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RESEARCH ON MARINE CORPS
ENLISTED PERSONNEL ATTRITION:
FINAL REPORT: NR170-819

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This is the final report of a four-year longitudinal study of U.S. Marine Corps first-term enlisted personnel attrition and reenlistment. Brief reviews of the design and major results are presented and the Technical Reports under this contract are abstracted. Finally, conclusions and implications for practice and further research are presented.																			

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Dr. H. Wallace Sinaiko

U.S. Marine Corps Enlisted Personnel:

Finally, and importantly, we express our sincere appreciation to the some 3,000 Marine Corps enlisted personnel who participated in various aspects of this research.



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RESEARCH ON MARINE CORPS ENLISTED PERSONNEL ATTRITION: FINAL REPORT

Problem

Pre-end of active obligated service (EAOS) attrition among first term enlistees is, "Obviously a serious problem warranting close attention. The high attrition rates experienced in the past are evidence that the full potential of recruits is not being achieved. Nevertheless, the measures taken to improve performance must not degrade our forces . . ." (DOD, 1978, p. 68).

Pre-EAOS attrition rates increased through the 1970's and were running from 30 to 40% after movement to the all-volunteer service (DOD, 1978). The attrition rate issue is magnified by the cost of attrition (Huck & Midlam, 1977) and by a relative decline in the 17-21 year old male primary recruiting pool projected for the remainder of this century (Wharton, 1979). These facts could lead to problems in maintaining military manning levels and readiness. Thus, a continuing search for better understanding of the causes and correlates of pre-EAOS attrition and exploration of counter attrition strategies are required. See Sinaiko (1977) for a compendium of papers dealing with the first term attrition problem.

The need to better understand the attrition phenomenon is not reduced by recent increases in recruiting success and decreases in attrition. The continuing recession and relative lack of employment alternatives for young people are a temporary lull. When the economy improves, recruitment and retention will resurface as major challenges for military managers. Although recent increases in military pay were a significant step, our research indicates there are a number of non-pay issues also

associated with military enlisted personnel retention.

The research program conducted by the University of South Carolina's Center for Management and Organizational Research between 1976 and 1981 was among the efforts directed toward better understanding of pre-EAOS attrition in the military, particularly the U.S. Marine Corps.

USC Research

The University of South Carolina military attrition research program had three major components:

1. The longitudinal tracking, via surveys and HMC master files, of a cohort of some 1500 male, first term enlistees who entered the Marine Corps in 1976 at Parris Island Recruit Depot.
2. Extension of the 1976 study to samples of male and female first term recruits who entered the Marine Corps in 1977 and 1978 at San Diego or Parris Island. This phase of the research provided an opportunity to evaluate the generalizability of the recruit training results from the original 1976 Parris Island sample.
3. An experimental evaluation of the effects of a realistic job preview on a sample 1978 Parris Island accessions. This component of the study is labeled PIRATE (Parris Island Recruit Assimilation Training Exercise).

In each of these components an attempt was made to provide analyses and results that would contribute to the manpower managers ability to understand and more effectively manage attrition. The research also sought to contribute to the understanding of the psychological processes associated with attrition.

Table 1 provides an annotated bibliography of the Technical Reports prepared under this contract. Also included in Table 1 are lists of Ph.D. dissertations and publications based on research conducted under this contract. A total of 14 technical reports, two Ph.D. dissertations, nine journal articles,

proceedings papers, or chapters, and one book have been generated from this project.

In the sections that follow, we provide management summaries of the results of the three major components of the study. The reader is referred to the relevant Technical Reports and publications for detailed analysis and discussion. The summary of results from the three major dimensions of the research program is followed by a discussion of implications for practice and further research.

LONGITUDINAL STUDY

What Was the Purpose of This Longitudinal Study?

This study sought to evaluate changes in Marine Corps recruit perceptions, attitudes, expectations, values, and behavioral intentions over four years and to relate such changes to turnover and reenlistment. Earlier reports in this series focused on cross-sectional analyses at various points in time (see e.g. TR-2, 5, 8, 10). Subsequent reports (TR-11 and 13) focused on longitudinal analyses over time. The reader is referred to Youngblood et al., 1981, TR-13, for a complete analysis of the 48 month longitudinal analysis.

What Was the Sample Composition?

The longitudinal sample consisted of 1,445 male, first term, non-reservist Marine Corps enlisted personnel who entered the Parris Island Recruit Training Depot in August of 1976. Figure 1 summarizes the basic longitudinal data collection design. Due to incomplete data, the Phase III measures were dropped from the longitudinal analysis. The results reported here are based on

Table 1

USC-ONR STUDY OF MARINE CORPS ATTRITION: SUMMARY OF OUTPUT
 William H. Mobley, Bruce M. Meglino, Stuart A. Youngblood
 Center for Management and Organizational Research
 University of South Carolina

ONR: N00014-76-C-0938
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TECHNICAL REPORTS

- TR-1. Mobley, W., Hand, H., and Logan, J. A Longitudinal Study of Enlisted Personnel Attrition in the U. S. Marine Corps: Preliminary Recruit Training Results. In Sinaiko, H. W. (Ed.) First Term Enlisted Attrition. Washington, D. C., Smithsonian Institution, 1977.
- A preliminary analysis of the August, 1976 Parris Island cohort. Among the major findings were: 17% of the new recruits think they have less than a .5 chance of completing enlistment; 20% were uncertain or did not intend to complete enlistment; and that recruit training graduates and attrites differ significantly on a number of variables before recruit training. Complete analyses following up this preliminary report were given in TR-2 and TR-5.
- TR-2. Mobley, W., Hand, H., Logan, J., and Baker, R. Pre-Recruit Training Values, Expectations, and Intentions of Marine Corps Recruits. Columbia: Center for Management and Organizational Research, University of South Carolina, TR-2, ADA041194, May, 1977.
- This report summarized pre-recruit training demographic, values, expectations, intentions, and expected leadership, group, and job variables. Comparisons by race and education were provided. A number of significant correlates of intention to complete the enlistment were reported.
- TR-3. Hand, H., Griffeth, R., and Mobley, W. Military Enlistment, Reenlistments and Withdrawal Research: A Critical Review of the Literature. Columbia: Center for Management and Organizational Research, University of South Carolina, TR-3, ADA048955, November, 1977.
- This report summarized military research on enlistment, reenlistment, and/or the withdrawal process. Among the research needs noted were: more longitudinal and multivariate designs; greater attention to organizational and policy variables; greater use of "hard criteria," i.e., actual attrition or reenlistment. Studies were classified in a matrix of 11 independent variables (job content, economic, aptitude, etc.) and 7 dependent variables (attrition, reenlistment, intentions, etc.).
- TR-4. Mobley, W., Griffeth, R., Hand, H. and Meglino, B. Review and Conceptual Analysis of the Employee Turnover Process. Columbia: Center for Management and Organizational Research, University of South Carolina, TR-4, ADA049307, December, 1977.

A detailed review of the management and psychological literature on turnover. Age, tenure, satisfaction, job content, intentions, and commitment were consistently related to turnover. However, lack of conceptual models, multivariate, and longitudinal research, and failure to consider attraction of alternative jobs were noted as precluding a better understanding of attrition.

- TR-5. Mobley, W., Hand, H., Baker, R., and Meglino, B. An Analysis of Recruit Training Attrition in the U.S. Marine Corps. Columbia: Center for Management and Organizational Research, University of South Carolina, TR-5, ADA053333, February, 1978.

This report updates TR-1 and 2 by analyzing recruit training attrition for the 1976 Parris Island cohort. It was found that graduates and attrites differ significantly on education, mental score, intentions and expectancy of completing, Marine role attraction and expected leadership and job content. Multivariate analyses are included as are analyses of changes during recruit training, and reasons for attrition.

- TR-6. Ashworth, D. N. and Mobley, W. H. Relationships Among Organizational Entry Goals, Subsequent Goals, and Performance in a Military Setting. Columbia: Center for Management and Organizational Research, University of South Carolina, TR-6, July, 1978.

This report analyzes organizational entry performance goals, recruit training performance, and post-recruit training performance goals. Expectancy of being an outstanding Marine was the best predictor of entry goal, entry goal was the best predictor of performance, and performance was the best predictor of later goals. Implications for practice and goal theory were discussed.

- TR-7. Cathcart, J. S., Goddard, R. D. and Youngblood, S. A. Perceived job Design Constructs: Reliability and Validity. Columbia: Center for Management and Organizational Research, University of South Carolina, TR-7, ADA062865, October, 1978.

This report combines data from the ONR data base, private sector, and educational institutions to evaluate the dimensions (attributes) of jobs as measured by the Job Diagnostic Survey (JDS) and relations with job satisfaction. Implications for job design research and practice are discussed.

- TR-8. Griffeth, R. W., Meglino, B. M., Youngblood, S. A., and Mobley, W. H. Advanced Training and Initial Duty Station Values, Expectations, and Intentions of Marine Corps Enlisted Personnel. Columbia: Center for Management and Organizational Research, University of South Carolina, TR-8, ADA069174, March, 1979.

This report summarizes, on a cross-sectional basis, the advanced training and initial duty station measures on the 1976 cohort. Descriptive data on intentions, expectations, values, leadership, job content, and group variables are provided, along with correlational analyses of intentions to complete and intentions to reenlist. This is a continuation of TR's 2 and 5.

- TR-9. Horner, S.O., Mobley, W.H., and Meglino, B.M. An Experimental Evaluation of the Effects of a Realistic Job Preview on Marine Recruit Affect, Intentions, and Behavior. Columbia: Center for Management and Organizational Research, University of South Carolina, TR-9, September, 1979.

This report summarizes the PIRATE experiment dealing with the impact of a realistic job preview (RJP). Recruit training attrition was reduced from 14.9% to 10.3% ($p < .17$) in the RJP groups. Survival days at six-months, twelve months, and recruit training performance were significantly higher in the RJP groups ($p < .05$). Explanatory mechanisms and managerial implications are discussed.

- TR-10. Youngblood, S.A., Meglino, B.M., and Mobley, W.H. A Cross-Sectional Analysis and Generalizability Implications of a Military Attrition Model. Columbia: Center for Management and Organizational Research, University of South Carolina, TR-10, January, 1980.

This report compares the 1976 Parris Island Cohort with 1977 and 1978 Cohorts from San Diego and Parris Island. Univariate and multivariate differences, methodological, conceptual, and practical implications are discussed.

- TR-11. Youngblood, S.A., Laughlin, J.E., Meglino, B.M., and Mobley, W.H. A Longitudinal Analysis of Military Recruit Attrition: The First 25 Months. Columbia: Center for Management and Organizational Research, University of South Carolina, TR-11, February, 1980.

This report summarizes pre-recruit training, post recruit training, advanced training, and duty station measures on the 1976 longitudinal cohort of Marine Corps enlistees. Significant differences between stayers and leavers and significant changes over the first 25 months of the enlistment are identified. Implications are discussed.

- TR-12. Mobley, W.H., Youngblood, S.A., Meglino, B.M., and Moore D.P. An Analysis of Female Recruit Attrition. Columbia: Center for Management and Organizational Research, University of South Carolina, TR-12, February, 1980.

This report analyzes 1977 and 1978 cohorts of female Marine Corps recruits. Intentions to complete and the difference between role attrition for military and civilian roles were predictive of recruit training attrition. Expected leader behavior, job autonomy, skill variety, and growth need strength also differentiated female attrites from non-attrites.

- TR-13. Youngblood, S.A., Mobley, W.H., Meglino, B.M., Laughlin, J.E., and Baker, R.L. Organizational Socialization: A Longitudinal Analysis of Attitude Change, Turnover, and Reenlistment in the Military. Columbia: Center for Management and Organizational Research, University of South Carolina, TR-13, October, 1981.

This report analyzes the four year changes in the original 1976 sample of Marine Corps recruits. Significant differences were found between early leavers, later leavers, and reenlisters. Further, differential rates of change in attitudes and perceptions were found between later leavers, completers, and reenlisters. The results have implications for recruitment, selection, socialization, and assignment processes.

- TR-14. Meglino, B.M., Youngblood, S.A., and Mobley, W.H. Research on Marine Corps Enlisted Personnel Attrition: Final Report. Columbia: Center for Management and Organizational Research, University of South Carolina, TR-14, August, 1982.

This report summarizes the 13 previous technical reports, two Ph.D. dissertations, and five publications conducted under this program of research. A four year longitudinal study of 1976 Marine Corps enlistees; generalizability analyses to 1977 and 1978 cohorts; and an experimental evaluation of realistic job previews are summarized. Implications for recruitment, selection, entry socialization, later transition socialization, and assignment are discussed.

PH.D. DISSERTATIONS

- Horner, S.O. A Field Experimental Study of the Affective, Intentional, and Behavioral Effects of Organizational Entry Expectations. Columbia: College of Business Administration, University of South Carolina, 1979. (Dr. Horner is now Manager of Training and Development, Semiconductor Division, Texas Instruments, Dallas).

- Griffeth, R.W. An Information Processing Model of Employee Turnover Behavior. Columbia: Department of Psychology, University of South Carolina, 1980. (Dr. Griffeth is now Assistant Professor of Organizational Behavior, Kent State University, Kent, Ohio.)

PUBLICATIONS

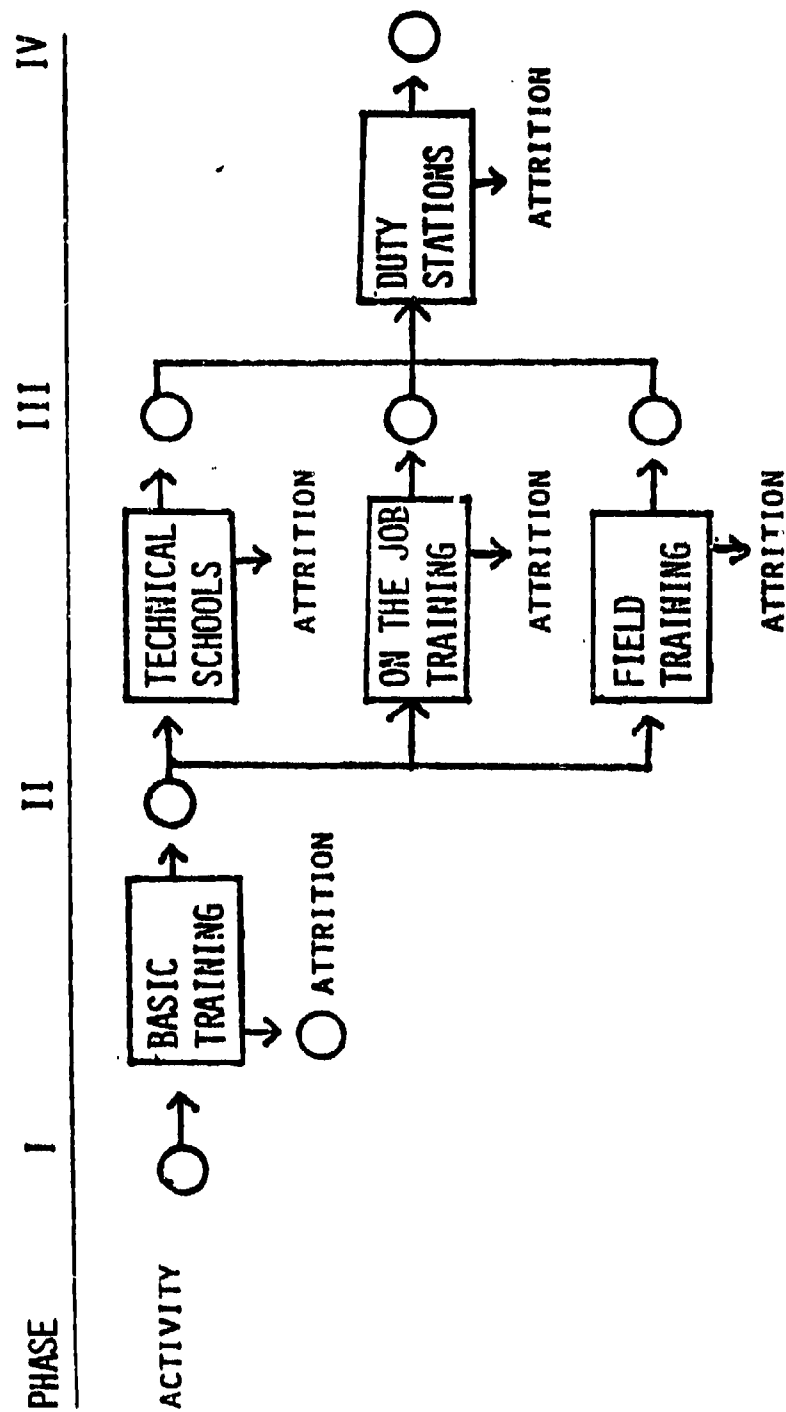
- Mobley, W., Hand, H., and Logan, J. A Longitudinal Study of Enlisted Personnel Attrition in the U. S. Marine Corps: Preliminary Recruit Training Results. In Sinaiko, H. W. (Ed.) First Term Enlisted Attrition. Washington, D.C.: Smithsonian Institution, 1977.

- Hand, H., Griffeth, R., and Mobley W. Military Enlistment, Reenlistment, and Withdrawal Research: A Critical Review of the Literature. JSAS Catalog of Selected Documents in Psychology. Tempe, Ariz.: JSAS, August, 1978.

- Cathcart, J.S., Goddard, R.B., and Youngblood, S.A. Validity of Job Design Constructs. Southern Management Association Proceedings, November, 1979, pp. 43-46.
- Mobley, W., Griffeth, R., Hand, H., and Meglino, B. Review and Conceptual Analysis of the Employee Turnover Process. Psychological Bulletin, 1979, 86, 493-522.
- Mobley, W., Hand, H., Baker, R., and Meglino, B. Conceptual and Empirical Analysis of Recruit Training Attrition. Journal of Applied Psychology, 1979, 55, 10-18.
- Youngblood, S.A., Mobley, W.H., and Meglino, B.M. Longitudinal and Experimental Analyses of First-Term Enlisted Attrition. In Sinaiko, H.W., P.R. Chatelier, C.A. Cook, J.R. Hosek, and G.T. Sicilia (Eds.), Military Personnel Attrition and Retention Research in Progress. Washington, D.C.: Smithsonian Institution, October, 1981, pp. 5-12.
- Mobley, W.H. Some Unanswered Questions in Turnover and Withdrawal Research. Academy of Management Review, 1982, 7, 111-116.
- Mobley, W.H. Employee Turnover: Causes, Consequences, and Control. Reading, Mass.: Addison-Wesley, 1982.
- Ashworth, D.N. and Meglino, B.M. An Examination of the Relationship Between Organizational Climate and Performance. Mid-Atlantic Journal of Business (in press).
- Youngblood, S.A., Mobley, W.H., and Meglino, B.M. A Longitudinal Analysis of Turnover. Journal of Applied Psychology (in review).

Figure 1

BASIC LONGITUDINAL DESIGN



○ - ADMINISTRATION OF SURVEY INSTRUMENTS

pre-recruit training, post-recruit training, and duty station measures. Table 2 summarizes the statistical design of the longitudinal study.

What Was Measured?

Measures included: demographic variables, expectations and perceptions of leadership, job content, the work group, and role rewards; satisfaction; attraction of both civilian and military roles; behavioral intentions to complete the enlistment and to reenlist; and actual attrition and reenlistment behavior. Measures taken at the beginning of recruit training, the end of recruit training, and after assignment to a duty station served as the basis for the longitudinal study. Figure 2 summarizes the measures.

What Were the Major Hypotheses?

1. Can early leavers (individuals who leave during recruit training) be distinguished from later leavers (individuals who leave after recruit training) and stayers (those who complete their enlistment or those who choose to reenlist) on the key components of the turnover model (Mobley, Griffeth, Hand, and Meglino, 1979)?
2. Can later leavers be distinguished from completers and reenlisters in terms of observed changes in the key components of the turnover model that develop over time?

What Were the Major Results?

Table 3 summarizes the results for the demographic variables. Among the major bivariate results, completers and reenlisters were more educated than leavers. In terms of mental scores, early

ANALYSIS OF VARIANCE DESIGN

	<u>N</u>	Group	Survey Measures		
			O ₁	O ₂	O ₃
<u>Design 1</u>	218	A	✓		
	111	B	✓		
	82	C	✓		
	323	D	✓		
	557	E	✓		
	35	F	✓		
	119	G	✓		
<u>Design 2</u>	101	B	✓	✓	
	75	C	✓	✓	
	278	D	✓	✓	
	497	E	✓	✓	
	31	F	✓	✓	
	110	G	✓	✓	
<u>Design 3</u>	43	C	✓	✓	✓
	162	D	✓	✓	✓
	231	E	✓	✓	✓
	13	F	✓	✓	✓
	64	G	✓	✓	✓
<u>Design 4</u>	393	D&E	✓	✓	✓
	77	F&G	✓	✓	✓
<u>Design 5</u>	162	D	✓	✓	✓
	13	F	✓	✓	✓
<u>Design 6</u>	231	E	✓	✓	✓
	64	G	✓	✓	✓
<u>Design 7</u>	175	D&F	✓	✓	✓
	295	E&G	✓	✓	✓

Note: O₁ = observation obtained upon entry (O₁), completion of basic training (O₂) or assignment to duty station (O₃).
 ✓ = completed survey at this phase.
 N = Maximum number of observations for each design.
 Group A = Leave before basic training completed.
 Group B = Leave after basic training but before duty station.
 Group C = Leave after duty station.
 Group D = Completers with three years enlistment.
 Group E = Completers with a four year enlistment.
 Group F = Reenlisters after a three year enlistment.
 Group G = Reenlisters after a four year enlistment.

Figure 2

MEASURES

<u>INDIVIDUAL</u>	<u>ORGANIZATIONAL</u>	<u>CRITERIA</u>
● AGE ● MENTAL GRADE ● EDUCATION ● RACE ● DEPENDENTS ● ROLE ATTRACTION - MARINE ● ROLE ATTRACTION - CIVILIAN	● LEADERSHIP (LBDQ) - CONSIDERATION - STRUCTURE ● GROUP (GDDQ) - HOMOGENEITY - PERMEABILITY - STABILITY - HEDONIC TONE - PLUS 9 OTHER DIMENSIONS ● JOB (JDS) - SKILL VARIETY - TASK SIGNIFICANCE - FEEDBACK - PLUS 7 OTHER DIMENSIONS	● INTENTIONS - EAOS - RE-ENLISTMENT ● PRE-EAOS ATTRITION - ADMINISTRATIVE REASONS - SELF-REPORT REASONS ● PERFORMANCE - SELF-REPORT - MASTER FILE - INDIVIDUAL RECRUIT TRAINING PERFORMANCE ● RECRUITMENT

Table 3
DEMOGRAPHIC STATISTICS FOR LEAVERS, COMPLETERS, AND REENLISTERS

Group	N ^a	Education (Years)	Race (% Cauc.)	Marital Status (% Married)	Mental (AFQT)	Age at Enlistment (Years)
A. Leave during recruit training	218	11.36 (.99) ^b	76.1	7.3	57.90 (18.66)	19.19 (1.90)
B. Leave after training but before duty station	111	11.09 (.98)	79.3	5.4	59.76 (18.70)	18.98 (2.06)
C. Leave after duty station	82	11.37 (.85)	73.2	6.1	59.66 (18.56)	18.67 (1.66)
D. Complete three year enlistment	323	11.80 (.68)	76.5	1.2	54.97 (19.70)	18.86 (1.22)
E. Complete four year enlistment	557	11.88 (.59)	82.9	2.3	65.07 (18.46)	18.88 (1.29)
F. Reenlist after three years	35	11.80 (1.02)	69.7	5.7	59.11 (20.02)	18.94 (1.82)
G. Reenlist after four years	119	11.84 (.86)	76.5	8.4	66.93 (18.39)	19.30 (1.94)

^aNumber of observations vary slightly due to missing values

^bFigures in parentheses are standard deviations

NOTE: One-way analysis of variance and chi-square analyses yielded significant differences ($p < .05$) among the subject groups on all demographic variables.

leavers had the lowest and reenlisters the highest scores.

Turning to the 25 survey variables, Table 4 summarizes the significant effects for each of the seven statistical designs. The significant time effects are apparent. The hypothesized initial differences between leavers, completers, and reenlisters in design one, also is apparent. Finally, the group by time effects between designs two and three increase as predicted.

Early leavers are clearly different from stayers on measures taken at the beginning of recruit training. Among the differences: early leavers initially had significantly lower intentions of completing their enlistment, lower expectations of completing their enlistment, lower expected satisfaction, lower attraction to the military role, lower perceptions of work group attraction and expected leader structure, lower internal motivation and growth need strength, and higher perceived chances of finding an acceptable civilian job.

Later leavers generally exhibited different patterns of attitude changes over time than the stayer groups on the key components of the turnover model. Specifically, leavers during advanced training and duty station exhibited sharp declines in completion intentions prior to leaving. Later leaver groups also exhibited larger declines in net role force, job satisfaction, and perceived work group attraction over time.

All groups generally exhibited the most favorable attitudes toward the military upon completion of basic training, but exhibited a marked decline between basic training graduation and after assignment to duty station.

Reenlisters with a four year enlistment period exhibited

Table 4
SUMMARY OF DESIGN EFFECTS^a

Design	Group	Time	Group x Time
1 (leavers ^b , completers, reenlisters)	84%	-	-
2 (leavers ^c , completers, reenlisters)	64%	76%	12%
3 (leavers ^d , completers, reelisters)	44%	80%	28%
4 (completers vs. reelisters)	4%	84%	8%
5 (completers vs. reelisters - three year enlistment)	4%	40%	4%
6 (completers vs. reelisters - four year enlistment)	4%	84%	16%
7 (three year stayers ^e vs. four year stayers)	60%	92%	20%

^aFigures are the percentage of significant effects for the 25 variables analyzed.

^bIncludes leavers prior to basic training completion, during advanced training, and during duty station.

^cIncludes leavers during advanced training and duty station only.

^dIncludes leavers during duty station only.

^eStayers include both completers and reelisters.

initially higher completion and reenlistment intentions, higher attraction to the military, higher internal motivation and growth need strength, higher expected satisfaction, and more favorable job and work group perceptions. These differences, initially between the four year reenlistment group and the later leaver and stayer groups, reappeared during the duty station and could be attributed to initial demographic differences as well as individual by job interactions due to differential assignments to MOS categories based on initial demographic differences. Figures 3 through 8 graphically illustrate the initial differences and the changes over time.

Discriminant analyses revealed that cognitive and attitudinal variables measured at the time of entry, contributed significantly to the prediction of membership in leaver, stayer, or reenlistment groups. Completion chances, reenlistment intentions, military role attraction, and education were the best predictors of leaver versus stayer status. The distinction between completers and reenlisters, however, revealed that the demographic variables of education, AFQT scores, race, and age were better predictors than cognitive or attitudinal variables. Table 5 summarizes the discriminant analysis results.

What Implications Can Be Drawn From This Study?

Selection procedures that utilize completion and reenlistment intentions measures and role attraction indexes in addition to traditional demographic measures of education and AFQT scores can better identify both high and low risk recruits at the time of entry.

Identification and distinction of later leaver groups can

High

17

Figure 3

Completion Intentions

Group
Means

Low

Phase: 1

2

3

Leavers

Stayers

A. recruit training

D. three year completers

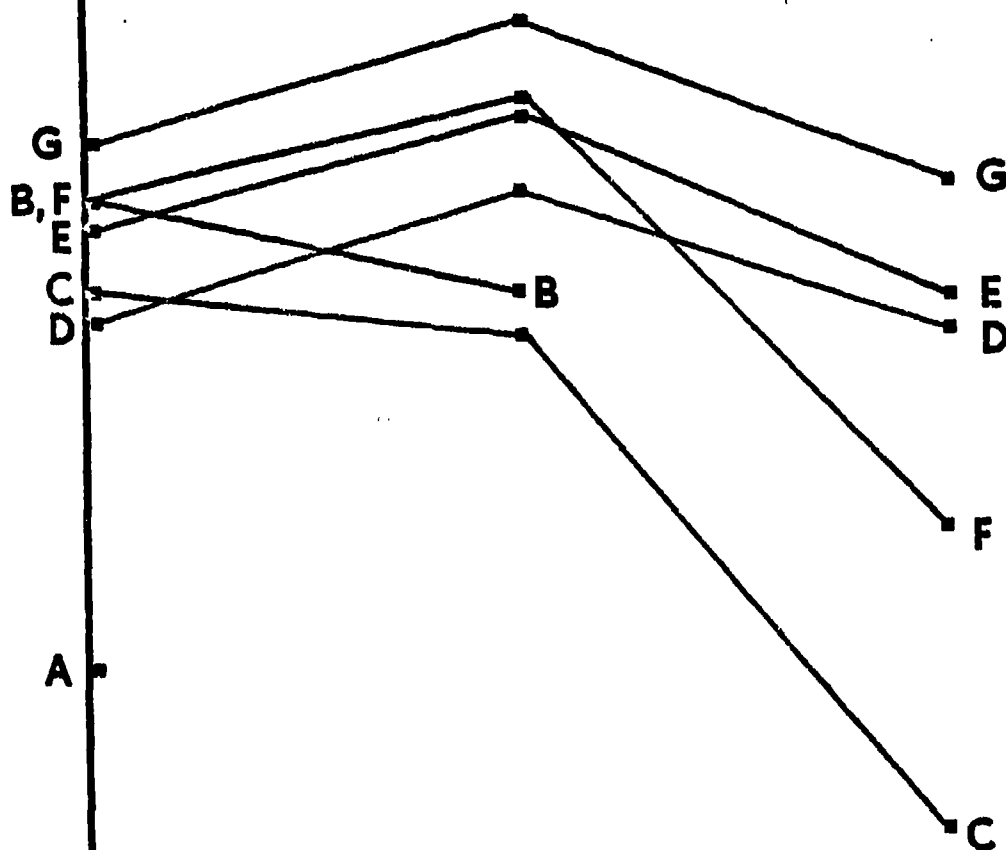
B. advanced training

E. four year completers

C. duty station

F. three year reenlisters

G. four year reenlisters



High

18

Figure 4

Reenlistment Intentions

Group
Means

Low

Phase: 1

2

3

Leavers

A. recruit training

B. advanced training

C. duty station

Stayers

D. three year completers

E. four year completers

F. three year reenlisters

G. four year reenlisters

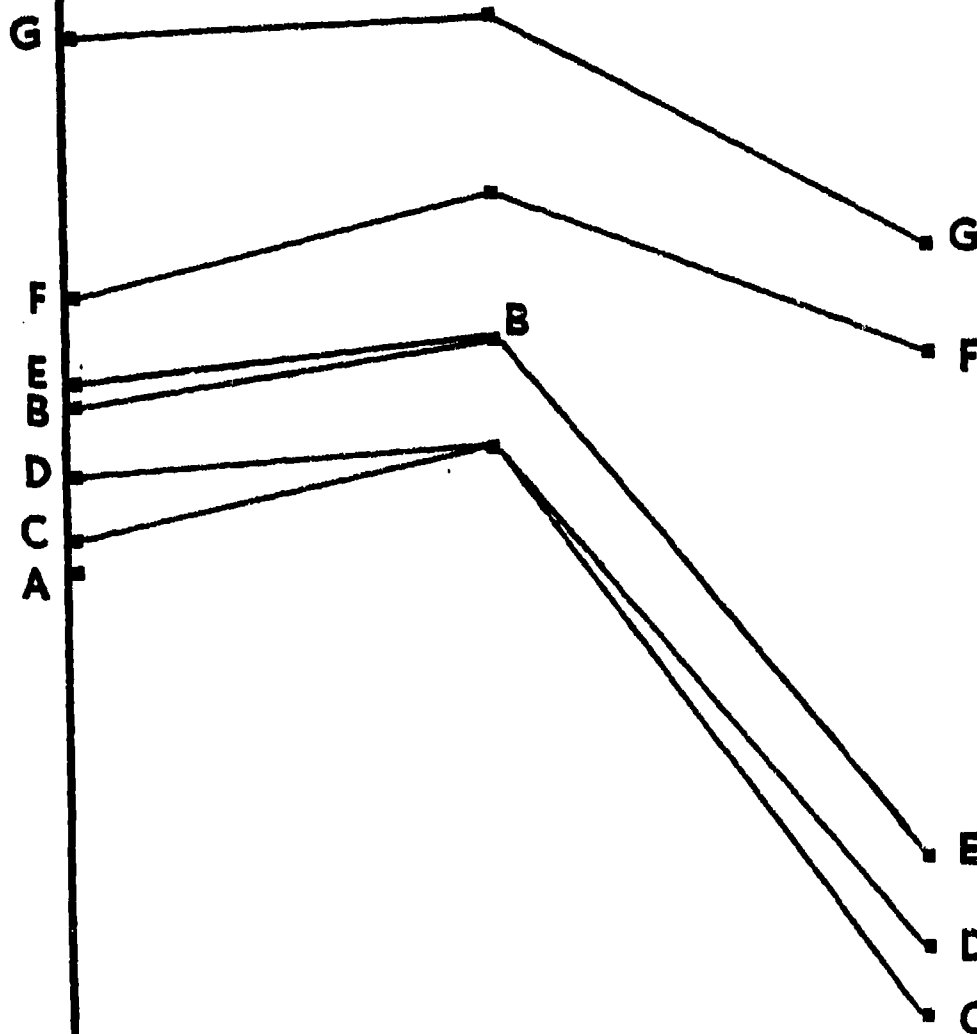
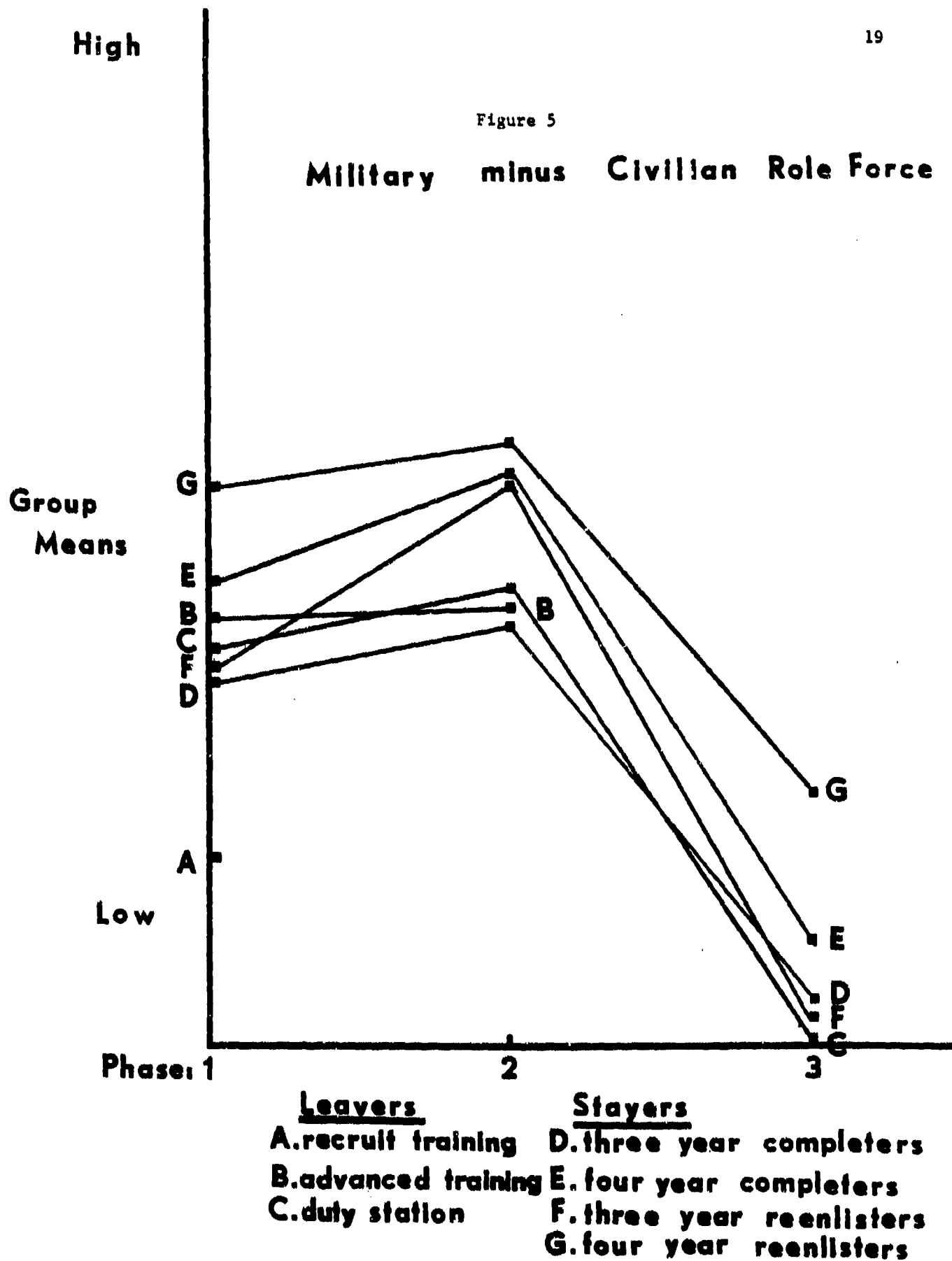


Figure 5

Military minus Civilian Role Force



High

Figure 7

Growth Need Strength

Group Means

Low

Phase: 1

2

3

Leavers

A. recruit training

B. advanced training

C. duty station

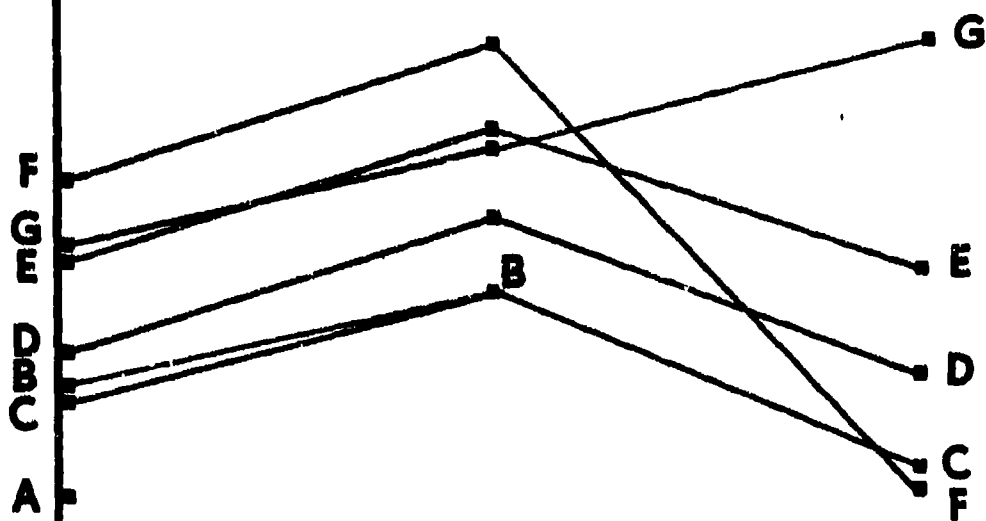
Stayers

D. three year completers

E. four year completers

F. three year reenlisters

G. four year reenlisters



High

22

Figure 8

Work Group Attraction

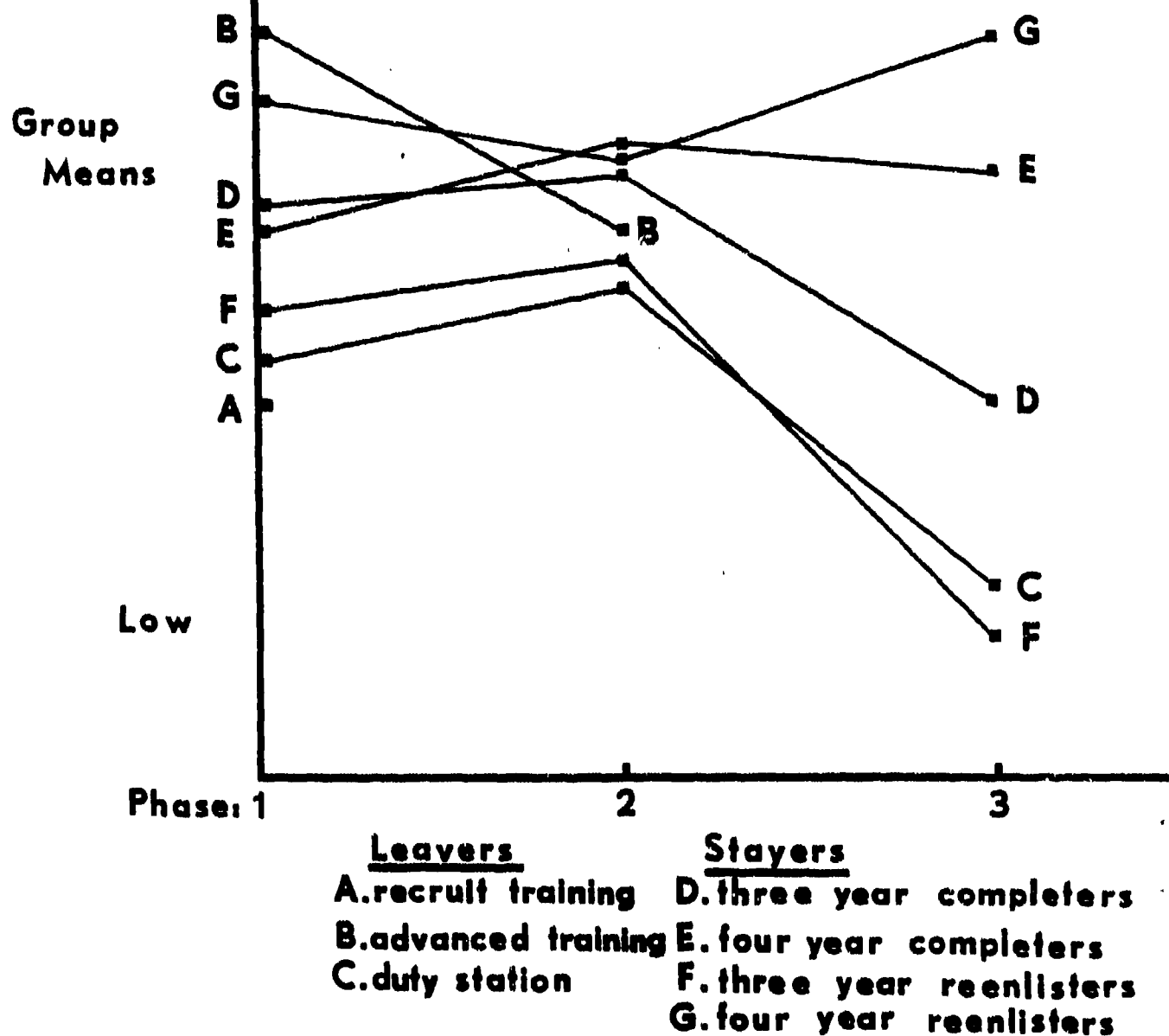


Table 5
STEPWISE DISCRIMINANT ANALYSIS RESULTS FOR LEAVER, COMPLETER, AND REENLISTER GROUPS

Variable	F to Enter	WILK'S LAMBDA	STANDARDIZED DISCRIMINANT COEFFICIENTS Function 1	Function 2	BETWEEN GROUP MEANS LEAVERS COMPLETERS REENLISTERS (N=216) (N=552) (N=105)
Education	39.34	.92	.82	-.26	11.39 11.89 11.78
Reenlistment Intentions	8.99	.89	.05	.83	2.84 2.96 3.46
Completion Chances	9.69	.87	.52	-.24	.80 .88 .90
Military Role Expectancies	5.42	.86	.52	-.19	27.40 29.71 30.85
Military Role Force	3.81	.86	-.58	.31	29.96 34.67 37.99
Task Significances	2.12	.85	.17	.22	3.60 3.81 3.98
Feedback From Others	1.77	.85	.17	-.12	2.96 3.18 3.17
AGE	1.63	.84	-.16	.13	18.90 18.90 19.01
Mental Group	1.84	.84	.12	-.20	60.65 64.33 66.97
Race	1.30	.84	.06	.35	.81 .85 .81
GROUP CENTROIDS					
Function 1					-.68 .23
Function 2					-.02 -.09 .50

CONDITIONAL PROBABILITY OF
CLASSIFICATION TABLE

	Leaver	Completer	Reenlistor
Leaver	.50	.41	.89
Completer	.16	.77	.07
Reenlistor	.20	.61	.19

HIT/MISS CLASSIFICATION TABLE

	ACTUAL		
	Leaver	Completer	Reenlistor
PREDICTED			
Leaver	192	157	34
Completer	85	409	40
Reenlistor	73	229	71

Percent of Cases Correctly Classified: 52%

also be enhanced by a knowledge of changes that occur over time for completion and reenlistment intentions, role attraction indexes, perceived work group attraction, satisfaction, internal motivation, and growth need strength.

Strategies directed at pre-entry socialization of applicants appear warranted to enhance self-selection and to modify expectations upon entry. Post-entry socialization strategies in conjunction with identification of high risk turnover groups at critical training and transition stages could also enhance retention. Specific strategies such as accurate portrayal of role information, organizational expectations, and career paths could assist recruiting and advertising efforts as well as stimulate anticipatory socialization. Post-entry socialization strategies might also employ: realistic previews prior to major transition points in training and job transfers, role modeling, the development of coping skills, differential job assignments and/or differential training and development strategies. Socialization and/or training strategies designed to enhance group cohesion may also provide a social support system to individuals identified as high turnover risks. An examination of the practice of contingent leadership styles for high risk turnover groups might also improve retention and reenlistment.

Future research is needed to explore the processes of successful socialization. Such efforts would involve more qualitative studies that examine how successful recruits master needed job skills, manage intergroup conflicts, define and exercise appropriate role behaviors, adjust to group norms and values, learn to reliably perform their assignments and to exhibit

innovative behavior spontaneously. Research of this nature needs to explore these processes longitudinally and well beyond the initial entry period into the organization.

GENERALIZABILITY ANALYSES

The primary longitudinal study was based on a sample of 1976 male enlistees who entered the Marine Corps through Parris Island Recruit Training Depot. The use of this cohort raises questions of generalizability with respect to time of accession, location of accession, and gender of enlistee. Two studies were undertaken to provide insight into the generalizability of the recruit training results for the original 1976 Parris Island male enlistee cohort.

The first generalizability study, reported in detail in Youngblood et al., 1980, TR-10, used samples of recruit accessions from Parris Island in July of 1977, and San Diego in July of 1977 and January of 1978. Figure 9 summarizes the comparisons for the original 1976 sample and the additional three samples.

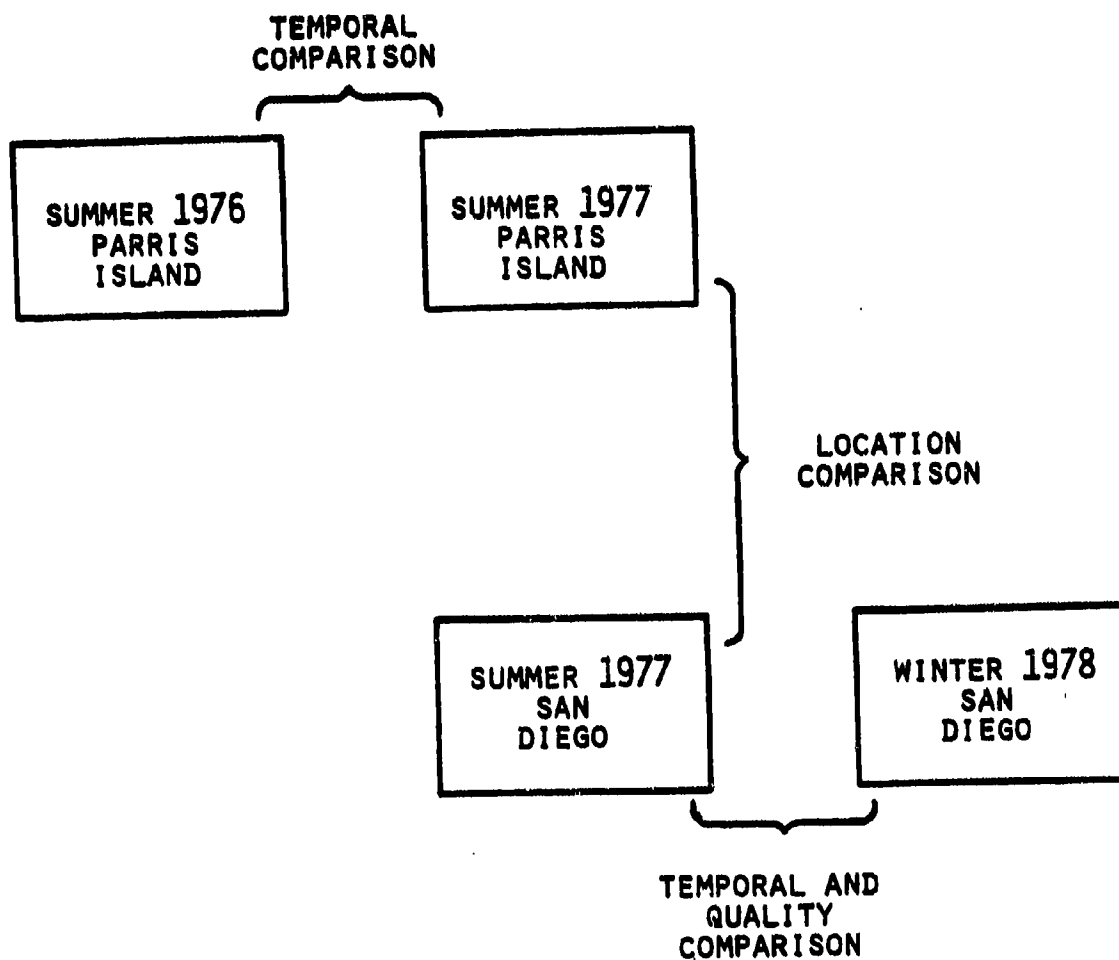
How Were the Groups Different?

Significant differences among the four groups were noted for racial composition, marital status, mental scores, age, and years of education. Compared to all other groups, the 1976 Parris Island recruits had significantly higher mental scores, and the 1978 San Diego sample was significantly older with significantly fewer years of education.

There was a significant overall difference in attrition rates across the four groups. Comparison of individual groups revealed no significant difference between 1976 and 1977 Parris Island (12% vs. 10%, a temporal comparison), marginal significance ($p < .10$)

Figure 9

SURVEY TIMES AND LOCATIONS



between 1977 Parris Island and San Diego (10% vs. 6%, a location comparison) and a significant difference between 1977 and 1978 San Diego (6% vs. 14%, a temporal and quality comparison).

How Did Graduates Differ From Attrites?

Recruit training graduates and attrites were compared on the measures they completed prior to the start of training. The pre-training measures which significantly differentiated graduates from attrites for all four groups were: intention to re-enlist, sum of the positive Marine role outcome expectancies, Marine role attraction, Marine role force, Marine role force minus civilian role force, and expected overall satisfaction.

In order to examine the attrition process in multivariate terms, a regression model was proposed and applied to each of the four cohort groups. Tests of homogeneity of slope and intercept for all possible ways of pooling cohort groups revealed significant differences between the 1978 San Diego sample and the other three cohort groups. Specifically, demographic and intention variables were significantly related to attrition for the pooled sample, while age, satisfaction, and intention variables were significantly related to attrition among the 1978 San Diego sample.

How Did Attrites Differ in Reasons for Attrition?

Reasons for attrition were examined in two ways: administrative and self reported. With respect to administrative reasons, all four samples discharged a substantial percentage of recruits due to unsuitability - apathy. However, Parris Island tended to have a higher attrition rate due to unsuitability - personality. Since 1976 the attrition rate has increased for

erroneous entry and decreased for physical disability and unsuitability - ineptitude. Table 5 summarizes the administratively recorded reasons for recruit training attrition in each sample.

Among the highest self-reported reasons for attrition for all four groups were: missed family and friends, too much pressure, lack of personal freedom and physical health. Rank order correlations between each sample for 30 possible self-reported reasons were relatively high, ranging from .66 to .80. Table 6 summarizes the self report reasons for recruit training attrition in each sample.

What Kinds of Individual Changes Were Noted During Recruit Training?

Changes during recruit training were examined for graduates (pre-training vs. post-training survey) and for attrites (pre-training vs. out-placement survey). Across all four groups, graduates exhibited a significant increase in leader consideration, job autonomy, feedback from others, group proficiency and growth need. Changes that were significant across three groups and were in the appropriate direction for a fourth group were: increased intention to re-enlist, increased chances of completing enlistment, increased role force toward the Marine role, decreased leader structure, and increased overall satisfaction. The San Diego cohort appeared to have experienced fewer significant changes during recruit training.

No significant changes were noted across all four groups for attrites. Significant changes across three groups with a fourth group in the appropriate direction were: increased expectation of

Table 6
Administratively Recorded Reasons for Recruit Training Attrition

Reason	1976 Parris Island Male Cohort Non-Reserve		1977 Parris Island Male Cohort Non-Reserve		1977 San Diego Male Cohort Non-Reserve		1978 San Diego Male Cohort Non-Reserve	
	N	%	N	%	N	%	N	%
Unsuitability, Ability, Defective Attitude, Inability to Expend Effort Constructively	52	29	19	40	16	52	18	35
Erroneous Entry	8	4	12	26	9	29	18	35
Unsuitability - Personality Disorder	65	37	15	32			2	4
Physical Disability	24	14						
Unsuitability - Inaptitude	17	10					1	1
Misconduct - Fraudulent Entry	5	3	1	2	4	13	2	4
Other	5 ^a	3			2 ^b	6	11 ^c	21
Total N	176	100	47	100	31	100	52	100

^aIncludes: hardship, lack of jurisdiction, misconduct-conviction by civil authorities.

^bIncludes: personal drug abuse and minority.

^cIncludes: Marine Corp. Recruit Failure Program.

SOURCE: Printout WM-4

Table 7

Self-Reported Reasons For Recruit Training Attrition

I am leaving the Marine Corps because of: ^a	1976 Parris Island Male Non-Reserve Cohort		1977 Parris Island Male Non-Reserve Cohort		1977 San Diego Male Non-Reserve Cohort		1978 San Diego Male Non-Reserve Cohort	
	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean
Physical health reasons.	10	2.90	4.5	3.10	1	3.33	1	3.48
Mental health reasons.	13	2.75	4.5	3.10	9	2.94	15	2.24
The poorly trained leaders I had.	17	2.69	25	2.29	22	2.11	24	2.10
The inability to make friends with other Marines.	22	2.57	9.5	2.86	30	1.78	19	2.19
Family problems back home.	14.5	2.73	6.5	3.06	22	2.11	9	2.33
The lack of personal freedom as a Marine.	2	3.38	2	3.43	6.5	2.89	3	2.78
Other enlistees picked on me.	24	2.54	21	2.43	19	2.17	26.5	2.00
I had trouble learning.	25	2.52	19	2.52	16.5	2.22	19	2.19
Inability to complete a training school.	18	2.62	17	2.57	15	2.28	24	2.10
A good job opportunity as a civilian.	12	2.78	11	2.76	11.5	2.44	12	2.29
Inability to get promoted.	16	2.72	14.5	2.67	19	2.17	12	2.29
Being a Marine is too physically demanding.	7	3.01	13	2.71	2	3.22	12	2.29
The assignments were too boring.	11	2.84	14.5	2.67	11.5	2.44	15	2.24
Superiors treated me unfairly.	6	3.05	6.5	3.05	8	2.78	6.5	2.38
There was too much pressure on me.	3	3.24	1	3.95	5	2.94	2	2.79
I missed my family/friends back home.	1	3.42	3	3.20	4	2.94	4	2.50
Getting in trouble was the only way I could get out of the Marines.	23	2.55	23	2.30	16.5	2.22	21	2.15
The rules and regulations were too rigid.	4	3.16	5	2.95	10	2.60	8	2.35
There wasn't enough discipline.	30	2.28	22	2.35	22	2.11	10	2.30
I want to get married.	8	2.99	12	2.75	13	2.39	19	2.19
I just couldn't stay out of trouble.	21	2.59	25	2.29	14	2.33	5	2.40
A change in my religious values.	19.5	2.61	16	2.62	26.5	2.00	22	2.14
Minorities are discriminated against.	14.5	2.73	19	2.52	24.5	2.06	28	1.95
I didn't get the location I wanted.	26	2.48	27.5	2.24	24.5	2.06	29	1.91
I didn't get the training I wanted.	19.5	2.61	27.5	2.24	29	1.88	17	2.20
I got hung up on drugs.	29	2.33	30	1.62	28	1.94	26.5	2.00
I couldn't get along with members of other races.	27	2.44	29	2.05	19	2.17	24	2.10
There were too many "Mickey Mouse" rules and regulations.	9	2.95	9.5	2.86	3	3.00	15	2.24
I was treated like a little child.	5	3.11	19	2.52	6.5	2.89	6.5	2.38
I couldn't get in the unit I wanted.	28	2.42	25	2.29	26.5	2.00	30	1.86
Mean N	105		21		18		21	

Note: Spearman rank order correlations were computed for each of the three possible pairs of cohorts for the set of ranks. The correlations are: 1976 Parris Island with 1977 Parris Island, $r = .80$; 1976 Parris Island with 1977 San Diego, $r = .76$; 1976 Parris Island with 1978 San Diego, $r = .69$; 1977 Parris Island with 1977 San Diego, $r = .68$; 1977 Parris Island with 1978 San Diego, $r = .69$; 1977 San Diego with 1978 San Diego, $r = .71$.

^aScale = 1, Strongly Disagree to 5, Strongly Agree

Source: 7M-5

finding an acceptable civilian job, decreased attraction to the Marine role, decreased Marine role force, decreased leader structure, and a decrease in dealing with others.

What Conclusions Can Be Drawn From This Study?

Although results from the 1976 Parris Island cohort were not consistently significant across all cohorts, the findings of this study generally support those of an earlier study of recruit training attrition (Mobley, Hand, Meglino, & Baker, 1978, TR-5). Significant pre-recruit training differences distinguished graduates from attrites and generally similar results were obtained for other analyses conducted.

Perhaps the most interesting conclusion of this study is the presence of two significantly different prediction equations for samples which differed in overall quality as measured by age and level of education. Since different variables were responsible for predicting attrition in these distinct groups, experimental studies which alter entrance and discharge criteria may yield useful strategies for maintaining staffing levels in the future. Such studies should evaluate the long term effects of such strategies.

The observation that graduates and attrites differed on measures taken prior to recruit training continues to have implications for recruiting. Also, these results raise the possibility of differential treatment, counseling, and other interventions directed at recruits representing high attrition risks.

Finally, self reported reasons for attrition suggest a number of possible interventions aimed at all recruits. Providing

individuals with ways of coping with the pressure of training and methods for dealing with homesickness and the lack of personal freedom could prove helpful in managing attrition.

Female Sample

Since all the results reported above were based on male enlistees, a separate study using the same set of measures was conducted using female Marine Corps recruits who entered Parris Island in August of 1977 and February of 1978. See Mobley et al., TR-12, for a detailed analysis of the female sample results.

How Was the Study Conducted?

Recruits were asked to complete a survey after they arrived at their recruit training location but before the actual start of training (pre-training survey) and again just prior to graduation (post-training survey). Individuals who left the Marine Corps during training were also given a survey (out-placement survey). The survey included measures of expectations, values, attraction for both the Marine and civilian roles, leadership, job content, group, satisfaction, and internal motivation. Demographic information was obtained on individuals through the Marine Corps Recruit Accession Management System (RAMS) file.

What Work Role Outcomes Were Most and Least Desirable?

Prior to the start of recruit training, the female recruits were asked to rate 50 work role outcomes in terms of their desirability or undesirability. The most desirable outcomes included: learning new skills; an organization that keeps its promises; a job which gives me pride in myself; good insurance, medical, and financial benefits, and an exciting job. The least

desirable outcomes included: a repetitive job with little responsibility; working closely with people who use drugs; a job involving physical violence; interference with marriage and family plans; and long separations from home and family.

How Did Graduates Differ From Attrites?

Female recruit training graduates and attrites were compared on the measures they completed prior to the start of recruit training. The pre-training measures which significantly differentiated female graduates from attrites included: intention to complete the enlistment (lower for attrites) and the difference between the military and civilian role forces (lower for attrites). Additionally, attrites exhibited higher expected leader consideration, lower growth need strength, and lower expected job autonomy. None of the demographic variables significantly differentiated attrites from graduates, perhaps due to the relatively low variance in these variables.

When the variables were subjected to a stepwise multiple regression analysis, the significant variables were expected leader consideration (attrites higher), job autonomy (attrites lower), skill variety (attrites higher), growth need strength (attrites lower), and intention to complete the enlistment (attrites lower).

The female data also were subjected to a hierarchical regression analysis with the variables entered in four steps based on an a priori model of the attrition process (Mobley et al., 1979). Demographic and personal variables were entered as the first set, the expected job content, leadership, and work group variables as the second set, expected satisfaction and net role

force as the third set, and finally intention to complete the enlistment as the final set. This analysis permits a comparison of the attrition process model results for females with the previously reported analyses for the male cohorts (Youngblood et al., 1980, TR-10).

The only set of variables which made a significantly unique contribution was the expected job content, leadership, and work group set. The overall equation was significant at the $p < .10$ level and the adjusted R^2 was seven percent. The significant individual variables were: growth need strength ($p < .10$); skill variety ($p < .05$); autonomy ($p < .05$); and leader consideration ($p < .05$).

When the results of this analysis were compared with the male results (Youngblood et al., 1980, TR-10), notable differences in the attrition process model were evident. For the males, the demographic/personal, expected satisfaction/net role force, and behavioral intention step F 's were significant. For the females, only the expected job content, leadership, and work group step F was significant.

Thus, with respect to the a priori attrition process model, the males and females appear to be different. It is important to recognize, however, that the male analyses were based on much larger sample sizes, exhibited greater variance in the independent variables, and that the females represent a "higher quality" sample than the males as indexed by education and mental grade.

It is evident from this analysis and the previously summarized bivariate analysis that expected job content factors of skill variety and job autonomy, expected leader consideration, and

growth need strength are significant unique contributors to the prediction of female recruit training attrition. The importance of accurate expectations and/or organizational modifications of the job content and leadership variables is clearly suggested. Selection on, and/or development of growth need strength also is suggested.

What Were the Major Reasons for Attrition?

The survey given to attrites prior to their departure from the Recruit Depot included questions dealing with self-reported reasons for attrition. In terms of rank order, the primary reasons for attrition were reported to be:

1. Lack of personal freedom
2. Too much pressure
3. Missed family and friends
4. Rules and regulations too rigid.

These reasons also were among the highest ranked by male cohorts reported earlier (Youngblood et al., 1980, TR-10). Rank order correlations were computed between reasons given by the female cohort and those previously reported by the male cohorts. The results were:

1977-78 Females vs. 1976 Parris Island Males: rho = .91;
vs. 1977 Parris Island Males: rho = .74;
vs. 1977 San Diego Males: rho = .74;
vs. 1978 San Diego Males: rho = .65.

Thus, the male and female recruit training attrites sampled gave similar self-reported reasons for attrition, especially for the most important reasons.

The reasons for female attrition as administratively recorded

on the HMC master file were "unsuitability-personality" (36.4%) and "unsuitability-apathy, defective attitude, inability to expend effort constructively" (27.3%). In the male cohorts, previously reported by Youngblood et al. (1980, TR-10), "unsuitability-apathy" was a major administrative reason for male recruit attrition at both Parris Island and San Diego and "unsuitability-personality" was a major administrative reason for male recruit attrition at Parris Island.

What Changes Were Observed During Recruit Training?

Changes during recruit training were examined for graduates (pre-training vs. post-training survey) and for attrites (pre-training vs. outplacement survey). For the graduates, there were significant increases in intention to reenlist, chances of completing the enlistment and finding an acceptable civilian job, role attraction and role force for both military and civilian roles, leader consideration, unit proficiency, and growth need strength. Graduates also reported a significant decrease in skill variety.

The attrites exhibited a significant increase in perceived chances of finding an acceptable civilian job, and a significant decrease in military role force and attraction, leader consideration, skill variety, task significance, feedback from the job, satisfaction, unit attraction and proficiency.

What are the Implications of the Results?

The recruiting effort might benefit by studying the female outcome desirability ratings since they indicate what recruits, prior to recruit training, value in a work role. Since intentions to complete the enlistment, expected leader consideration,

expected job content, and growth need strength, as measured prior to recruit training, differentiate subsequent graduates and attrites, such variables may be useful in selection, counseling, and early recruit training processes. We continue to believe that realistic job previews can be one useful strategy, at both the recruiting and recruit training stages, for providing: accurate expectations (of e.g., leader style, job content, etc.), value clarification, coping skills, and credible role models (see Horner et al., 1979). Further, identifying individuals with low predicted retention early in the process may provide an opportunity for coaching and counseling prior to actual recruit training. Note that the female recruit training attrition profile may differ from the male profile. Finally, the outcome desirability, expectancy, and composite measures, along with the reasons for attrition data, should be useful to personnel policy and practice managers in designing a military role with greater attraction relative to the civilian role for female recruits.

The Pirate Experiment

Why Realistic Job Previews?

Experiences encountered by an individual prior to and shortly after entry into a new organization have a profound effect upon the individual's attitudes and behavior (see Van Maanen, 1976; Wanous, 1977, for reviews). A number of studies have shown that early turnover is related to the new employee's lack of realistic information concerning the job and the organization.

Several recent studies of military and business organizations have suggested supplying new and potential employees with

realistic information concerning the organization. In a review of career expectations in the military, Wiskoff (1976) concluded that thought should be given to increasing group cohesiveness, providing reality oriented training, and introducing more realistic leadership expectations. Glickman, Goodstadt, Frey, Korman, and Romanczuk (1974) conducted a longitudinal study of the U.S. Navy. They concluded:

The accuracy of expectations conveyed to recruits ... needs to be enhanced. Inappropriate expectations lead to disenchantment on the part of recruits, which in turn lead to lessened interest in reenlisting, as well as negative feedback to prospective recruits among friends and relatives (p. 5).

From an initial study of attrition in the Marine Corps, Mobley, Hand, Baker, and Meglino (1979, TR-5) suggested that an initial recruit depot program aimed at clarifying expectations as well as enhancing the recruit's expectancy of completing his enlistment may help reduce attrition among first-term male enlistees. In a more recent longitudinal study, Lau (1979) suggested providing entering Navy recruits with realistic information as a procedure to reduce attrition.

A number of attempts have been undertaken to reduce attrition by giving potential or new employees a realistic job preview (RJP). Wanous (1977) reviewed six field studies that were concerned with the effects of RJP's on turnover. He concluded:

The use of realistic job previews in the recruitment of new members has shown consistent results in reducing the turnover of newcomers for a wide variety of organizations. Conclusions about the effect of realism on other facets of the entry process must remain tentative, however (Wanous, 1977, p. 615).

A more recent review of 10 RJP studies (Horner, 1979; Horner,

Mobley, & Meglino, 1979, TR-9) concluded that a distinction must be made between RJP's given before and those given after the employment decision. Further, while there is some evidence the RJP's can help reduce attrition, the evidence is inconsistent and the psychological mechanisms by which RJP's operate is not well understood.

In an attempt to explicate the possible contribution of RJP's to attrition reduction, a conceptual model was developed and tested using samples of Marine Corps recruits. A simplified version of this conceptual model is presented in Figure 10.

A number of major hypotheses follow from this conceptual model specifically, realistic job previews may help reduce attrition by:

1. lowering job ambiguity;
2. providing role models;
3. increasing efficacy expectations, i.e., confidence;
4. increasing perceived ability to cope and perform;
5. changing role outcome values;
6. increasing trust and honesty;
7. changing expectations.

What Was the Experimental Evaluation of the RJP?

In order to evaluate the effectiveness of the realistic job preview (RJP) and to evaluate the processes by which it may influence attrition, a field experiment was designed. This experiment was conducted at the Marine Corps Recruit Depot (MCRD) at Parris Island, South Carolina. The experiment was labeled PIRATE, Parris Island Recruit Assimilation Training Exercise.

Subjects. A total of 978 enlisted male recruits participated in the study. This did not include 43 recruits who were dropped from the organization due to fraudulent or erroneous entry during the time of the study. All participants were assigned to platoons

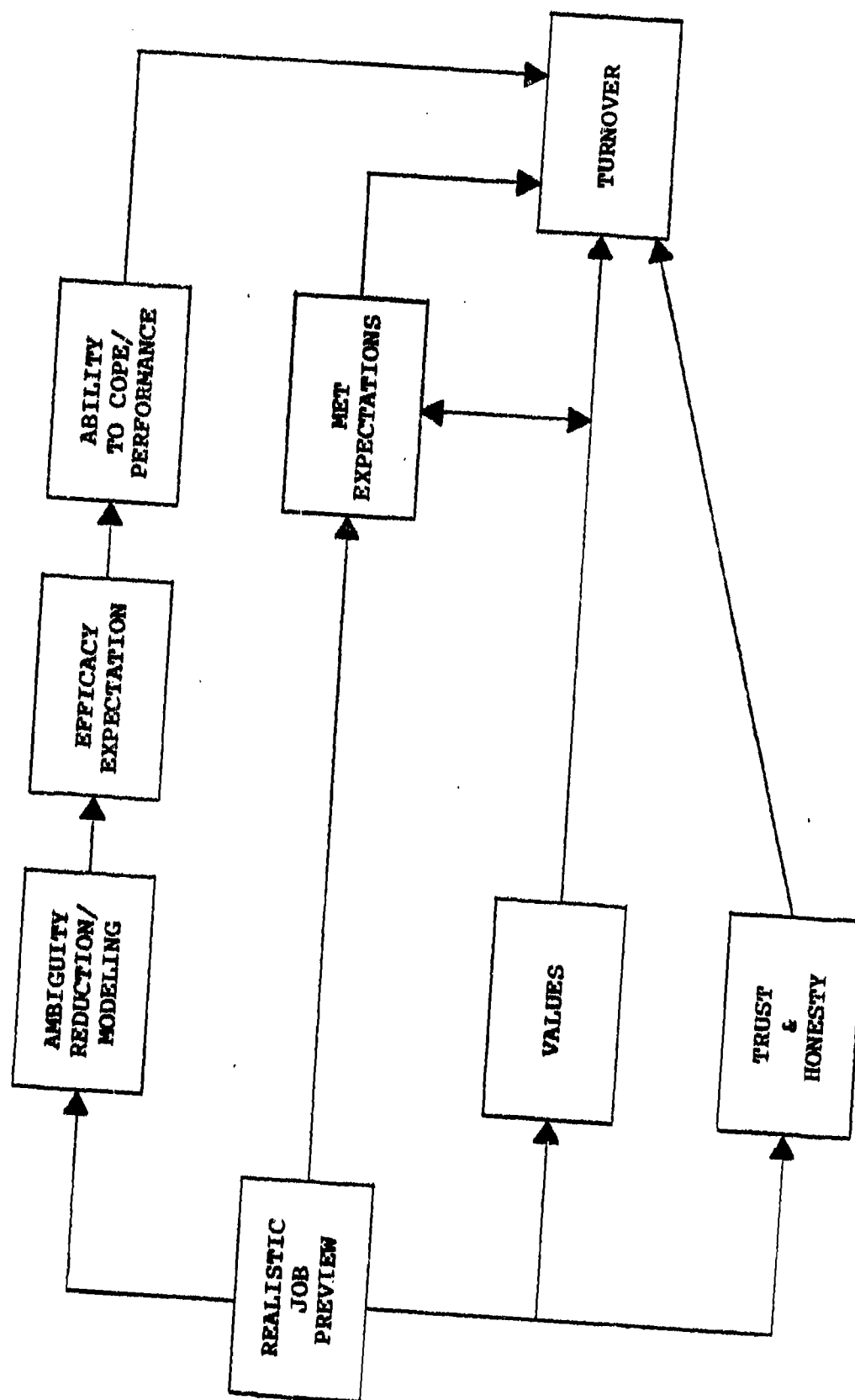


Figure 10. Intermediate links between RJP's and turnover.

in the usual MCRD manner. The platoon was the basic training unit and was used as the unit for assignment to experimental conditions. Once the date for starting the study was established, all incoming recruits were included in the experiment with the exception mentioned above, until 12 platoons had been filled.

RJP film. The 80-minute color video RJP film was produced by the Training and Support Center (TSC) at Parris Island in close cooperation with the Center for Management and Organizational Research, College of Business Administration, University of South Carolina (USC). Content for the RJP film and many of the questions included in the measures were based on observations of the training by the USC research team, previous research results, and on extensive interviews with over 300 recruits, drill instructors (DI's), and other Marine Corps personnel.

The RJP film was based primarily on information gained from these interviews. Those areas that the recruits said they wished someone had told them about early in their training were included. Recruits were shown going through some of the training that was perceived to be the greatest cause of concern among recruits. Voices of the recruits and their instructors were played on the sound track over the video picture. The voices explained how the recruit should react to certain situations and the voices gave advice on how to cope with the training.

The film started with the recruits arrival at Parris Island. The first few days of processing were shown. The participants in the study had already experienced most of the processing but it was hoped that if they were shown a realistic picture of what they

had already experienced, they would be more likely to accept the rest of the film as being realistic. Since the main thrust of the study was to reduce early attrition, the first three weeks of events were shown in more detail than the later weeks of training. The film included many of the details of daily life, from the time the recruit first got up in the morning until he went to bed at night. All major events in training were covered. A special section was devoted to showing how the DI was trained and how DI's viewed recruits. The DI's told how they wanted new recruits to act and advised the recruits on how to cope with their DI's.

The role models chosen for the film were not preselected for voice or appearance. Most of the scenes were shot as the recruits were actually undergoing the training. The good as well as the average and poor performers were depicted in the film. The idea was to show each recruit a successful role model with which to identify. If only the best performers were shown, it may have been hard for some incoming recruits to identify with the role models.

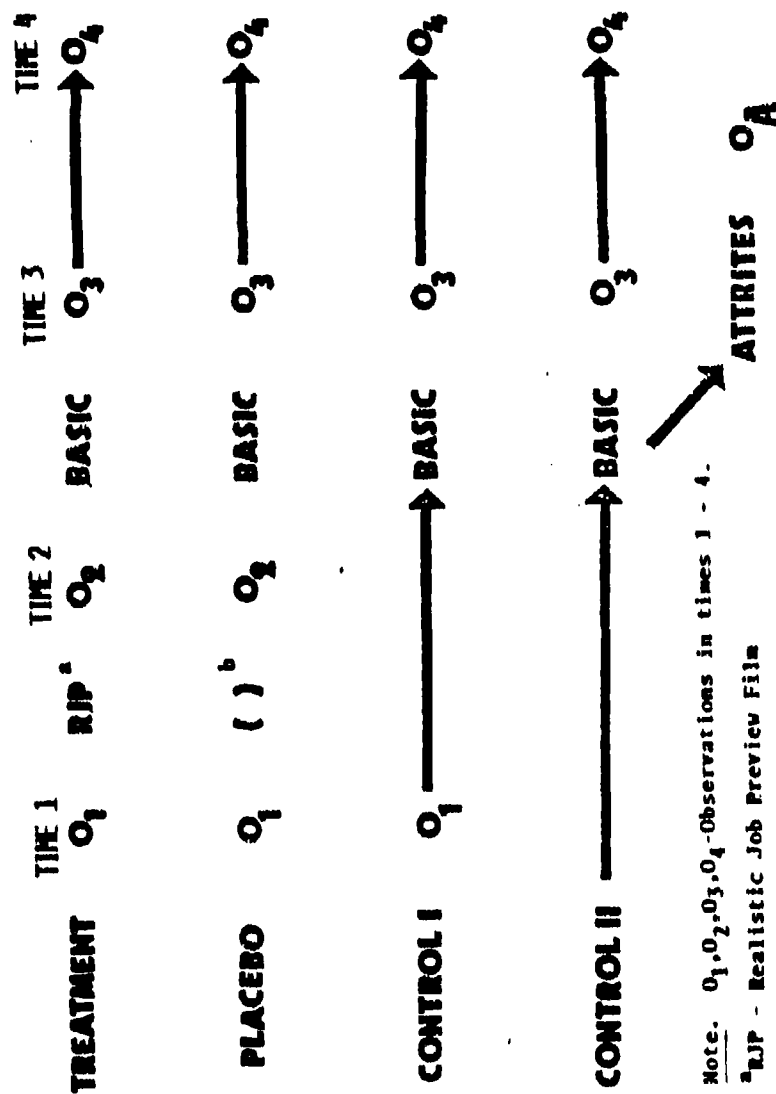
The film also related factual information concerning such things as average improvement scores on the physical training tests, the number who fail academic tests, etc.

Experimental design. As shown by the experimental design (Figure 11), each of the four platoons in a "series" was assigned to one of the four experimental conditions: treatment, placebo, control I or control II. This design was replicated for each of the three training battalions.

The first questionnaire (O1) was administered by the researchers to the first three platoons of each series on the

EXPERIMENTAL DESIGN

PIRATE



Note. O₁, O₂, O₃, O₄ - Observations in times 1 - 4.

^aRIP - Realistic Job Preview Film

^b() - Placebo Film

Figure 11. PIRATE (Parris Island Recruit Assimilation Training Exercise) design.

morning of their second day at Parris Island. Recruits were assured that their answers would be kept confidential and that their participation was voluntary.

After the survey was completed, the first two platoons of each series were marched to a classroom building. One platoon was then designated at random as either the treatment or placebo group. Both platoons were seated in separate but similar classrooms containing closed circuit color TV monitors. The groups were read an introduction by the researcher. The treatment group saw the 80-minute color RJP video tape of what recruit training is really like. The placebo group saw a series of three traditional Marine Corps films. The traditional recruiting films were in color and lasted approximately 82 minutes. Both groups received a 10-minute break during the presentation. The breaks were staggered so that the two groups could not interact with each other.

After the presentations were completed, the platoons returned to the receiving area where they continued to be processed. The platoons were kept separated while being processed. That same afternoon the treatment and placebo groups returned to the classrooms in the receiving area and were administered the second questionnaire (Q2). This questionnaire was identical to the Q1 measure.

After three weeks of training, all platoons were administered the third questionnaire (Q3). This questionnaire was similar to the previous questionnaires except the recruits were directed to answer in terms of what training is like now. During the last week of training, the fourth questionnaire (Q4) was administered

to each group. The questionnaire was identical to Q3.

MEASURES. Measures of turnover and demographic variables were obtained from the Recruit Accessions Management System (RAMS) computer file furnished by the organization. Performance measures were obtained from the personnel folders of each recruit. The attitudinal data were obtained from questionnaires.

What Were the Major Results?

See Horner, 1979 and Horner, Mobley, and Meglino, 1979, TR-9, for a complete analysis of results. Only a summary of the major results are presented here.

Table 7 presents the results of the attrition analysis. At three, six, and twelve months after accession, the RJP groups had lower attrition than did the control groups. Although the three month difference did not reach a satisfactory level of statistical significance, the six and twelve month differences were statistically significant. A similar pattern of results were observed when survival days were used as the criterion.

The results of the tests of some of the primary hypotheses regarding how the RJP operates are presented in Table 8. When the RJP groups were compared with the various control groups non-statistically significant differences were found for job and organizational expectations, efficacy expectations and trust and honesty. However, the RJP group was significantly lower on expected job ambiguity, revealed significantly more change in role outcome values, and a marginally significant difference in ability to cope. Further, the RJP group, when compared to the control groups had significantly higher performance as measured by Military Skill Marks (MSM).

Table 8

SUMMARY OF PIRATE ATTRITION RESULTS

Criteria	RJP Groups	Control Groups	Significance
3 Month Attrition	10.3%	14.9%	.17
6 Month Attrition	14.9%	23.8%	.02
12 Month Attrition	22.4%	33.1%	.01

N=678

Table 9

SUMMARY OF PIRATE RESULTS: RJP VS CONTROL GROUPS

VARIABLES	RJP vs. Control Groups Significance of Difference
Job & Organizational Expectations	ns
Expected Ambiguity	.05
Efficacy Expectations	ns
Ability to Cope	.07
Performance (Military Skills Marks)	.01
Change in Outcome Values	.05
Trust and Honesty	ns

Although the RJP did not significantly influence measured expectations, it is well to note that when an individual level analysis was conducted over all groups, the extent to which expectations were not met was significantly related to attrition.

What are the Major Conclusions and Implications of the RJP Results?

The results of this study indicate that a realistic job preview given shortly after organizational entry can help reduce attrition. The fact that the attrition reduction effect became stronger over time may be due to a statistical artifact, i.e., relatively low variance in the early months. Alternatively or additionally, the RJP may have a delayed or cumulative effect.

The results dealing with the conceptual model suggest that the RJP may have its influence through several mechanisms. The literature on organizational entry and socialization notes the importance of role clarity in successful assimilation of new members. The present results demonstrated that the RJP significantly reduced expected role ambiguity.

There also was an indication that the RJP group was better able to cope with their environment as reported prior to graduation ($p < .07$). The coping mechanism is a compelling conceptual variable in designing RJP's. Further research is underway to attempt to more directly evaluate the effects of teaching coping skills via an RJP.

The fact that the RJP groups had significantly higher performance as measured by Military Marks Scores is encouraging. It may well be that the reduced ambiguity and coping skills modeled in the RJP served to enhance performance.

The finding that the RJP group demonstrated more change in role-outcome values than did the controls illustrates the potential socialization influence of RJP's. The organizational socialization literature notes that in new environments, values are subject to modification. To the extent an RJP reflects values appropriate to the organization and to the extent such values are not too discrepant from original values, the RJP may be a valuable socialization strategy.

What Conclusions Can Be Drawn from the RJP Experiment?

This experiment serves to illustrate the potential utility of realistic job previews as a counter attrition and organizational socialization strategy. Given the relatively low cost of developing and RJP compared to the costs of attrition, the RJP appears worthy of broader implementation and evaluation.

However, several cautions are in order. Since the present study was done in only one location at limited points in time, additional evaluations are in order. Further, it must be emphasized that an RJP is neither a recruiting film nor a casual gathering of information about the organization. Rather, the RJP should be a carefully developed, realistic, situation specific treatment designed to illustrate effective coping behaviors, reduce ambiguity, illustrate desired values, convey information which is salient to the target audience, and provide identifiable role models.

Given these cautions, it is suggested that RJP's may have application beyond recruit training. Use of RJP's at the recruitment stage may encourage better self-selection and thus reduce later attrition. Use of RJP's at any major transition

point, for example, from recruit training to advanced training, from training to duty station, from one duty station to another, may facilitate adjustment and help reduce undesired attrition.

Realistic job previews will not be a panacea for personnel adjustment and attrition problems. Selection criteria, organizational and job design, leadership, policies and practices are among the variety of other relevant variables and processes. However, RJP's may well be one important strategy for effective human resource development and management.

SUMMARY OF RESULTS AND IMPLICATIONS

Listed below are some of the major conclusions of this program of research.

1. Measures of attitudes, expectations, and behavioral intentions are predictive of attrition. These measures increase the predictability of attrition beyond that attainable by using education, test scores, and demographics.
2. Early leavers, later leavers, completers, and reenlisters can be differentiated in terms of initial differences and in terms of differential rates of change in attitudes, perceptions, and role attraction over the course of the enlistment.
3. Perceptions and evaluations of civilian roles at the time of entry and throughout the enlistment enhance the prediction and understanding of attrition and reenlistment behavior.
4. Cohorts of females and "lower quality" recruits exhibit

different recruit training attrition prediction equations from summer month male recruits. These results suggest the need to further assess possible differential recruitment, induction, and early training for such groups.

5. Realistic job previews are potentially useful in providing recruits with realistic expectations about their military role, building confidence, and teaching coping skills.
6. Many of the self-reported reasons for recruit training attrition are similar to those found with young people in other major transitions such as going to college, the first job, or first time away from home. These reasons include perceived pressure, homesickness, perceived rigidity in rules and regulations, perceived lack of personal freedom. Coping skills for dealing with these issues can be taught.
7. Identification of high attrition risk recruits is feasible and may provide a basis for differential treatment at recruitment, induction, and early training. Particularly when faced with a tight labor market, it may be cost effective to do more to alter the expectations, perceptions, and attitudes of high attrition risk candidates and to consider alternative early recruit training strategies to increase the probability of retention.
8. Pay is only one of a number of outcomes that contributes to enlistment, completion, and reenlistment. Our data

suggest that learning new skills, being part of an effective team, having good performance recognized, having a qualified leader, and overall attractiveness of the military relative to civilian roles are important to retention and reenlistment.

POSSIBLE ACTIONS AND FUTURE RESEARCH

Listed below are a series of actions which could be evaluated and researched in terms of counter-attrition feasibility and effectiveness. We believe these suggestions are worthy of discussion and consideration based on theoretical, empirical, and/or practical bases.

1. Recruiting

- * Give realistic job previews at the recruiting stage.
- * Give attitudinal measures at the recruiting stage and combine with demographic prediction to flag poor risks. Cycle these predicted poor risk recruits through a career counseling stage.
- * Seek to increase the qualified recruit pool by getting accurate career information to junior high school and high school counselors.
- * Enhance "competitiveness" of military role relative to alternative civilian roles in both pay and non-pay areas.

2. Recruit Training

- * Give realistic job preview(s) during recruit training (must be situation specific, realistic, current, deal with salient issues).
- * Flag predicted poor risks upon arrival at recruit

depot and give extended (e.g., 2-5 days) low stress processing and orientation prior to placing in regular units for recruit training.

- * Perform research on the effects of differential leadership styles for "high risk" recruits on performance and retention.
- * Evaluate use of short range goal-setting feedback processes during recruit training.

3. Post Recruit Training

- * Give realistic job previews prior to any major transition, e.g., recruit training to advanced training; U.S. to Okinawa, etc.
- * Evaluate mechanisms for enhancing "meaningfulness" of work roles in field infantry units.
- * Enhance the "competitiveness" of the military role relative to alternative civilian roles in both pay and non-pay areas.
- * Seek to minimize family disruption on duty assignments.

4. General Additional Research

- * Unit and MOS level research on correlates of differential attrition rates.
- * Utility analysis of attrition. When does it become counter productive to try to "salvage" an enlistee?
- * Gatekeeper research. What criteria, decision, rules are used by those who control attrition. What is impact of policy decisions relative to attrition rates.

- * Research on labor market effects on both recruitment and retention. The U.S. is made up of many "labor markets." The impact of local labor market at the time of enlistment and through the enlistment on attitudes and behavior is worthy of much closer analysis.
- * Additional research on transitions beyond recruit training. Where do personnel get their information, expectations, and coping skills as applicable to their next assignment? What are the specific geographic, occupational, and/or unit factors that contribute to the differential rate of change in attitudes, perceptions, and intentions predictive of later attrition, completion, or reenlistment?

REFERENCES

- Campbell, J.P., Dunnette, M.D., Lawler, E.E. III, & Weick, K.E., Jr. *Managerial behavior, performance, and effectiveness*. New York: McGraw Hill, 1970.
- Dachler, H.P. & Mobley, W.H. Construct validation of an instrumentality expectancy-task-goal model of work motivation: Some theoretical boundary conditions. *Journal of Applied Psychology Monographs*, 1973, 58, 397-418.
- Glickman, A.S., Goodstadt, B.E., Frey, R.L., Korman, A.K., & Romanczuk, A.P. Navy Career Motivation Programs in an All-Volunteer Condition. (AIR-32201-6/74FR), AD-786-724, Washington, D.C.: American Institutes for Research, June, 1974.
- Graen, G.B. Role making process within complex organizations. In M.D. Dunnette (Ed.), *Handbook of industrial and organizational psychology*. Chicago: Rand McNally, 1976.
- Griffeth, R.W., Meglino, B.M., Youngblood, S.A., & Mobley, W.H. Advanced training and initial duty station values, expectations, and intentions of Marine Corps enlisted personnel. Columbia: Center for Management and Organizational Research, University of South Carolina, TR-8, March, 1979.
- Hackman, J.R. & Oldham, G.R. Development of the job diagnostic survey. *Journal of Applied Psychology*, 1975, 60, 159-170.
- Hackman, J.R. & Oldham, G.R. The job diagnostic survey. Technical Report No. 4, New Haven, Yale University Department of Administrative Sciences (ONR, N0014-67A-0097-0026), May, 1974.
- Hand, H.H., Griffeth, R.W., & Mobley, W.H. Military enlistment, reenlistment and withdrawal research: A critical review of the literature. Columbia: Center for Management and Organizational Research, University of South Carolina, TR-3, ADA048955, November, 1977.
- Horner, S.O. A field experimental study of the affective, intentional, and behavioral efforts of organizational entry expectations. Unpublished Ph.D. dissertation. Columbia: University of South Carolina, 1979.
- Horner, S.O., Mobley, W.H., & Meglino, B.M. An experimental evaluation of the effects of a realistic job preview on Marine recruit affect, intentions, and behavior. Columbia: Center for Management and Organizational Research, University of South Carolina, TR-9, September, 1979.

- Huck, D.F. & Midlam, D.O. A model to analyze the cost impact of first term attrition in the Navy and Marine Corps. DOD/ONR Conference of First Term Attrition, Leesburg, Virginia, April, 1977.
- Lau, A.W. Personnel and Organizational Determinants of Enlisted Attrition. (NPRDC TR 79-11). San Diego: Naval Personnel Research and Development Center, March, 1979.
- Lawler, E.E. Motivation in work organizations. Monterey: Brooks/Cole, 1973.
- Libo, L.M. Measuring group cohesion. Ann Arbor: Research Center for Group Dynamics, University of Michigan, 1953.
- Locke, E.A. Personnel attitudes and motivation. Annual Review of Psychology, 1975, 26, 457-480.
- Lockman, R.F. Forecasting enlisted attrition: The first year of service. Center for Naval Analysis, 1975.
- Matthews, W.T. Quality of Marines: Test scores, personal data, and performance. DOD/ONR Conference on First Term Attrition, Leesburg, Virginia, April, 1977.
- Mitchell, T.R. Expectancy models of job satisfaction, occupational preference, and effort: A theoretical, methodological, and empirical appraisal. Psychological Bulletin, 1974, 81, 1053-1097.
- Mobley, W.H. Intermediate linkages in the relationship between job satisfaction and employee turnover. Journal of Applied Psychology, 1977, 62, 237-240.
- Mobley, W.H., Griffeth, R.W., Hand, H.H., & Meglino, B.M. Review and conceptual analysis of the employee turnover process. Psychological Bulletin, 1979, 86, 493-522.
- Mobley, W.H., Hand, H.H., & Logan, J.E. A longitudinal study of enlisted personnel attrition in the U.S. Marine Corps: Preliminary recruit training results. In Sinaiko, H.W. (Ed.), First Term Enlisted Attrition. Washington, D.C.: Smithsonian Institution, 1977.
- Mobley, W.H., Hand, H.H., Logan, J.E., & Baker, R.L. Pre-recruit training, values, expectations, and intentions of Marine Corps recruits. Columbia: Center for Management and Organizational Research, University of South Carolina, TR-2, ADA041194, May, 1977.
- Mobley, W.H., Hand, H.H., Baker, R.L., & Meglino, B.M. An analysis of recruit training attrition in the U.S. Marine Corps. Columbia: Center for Management and Organizational Research, University of South Carolina, TR-5, February, 1978.

- Mobley, W.H., Hand, H.H., Baker, R.L., & Meglino, B.M. Conceptual and empirical analysis of military recruit training attrition. *Journal of Applied Psychology*, 1979, 64, 10-18.
- Mobley, W.H., Youngblood, S.A., Meglino, B.M., & Moore, D.P. An analysis of female recruit attrition. Columbia: Center for Management and Organizational Research, University of South Carolina, TR-12, February, 1980.
- Office of the Assistant Secretary of Defense, Manpower. *America's volunteers: A report on the all-volunteer armed forces*. Washington, D.C.: Department of Defense, December 31, 1978.
- Porter, L.W. & Steers, R.W. Organizational, work and personal factors in employee turnover and absenteeism. *Psychological Bulletin*, 1973, 80, 151-176.
- Sands, W.A. Prediction of Enlisted Attrition - (two years): The PQEI-2 model. Conference of the Military Testing Association, Pensacola, October, 1976. (NPRDC).
- Schneider, J. The "greener grass" phenomenon: Differential effects of a work context alternative on organizational participation and withdrawal intentions. *Organizational Behavior and Human Performance*, 1976, 16, 308-333.
- Schneider, J. & Katz, A. Personnel reactions to incentives. Naval conditions and experience: A longitudinal research study. Report No. 3, Navy Personnel Research and Development Center, San Diego, 1972.
- Sinaike, H.W. (Ed.) *First Term Enlisted Attrition*. Washington, D.C.: Smithsonian Institution, 1977.
- Stogdill, R.M. & Coons, A.E. *Leader behavior: Description and measurement*. Columbus: Ohio State University, Bureau of Business Research Monograph No. 88, 1957.
- Van Maanen, J. Breaking in: Socialization to work. In R. Dubin (Ed.), *Handbook of Work, Organization, and Society*. Chicago: Rand McNally, 1976.
- Vroom, V.H. *Work and motivation*. New York: Wiley, 1964.
- Wanous, J.P. Organizational entry: Newcomers moving from outside to inside. *Psychological Bulletin*, 1977, 84, 601-618.
- Wharton Economic Forecasts. Interim report for Office of Naval Research contract N00014-Z6-C-Q782. Volume I, Philadelphia: July, 1979.
- Wiskoff, M.E. Review of career expectations research: Australia, Canada, United Kingdom, and United States. (NPRDC TN 77-9). San Diego: Navy Personnel Research and Development Center, December, 1976.

Wiskoff, M.E. Review of career expectations research: Australia, Canada, United Kingdom, and United States. (NPRDC TN 77-9). San Diego: Navy Personnel Research and Development Center, March, 1977.

Youngblood, S.A., Meglino, B.M., & Mobley, W.H. A cross sectional analysis and generalizability implications of a military attrition model. Columbia: Center for Management and Organizational Research, University of South Carolina, TR-10, December, 1979.

Youngblood, S.A., Laughlin, J.E., Meglino, B.M., & Mobley, W.H. A longitudinal analysis of military recruit attrition: The first 25 months. Columbia: Center for Management and Organizational Research, University of South Carolina, TR-11, February, 1980.

Youngblood, S.A., Mobley, W.H., Meglino, B.M., Laughlin, J.E., & Baker, R.L. Organizational socialization: A longitudinal analysis of attitude change, turnover, and commitment in the military. Columbia: Center for Management and Organizational Research, University of South Carolina, TR-13, October, 1981.

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