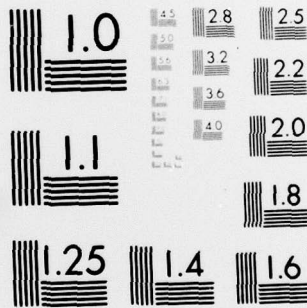


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Research Memorandum 65-7

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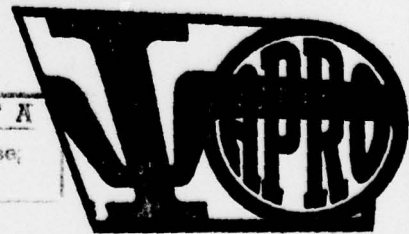
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9 Research Memorandum 65-7

6 PREDICTION OF DISCIPLINARY BEHAVIOR IN A
TWO-YEAR FOLLOW-UP SAMPLE

10 by Adrian U. Dubuisson and Bryan Sargent

14) APRO-RM-65-7

Submitted by:
Edmund F. Fuchs
Chief, Military Selection
Research Laboratory

Approved by:
J. E. Uhlener
Director of
Laboratories

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PREDICTION OF DISCIPLINARY BEHAVIOR IN A
TWO-YEAR FOLLOW-UP SAMPLE

BACKGROUND

The primary objective of the RETENTION STANDARDS Task was to develop techniques for the early identification of individuals whose behavior would prove unacceptable to the Army. The criterion of acceptability used throughout the series of studies was essentially type of discharge received. Disciplinary action in the form of court-martial conviction was included in order to refine the criterion.

The major effort in the early phase of the research was an exploratory investigation of the relationship between a large number of experimental predictors and the retention criterion. From these early studies--conducted, for the most part, on samples of enlisted men for whom data were readily available from personnel records or through reanalysis of related data from previous U. S. APRO studies--a number of psychological measures and personal and background characteristics emerged as being potentially useful in identifying men whose behavior as soldiers is likely to prove unacceptable.

The second phase was to identify the predictors which appeared to have potential pay-off against the service behavior of groups more representative of current Army enlisted input. At the same time, new self-description measures, developed mainly from information gained in the earlier research period, were administered to samples at entry into service for validation against behavior after a two-year period of service.

In the present study, longitudinal data on a large group of enlisted men were analyzed with two objectives: (1) to validate predictors selected and refined on the basis of previous studies, and (2) to develop and validate scales based on the experimental self-description forms.

PROCEDURE

PREDICTOR VARIABLES

Personal History Form, OA-1, PT 3556. 227 items developed specifically for research in military delinquency.

Army Self-Description Blank, S-1b, PT 3056. A 150-item instrument presented by tape recorder. Four keys, previously selected, were used¹.

¹ Carleton, F. O., Burke, L. K., Klieger, W. A., and Drucker, A. J. Validation of the Army Personality Inventory against a military adjustment criterion. U. S. Army Personnel Research Office. Technical Research Note 71. May 1957.

General Classification Key, PT 3059. Items 1-60, empirically keyed in PRT 2391 for the prediction of success in cooks, clerks, mechanics and infantry MOS.

API Suppressor Key, PT 3057. Items 61-75, identified as suppressor items in studies of the Army Personality Inventory.

API Valid Key, PT 3058. Items 76-120, identified as "valid" in studies of the API.

Basic Training Key, PT 3060. Items 121-150, selected as best predictors of ratings of basic training combat aptitude.

Army Classification Battery. Nine test scores were used: Verbal, Arithmetic Reasoning, Pattern Analysis, Mechanical Aptitude, Army Clerical Speed, Army Radio Code Aptitude, Shop Mechanics, Automotive Information, and Electronics Information.

AFQT. Total percentile score.

AGE. Age at entry into the Army.

Education. Years of civilian education completed.

Physical Profile. Rating in "S" category:

1. No psychiatric disorder
2. Mild transient disorder, psychoneurotic, borderline mental deficiency, etc.
3. Mild chronic psychoneurosis, moderate psychiatric history.

Number of Psychogenic Disorders prior to Service. Indications taken from Medical Forms SF 88 and SF 89.

Civilian Delinquency. Items taken from Record of Enlistment (DD Form 4) or Record of Induction (DD Form 47) indicating prior arrests, convictions, or offenses.

Previous Rejection. For inductees (US) only. Reasons for rejection were not specified on Record of Induction, DD Form 47.

Sick calls. Number of sick calls by the individual during Basic Combat Training.

Basic Training Cadre Rating. Training cadre rated each individual on likelihood of becoming a "trouble maker" during tour of duty. Cadre were asked

to rate each man they knew well enough to rate and assign 10% in the lowest category, 20% in the next, 50% in the third, and 20% in the most favorable (4 categories in all).

SAMPLES

Test and personal data were obtained on 3,000 enlisted men entering the Army during the winter of 1957-58. These men were assigned to 16 basic training companies at Fort Dix, New Jersey; Fort Jackson, South Carolina; Fort Carson, Colorado; and Fort Ord, California. Information on service behavior and disciplinary action was later collected from the personnel files of the participating training companies. After a two-year period had elapsed, completed behavior criteria were collected for final analysis.

Incomplete data cases were checked to assure that they did not form a group having systematic bias--especially on the criterion measure. The inductee (US) sample consisted of 879 cases; the enlistee (RA) sample, 1103 cases.

THE ACCEPTABILITY CRITERION

The criterion measure combined type of discharge and incidence of court-martial conviction. Each sample was divided into the three categories defined below. For RA men still in service, but with record of court-martial conviction, assignment to criterion categories was made judgmentally by task personnel. Amount of time lost in days, number of grade reductions, and number and type of court-martial convictions were used as guides in making the criterion assignments.

Honorable Discharge--No Court-Martial Convictions. All U. S. personnel honorably discharged before or at termination of service who did not have records of court-martial convictions. Minimum length of service for inclusion was 6 months.

All RA personnel still in service at the end of 23 months who did not have records of court-martial conviction or other evidence of delinquency. RA's honorably discharged after at least 6 months in service with no court-martial record were also included.

Honorable Discharge--Court-Martial Conviction. All U. S. personnel honorably discharged with one or more court-martial convictions. RA personnel still in service with record of court-martial conviction, assigned to this category on a judgmental basis.

Other Than Honorable Discharge. All U. S. personnel having other than honorable discharge. All RA personnel receiving other than honorable discharge within the two-year follow-up period, plus those still in service with record of court-martial conviction assigned to this category on a judgmental basis.

STATISTICAL ANALYSIS

All analyses were conducted separately on the RA and US samples. In each sample, number and percentage of men in each of the three acceptability categories were computed. Means and standard deviations were obtained for each discharge category and for the total sample.

Intra-class reliability coefficients of cadre ratings were computed on a representative sample using the Ebel technique for computing rating reliability. Only men having two or more cadre ratings were included in this step of the analysis.

Two randomly assigned RA subsamples (2a and 2b) were used for development of keys for the Personal History Form and for obtaining the multiple validity coefficient for this form plus the other variables identified as most valid by test selection procedures. Subsamples 2a and 2b each contained 432 cases. The remaining 239 RA cases were not used in this portion of the study.

RESULTS

COMPARISON OF RA AND US COMPONENTS

Distribution of the RA and US samples by criterion category is shown in Table 1. Percentages with court-martial conviction and other than honorable discharge were strikingly higher in the RA sample than in the US sample. A total of 15 percent of the RA enlisted men were in either the middle or low criterion categories. Only 1.6 percent of the U. S. component were similarly classified. This difference between RA and US component samples had been evidenced in past RETENTION STANDARDS studies.^{2,3,4} The small percentage of US enlisted men in the undesirable categories precluded stable correlation coefficients, and no further analysis of the U. S. sample was undertaken.

² Klieger, W. A., deJung, J. E., and Dubuisson, A. U. Peer ratings as predictors of disciplinary problems. U. S. Army Personnel Research Office. Technical Research Note 124. July 1962.

³ Klieger, W. A., Dubuisson, A. U., and Sargent, B. B. III. Correlates of disciplinary record in a wide-range sample. U. S. Army Personnel Research Office. Technical Research Note 125. August 1962.

⁴ Dubuisson, A. U. and Klieger, W. A. Combat performance of EM with disciplinary records. U. S. Army Personnel Research Office. Technical Research Note 148. June 1964.

Table 1
NUMBER AND PERCENT OF ENLISTED MEN IN EACH CRITERION CATEGORY

Category	RA Sample		US Sample	
	N	%	N	%
Honorable discharge, no court-martial conviction	937	85.0	865	98.4
Honorable discharge, one or more court- martial convictions	123	11.2	3	0.3
Other than honorable discharge	43	3.8	11	1.3
TOTAL	1103	100.0	879	100.0

PREDICTION OF DISCIPLINARY BEHAVIOR

Correlation of all predictors with the discharge criterion in the RA subsample is shown in Table 2. All coefficients are triserial correlation coefficients.

Two keys of the Personal History Form, several ACE tests, level of education, and AFQT percentile score yielded highest zero order coefficients in both RA subsamples. Average cadre rating had relatively low validity for the discharge criterion in comparison with the validity of predictors more cognitive in nature. In an earlier study, cadre and peer ratings were among the best predictors of the discharge criterion². The Ebel reliability coefficients were .30 for a single rater and .59 for the averaged ratings. Thus, addition of peer ratings might prove worthwhile in increasing validity through increased reliability.

Validity coefficients shown in Tables 2, 3, and 4 for the Personal History Form are "crossed" validity coefficients for items selected in alternate samples.

² See footnote on page 4.

Table 2

VALIDITY OF EXPERIMENTAL PREDICTORS OF DISCHARGE CRITERION
(TRISERIAL CORRELATION COEFFICIENTS*)

Variable	RA Subsample	
	2a	2b
Personal History Form OA-1 Valid Key	.52	.43
General Classification Key	.15	.16
API Suppression Key	-.02	.00
API Valid Key	.33	.39
Basic Training Key	.18	.25
VE	.31	.31
AR	.28	.30
PA	.24	.33
MA	.29	.35
ACS	.18	.29
ARC	.17	.21
SM	.21	.36
AI	.21	.26
ELI	.29	.39
Psychogenic Disorders	.12	.04
Age At Entry	.26	.19
Years of Education	.40	.40
AFQT Total Score	.29	.38
Sick Calls	-.10	-.06
Basic Training Avg. Rating	.23	.28

ACB Tests

*Corrected for restriction in range using AFQT percentile score as the explicit selector.

Table 3

PREDICTOR COMPOSITE AND VALIDITY FOR RA SUBSAMPLE 2a

Variable	Intercorrelations						
1. Personal History Form OA-1	<u>1</u>						
3i. Electronics Information (ACB)	.329	<u>3i</u>					
2b. API Suppressor Key	-.153	-.220	<u>2b</u>				
2c. API Valid Key	.566	.391	-.473	<u>2c</u>			
9. Cadre Rating	.255	.127	-.108	.213	<u>9</u>		
10. Criterion	.521	.286	-.023	.334	.226	<u>10</u>	
β	.4281	.1290	.1181	.0771	.0963		
R	.521	.535	.542	.549	<u>.552</u>		
R ^a	-	-	-	-	<u>.508</u>		

^aR obtained using inter-r's and validities from RA subsample 2b.

Table 4

PREDICTOR COMPOSITE AND VALIDITY FOR RA SUBSAMPLE 2b

Variable	Intercorrelations						
1. Personal History Form OA-1	<u>1</u>						
2c. API Valid Key	.395	<u>2c</u>					
8. Education	.636	.375	<u>8</u>				
2b. API Suppressor Key	-.059	-.466	-.101	<u>2b</u>			
9. Rating	.253	.214	.230	-.062	<u>9</u>		
3b. Arithmetic Reasoning (ACB)	.449	.414	.585	-.146	.165	<u>3b</u>	
10. Criterion	.432	.386	.402	.003	.275	.302	<u>10</u>
β	.1889	.3092	.1481	.1827	.1374	.0068	
R	.432	.492	.518	.537	.549	<u>.549</u>	
R ^a	-	-	-	-	-	<u>.524</u>	

^aR obtained using inter-r's and validities from RA subsample 2a.

The "back" validity coefficients were .65 and .64 as against crossed values of .52 and .43. The back key in subsample 2a consisted of 40 items, that in subsample 2b of 42 items. Of these items 20 were common to the two subsamples. Four of the 20 dealt with completion of high school. Most of the other items selected in both subsamples were concerned with success or failure in school, jobs held, and delinquency-type activities--gang fights, running away from home, appearances in juvenile court and the like. Several items selected in both subsamples were based on adjustment to Army life and thus would have limited pre-induction screening value. It seems likely that the high validity coefficients would not hold up if these forms were used directly in operational programs. However, the content is useful in pointing to important factors in the prediction of disciplinary record.

Using a step-wise test selection technique, predictor composites were obtained in the two RA subsamples. Five tests were selected in subsample 2a (Table 3) and six tests in subsample 2b (Table 4). Four tests were selected in common in the two subsamples: the Personal History Form OA-1, the Army Personal Inventory "valid key", the Army Personal Inventory suppressor key, and the basic training cadre rating. Although the validity coefficient of the cadre rating was relatively low in comparison with that of many predictors not selected in the test composites, a higher degree of independence was shown between the rating and all other predictors.

Estimates of unbiased validity for the predictor composites were obtained by a double cross procedure. Multiple correlation coefficients were computed, using the beta weights derived in one subsample with the intercorrelations and validity coefficients of the predictors in the other subsample. As shown in the last row of Tables 3 and 4, negligible shrinkage occurred between the "back" and cross multiple R's for either subsample. R's of .52 and .51 were obtained, a reduction .048 in one subsample, .025 in the other.

Of the most valid predictors, several provide economical measures of service acceptability in that they are readily available prior to enlistment--AFQT percentile score, aptitude measures, age, level of education. In combination with a cadre rating procedure and a personal history form, these measures demonstrated relatively high validity. In future studies in the induction and classification area, the use of peer ratings should be investigated, in view of obtained evidence of their effectiveness in predicting service acceptability.

SUMMARY

Predictors identified as promising in antecedent studies were validated in a longitudinal sample representative of Army input. Experimental measures included tests and personal data obtainable during induction and classification processing, a personal history form developed expressly to predict military delinquency, and ratings by basic training cadre on the individual's trouble-making propensities. Measures were analyzed in relation to a criterion based on type of discharge and court-martial conviction.

The most valid single predictors were the newly developed Personal History Form, the Army Personal Inventory, years of education, age, and the Armed Forces Qualification Test. Ratings by basic training cadre, less valid as single predictors, made an important contribution to validity because they were relatively independent of the other measures.

Several of the predictors investigated provide moderately effective and economical measures of service acceptability. AFQT score, age, and level of education are readily available prior to acceptance for service. A personal inventory and basic training cadre ratings would contribute to early identification of potential trouble-makers.