Research Note 83-30

AD-A135 834

AN EVALUATION OF THE ROTC SCHOLARSHIP SELECTION SYSTEM

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PERSONNEL ACCESSION AND UTILIZATION TECHNICAL AREA

U. S. Army

Research Institute for the Behavioral and Social Sciences

May 1978

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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER: Research Note 83-30	2. GOVT ACCESSION NO.: AD-A135834	3. RECIPIENT'S CATALOG NUMBER:
4. TITLE (and Subtitle): An Evaluation of the ROTC Scholarship Selection System		5. TYPE OF REPORT & PERIOD COVERED: 1 Sept. 1976 - 30 May 1978 Research Report
		6. PERFORMING ORG. REPORT NUMBER:
7. AUTHOR(s): Faris R. Kirkland, Jerome V. Good		8. CONTRACT OR GRANT NUMBER(s): DAHC19-76-C-0047
9. PERFORMING ORGANIZATION NAME AND ADDRESS: University City Science Center, 3624 Science Center, Philadelphia, PA. 19104		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS: PR 76-102 PERI-II
11. CONTROLLING OFFICE NAME AND ADDRESS: U.S. Army Research Institute for the Behavior and Social Sciences, 5001 Eisenhower Ave., Alexandria, VA. 22333		12. REPORT DATE: 30 May 1978
		13. NUMBER OF PAGES: 43
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		15. SECURITY CLASS. (of this report): Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE:

16. DISTRIBUTION STATEMENT (of this Report)

Approved for Public Release; Distribution Unlimited

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Scholarship
Reserve Officer Training Corps (ROTC)
College Performance Prediction
Women, Treatment
Officer Procurement
Minorities, Equitable Treatment
Selection Criteria Assessment
Military Personnel Evaluation
Military Performance Prediction

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

The Army ROTC scholarship selection system was evaluated using a longitudinal data set composed of information on 16,000 individuals including applicants for Army ROTC scholarship, students in college on ROTC scholarships, and officers on active duty commissioned from West Point, ROTC and officer candidate school. The data spanned a twelve year period. The variables used in selection are Scholastic Aptitude

Test or American College Test scores, high school class standing, extracurricular and athletic activities and leadership, and an interview score assigned by a board composed of Army officers. The validity of these variables and their relative weights in scholarship selection were empirically assessed. Regression analysis across time, using selection variables to predict college and Army level criterion variables, are reported. Equitable treatment of women and minorities is discussed. Modification of selection variables are suggested to improve upon what was found to be a basically sound selection system.

The Army ROTC scholarship selection system was evaluated using a longitudinal data set on 16,000 individuals including applicants for Army ROTC scholarships, students in college on ROTC scholarships, and officers on active duty commissioned from West Point, ROTC, and officer candidate schools. The data spanned the twelve year history of the scholarship program.

The validity of selection criteria were empirically assessed through regression analysis across time, from selection variables to college criteria and from selection variables to Army performance criteria. The selection system was found to select highly qualified and well-rounded high school seniors to receive scholarships. SAT scores and class standing correlated positively with academic and ROTC grade point averages, and with grades in the Officer Basic Course. Academic selection variables correlated negatively with officer efficiency report scores. Interview scores correlated positively with several measures of performance as officers, including officer efficiency report scores. Activities scores showed no correlation with collegiate or military criteria.

Weighting systems for variables comprising the Whole Person Score have evolved since the inception of the scholarship program in 1964. The current selection formula assigns relative weights of 30:30:30:10, respectively, to Scholastic Aptitude Test scores, high school class standing, extracurricular and athletic activities, and interview scores. Regression of selection variables to the Whole Person Score revealed that the operative weights of the selection variables follow approximately the 30:30:30:10 pattern. Weighting of variables was found to be less important than distributional properties of variables and the procedures by which they are applied. To improve their distributional properties, interview and activities scores should be standardized by comparison with scores from all applicants for whom records are available.

The scholarship program as a whole is an effective affirmative action system with respect to blacks because high proportions of blacks are awarded two and three-year scholarships. Blacks are underrepresented, compared to their proportion in the general population, among recipients of four-year scholarships. The quota system for female applicants provides equitable treatment and meets military requirements for female officers.

Interview board scores are highly skewed and therefore contribute less than their intended weight in selection. Modification of interview procedures to enhance the independence of the submeasures and eliminate inferential judgments on the part of interviewers would improve this selection variable.

Evaluation of the potential of standard tests of interest in and knowledge of military service, such as those used by the Air Force and Navy, to strengthen the non-academic selection variables is warranted.

Rating of high schools in order to control for quality of applicants from diverse high schools, while theoretically possible, is technically infeasible. It is also politically inadvisable because of negative effects on equality of opportunity.

CONTENTS

INTRODUCTION

PURPOSE

The purpose of the research described in this report was to conduct an empirical evaluation of the selection system used to award Army ROTC four-year scholarships during the first 12 years of the scholarship program. The principal focus of the evaluation was the validity of the selection criteria. A major sub-task was to evaluate the impact of the selection procedures on minority groups and women. Other sub-tasks were to evaluate interview board procedures, selection systems used by other scholarship programs, and the possible utility of high school rating factors.

BACKGROUND

In 1964 Congress authorized the Army to establish an ROTC scholarship program to provide financial assistance for the education of qualified and motivated young men and women who desire to pursue careers as commissioned officers in the Active Army after graduation from college. In 1965 the first scholarships were awarded. Selection is competitive and based on a Whole Person Score derived from: (1) Academic ability as measured by Scholastic Aptitude Test (SAT) or American College Test (ACT) scores; (2) Academic achievement as measured by rank in class; (3) Motivation, poise, appearance, leadership potential, and oral expressiveness as judged by a board of Army officers on active duty; and (4) Achievement in athletics, leadership, and extracurricular activities (or after-school work) evaluated using a standard scoring system.

Currently, seven to ten thousand completed applications for ROTC scholarships are received by the U.S. Army Training and Doctrine Command (TRADOC) each year. About 3500 applicants are called before interview boards. Application dossiers for the 2600 best qualified applicants are then reviewed by a board of officers working from an order of merit list (OML) prepared by the TRADOC staff. Approximately 800 winners and 700 alternates are designated for a varying number of scholarships.

PROCEDURE

EMPIRICAL VALIDATION OF THE SELECTION SYSTEM

The validity of the selection system was evaluated by determining the relationships between selection variables (the Whole Person Score and its components) and four sets of criterion variables: (1) Performance in college, as reflected in academic grade point average; (2) Performance in ROTC, as reflected in ROTC grade point average and rank in the cadet organization; (3) Performance as an officer, as reflected in officer efficiency report (OER)

Table 1

WEIGHTING SYSTEMS AND NUMBERS OF SCHOLARSHIPS AWARDED BY CLASS

Class (Year of Graduation from College)	No. of 4-Year Scholarships Awarded	SAT Scores	Class Standing	Interview	Activities Total	Activities Subscores
69	398	40%	30%	0	30%	12% Athletic 10% Ldrship. 8% Extra-Curricular
70*	394					
71	785					
72	779					
73*	916	25%	25%	20%	30%	10% Athletic 10% Ldrship. 10% Extra-Curricular
74	1224					
75*	1235	35%	30%	10%	25%	8% Athletic 9% Ldrship. 8% Extra-Curricular
76	1253					
77*	890	30%	30%	10%	30%	9% Athletic 12% Ldrship. 9% Extra-Curricular
78	1157					
79	1370					
80	700					
81	700					

* Class chosen for empirical validation.

scores; (4) For the class of 73[1] only, performance as a new officer as reflected by grades at the Officer Basic Course (OBC), scores on the Officer Evaluation Battery, and scores on two special-purpose first-term performance ratings (SPM).

Stepwise multiple regression analysis was conducted using the four selection variables (SAT, class standing, activities, interview score). For the class of 73, regressions were also done with nine specific extracurricular activities to see if prediction could be improved by substituting specific components for the general activities variable.

LONGITUDINAL FILE

To make these analyses possible a longitudinal file was created using data on selection variables, collegiate criterion variables, and final criterion variables for a set of scholarship applicants at several points in their careers. The longitudinal file also included collegiate and final criterion data on 1, 2, and 3-year scholarship winners and final criterion data on a comparison group of officers commissioned through programs other than the ROTC scholarship program. Four classes were selected for this phase of the evaluation - one selected under each of the four major variants of the weighting scheme used during the first decade of the scholarship program (Table 1).

Data on selection variables were extracted from application files. Data on collegiate criterion variables were taken from DA forms 131 - master records maintained in ROTC units - and from Scholarship Enrollment Reports maintained at TRADOC. Final criterion variables included OER data from the Officer Master File (Table 2).

EVALUATION OF THE WEIGHTING SYSTEM

The weighting system was evaluated in two ways. The effective weight was compared with the theoretical weight of each major variable in predicting the Whole Person Score, and the contribution of each variable to prediction of performance in college and in the Army was calculated. Multiple regression was the principal analytic device. Recent classes (77-80) were used in determining the actual contributions of each variable to the Whole Person Score because Whole Person Scores were not available for the earlier classes on which longitudinal analyses were conducted.

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1 Class graduating from college in 1973. Throughout we have omitted the apostrophe before two digit class numbers.

Table 2

DATA AVAILABLE AND POPULATION SIZES IN LONGITUDINAL FILE

Class	Selection Variables (Application Dossiers)	Collegiate Criterion Variables (DA Form 131)	Final Criterion Variables (OER)	Notes
70	435	0	266	DA Forms 131 Destroyed
73	1598	462	645	
75	947	738	351	
77	2004	656	0	Not Yet on Active Duty
TOTAL	4984	1856*	1262 **	

* In addition, DA Forms 131 were available on 2160 3, 2, and 1-year scholarship holders.

** In addition, final criterion data were obtained for 5633 officers in the following comparison groups:

- 1, 2, 3-year scholarship holders
- 4-year scholarship holders for whom application data were not available
- Officers commissioned through ROTC (non-scholarship), USMA, and OCS.

PSYCHOMETRIC PROPERTIES OF THE SELECTION VARIABLES

Scholastic Aptitude Test scores, standardized on a national distribution, are psychometrically the soundest of the selection variables. Class standing scores are based on percentiles (rank in class divided by class size) ranging from zero (highest standing) to one (lowest standing). Three different systems have been used to convert the percentiles to Whole Person Score points.[2] The system used since 1975 standardized scores on a normal distribution representing all graduating high school students. The activities score is made up of points for extracurricular, athletic, and leadership activities based on an arbitrary set of categories emphasizing participation in specified activities: Scouting, Junior ROTC, Boys' or Girls' State, 4H, student government, varsity athletics, etc. The scales have 10 or 12 intervals tied to levels of achievement. Only the highest scoring athletic, extracurricular, and leadership activity in each category is counted. Activities scores are added directly into the Whole Person Score without being standardized. The interview score - composed of attitude, appearance, poise, oral expression, and leadership potential subscales - is incorporated into the Whole Person Score through a linear conversion. Scores are not standardized.

Of the four submeasures in the Whole Person Score only SAT scores and class standings are standardized, and those on different populations. The psychometric deficiencies of the data dictated a conservative approach in evaluating the weighting scheme and in interpreting the results.

Another psychometric issue is restriction of range. The selection process, by progressively eliminating applicants with less competitive records, serves to reduce progressively the range of variability among successful applicants. Restriction of range makes a variable less useful for prediction of criterion variables.

RESULTS

EMPIRICAL VALIDATION OF THE SELECTION SYSTEM

Prediction of Performance in College. Regression of selection variables to collegiate grade point averages (GPA) were conducted for the classes of 73, 75, and 77, and of Whole Person Scores to GPA for the classes of 77, 78, and 79. SAT scores and class standing correlated positively with academic GPA. The four variables in the selection system accounted for between 4% and 9% of the variance in GPA for the classes of 73, 75, and 77 (Table 3). The Whole Person Score correlated significantly with college GPA for the male classes of 77, 78, and 79, and for the female class of 79 (Table 4).

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2 Scores derived from raw percentiles and the two standardization schemes for the class of 80 were compared. The lowest correlation between the three systems was .886.

Table 3

REGRESSION CORRELATIONS OF SELECTION VARIABLES
TO ACADEMIC GRADE POINT AVERAGE

Selection Variable	Class of 73		Class of 75		Class of 77	
	r	Beta	r	Beta	r	Beta
SAT Score	.119	.675	.216	.179	.227	.215
Standing	.147	.109	.238	.191	.165	.141
Activities	.000	.020	.066	.040	-.054	.061
Interview	-.159	.126	-.042	.006	-.003	-.020
N	121		425		850	
Multiple R	.212		.294*		.270**	

* Significant at .05
** Significant at .01

Prediction of ROTC Performance. Regression of selection variables to ROTC GPA and cadet rank conducted for the classes of 73, 75, and 77 showed no significant correlations with any of the selection variables. Regression of Whole Person Scores to ROTC GPA showed a significant correlation only with the male class of 78 (Table 4).

Table 4

CORRELATION OF WHOLE PERSON SCORE WITH ACADEMIC GRADE POINT AVERAGE AND ROTC GRADE POINT AVERAGE

Sex Selection Variables	Class 77	78	79
Men			
Academic GPA	.23**	.26**	.17**
ROTC GPA	.06	.16**	.05
N	816	899	756
Women			
Academic GPA	-.05	.18	.24*
ROTC GPA	-.30	.27	.14
N	18	50	116

* Correlation significant at .01
** Correlation significant at .001

Prediction of Performance as Officers: OER Scores. Regression analyses to OER performance and potential scores were done for the classes of 70, 73, and 75. Members of the class of 70 were the only ones who had been in the Army long enough to have the full set of five OERs recorded on the Army Master File, and 70 was the only class for which the multiple R was significant (Table 5). SAT scores were negatively correlated and interview board scores positively correlated with OER potential and performance. Class standing and activities were uncorrelated with OER scores. Variables in the selection system accounted for less than 9% of the variance in OER scores. There were no significant correlations between selection variables and OER scores for the classes of 73 and 75.

Table 5

REGRESSION CORRELATIONS OF SELECTION VARIABLES
TO AVERAGE OFFICER EFFICIENCY RATINGS - CLASS OF 70

Selection Variables	Performance Ratings r	Performance Ratings Beta	Potential Ratings r	Potential Ratings Beta
SAT Scores	-.183	-.187	-.193	-.196
Standing	-.021	-.033	-.037	.020
Activities	-.028	-.082	-.029	-.086
Interview	.220	.215	.226	.220
N	263		263	
Multiple R	.288*		.298*	

* Significant at .05.

Prediction of Performance as Officers: Supplemental Variables. Six supplemental criterion variables measuring characteristics of members of the class of 73 during their first year of duty were analyzed:

Officer Basic Course (OBC)	Final Grade
Officer Evaluation Battery (OEB) (written test)	OEB Combat Leadership OEB Technical-Managerial Leadership Career Potential
Special Purpose First Year Measures (SPM) (performance ratings)	Entry Performance Present Performance

Intercorrelations between all three OEB measures, and between the two SPM measures, were significant and positive. OBC final grades were significantly positively correlated with OEB career potential, OEB technical-managerial leadership, SPM present performance and SPM entry performance (Table 6).

Table 6

INTERCORRELATIONS BETWEEN SPECIAL PURPOSE CRITERION MEASURES - CLASS OF 70

	OBC Final Grade	OEB Tech-Mgr.	OEB Combat Ldr.	OEB Career Pot.	SPM Entry Perf.
OEB Tech-Mgr. Leader	.13				
OEB Combat Leadership	.23*	.33*			
OEB Career Potential	.15*	.24*	.51**		
SPM Entry Performance	.20*	.03	.03	-.01	
SPM Present Performance	.18*	.06	.00	-.05	.85**

* Correlation significant at .01
** Correlation significant at .001

Table 7

CORRELATIONS BETWEEN SELECTION VARIABLES AND SPECIAL PURPOSE CRITERION VARIABLES - CLASS OF 73

Criterion Variables	Selection Variables			
	SAT Score	Class Standing	Activities	Inter-View
OBC Final Grade	.14*	.17*	-.05	.04
OEB Technical-Managerial Leadership	.50**	.23*	.05	.06
OEB Combat Leadership	.11	.04	-.05	.01
OEB Career Potential	.14*	.04	-.10	.04
SPM Entry Performance	-.09	-.04	.14*	.26*
SPM Present Performance	-.13	-.06	.11	.18*

* Significant at .01 ** Significant at .001

Of the selection variables (Table 7), SAT scores were significantly positively correlated with OBC grades, OEB technical-managerial leadership, and OEB career potential. Class standing was significantly correlated with the first two criterion variables. SPM entry performance and present performance were positively correlated with interview scores, and entry performance was positively correlated with activities.

Regression of the selection variables on OEB technical-managerial leadership yielded a significant multiple R. The selection variables accounted for 25% of the variance - the strongest predictive power the selection system displayed to any criterion. SAT scores and class standing contributed most to the prediction. Regressions of selection variables on the other supplemental criteria did not reveal significant correlations.

In addition to the regressions with selection variables, regressions were done using nine specific extracurricular activities as independent variables to predict each of the six OBC, OEB and SPM measures. These analyses were designed to check whether the predictive power of the activities variable would be improved by substituting specific components for the summary activities measure. The nine activities - National Honor Society, debate team, scouting rank, scouting leadership, Boys' State, 4H, student government, student publications and Junior ROTC rank - yielded no significant regressions and few significant correlations with the supplemental criterion measures. As expected, National Honor Society correlated with dependent variables in the same direction as SAT scores. Its correlation was significant at .01 only with OEB technical-managerial leadership, making it far weaker as a predictor than SAT scores. Scouting leadership correlated positively at .01 with OEB combat leadership. Student government correlated negatively at .01 with OEB combat leadership and with OEB career potential. SAT verbal scores had higher correlations with both OEB combat leadership and OEB career potential than did the extracurricular activities. Debate team, scout rank, Boys' State, 4H, student publications, and Junior ROTC rank were not correlated significantly with any criterion variables. Neither the overall activities score, nor scores of specific activities, nor groups of specific activities were found to be effective in predicting success in college, in ROTC, or in the Army.

EVALUATION OF SELECTION VARIABLES AND WEIGHTS

Operative Contribution of Selection Variables to Selection of Winners. Since the selection variables are intercorrelated (See Appendix A for intercorrelation tables), the relative importance of selection variables cannot be derived directly. Three statistics were generated to provide bases for estimating the contribution by each variable - the zero order correlation (r), standardized Betas, and change in the square of the multiple correlation coefficients (ΔR) (Table 8).

Table 8A

STEPWISE REGRESSION FOR MALE APPLICANTS:
SELECTION VARIABLES TO WHOLE PERSON SCORES

	77	78	79	80
r				
Standing	.578	.595	.498	.449
Activities	.334	.323	.390	.417
SAT Score	.470	.473	.398	.441
IVB Score	.138	.151	.196	.194
Beta				
Standing	.561	.628	.654	.512
Activities	.555	.585	.681	.707
SAT Score	.555	.580	.599	.622
IVB Score	.237	.217	.237	.217
ΔR^2				
Standing	.334	.354	.248	.201
Activities	.173	.187	.262	.258
SAT Score	.241	.283	.312	.335
Interview	.054	.046	.054	.046
Multiple R	.896	.933	.936	.917
N	1850	1942	2186	2080

Table 8B

STEPWISE REGRESSION FOR FEMALE APPLICANTS:
SELECTION VARIABLES TO WHOLE PERSON SCORE

	'77	'78	'79	'80
r				
Standing	.595	.667	.418	.428
Activities	.352	.409	.350	.403
SAT Score	.635	.539	.404	.397
IVB Score	.074	.193	.136	.239
Beta				
Standing	.595	.569	.686	.521
Activities	.499	.528	.708	.747
SAT Score	.568	.460	.631	.650
IVB Score	.114	.122	.201	.222
ΔR^2				
Standing	.403	.444	.174	.183
Activities	.237	.222	.256	.263
SAT Scores	.246	.185	.347	.340
Interview	.012	.015	.040	.048
Multiple R	.947	.931	.904	.914
N	141	191	461	409

The nominal relative weights, 30:30:30:10, are reflected most closely by the Betas. This was expected because the sum of unit changes in the selection variables defines the Whole Person Score. Since the selection variables are intercorrelated, Betas are not appropriate indicators of relative importance.[3]

The $\triangle R^2$, reflecting the contribution of each selector variable to variance in the Whole Person Score, with the interactive effects of the other selection variables partialed out or held constant, indicate three trends from the class of 77 to the class of 80. There is a diminution in the importance of class standing, an increase in the importance of SAT scores and activities, and (for women only) an increase in the importance of the interview score. These three trends reflect changes in the leverage of the variables as a function of changes in variability from year to year. The relative operative contributions of SAT scores, class standing, and activities oscillate widely around their nominal 30% weight. The contribution of the interview scores is consistently below its assigned 10% weight. This was expected because of the consistently narrow range of variability in the highly skewed interview score.

Contribution of Selection Variables to Prediction of Criterion Variables. Because of the small contribution by selection variables to variance in criterion variables, estimates of the relative operative weights of the selection variables are meaningless.

Validity of the Selection Variables. Measures of academic ability and achievement were the strongest predictors of winning a scholarship, and of academic success in college. They also were positively correlated with two Army criterion variables measured early in an officer's career - OBC final grade and OER technical-managerial leadership. SAT scores and class standing were negatively correlated with OER scores and SPM first-term performance ratings. The only variable associated positively with effective military performance is the interview score. The activities score demonstrated no association with either collegiate or military performance. Regressing individual athletic, leadership, or extracurricular activities against criterion measures did not reveal stronger correlations.

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3 See R. B. Darlington. Multiple regression in psychological research and practice. Psychological Bulletin, March 1968, 161-182.

EVALUATION OF THE IMPACT OF THE SELECTION SYSTEM ON MINORITIES AND WOMEN

Comparative Performance on Selection Variables by Race. The most complete data on the comparative effects of selection procedures on minorities and women were available for the classes of 79 and 80, and for the early stages of 81. The scores by each sex/racial group were compared on each selection variable, and differences were tested for significance (Table 9).

In the classes of 79-81 the mean total SAT scores for male and female black applicants were 233 to 315 points below the mean scores of their white counterparts, and the scores of Spanish-speaking applicants were 144 to 267 points below those of whites. On class standing, black and Spanish-speaking applicants were consistently below whites. Differences across racial groups on SAT scores and class standing were significant at .001 for all classes and both sexes.

In two classes (male 79 and 81) minority group applicants had significantly higher activities scores than whites. In one class (female 80) whites had significantly higher activities scores. In the other three groups minorities generally had higher scores but the differences were not significant. Analyses of activities subscores are shown in Appendix D, Table D-4. Among men, whites had significantly higher scores on extracurricular activities while minorities had significantly higher scores on leadership activities. There were no consistent patterns on activities subscores among women.

The interview board scores had the least variance by race of the four selection variables. Black and Spanish-speaking men received significantly higher mean scores than other applicants interviewed in the classes of 79 and 80. There were no significant differences by race for the class of 81 or for females in any class.

Operation of Selection Procedures. Cumulative selection rates for white, black, Spanish and other groups were analyzed to determine at what points in the selection process - application, interview, finalist, winner/alternate winner - groups were favored or selected against. Applicants were called for interviews on the basis of their scores on SAT, class standing, and activities. Roughly half of the whites, two-thirds of the Spanish-speaking, four-fifths of the blacks, and half of the other minorities were eliminated prior to being called for interviews (Table 10).

SAT scores were most important in explaining the high attrition of the black and Spanish-speaking applicants. SAT scores had the greatest variability and psychometric leverage of the three screening variables, and blacks and Spanish-speaking applicants had significantly lower scores than did whites and other minorities. Low SAT scores among blacks appear to be a characteristic of the population (Table 11).

Table 9

COMPARISON OF MEAN SCORES ON SELECTION VARIABLES
ACROSS RACIAL GROUPS FOR CLASSES OF 79, 80, AND 81

Variable Sex.	Class	Total	White	Black	Spanish	Other
Mean SAT Scores (Maximum = 1600, Minimum = 400)						
	79**	1065	1050	847	929	1009
Men	80**	1070	1089	803	917	1045
	81**	1081	1099	833	945	1063
	79**	1056	1075	863	913	997
Women	80**	1053	1085	770	873	1023
	81**	1052	1083	797	816	1034
Mean Class Standing Percentile (Maximum = .00, Minimum = .99)						
	79**	.20	.19	.25	.25	.17
Men	80**	.20	.20	.26	.22	.17
	81**	.19	.18	.25	.20	.17
	79**	.13	.12	.20	.17	.13
Women	80**	.14	.13	.24	.16	.12
	81**	.13	.12	.20	.16	.09
Mean Activities Scores (Maximum = 240, Minimum = 0)						
	79*	154	154	156	160	157
Men	80	153	153	154	156	156
	81*	155	155	160	159	154

Table 9 (Continued)

COMPARISON OF MEAN SCORES ON SELECTION VARIABLES
ACROSS RACIAL GROUPS FOR CLASSES OF 79, 80, AND 81

Variable Sex	Class	Total	White	Black	Spanish	Other
Mean Activities Scores (Maximum = 240, Minimum = 0)						
	79	144	144	142	150	140
Women	80**	144	145	136	142	141
	81	147	147	149	152	145
Mean Interview Scores (Maximum = 84, Minimum = 0)						
	79*	73	73	77	75	73
Men	80*	74	74	78	75	73
	81	76	76	77	73	75
	79	76	76	75	76	78
Women	80	77	77	76	77	81
	81	78	78	83	81	77

* Difference between races significant at .01

** Difference between races significant at .001

See Appendix B for standard deviations and for breakout of math and verbal SAT scores, class rank and class size, activities categories, and interview subscores.

Table 10A

CUMULATIVE SELECTION RATES OF
RACIAL GROUPS AT FIVE
STAGES IN THE SELECTION PROCESS (CLASS OF 79)

Stage in Selection	White Number (%)	White % Selected	Black Number (%)	Black % Selected	Spanish Number (%)	Spanish % Selected	Other Number (%)	Other % Selected
			Racial Groups (Male)					
Applicants	6427 (91.5)	100%	315 (4.5)	100%	127 (1.8)	100%	152 (2.2)	100%
Interviewed	3168 (94.1)	49.3%	68 (2.0)	21.6%	42 (1.2)	33.1%	90 (2.7)	59.2%
Finalists	2055 (93.8)	32.0%	47 (2.1)	14.9%	27 (1.2)	21.3%	61 (2.8)	40.1%
Winners & Alts.	1684 (94.5)	26.2%	32 (1.8)	10.2%	18 (1.0)	14.2%	47 (2.6)	30.9%
Winners	1026 (94.8)	16.0%	17 (1.6)	5.4%	8 (0.7)	6.3%	31 (2.9)	20.4%
			(Female)					
Applicants	1508 (89.3)	100%	120 (7.1)	100%	25 (1.5)	100%	35 (2.1)	100%
Interviewed	683 (92.5)	45.3%	27 (3.7)	22.5%	9 (1.2)	36.0%	19 (2.6)	54.3%
Finalists	426 (92.4)	28.2%	15 (3.3)	12.5%	6 (1.3)	24.0%	14 (3.0)	40.0%
Winners & Alts.	212 (94.2)	14.1%	6 (2.7)	5.0%	1 (0.4)	4.0%	6 (2.7)	17.1%
Winners	133 (94.3)	8.8%	3 (2.1)	2.5%	0 (0.0)	0.0%	4 (4.3)	11.4%

Note: Applicants: WPS recorded on TRADOC Combined Region Files.
Interviewed: Interview scores recorded on TRADOC Combined Region Files.
Finalists: Included on TRADOC Applicant File.
Winners and Alternates and Winners were taken from TRADOC statistical summaries.

TABLE 10B

CUMULATIVE SELECTION RATES OF RACIAL GROUPS
AT FIVE STAGES IN THE SELECTION PROCESS (CLASS OF 80)

Stage in Selection	White Number (%)	White % Selected	Black Number (%)	Black % Selected	Spanish Number (%)	Spanish % Selected	Other Number (%)	Other % Selected
			Racial Groups (Male)					
Applicants	6643 (89.0)	100%	512 (6.9)	100%	126 (1.7)	100%	180 (2.4)	100%
Interviewed	3423 (94.2)	51.5%	96 (2.6)	18.8%	38 (1.0)	30.2%	88 (2.4)	48.9%
Finalists	1975 (95.0)	29.7%	36 (1.7)	7.0%	16 (0.8)	12.7%	51 (2.5)	28.3%
Winners & Alts.	1420 (95.2)	21.4%	21 (1.4)	4.1%	10 (0.7)	7.9%	41 (2.7)	22.8%
Winners	804 (95.7)	12.1%	8 (1.0)	1.6%	5 (0.6)	4.0%	23 (2.7)	12.8%
			(Female)					
Applicants	1630 (86.9)	100%	163 (8.7)	100%	27 (1.4)	100%	55 (2.9)	100%
Interviewed	718 (94.8)	44.0%	11 (1.4)	6.7%	9 (1.2)	33.3%	19 (2.5)	34.5%
Finalists	387 (94.6)	23.7%	4 (1.0)	2.5%	6 (1.5)	22.2%	12 (2.9)	21.8%
Winners & Alts.	174 (93.0)	10.7%	2 (1.1)	1.2%	2 (1.1)	7.4%	9 (4.8)	16.4%
Winners	112 (91.8)	6.9%	1 (0.8)	0.6%	2 (1.6)	7.4%	7 (5.7)	12.7%

Note: Applicants: WPS recorded on TRADOC Combined Region Files.
Interviewed: Interview scores recorded on TRADOC Combined Region Files.
Finalists: Included on TRADOC Applicant File.
Winners and Alternates and Winners were taken from TRADOC statistical summaries.

Table 11

DISTRIBUTION OF VERBAL
SAT SCORES FOR 1969-70 MALE HIGH SCHOOL GRADUATES [4]

Group	VERBAL SAT SCORE RANGE			
	200-299	300-349	450-800	Total
Total	444,000	672,000	334,000	1,450,000
Blacks	99,300	43,500	5,200	148,000
% Blacks	22.4	6.5	1.6	10.2

Class standing scores also weighed against blacks and Spanish-speaking minorities. The screening variable on which the minorities performed best - activities - was low in variability and therefore had little leverage.

The interview boards improved the representation of black men and of Spanish-speaking men and women in the class of 79, and of Spanish-speaking women in the class of 80. In subsequent stages of the selection process black and Spanish-speaking minorities usually were attrited faster than whites and other minorities. Because of the skewness of interview board scores, the superior performance of the minorities was expressed in a restricted range of Whole Person Score points. Further, the interview board score counted only 10% as compared to 30% for each of the other three selection variables.

The psychometric properties of the variables, the order in which they were applied, and the relative strengths and weaknesses of minority applicants has resulted in a selection rate for blacks and Spanish-speaking minorities that is lower than the representation of those groups in the general population. The selection rate for blacks approximates the representation of male high school graduates who score above 450 on the verbal SAT (1.5 to 2%).

Predominantly Black Colleges. The distribution of recipients of various types of scholarships (4, 3, 2, or 1-year) among predominantly black as compared to predominantly white colleges (Table 12) reveals that:

- Two-thirds of black scholarship holders attend black colleges.

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4 Humphrey Doermann. Lack of money: A barrier to higher education. In College Entrance Examination Board, Barriers to Higher Education, New York, 1971.

TABLE 12

DISTRIBUTION OF SCHOLARSHIP HOLDERS ACROSS COLLEGES
BY RACE AND TYPE OF SCHOLARSHIP FOR
SCHOOL YEARS 1972-3 THROUGH 1975-6

Race of Student	Type of Scholarship	1972-3		1973-4		1974-5		1975-6	
		Predominant Race of College							
		White	Black	White	Black	White	Black	White	Black
White	4-yr	2447		3305		3336		3246	1
	3-yr	883	4	1467	7	1553		1435	5
	2-yr	592	2	995	5	977	5	926	5
	1-yr	21		92	1	186	6	78	
Black	4-yr	49	9	65	11	61	6	54	5
	3-yr	28	123	54	211	59	230	46	230
	2-yr	23	58	40	87	52	67	57	57
	1-yr		2	1	3	1	2		
Spanish-speaking	4-yr	52		58		43		33	
	3-yr	24		20		46		54	
	2-yr	14		17		25		34	
	1-yr	1		1		9		5	
Other	4-yr	52		63		57		56	
	3-yr	8		14		18		11	
	2-yr	6		11		18		15	
	1-yr			2		1			
Totals	4-yr	2600	9	3491	11	3497	6	3389	6
	3-yr	943	127	1555	218	1676	230	1548	235
	2-yr	635	60	1063	92	1072	72	1032	62
	1-yr	22	2	96	3	197	8	83	
		4200	198	6205	324	6442	316	6052	303

Predominantly black ROTC colleges considered were:

North Carolina A & T State Univ.
Saint Augustine's College
Central State University
South Carolina State College
Prairie View A & M College
University of Arkansas - Pine Bluff
Fort Valley State College
Southern Univ. & A & M College
Alcorn A & M College
Jackson State College
Alabama A & M Univ.
Tuskegee Institute
Howard University
Florida A & M Univ.
Morgan State College
Virginia State College
Bishop College
Hampton Inst.
Norfolk State College

- Few whites and no Spanish-speaking or other minority scholarship holders attend black colleges.

- Most white, Spanish-speaking, and other minority individuals enter the scholarship system as recipients of 4-year scholarships, whereas most blacks (75% to 85%) enter as 3 and 2-year scholarship recipients.

- Only about 10% of black 4-year scholarship holders attend predominantly black colleges, but 75% of black 3, 2, and 1-year scholarship holders attend predominantly black colleges.

The importance of three-year scholarships to black aspirants for Army commissions and to black ROTC colleges is evident from the table. In school year 1975-6 1.7% of the 4-year scholarship holders were black, but 15.6% of the 3-year scholarship holders were black.

Women. The present quota and selection procedures provide that women will be represented in the four-year scholarship program in proportion to the number of women projected to be in the officer corps four or five years hence (over 15% of scholarship winners in 1976 - class of 80). This system gives women access to the benefits of the program and meets Army affirmative action goals and personnel needs.

Table 13 shows mean scores on the four selection variables and their major components for men and women finalists in three classes. Though SAT total scores are not significantly different for men and women, both the verbal and mathematics components taken separately show significant differences between the sexes. Both men and women have lower SAT verbal than SAT math scores, but the difference is greater among men. Women have significantly higher class standing scores than men except in the class of 77. The activities measure favors men. The extracurricular submeasure does not differentiate significantly between male and female applicants. Men earned higher scores on the athletics and leadership submeasures. An experimental system (Appendix C) for scoring total participation and achievement in activities shows that women have higher mean scores than men in participation and leadership in extracurricular activities, while men have higher mean scores for athletics and athletics leadership. Interview board scores favor women to a significant degree. However, since scores on this variable are highly skewed, the higher scores recorded for women give little advantage in the Whole Person Score.

EVALUATION OF INTERVIEW BOARD PROCEDURES

Interview board procedures were evaluated to determine whether they were biased, whether they contributed to predicting academic and/or military success, and whether the sub-scales within the interview board score measured discrete traits.

Interview boards for the classes of 79, and 80, gave significantly higher scores to black and Spanish-speaking male applicants than they gave whites and other minorities (Table 9), and gave women of all races in the classes of

TABLE 13

ANALYSIS OF VARIANCE OF SELECTION VARIABLES BY SEX AND BY YEAR

Variable	Male		Female		F Ratio (Significant at .001)		
COHORT	Mean	S.D.	Mean	S.D.	Sex	Year	Interaction
SAT Total					N.S	32	18
77	1201	125	1151	136			
78	1216	123	1251	127			
79	1192	122	1187	116			
SATV					14	28	9
77	584	74	573	80			
78	591	73	617	74			
79	577	74	588	69			
SATM					25	22	20
77	617	68	578	73			
78	624	69	634	68			
79	615	68	599	65			
Standing					143	N.S.	11
77	.07	.07	.07	.07			
78	.08	.07	.04	.05			
79	.08	.07	.04	.04			
Activities					155	60	8
77	164	21	148	18			
78	170	21	160	22			
79	170	22	162	22			
Extracurricular					N.S.	63	N.S.
77	49	8	48	7			
78	51	8	51	8			
79	51	9	52	9			
Athletic					226	109	9
77	46	11	37	11			
78	49	11	42	12			
79	51	11	46	12			
Leadership					50	19	N.S.
77	69	16	63	14			
78	70	14	68	14			
79	68	16	63	14			
Interview					49	36	N.S.
77	73	9	77	6			
78	75	8	77	8			
79	76	8	78	7			
Population							
77	1850		141				
78	1942		191				
79	2186		461				

77, 78, and 79 significantly higher scores than men (Table 13). These results indicate that the interview boards were not a source of institutional racial or sexual bias.

The regression analyses of the weighting system demonstrated that the interview board score was less effective than expected in influencing selection. Because it was highly skewed, it had less leverage than intended. The interview board score made no significant contribution to predicting academic or ROTC grades. On the other hand, the interview board score was the most effective variable in predicting the SPM measures of present and entry performance. In predicting OER ratings, the interview board score was the only positively correlated variable (Table 5). There is a possibility of autocorrelation between interview board scores and efficiency ratings because of similarities in procedure and in the values of interviewers and raters. The same phenomenon could be described as evidence of high inter-rater reliability.[5]

The independence of the sub-variables of the interview board score was evaluated by calculating intercorrelations between sub-scales and between sub-scales and total score. The total score was strongly correlated with the leadership potential sub-score (average r = .92) and with the attitude sub-score (average r = .85), and moderately correlated with the other sub-scores (average r = .63). Intercorrelations between sub-scores, ranging from .37 to .62, revealed that evaluations of applicants' presence (e.g., poise, oral expression, appearance) were more independent of each other than were judgments of the applicants' state of mind (e.g. attitude, leadership potential). The interview board members appear to have made independent judgments about those characteristics they could observe directly, but when called upon to judge qualities they could only infer, they fell back on overall impressions.

SELECTION SYSTEMS USED BY OTHER SCHOLARSHIP PROGRAMS

The only large-scale programs in the United States granting scholarships exclusively on merit without consideration of need are those sponsored by the Army, Navy, and Air Force. All three programs use a whole person concept based on academic measures (SAT scores and high school academic performance), extracurricular activities, and a personal interview with one or more officers (Table 14).

The Air Force and Navy administer additional tests to finalists to help judge their career potential. The Strong Vocational Interest Blank and Background Questionnaire, given to Navy finalists, constitute 25% of their Whole Person Scores. Air Force finalists take the Air Force Officers Qualifying Test which becomes part of the final selection file. The absence of positive correlations between most ROTC selection criteria and performance as officers suggests that the use of such instruments by the Army merits exploration. These devices permit measurement of attitudes toward the military services,

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5 Weakening this argument is the absence of correlation between interview board scores and cadet rank - a global judgment of leadership ability, reliability, interest, and performance in the ROTC setting.

TABLE 14

CHARACTERISTICS OF MILITARY SCHOLARSHIP SELECTION SYSTEMS

Selection Device	Army	Air Force	Navy
SAT/ACT	30% Weight	Minimum 900 with 500 Math	25% Weight Minimum 1050 with 600 Math
Class Standing/ High School Grades	30% Weight	Minimum 40th Percentile 2.0 GPA	35% Weight
Activities	30% Weight	Subjective Evaluation by Board	Subjective Evaluation by Board
Personal Interview	10% Weight	Subjective Evaluation by Board	15% Weight
Strong Vocational Interest Blank/ Background Questionnaire	Not Used	Not Used	25% Weight
Air Force Officer Qualifying Test	Not Used	Yes	Not Used
Central Selection Board	Selects from Order of Merit List	Develop Order of Merit List from Finalists	Selects from Preselected Categories
Selection Basis	National	National	State
Average SAT Scores of Winners*	SATV 612 SATM 650 Total 1262	SATV 640 SATM 695 Total 1335	SATV 570 SATM 650 Total 12_0
Percent in Top 20% of Class *	98	90	89
Percent in Top 50% of Class*	100	100	98

* Profiles of winners based on 1976-77 winners for Army & Navy; 1977-78 winners for Air Force.

knowledge of and interest in military matters, and awareness of the duties of an officer.

RATING HIGH SCHOOLS

Variation in grading standards among high schools has prompted efforts to develop correction factors which could be applied to the grade point averages of graduates from each school so that more accurate predictions could be made of performance in college. Dailey[6] developed a taxonomy of high schools that associated academic performance with demographic and geographical characteristics of high schools. Shaycroft[7] demonstrated the strength and stability of correlations between mean test scores within a school, and thereby affirmed the potential validity of a correction factor associated with the school. Tucker[8] developed regression models to derive correction factors - a process he called central prediction.

In his evaluation of the work on central prediction, Linn[9] said that the gain in predictive accuracy was smaller than had been assumed, and that other methods - including standardizing test scores - were more effective. Recent work by the staff of the Educational Testing Service reveals no new approaches.[10] The use of demographic variables as a basis for rating high schools has been criticized because it would confer further advantage on the student already favored by the very economic and social factors that earned his school a high rating.[11]

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6 John T. Dailey. A system for classifying public high schools. J.C. Flanagan, et al. Studies of the American High School. Project Talent monograph series, No. 2, U.S. Office of Education, Dec. 1962

7 Marion F. Shaycroft. The statistical characteristics of school means. J.C. Flanagan, et al. Studies of the American High School Project Talent monograph series, No. 2. U.S. Office of Education, Dec. 1962.

8 L.R. Tucker. Formal models for a central prediction system. Psychological Monograph Number 10, William Byrd Press, 1963.

9 Robert L. Linn and R. Boldt. Grade adjustments for prediction of academic performance: A review. Journal of Educational Measurement, Volume 3, No. 4, 1966

10 Melvin R. Novick, Paul H. Jackson, Dorothy T. Thayer and Nancy S. Cole. Applications of Bayesian methods to the prediction of educational performance. Research Bulletin, Educational Testing Service, Princeton, New Jersey, 1971.

11 J.S. Coleman et al. Equality of educational opportunity. U.S. Office of Education, Washington, D.C., 1966.

As Tucker[12] pointed out, a substantial number of students must be followed to establish stable regression coefficients. The 5118 ROTC scholarship applicants on whom application data were coded as part of this project came from 2950 high schools. Thirty-six high schools provided 10 or more applicants across the four classes.[13] The average production of scholarship winners by these schools was fewer than four per year. Therefore, use of high school rating factors as a component of the ROTC scholarship selection system is not feasible.

CONCLUSIONS

VALIDITY OF THE SELECTION SYSTEM

The selection system has performed as expected in identifying and awarding scholarships to highly qualified applicants. A comparison of the records of ROTC scholarship finalists with national averages compiled by the American Council on Education reveals the superior achievements of the students competing for scholarships (Table 15).

Table 15

COMPARISON OF EXTRACURRICULAR DISTINCTIONS OF SCHOLARSHIP WINNERS WITH NATIONAL AVERAGE [14]

	Percent Achieving Distinction					
	1967 Norm 4-Year	4-Year ROTC Scholarship Applicants				
Distinction	Colleges	71	74	76	78 (M)	78 (F)
Earned Varsity Letter	50	73	63	61	59	24
Editor, School Paper	10	22	21	17	19	29
Honor Society Member	23	46	50	56	43	45
President, Stu. Orgn.	25	80	66	59	64	81

12 Tucker. Op. Cit.

13 Four were military academies, 10 were overseas schools for military dependents, and 18 were schools serving largely military communities. Two served communities that were not primarily military. See Appendix D for details.

14 R.J. Panos, A.W. Astin and J. A. Creager. National norms for entering college freshmen - Fall 1967. American Council on Education, Research Reports Vol. 2, No. 7, 1967.

Average SAT scores presented by scholarship winners are above the 80th percentile (verbal) and the 90th percentile (math). Alternates average above the 75th percentile (verbal) and the 85th percentile (math). In the class of 80, 17% of the male winners and 43% of the female winners were first in their classes. Eighty-eight percent of the male and female winners were in the top tenth.

The selection system has also performed as expected in selecting students who would perform well as officers. OER scores earned by officers commissioned through USMA, ROTC scholarship programs, ROTC non-scholarship programs, and OCS were compared. USMA graduates (N = 961) earned marginally higher efficiency ratings than ROTC 4-year scholarship graduates (N = 1182) who in turn earned marginally higher ratings than non-scholarship ROTC graduates (N = 2212) (significant at the .05 level using t tests). Of the few ROTC scholarship graduates who have been in the Army long enough to make decisions on whether to remain on active duty beyond their obligated terms, those who stayed on had significantly higher OER ratings than those who left the service.

VALIDITY OF SELECTION VARIABLES AND WEIGHTS

The nominal weights assigned to the selection variables were reflected approximately in the operative contributions of the variables to the Whole Person Score. The effectiveness of the selection variables as predictors to criteria of collegiate success were low (less than 10% of the variance). As predictors of military success the selection variables were ineffective. SAT scores and class standing predicted collegiate success but are negatively correlated with military success. Interview board scores predicted military success but were negatively correlated with academic success. The activities score had no predictive value. The emphasis placed on specific activities - varsity athletics, Junior ROTC, Scouting, Boys' State, etc. - was not validated by comparison with any criterion data. It is not possible using the present selection variables to derive a weighting scheme that predicts optimally to success in college (a precondition to earning a commission) and optimally to success in the Army.

The weights assigned to each variable proved to be less important in determining who won scholarships than the procedures by which selection criteria were applied and the distributional properties of the variables. The results of this research indicate that tinkering with the weights or standardization schemes is not a fruitful means to operationalize policy decisions. Procedural devices, such as quotas or special allocations of scholarships, are more promising ways by which the selection system can be adapted to achieve policy objectives.

TREATMENT OF MINORITIES AND WOMEN

Minorities. The Army ROTC scholarship program as a whole operates successfully to achieve affirmative action goals with respect to blacks. The success is due to the procedures used to allocate 2 and 3-year scholarships (Table 16).

Table 16

REPRESENTATION OF BLACKS AMONG SELECTED GROUPS

Group	Percent Black	
Officers on Active Duty	4%	
Scholarship Applicants*	6%	
Scholarship Holders*	8%	4-year: 2% Black 3-year: 15% Black 2-year: 11% Black

* Data on scholarship applicants and holders from school years 1972-3 through 1975-6.

The 4-year scholarship selection system awarded very few scholarships to black (2%) and Spanish-speaking (1%) applicants. The procedures by which selection variables were applied, the weak psychometric properties of variables on which minority applicants were strong, and the strong psychometric properties of variables on which minority applicants were weak operated to screen out a high proportion of blacks and Spanish-speaking applicants on academic grounds early in the selection process before they could show their personal qualifications to interview boards. The skewness of the interview board scores then operated to weaken their impact on Whole Person Scores.

Women. The quota and selection procedures for women bring female scholarship winners with qualifications comparable to those of males into the Army in sufficient numbers. The selection criteria do not favor one sex at the expense of the other. However, many of the activities emphasized in TRADOC Circ. 145-5 are non-traditional for women (e.g. Junior ROTC) or are graded differently for men and women (e.g., the top rank for Boy Scouts earns 62 points, the top rank for Girl Scouts earns 52 points).

Because separate quotas are maintained, the general bias in the activity measure favoring men has no discriminatory effect on women. However, the use of a scoring system developed for evaluating men to evaluate women may tend to select women with masculine orientations rather than women who are outstanding as women.

EVALUATION OF THE INTERVIEW BOARD SYSTEM

The interview board score emerged from this evaluation as important in supporting the candidacy of minority group members and as a predictor of success in the Army. Its predictive power and sensitivity could be increased by using longer scales to allow the interviewers to make more subtle distinctions and by reducing the number of scales on which the interviewer has to differentiate between clearly outstanding applicants. To preserve the in-

dependence of the submeasures on the interview board score (and avoid autocorrelation) the interviewers should be asked to report only on characteristics about which they can form judgments based on observations during the interviews.

SELECTION SYSTEMS USED BY OTHER SCHOLARSHIP PROGRAMS

The weakness of the non-academic selection variables used by the Army ROTC scholarship selection system in predicting to collegiate academic and ROTC success, and the negative correlations between academic variables and military performance, suggest that alternative selection variables be explored. Tests of interest in and knowledge of the military service, such as those used by the Air Force and Navy, merit evaluation.

HIGH SCHOOL RATING SYSTEMS

High school rating systems are theoretically feasible. However, because of the low numbers of graduates from any given school, regression coefficients used to construct the rating factor would be unstable. Of greater importance than technical issues is the negative effect high school ratings would have on equality of opportunity.

APPENDIX A: INTERCORRELATIONS BETWEEN SELECTION VARIABLES

Class	Correlations Between					
	Standing and SAT	Standing and Activities	Standing and Interview	SAT and Activities	SAT and Interview	Activities and Interviews
70 Male	.30	-.06	.13	-.17	-.21	.08
73 Male	.27	-.02	.08	-.05	-.05	.14
75 Male	.27	-.17	-.03	-.02	.14	.10
77 Male	.22	.01	.08	-.06	-.13	.08
77 Female	.21	-.08	.20	-.19	.11	.08
78 Male	.16	.17	.12	-.31	-.11	.13
78 Female	.30	.09	-.04	-.17	-.02	.10
79 Male	.04	.22	.13	-.30	-.09	.14
79 Female	.05	.31	.09	-.25	-.08	.07
80 Male	.14	-.18	-.09	-.34	-.05	.08
80 Female	.13	.23	.04	-.40	-.11	.15
81 Male	.28	.06	.02	.07	.03	.10
81 Female	.26	.15	.02	.02	-.06	.25

APPENDIX B: COMPARATIVE PERFORMANCE ON SELECTION VARIABLES BY RACE

Table B-1

COMPARISON OF SAT SCORES ACROSS RACIAL GROUPS

	Total		White		Black		Spanish		Other	
Class	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
79 (M)										
Total **	1065	169	1080	167	847	202	929	173	1009	204
Verbal **	515	97	522	92	416	107	450	91	471	110
Math **	551	97	558	91	431	107	478	98	539	112
79 (F)										
Total **	1056	168	1075	161	863	217	913	203	997	206
Verbal **	524	92	534	89	430	117	434	114	474	107
Math **	533	90	542	87	433	109	478	101	522	118
80 (M)										
Total **	1070	187	1089	173	803	194	917	220	1045	190
Verbal **	518	100	527	94	396	105	438	125	485	106
Math **	553	102	562	95	407	100	478	106	560	106
80 (F)										
Total **	1053	182	1085	177	770	202	873	227	1023	238
Verbal **	521	107	538	94	382	109	429	122	492	129
Math **	532	108	548	96	388	100	444	118	531	119
81 (M)										
Total **	1081	173	1099	169	833	209	945	211	1063	188
Verbal **	521	100	530	94	407	109	456	114	498	109
Math **	560	99	569	92	427	110	489	108	565	98
81 (F)										
Total **	1052	176	1083	171	797	217	816	175	1034	199
Verbal **	519	96	535	93	393	115	400	96	505	110
Math **	533	94	548	91	404	112	417	86	529	110

** Significant at .001.

Table B-2

COMPARISON OF CLASS STANDING ACROSS RACIAL GROUPS

Class	Total Mean	Total S.D.	White Mean	White S.D.	Black Mean	Black S.D.	Spanish Mean	Spanish S.D.	Other Mean	Other S.D.
79 (M)										
Rank **	69	85	67	82	89	112	114	137	60	67
Size **	356	226	353	225	355	221	421	265	392	229
Standing**	.20	.17	.19	.17	.25	.22	.25	.21	.17	.19
79 (F)										
Rank **	46	67	45	64	71	93	48	85	45	65
Size	356	224	353	224	367	214	360	208	423	271
Standing**	.13	.14	.12	.13	.20	.19	.17	.23	.13	.15
80 (M)										
Rank **	71	86	70	84	93	106	88	113	68	94
Size **	352	223	349	222	361	204	407	254	405	254
Standing**	.20	.18	.20	.18	.26	.20	.22	.18	.17	.17
80 (F)										
Rank **	50	66	46	63	89	93	39	39	49	64
Size *	367	226	362	225	386	222	353	213	449	249
Standing**	.14	.14	.13	.14	.24	.20	.16	.16	.12	.14
81 (M)										
Rank **	67	82	65	80	93	109	75	82	65	71
Size **	363	227	361	227	352	195	418	289	418	225
Standing**	.19	.17	.18	.17	.25	.22	.20	.17	.17	.18
81 (F)										
Rank **	46	60	42	55	75	93	66	68	48	58
Size *	364	222	360	222	367	206	392	216	441	259
Standing**	.13	.14	.12	.13	.20	.20	.16	.12	.09	.08

* Significant at .01
** Significant at .001

Table B-3

COMPARISON OF ACTIVITIES SCORES ACROSS RACIAL GROUPS

Class	Total Mean	Total S.D.	White Mean	White S.D.	Black Mean	Black S.D.	Spanish Mean	Spanish S.D.	Other Mean	Other S.D.
79 (M)										
Total *	154	29	154	29	156	29	160	28	157	28
Extrac. *	49	11	49	11	47	10	49	11	47	10
Athletic	48	11	48	11	48	12	48	11	48	11
Ldrshp. **	57	20	57	20	61	20	64	19	62	18
79 (F)										
Total	144	29	144	29	142	29	150	32	140	34
Extrac.	49	10	49	10	49	12	53	13	49	10
Athletic	41	13	42	13	39	11	39	10	39	13
Ldrshp.	53	18	53	18	54	18	57	21	52	20
80 (M)										
Total	153	29	153	29	154	30	156	28	156	28
Extrac.**	48	10	48	10	45	9	47	10	47	10
Athletic	48	11	48	11	47	12	48	12	48	12
Ldrshp.**	57	20	56	20	62	20	61	20	61	19
80 (F)										
Total **	144	29	145	29	136	30	142	37	141	23
Extrac. **	48	9	48	9	45	8	47	10	45	8
Athletic **	42	13	43	13	37	13	41	14	40	13
Ldrshp.	54	18	54	18	54	20	54	21	56	17
81 (M)										
Total *	155	29	155	29	160	29	159	29	154	30
Extrac. *	49	11	49	11	48	11	48	10	48	10
Athletic	48	11	48	11	47	12	48	11	47	12
Ldrshp. **	58	20	58	20	65	19	63	20	59	20
81 (F)										
Total	147	30	147	29	149	32	152	32	145	31
Extrac.	50	10	50	10	48	10	49	10	49	10
Athletic *	43	13	43	13	41	14	43	12	39	13
Ldrshp. **	55	20	54	19	60	20	60	21	57	19

* Significant at .01 ** Significant at .001

Table B-4

COMPARISON OF INTERVIEW BOARD SCORES ACROSS RACIAL GROUPS

Class	Total		White		Black		Spanish		Other	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
79(M)										
Total *	73	10	73	11	77	8	75	9	73	10
Attitude *	21	3	21	3	22	3	21	3	21	3
Appear. *	11	1	11	1	12	1	11	1	11	1
Poise *	11	2	11	2	11	1	11	1	11	1
Oral Exp.	11	2	11	2	11	2	11	2	11	2
Ldr. Pot. *	20	4	20	4	21	3	21	3	20	4
79(F)										
Total	76	9	76	9	75	9	76	7	78	7
Attitude	21	3	21	3	21	3	22	2	22	2
Appear.	11	1	11	1	12	1	11	2	12	1
Poise	11	1	11	1	11	1	11	1	12	1
Oral Exp.	11	1	11	1	11	2	11	1	11	1
Ldr. Pot.	21	4	21	4	21	4	21	3	21	3
80(M)										
Total *	74	10	74	10	78	8	75	8	73	11
Attitude *	21	3	21	3	22	3	21	4	21	3
Appear.	11	1	11	1	12	1	12	1	11	1
Poise	11	1	11	1	11	1	11	1	11	2
Oral Exp.	11	2	11	2	11	2	11	1	10	2
Ldr. Pot.*	20	4	20	4	22	3	20	3	20	4
80 (F)										
Total	77	8	77	8	76	10	77	9	81	6
Attitude	22	3	22	3	22	2	22	3	23	3
Appear.	12	1	12	1	12	1	12	1	12	1
Poise	11	1	11	1	12	1	11	1	12	1
Oral Exp.	11	1	11	1	11	2	11	1	12	1
Ldr. Pot.	21	3	21	3	20	5	21	3	23	3

Table B-4 (Continued)

Class	Total Mean	Total S.D.	White Mean	White S.D.	Black Mean	Black S.D.	Spanish Mean	Spanish S.D.	Other Mean	Other S.D.
81(M)										
Total	76	10	76	10	77	9	73	12	75	9
Attitude	22	3	22	3	22	3	21	4	22	3
Appear.	11	1	11	1	12	1	11	1	11	1
Poise	11	1	11	1	11	1	11	2	11	1
Oral Exp.	11	2	11	1	11	2	11	2	11	2
Ldr. Pot.	21	4	21	4	21	3	20	5	21	4
81(F)										
Total	78	8	78	8	83	2	81	-	77	6
Attitude	22	3	22	3	23	1	23	-	22	2
Appear.	12	1	12	1	12	-	12	-	11	1
Poise	11	1	11	1	12	-	12	-	11	1
Oral Exp.	11	1	11	1	12	-	12	-	11	1
Ldr. Pot.	21	3	21	3	24	1	22	-	21	3

* Significant at .01
** Significant at .001

APPENDIX C: EXPERIMENTAL SYSTEM FOR SCORING ACTIVITIES

An experimental system for scoring activities was developed in an effort to achieve more sensitive discrimination. The major differences between the experimental system and the TRADOC system were:

1. The experimental system counted all activities rather than only the highest ranking in each of 3 categories - Activities, Leadership, and Athletics.

2. The experimental system recognized all activities rather than focusing on a selected few as does TRADOC (e.g., Junior ROTC, Boys' State, Scouting).

The experimental system was used with several analyses for the class of 73. Comparison of scores by men and women is shown in Table C-1.

ACTIVITIES

1. Participation: None - 1 (Add 1 point for each activity up to 9)

2. Awards (Count multiple awards for different activities only)

   None - 1, School/Local - 2, Multiple - 3, City/Sectional - 4,

   Multiple - 5, State - 6, Regional - 7, National - 8,

   Multiple state or higher - 9

3. National Honor Society: Yes - 2, No - 1

4. Debating Team: Yes - 2, No - 1

5. 4H: None - 1, Participant - 2, Awards: Local - 3, County/State - 4,

   National - 5;

   Delegate: State - 6, National Congress - 7

6. Publications: No Participation - 1, Contributor - 2, Staff Assistant or

   Reporter - 3, Staff Editor or Business Manager - 4, Editor in Chief - 5

7. Scouting: No Participation - 1, Participation - 2, Tenderfoot - 3,

   2nd Class - 4, 1st Class - 5, Star - 6, Life - 7, Eagle - 8

LEADERSHIP

8. Extracurricular Leadership: None - 1 (Add 2 Points for each presidency/ chairmanship

1 Point for each other office up to 9)

9. Scouting Leadership: None - 1, Patrol Leader - 2, Senior Patrol Leader - 3, Jr. Assistant Scout Master - 4, Officer of Explorer Post - 5, Pres. of Explorer Post - 6

10. Junior ROTC/CAP: No participation - 1, Member - 2, SGT - 3, LT - 4, CAPT - 5, MAJ - 6, LTC - 7, COL - 8, Multiple school corps cmdr - 9

11. Boys State/Nation: No participation - 1, Local office - 2, Senior local officer - 3, Boys' State delegate, - 4 Boys' Nation or UN Delegate - 5, Participation without office specified - 6

12. Inter School Organizations: No offices - 1, Officer of local organization - 2, Delegate to State Organization - 3, Officer of State Organization - 4, Delegate to National Organization - 5, National Officer - 6, Nat. Merit Commendation - 7, Nat. Merit Achievement - 8, Nat. Merit Semi-Finalist - 9

13. School Wide Organization: None - 1, Student council member - 2, Officer 10th, 11th grade - 3, Officer 12th grade - 4, Officer student council - 5, President 10th, 11th grade - 6, President 12th grade - 7, 2 or more class or student council offices in senior year - 8, President of school or student council - 9

ATHLETICS

14. Participation

None - 1, Club or intramural - 2, Multiple club - 3, JV - 4,

1 varsity team (Letter) - 5, 2 varsity letters - 6, 3 or more varsity letters - 7, School athletic prize - 8, Multiple athletic prizes - 9

15. Competitive Achievement in Athletics: None - 1, Add points as follows for each membership on honorary or championship teams, or for achievements in tournaments (Maximum - 9)

    1 - Point for all conference 2nd. team or honorable mention, or school/local finalist.

    2 - Points for all conference 1st. team, or school/local champion.

    3 - All city/district

    4 - All state/regional

    5 - All american/national

16. Athletic Leadership: None - 1, Captain Of: Informal - 2, Intramural - 3, Junior Varsity - 4, Varsity - 5, Multiple Varsity - 6

TABLE C-1

MEANS OF EXTRACURRICULAR ACTIVITIES
CLASS OF 77

Variable	Male N = 2004 Mean	Male N = 2004 S.D.	Female N = 138 Mean	Female N = 138 S.D.
Activities Total (Sum 1-16)	18	5	18	5
Athletic Total (14 + 15 + 16)	5.9	2.8	6.1	2.5
Extracurricular Total (Sum 1-13)	7.7	2.6	7.3	2.6
Extrac. Participation (1)	5.9	2.1	6.7	2.1
Extrac. Awards (2)	1.3	1.1	1.5	1.3
Extrac. Leadership (8)	2.8	1.9	3.4	1.9
Athletic Participation (14)	4.2	2.2	2.5	1.8
Athletic Achievement (15)	1.5	1.2	1.4	1.3
Athletic Leadership (16)	1.7	1.5	1.4	1.1
National Honor Society (3)	1.6	0.5	1.6	0.5
Debate Team (4)	1.2	0.4	1.2	0.4
Scouting (7)	2.9	2.8	1.5	1.3
Scouting Leadership (9)	1.6	1.3	1.3	0.9
Boys/Girls State (11)	1.5	1.1	1.2	0.7
Junior ROTC Rank (10)	2.0	1.9	1.4	1.3
Publications (6)	1.8	1.3	2.4	1.5
Student Government (13)	2.6	2.4	2.2	1.9
4H (5)	1.1	0.4	1.1	0.4

APPENDIX D

HIGH SCHOOLS WITH TEN OR MORE APPLICANTS

Codes

F - High school serving a population with many military families

D - Military dependents high school abroad

M - Military school

Number of Applicants	Code	Name and Location of School
10	F	Enterprise High School, Enterprise, Alabama
10	F	East Anchorage High School, Anchorage, Alaska
10	F	Buena High School, Sierra Vista, Arizona
15	F	St. John's College High School, Washington, D. C.
22	F	Baker High School, Columbus, Georgia
15		Central/Lanier High School, Macon, Georgia
23	F	Leilehua High School, Oahu, Hawaii
12	M	Marmion Military Academy, Aurora, Illinois
23	F	Senior High School, Leavenworth, Kansas
13		Woodlawn High School, Shreveport, Louisiana
13	F	Arundel High School, Gambrills, Maryland
12	F	Christian Brothers Col. M. I., St. Louis, Missouri
11		Bellevue High School, Bellevue, Nebraska
13	M	New York Military Academy, Cornwall Hts., New York
24		Xavier High School, New York, New York

16	F	Eisenhower High School, Lawton, Oklahoma
17	F	Carlisle High School, Carlisle, Pennsylvania
15	M	Valley Forge Military Academy, Wayne, Pennsylvania
25	F	Central Catholic High School, San Antonio, Texas
14	F	MacArthur High School, San Antonio, Texas
13	F	Cole High School, San Antonio, Texas
14	F	T. Roosevelt High School, San Antonio, Texas
10	F	Senior High School, Logan, Utah
12	F	Kecoughton High School, Hampton, Virginia
12	M	Staunton Military Academy, Staunton, Virginia
11	F	Walla Walla High School, Walla Walla, Washington
20	D	Balboa High School, Canal Zone
13	D	Cristobal High School, Canal Zone
23	D	Kubasaki American High School, Japan
18	D	Frankfurt American High School, Germany
25	D	Heidelberg American High School, Germany
16	D	Kaiserslautern American High School, Germany
14	D	Stuttgart American High School, Germany
10	D	Mannheim American High School, Germany
11	D	Arnold American High School, Germany
12	D	Torrejon American High School, Spain

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