

## Analysis of Early Military Attrition Behavior

About one third of the first-term enlistees in each of the military services fail to complete their enlistment terms. The period of highest attrition rate occurs during the first six months of service when over 10 percent of the entering cohort is discharged. What factors influence military attrition during this period? Which individuals are attrition prone? What policies will reduce attrition? These questions are addressed by examining recently available data on the background, motivations, and subsequent early attrition behavior of first-term enlisted males.

The data are from the 1979 Survey of Personnel Entering Military Service, observations from which have been linked with military personnel records to determine whether or not early attrition occurred. (Most previous attrition studies have had to rely on personnel records alone.) A model was created to assess how early attrition was predicted by a variety of factors, including demographic background, prior work experience, job match and satisfaction, and entry point decisions. The analysis framework was based on job matching and firm-specific human capital models that analyze the dynamics of job separation.

### PREDICTORS OF EARLY ATTRITION

The major new finding of the research is the strong relationship between early attrition and pre-enlistment work history. A spell of unemployment in the year before enlistment raises the probability of attrition by 2.2 percentage points. Recruits who change jobs frequently before enlistment are more prone to early attrition. Other things equal, a nineteen-year-old recruit with four previous employers has a predicted six-month attrition rate of 12.7 percent compared with 9.6 percent for a similar recruit with a single previous employer. Also, individuals with no prior work experience have early attrition rates 3.4 percentage points higher than those with some experience.

Like earlier studies, this study shows that high school graduates have markedly lower attrition than nongraduates. The early attrition rates of non-high school graduates and recruits with a certificate of general educational

development (GED) are 8 percentage points higher than the rates of high school graduates. Our confidence in this well-known result is increased because this analysis accounts for previously unobserved variables, such as work history and satisfaction with initial military job assignment, which might have distorted the effect of high school graduation status on attrition.

An unexpected finding is that **older recruits are more prone to early attrition than are younger recruits**. Early attrition increases over one percentage point for each year beyond age 17 at enlistment. This result is the reverse of the usual relationship between age and 36-month attrition. This suggests that accession screens based on three-year attrition profiles may distort recruiting and training efforts, because young recruits separate late in the term and old recruits separate early. The costs associated with the loss of a 17- and 20-year-old recruit are not equal if the 17-year-old separates after 30 months and the 20-year-old separates after 5 months. Significantly more of the costs of training and recruiting are recouped in the former case than in the latter case.

A number of factors were found to be insignificant. For instance, **military job match and satisfaction, as recorded at the time of enlistment, do not significantly affect early attrition**. Recruits who are directed into unexpected or less desired occupations are no more attrition prone than those who receive their first occupation choice. Moreover, **most of the inducements offered at the entry point to encourage enlistment also have no significant impact on early attrition**. For example, recruits with guaranteed or preferred location assignments are no less likely to leave than recruits who accept a second choice.

### IDENTIFYING ATTRITION-PRONE PERSONNEL

These findings imply that more sophisticated accession screens could help predict attrition. **Although high school graduation status remains the best single predictor of early attrition, age and previous employment taken together have comparable predictive value**. These three variables could be used together to identify military

applicants who are highly prone to early attrition. As illustrated below, older dropouts with poor employment histories are four times as likely to leave during the first six months as young high school graduate enlistees with employment stability. By the same token, the combination of youth and employment stability can compensate for a deficiency in education. While the overall early attrition rate of high school graduates is half that of dropouts, 17-year-old nongraduates with a stable employment history are less attrition prone than graduates who enlist at age 20 after some employment instability.

### MILITARY ATTRITION VS. CIVILIAN SEPARATION

Because the armed services must compete directly with civilian employers for personnel, the predictors of early military attrition are also compared with those of civilian separations of young workers. Several factors—work history, general aptitude, and minority status—have similar impacts on both types of separations. But three important factors have quite different effects: age, education, and job satisfaction.

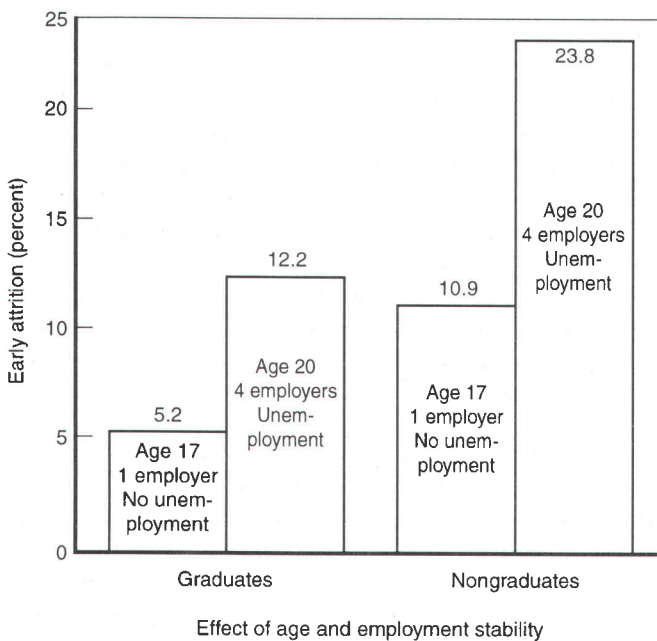


Figure 1—Early attrition predictions differ by age and employment stability in addition to graduation status

Although young recruits are less prone to early attrition than older ones, the opposite is true for civilians. For young civilian workers each yearly increment in age decreases the separation rate by 3 percentage points. This difference between sectors is particularly disturbing because it suggests that older enlistees may be labor market “misfits” who do worse in the military than one would expect even after controlling for their previous work history.

The lack of a high school diploma, a valuable predictor of military attrition, has no significant impact on the separation rate of young civilian workers who are full-time labor force participants. This difference suggests that the attitudinal and behavioral differences associated with dropping out of school may be less compatible with the demands of military discipline than those of civilian employment.

Finally, although job satisfaction is consistently linked with civilian separation, differences in military job satisfaction—at least as indicated on enlistment day—have no significant effect on the likelihood of early attrition. The reasons for this difference are unclear: it may reflect a variety of factors, including the inability of new recruits to anticipate their future work situations in the military.

### SERVICE POLICIES AND ATTRITION

While this research focuses on how differences in individual characteristics influence attrition, recent experience indicates that service policies also play a critical role in determining the level of attrition. For example, one would expect a sharp attrition decline as the proportion of graduate accessions in all services rose from 70 percent in 1979 to 86 percent in 1982. In fact, six-month attrition actually rose from 10.8 percent for 1979 accessions to 11.9 percent for 1982 accessions. In terms of attrition, the “high quality” 1982 cohort is not doing better than the 1979 cohort. This recent insensitivity of attrition to large changes in recruit quality may suggest that as the quality of cohorts has improved, standards of discipline or performance may also have risen. Further research is planned into how changes in cohort quality and service policies affect attrition.

*This research brief describes work done within the Forces and Resources Policy Center of RAND's National Defense Research Institute for the office that preceded the Under Secretary of Defense (Personnel and Readiness). It is more fully documented in Analysis of Early Military Attrition Behavior, by Richard Buddin, R-3069-MIL, July 1984, 71 pp., \$7.50, available from RAND Distribution Services (Telephone: 310-451-7002; FAX: 310-451-6915; or Internet: order@rand.org). Abstracts of all RAND documents may be viewed on the World Wide Web (http://www.rand.org). Publications are distributed to the trade by National Book Network. RAND is a nonprofit institution that helps improve public policy through research and analysis; its publications do not necessarily reflect the opinions or policies of its research sponsors.*

### RAND

1700 Main Street, P.O. Box 2138, Santa Monica, California 90407-2138 • Telephone 310-393-0411 • FAX 310-393-4818  
1333 H St., N.W., Washington, D.C. 20005-4707 • Telephone 202-296-5000 • FAX 202-296-7960

RB-2001-2 (1985)