never served

Yes, retired from

- Active Army (USA)
- Active Navy (USN)
- Active Marine Corps (USMC)
- Active Air Force (USAF)
- Active Coast Guard (USCG)
- Army National Guard (ARNG)
- Army Reserve (USAR)
- Naval Reserve (USNR)
- Marine Corps Reserve (USMCR)
- Air National Guard (ANG)
- Air Force Reserve (USAFR)
- Coast Guard Reserve (USCGR)

Yes, separated from

- Active Army (USA)
- Active Navy (USN)
- Active Marine Corps (USMC)
- Active Air Force (USAF)
- Active Coast Guard (USCG)
- Army National Guard (ARNG)
- Army Reserve (USAR)
- Naval Reserve (USNR)
- Marine Corps Reserve (USMCR)
- Air National Guard (ANG)
- Air Force Reserve (USAFR)
- Coast Guard Reserve (USCGR)

Yes, now serving in

- Active Army (USA)
- Active Navy (USN)
- Active Marine Corps (USMC)
- Active Air Force (USAF)
- Active Coast Guard (USCG)
- Army National Guard (ARNG)
- Army Reserve (USAR)
- Naval Reserve (USNR)
- Marine Corps Reserve (USMCR)
- Air National Guard (ANG)
- Air Force Reserve (USAFR)
- Coast Guard Reserve (USCGR)

77. What is/was your current spouse's pay grade?

- | | | | | |
|---------------------------|---------------------------|---------------------------|---------------------------|----------------------------|
| Enlisted Grades | | Officer Grades | | |
| <input type="radio"/> E-1 | <input type="radio"/> E-6 | <input type="radio"/> W-1 | <input type="radio"/> O-1 | <input type="radio"/> O-5 |
| <input type="radio"/> E-2 | <input type="radio"/> E-7 | <input type="radio"/> W-2 | <input type="radio"/> O-2 | <input type="radio"/> O-6 |
| <input type="radio"/> E-3 | <input type="radio"/> E-8 | <input type="radio"/> W-3 | <input type="radio"/> O-3 | <input type="radio"/> O-7+ |
| <input type="radio"/> E-4 | <input type="radio"/> E-9 | <input type="radio"/> W-4 | <input type="radio"/> O-4 | above |
| <input type="radio"/> E-5 | | | | |

Spouse never served in the U.S. Armed Forces

78. How long have you been married to your current spouse?

Less than 1 year

NO. YEARS MARRIED

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

USE NO. 2 PENCIL ONLY

88. What is your spouse's overall attitude toward your participation in the Guard/Reserve? Mark one

- Very favorable
 Somewhat favorable
 Neither favorable nor unfavorable
 Somewhat unfavorable
 Very unfavorable

EVERYBODY ANSWER:

89. How many dependents do you have? Do not include yourself or your spouse. For the purpose of this survey, a dependent is anyone related to you by blood, marriage, or adoption, and who depends on you for over half their support

- None. GO TO QUESTION 93 6
 1 7
 2 8
 3 9
 4 10 or more
 5

90. Are any of your dependents physically, emotionally, or intellectually handicapped requiring specialized treatment, therapy, education, training, or counseling? Mark all that apply

- Yes, permanently
 Yes, temporarily
 No

91. How many of your dependents are UNDER 18 YEARS OLD? Mark one

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

92. Are your dependent arrangements realistically workable for each of the following situations?

	Yes	Probably	No
Short-term emergency situation such as a mobility exercise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Long-term situation such as a mobilization/deployment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

V CIVILIAN WORK

A. YOUR OWN EXPERIENCE

93. Are you currently? Mark all that apply

- Working full-time as a Guard/Reserve technician.
 GO TO QUESTION 96
 Working full-time in a civilian job (not technician)
 Working part-time in a civilian job
 With a civilian job but not at work because of temporary illness, vacation, strike, etc.
 Self-employed in own business
 Unpaid worker (volunteer or in family business)
 Unemployed, laid off, looking for work
 In school
 Retired
 A homemaker
 Other

94. What is your immediate (main) civilian supervisor's overall attitude toward your participation in the Guard/Reserve? Mark one

- Does not apply. I am not working at a civilian job.
 GO TO QUESTION 96
 Does not apply. I am self-employed
 Very favorable
 Somewhat favorable
 Neither favorable nor unfavorable
 Somewhat unfavorable
 Very unfavorable

95. How much of a problem for your main employer (or for you, if self-employed) are each of the following? Mark one for each item.

	Serious Problem	Somewhat of a Problem	Slight Problem	Not a Problem	Does Not Apply	Don't Know
Absence for weekend drills	<input type="radio"/>					
Absence for Annual Training/ACDUTRA	<input type="radio"/>					
Absence for extra time spent at Guard/Reserve	<input type="radio"/>					
Time spent at work on Guard/Reserve business	<input type="radio"/>					

THE NEXT QUESTIONS ARE ABOUT YOUR CIVILIAN JOB IN 1985. IF YOU HAD MORE THAN ONE JOB, PLEASE ANSWER THESE QUESTIONS FOR THE JOB WHERE YOU WORKED THE MOST HOURS PER WEEK FOR MOST OF THE YEAR.

96A. What kind of work did you do, that is, what is your job called? For example, electrical engineer, construction worker, carpenter, high school teacher, typist, etc. Mark one.

- I had no civilian job in 1985. GO TO QUESTION 111.
- PROFESSIONAL (teacher, doctor, engineer, social worker, writer, etc.)
- MANAGERIAL/ADMINISTRATIVE (accountant, labor relations specialist, school principal, office manager, farm manager, etc.)
- TECHNICAL (health technologist, computer programmer, electronic technician, pilot, navigator)
- SALES (sales supervisor, cashier, self-employed sales person, etc.)
- CLERICAL (secretary, bookkeeper, computer operator, mail clerk, etc.)
- CRAFTS (plumber, carpenter, precision textile machine worker, auto mechanic, etc.)
- SECURITY (police, fire fighter, protective services, etc.)
- OPERATIVE, except transportation (assembler, operator, hand work, fabricator, production inspector, etc.)
- TRANSPORTATION (bus driver, crane operator, truck driver, etc.)
- LABORER, except farm (service station worker, production helper, construction laborer, etc.)
- SERVICE, including private household (food preparation and service worker, banking cleaner/other service worker, etc.)
- FARM LABORER

96B. Write the name of your job in the box below.

KIND OF WORK/JOB TITLE

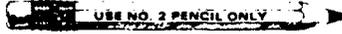
97. Which of the following best describes your civilian employer in 1985? Mark one.

- Federal Government
- State Government
- Local Government (including public schools)
- Self-employed in own business
- Private firm with more than 500 employees
- Private firm with 100-499 employees
- Private firm with less than 100 employees
- Working without pay in family business or farm

98. What kind of organization did you work for in 1985? (For example, TV and radio manufacturing, retail shoe store, police department, etc. Federal workers enter the Agency, Department or Government Branch for which you work.)

Write the kind of organization (business/industry) in the space below. Do not write the name of the company.

KIND OF ORGANIZATION



99. What was your Federal Government pay type and grade at the end of 1985? Mark both the pay type and the number grade

Does not apply. I didn't work for the Federal Government

- | | | |
|-----------------------------------------|------------------------------------|-------------------------|
| Pay Type | Number Grade | |
| <input type="radio"/> GM | <input type="radio"/> 16 or higher | <input type="radio"/> 8 |
| <input type="radio"/> GS | <input type="radio"/> 15 | <input type="radio"/> 7 |
| <input type="radio"/> WS | <input type="radio"/> 14 | <input type="radio"/> 6 |
| <input type="radio"/> WL | <input type="radio"/> 13 | <input type="radio"/> 5 |
| <input type="radio"/> WG | <input type="radio"/> 12 | <input type="radio"/> 4 |
| <input type="radio"/> US Postal Service | <input type="radio"/> 11 | <input type="radio"/> 3 |
| <input type="radio"/> Other | <input type="radio"/> 10 | <input type="radio"/> 2 |
| | <input type="radio"/> 9 | |

100. In 1985, how many hours per week did you usually work at your (main) civilian job?

NO OF HOURS PER WEEK USUALLY WORKED

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

101. In 1985, how often did you work more than 40 hours per week at your (main) civilian job? Give your best estimate

- | | |
|---------------------------------|----------------------------------------|
| <input type="radio"/> None | <input type="radio"/> 10-14 weeks |
| <input type="radio"/> 1-4 weeks | <input type="radio"/> 15-19 weeks |
| <input type="radio"/> 5-9 weeks | <input type="radio"/> 20 or more weeks |

102. In 1985, how were you paid when you worked over 40 hours a week? Mark one

- Not paid extra for working over 40 hours
- Paid at my regular pay rate for all hours I work
- Paid time-and-a-half
- Paid double time
- Paid more than double time

103. In 1985, did you lose opportunities for overtime/extra pay because of your Guard/Reserve obligations?

- Yes, frequently
- Yes, occasionally
- No

104. In 1985, what were your USUAL WEEKLY EARNINGS from your (main) civilian job or your own business before taxes and other deductions? Give your best estimate.

WEEKLY EARNINGS

\$

				0	0
0	0	0	0	0	0
1	0	0	0	0	0
2	0	0	0	0	0
3	0	0	0	0	0
4	0	0	0	0	0
5	0	0	0	0	0
6	0	0	0	0	0
7	0	0	0	0	0
8	0	0	0	0	0
9	0	0	0	0	0

105. In 1985, how many days of paid vacation did you receive from your (main) civilian job?

NO DAYS OF PAID VACATION

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

I didn't receive paid vacation

106. Which of the following describes how you got time off from your civilian job to meet your Guard/Reserve obligations in 1985? Include Annual Training/ACDUTRA. Mark all that apply

- Does not apply. I was self-employed GO TO QUESTION 108
- I received military leave/leave of absence
- I used vacation days
- My Guard/Reserve obligations were on days on which I didn't work

107. Which of the following describes how you were paid for the time you took from your civilian job for Guard/Reserve obligations? Mark all that apply

- I received full civilian pay as well as military pay
- I received partial civilian pay as well as military pay
- I received only military pay
- My Guard/Reserve obligations were on days on which I didn't work

108. During 1985, what was the TOTAL AMOUNT THAT YOU EARNED FROM ALL CIVILIAN JOBS or your own business BEFORE taxes and other deductions? Include earnings as a Guard/Reserve technician. Include commissions, tips, or bonuses. Give your best estimate.

AMOUNT EARNED AT CIVILIAN JOB

\$

0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9

- More than \$100,000
- None

109. Altogether in 1985, how many weeks did you work for pay, either full- or part-time, at a civilian job? Include weeks that you were on paid vacation, paid sick leave, and military leave.

NO OF WEEKS WORKED

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

- None

110. In 1985, how many weeks were you without a job and looking for work?

NO OF WEEKS LOOKING FOR WORK

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

- I had a job throughout 1985
- I was not looking for work

B. YOUR SPOUSE'S WORK EXPERIENCE

111. Do you currently have a spouse?

- No GO TO QUESTION 115
- Yes
- Yes, separated GO TO QUESTION 115

112. Is your SPOUSE. Mark ALL that apply

- In the Armed Forces - full-time
- In the Armed Forces - part-time in Guard/Reserve
- Working full-time as a Guard/Reserve technician
- Working full-time in other Federal civilian job
- Working full-time in civilian job (not technician or other Federal)
- Working part-time in Federal civilian job
- Working part-time in civilian job (not Federal)
- Self-employed in his or her own business
- With a job, but not at work because of TEMPORARY illness, vacation, strike, etc.
- Unpaid worker (volunteer or in family business)
- Unemployed, laid off, or looking for work
- In school
- Retired
- A homemaker
- Other

113. In 1985, how many weeks did YOUR SPOUSE work for pay, either full- or part-time, at a civilian job? Include weeks that your spouse was on paid vacation and paid sick leave. Give your best estimate.

- None. GO TO QUESTION 115

NO OF WEEKS WORKED

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

114. Altogether in 1985, what was the total amount that YOUR SPOUSE earned from a civilian job or his or her own business, BEFORE taxes and other deductions? Include earnings as a Guard/Reserve technician. Include commissions, tips or bonuses. Give your best estimate.

AMOUNT EARNED BY SPOUSE

\$

0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9

- More than \$100,000
- None

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