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FOLLOW-UP OF THE OFFICER EVALUATION CENTER

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The Army conducted an Officer Evaluation Center at Fort McClellan, Alabama, in early 1960's where about 900 first and second lieutenants underwent three days of evaluation of their technical, administrative and combat skills. Over 2000 measures were taken from performance on 15 exercises. These observations yielded 341 variables which were reduced by factor analysis to 8 factors. In 1981, almost 20 years later, a follow up was conducted. Results showed that OEC summary variables did yield significant discriminant functions and small improvements in prediction over chance for groups of career vs. single-term		

20. Abstract (con't)

(2 year) officers. 

FOLLOW-UP OF THE OFFICER EVALUATION CENTER^a

BACKGROUND

Overview of the Officer Evaluation Center

In the late 1950's and early 1960's research was conducted by the U.S. Army Personnel Research Office to develop means of identifying officers with the aptitudes and characteristics to successfully meet the demands of different types of command responsibility. In essence, the research program centered around the development of the Differential Officer Battery (DOB). This battery included measures of information ranging from military tactics to the physical sciences, sports and the arts. Biographical reports and self-descriptive statements of interests and attitudes were also included. In the process of development and refinement, the battery was administered to 6500 active duty officers in 1958 and 1959 and about 4000 in 1961 and 1962 (Helme, Willemin & Grafton, 1971).

Suitable criterion measures were needed to validate this instrument. Ratings by peers and superiors were used as part of the validation effort. However, these were not totally satisfactory in that the DOB had been designed to differentially assess potential for combat, technical and administrative assignments. An officer's job rating was relevant only to his current assignment which could be representative of only one of the three categories.

It was decided that a series of situational tests would be administered to serve as additional validation criteria. These would allow assessment of each officer in each of the three areas and provide the added advantage of uniformity of tasks and standardization of observations. For the purpose of administration of these situational tests, the Officer Evaluation Center (OEC) was established at Fort McClellan, Alabama, on 1 March 1962. The first year of the center's operation was spent staffing, training assessors and finalizing procedures. The first officers who had taken the DOB were not tested until February of 1963. Final revisions were made based on the first "shakedown" samples and for-the-record testing began in June of 1963.

In the process of refinement, all OEC exercises had been worked into a central scenario. This framework was that of a simulated Military Assistance Advisory Group (MAAG) Headquarters. New assessors were told to assume that they were "reporting for duty" at this MAAG Headquarters located in a friendly host nation. All tests then became a succession of assignments to be performed while temporarily awaiting reassignment to a field unit (Willemin, 1964).

Exercises were selected to provide reliable although not necessarily complete coverage of the technical, administrative and combat areas.

a. An abbreviated version of this report was presented at the 23rd Annual Conference of the Military Testing Association, 1981.

All exercises had to meet certain conditions. They were required to be able to be performed without specialized training and experience, to be recognizable as representative military requirements, and to have militarily meaningful outcomes characteristic of good or poor performance.

Exercises were drafted with the assistance of subject-matter experts, field tested and then technically reviewed at the appropriate branch schools. They were designed to include measures of the following categories of behavior: perceiving situational elements, judging future developments, analyzing problem elements, planning future action, organizing resources, deciding the course of immediate action, taking the initiative to act, communicating orders and information, training and directing subordinates, and persisting under stress (Willemin, 1964).

Officer Evaluation Center Exercises

Each exercise was to be primarily representative of one of the three areas of interest. There were five exercises developed in each of the three areas. A summary of these is given as follows:

Combat Exercises

1. March Order. Examinee plans a tactical road march and reacts to interruptions by senior and subordinate personnel.
2. Observation Post. Examinee directs fire onto visible targets. He must perceive terrain, enemy activity and targets, estimate range and communicate this information.
3. Security Mission. Examinee must anticipate enemy actions, quickly plan offensive and defensive actions and direct subordinates through face-to-face contact.
4. Roadblock. Examinee must apply basic tactical principles and communicate important information to others.
5. Route Reconnaissance Patrol. Examinee must cope with persistent obstructions to mission progress, respond to critical situational factors and withstand psychological stress under simulated prisoner-of-war conditions.

Technical Exercises

1. Communications Exhibit. Examinee troubleshoots technical equipment and must use subordinates as effectively as possible.
2. Automotive Inspection. Examinee detects equipment deficiencies and recommends and/or performs corrective actions.
3. Road Damage and Radiation Survey. Examinee must organize teams, train subordinates, collect and communicate information and make plans under conditions of time pressure, obstacles, harassment and fatigue.
4. Airfield Layout. Examinee must use technical information to select an airfield site and compute the necessary length of a runway.

5. Weapons Assessments. Examinee reports on the characteristics of an enemy weapon from a technical intelligence point of view.

Administrative Exercises

1. Improper Supply Records. Examinee analyzes supply records, writes a summary memorandum and (tactfully) communicates discrepancies.

2. Office Management. Examinee must organize administrative tasks and correct improper office procedures.

3. Production Analysis. Examinee analyzes production data, organizes unit for efficient operation, and communicates plans.

4. Site Selection. Examinee must use logistical judgment to interpret information and consider factors in site selection.

5. Highway Traffic Plan. Examinee must plan logistical support for a large scale tactical operation and respond to rapid political and military changes.

Each officer went through the exercises as an individual. The entire set required three days to administer. The combat setting was made as realistic as possible with 17 officers and 41 enlisted personnel playing the roles of United States and allied personnel. The first day's exercises were carried out under time pressure but "peacetime" conditions. On the second day the examinee was awakened at 0230 after about four hours sleep and told that the host nation was at war. The remainder of the exercises were carried out under "emergency" conditions and increasing fatigue on the part of the examinee (Helme, Willemin & Grafton, 1971).

METHOD

Sample

The original sample of OEC participants was drawn from the pool of 4000 lieutenants who took the DOB between 1961 and 1964. Of these, about 900 attended the OEC after one or two years of active duty. Both first and second lieutenants were included as were graduates of the U.S. Military Academy and both Reserve and Regular Army graduates of Reserve Officer Training Corps (ROTC). The lieutenants represented 10 different combat arms, combat support and combat service support branches. Only about 737 of the original 900 participants were included in the data base. The remaining officers were members of the first thirty-odd groups used as a "shakedown" sample to refine measures and exercises (Helme, Willemin & Grafton, 1971).

The first step of the current research was to determine where these 737 men were in relation to their military careers and what data were available to indicate whether their performances at the OEC bore any relationship to their later degrees of military success.

Through the Army's locator service, the names of 101 OEC participant officers still on active duty were found. At the time of follow-up sampling, 1980, these included: 1 colonel, 86 lieutenant colonels, 11 majors and 3 whose then current ranks could not be determined from information provided. The names of 412 additional OEC participants were found through computer search at the National Personnel Records Center (NPRC) in St. Louis, Missouri. The location of their records at NPRC indicated that these men had been discharged from all active and/or reserve military commitments.

The military history of the remaining 224 participants may be considered unknown. However, there is a third major repository of military records which is the Reserve Component Personnel and Administrative Center (RCPAC) in St. Louis, Missouri. This center houses records of individuals involved with Reserve Component (National Guard, etc.) units. It is possible that some of the remaining OEC records could be found there.

Information Collected

It was quickly determined that information available for the discharged subsample of officers with records at NPRC would be limited. However, because of difficulties of obtaining records for officers still on active duty, it was decided to use available information for the first set of analyses.

Only certain forms contained in any significant numbers of individual NPRC folders were found to be useful. These were:

- Form DD 214--Report of Transfer or Discharge.
- Form USAAC 872--Discharge.
- Form 67-5, 67-6--U.S. Army Officer Evaluation Report.

Only those items of information were taken from these forms which might reasonably be considered indicative of military success. These were:

- Number of years of active military service.
- Rank at the time of discharge from active duty.
- Rank at the time of discharge from the Reserve Component.
- Reason for discharge from the Reserve Component.
- Officer Evaluation Report total scores.

OEC Summary Variables

During the conduct of the OEC, more than 2000 observations and judgments were recorded on each assessee. These consisted of checklists of specific behaviors, scale ratings and quantitative summations of written products. Initially, these items were analyzed by factor analyses conducted separately for each exercise. Intercorrelations and factor analyses of these scores yielded 342 scales or variables. The number of variables was then reduced to 256 by elimination of those which were linear combinations of less complex ones and those on which 90% or more of the participants scored alike. Further factor analysis resulted in the identification of a set of 30 factors, all but two of which were specific to a single task. To find cross-task factors, "marker" variables were chosen for each factor. These were then combined with

additional independent scales, refactored and rotated. A set of eight factors were identified and analysis using these 8 factors was then extended to the remaining variables (Helme, Willemin & Grafton, 1971).

Information remaining from the original set of OEC data consists of 25 summary variables. These scores represent 7 of the original 15 exercises (3 from administrative exercises and 2 each from the combat and technical areas). These summary scales are part of the 342 variables derived in the initial set of analyses. About half loaded on the final 8 cross-situational factors derived from analyses. Few (about 5) are markers or variables which loaded on the intermediate set of 30 variables. It is likely that many of them were omitted from this stage of analysis because they were linear combinations of simpler variables. A summary description of the variables is provided at Table 1.

Measures of leader characteristics resulting from DOB development were correlated with OEC variables and factor scores. A number of significant correlations were found and differential prediction of the combat and technical-managerial leadership domains was shown (Helme, Willemin & Grafton, 1974).

Determination of Groups

It was determined that the best use of the existing data would be to determine how effectively the OEC variables could discriminate between the group of participants who chose to get out of the Army after their initial obligation and the group who decided to remain for a full-career (20-year) term. The decision to remain in the Army is the fundamental criterion of a successful military career. It is the summary outcome of all the skills, motivations, experienced successes, etc. which allow one to choose and successfully complete a given life's work. Any set of variables potentially able to detect finely-tuned differences in level of success such as one-time ratings or awards should also be able to detect differences in this basic yet overriding criterion.

The group of 101 career officers for the analysis was self-defined. However, the discharged group required some further definition. Of 412 cases available, useful data was available for only 352. Of these, by far the majority, 237, fit the pattern of a minimal 2-year active duty commitment and completion of the remainder of the obligation in some type of a reserve unit. It was decided to use the homogeneous sample of 237 for the second group. An unstructured perusal of all the records indicated that those having more or less than two years of active duty represented a much more ill-defined group. These included: officers killed in Vietnam, West Point graduates leaving the Army after completion of their minimal 5-year commitment, medical discharges, and a variety of unique cases.

TABLE 1

Remaining OEC Summary Variables ^a

Exercise	Variable	Loads on Factor
<u>Administrative Area</u>		
Highway Traffic Plan	Factor Total	8, Technical Skills
	Attention to Data Requirements	1, Technical-Managerial Leadership
Office Management	Sequencing of Operations Retained Procedures	b
Site Selection	Factor Total	
<u>Technical Area</u>		
Automotive Inspection	Factor Total	8, Technical Skills
	Identifying Information	5, Mission Persistence
Airfield Layout	Sites Weighted Scale	
	Basic Geographical Considerations	
	Operational Hazards	
	Engineering Considerations	c
	Computational Accuracy	
	Utilization of Terrain Features	d
	Number of Sites Evaluated	7, Tactical Skills
	Thoroughness of Runway Report	
	Total Score	7, Tactical Skills
<u>Combat Area</u>		
Security Mission	Firm Handling of Personnel	
	Effectiveness of Defense Plan	
	Total Score	2, Combat Leadership
Roadblock	Attitude and Motivation	
	Tactical Control	
	Instruction of Men	3, Team Leadership
	Handling of Sniper	
	Confidence and Forcefulness	2, Combat Leadership
	Effectiveness in Establishing Abatis	3, Team Leadership

a. Final cross-task factors, original analysis.

b. Marker for intermediate factor 30, Commo and Staff.

c. Independent variable.

d. Marker for intermediate factor 23, Mission Accomplishment.

RESULTS AND DISCUSSION

Analysis of Career versus Non-career Groups

A stepwise discriminant analysis was performed using the "2-year" and "20-year" career groups described and a significant discriminant function was found. The value of Wilks' lambda was .89 with a corresponding Chi-square of 35.54 (d.f.= 7; $p < .001$). The canonical correlation was .318. Neither of these statistics indicates a very high degree of separation between the groups.

Standardized function coefficients are shown at Table 2 for the 7 variables of the total 25 included in the function. These show the relative contributions of each variable to the function. By looking back to Table 1, one can determine the factors from the original analysis on which these variables loaded. It is interesting to note that while only 10 of the 25 summary variables were reported as loading on the final, cross-task factors of the original analysis, 4 of the 7 loading in the current analysis came from these 10.

A cross-comparison of Tables 1 and 2 also helps to lend interpretation to the function. To the extent that these 5 variables are indicative of the original, cross-task factors shown in Table 1: combat and team leadership, tactical skills, and technical skills, the military careerists appear to be distinguished from the other group along a general dimension combining military and leadership talents.

Following determination of the discriminant function, its ability to correctly classify cases was examined and 65.38% of cases were correctly classified using this function. This represents 30.76% fewer classification errors than would have been expected by chance. Classification results by group are shown below:

<u>Actual Career Group</u>	<u>Predicted Career Group</u>	
	<u>20-year</u>	<u>2-year</u>
20-year	68 (67.3%)	33 (32.7%)
2-year	84 (35.4%)	153 (64.6%)

Lack of information and the considerable time span involved make it difficult to discuss those considerations that normally go with classification. For example, the large differences in group size would suggest improvement in overall classification through the use of prior probabilities of group membership other than chance. However, the most appropriate percentages to use were not readily available. They would be the statistical projections of officer retention of twenty years before.

Those factors affecting tolerance for misclassification have also changed. The Selective Service System was still in effect in the early 1960's. Under that system the loss of a potentially successful officer through misclassification might have been much less costly than it is today.

TABLE 2

Standardized Discriminant Function Coefficients and Group Means

Variable	Standardized Coefficient	Group Means	
		20-yr.	2-yr.
<u>2-year vs. 20-year Group Analysis</u>			
Airfield Layout, No. Sites Evaluated ^{a1/b}	-.50	5.06	5.24
Automotive Inspection, Factor Total ^{a2/b}	.24	9.34	8.16
Roadblock, Confidence/Forcefulness ^{a3}	.80	28.61	25.03
Security Mission, Total Score	.44	297.71	254.11
Airfield Layout, Comp. Accuracy	-.30	.55	.64
Roadblock, Instruction of Men ^{a4}	-.34	10.71	9.89
Site Selection, Factor Total	.23	10.12	9.35
<u>Rank at Discharge Group Analysis</u>			
Airfield Layout, No. Sites Evaluated ^{a1/b}	-.38	5.18	5.33
Automotive Inspection, Factor Total ^{a1/b}	-.53	9.25	7.53
Roadblock, Attitude/Motivation	.57	29.48	27.20
Roadblock, Handling of Sniper	-.32	4.82	5.26
Roadblock, Tactical Control	-.38	3.12	3.34
Highway Traffic Plan, Attn. to Data ^{a5}	-.29	3.88	4.23
Airfield Layout, Utilizing Requirements of Terrain Features	.40	1.67	1.45

a. These variables loaded on factors in original analyses: 1) Tactical Skills; 2) Mission Persistence; 3) Combat Leadership; 4) Team Leadership; 5) Technical-managerial Leadership.

b. These variables included discriminant functions for both analyses.

Analysis of Groups within the 2-year Sample

Following initial analysis, the 2-year sample of officers deciding not to remain in the Army was examined. This sample revealed a bimodal distribution along the dimension of rank at the time of discharge from the reserve component. Of the 222 officers for whom records were available, 84 were discharged as captains and 137 as first lieutenants. Assuming this attainment of rank to be an indicator of military success, a second stepwise discriminant analyses was performed using groups formed on the basis of rank at time of reserve discharge. A significant discriminant function was found with Wilks' $\lambda = .90$, Chi-square = 21.58 (d.f. = 7, $p < .003$), and canonical correlation = .308.

The accuracy of classification was checked and 67.87% of cases were correctly classified representing 35.74% fewer errors than would have been expected by chance. Classification results by groups are shown below.

<u>Actual Rank at Discharge</u>	<u>Predicted Rank at Discharge</u>	
	<u>1LT</u>	<u>CPT</u>
1LT	93 (67.9%)	44 (32.1%)
CPT	27 (32.1%)	57 (67.9%)

Standardized discriminant function coefficients shown at Table 2 indicate the relative contributions of variables to the function. As with the first analysis, exactly 7 of the 25 variables are included in the function. However, except for the first two variables (marked), sets of variables belonging to the two separate analyses do not overlap. Also the variables in the latter analysis tend not to be the ones which loaded on factors in the original analyses. (The exceptions are the two overlapping variables noted in Table 2 and the "Highway Traffic Plan" variable.)

This would suggest that the dimension(s) separating the career-bound young officer from the one who will leave for civilian life may not be entirely the same as those determining success as a young officer. One obvious difference might be the factor of motivation. Anecdotal evidence from the records suggested that many of these officers may have been bright and capable, yet only interested in fulfilling their minimal military obligation. A number of them requested early discharge in order to attend medical, law or graduate school. However, further discussion would be speculative since there is insufficient data remaining to support this hypothesis.

Finally, for this sample of 2-year officers, correlations of scores on the OEC variables and average Officer Evaluation Report Scores were obtained. These are presented at Table 3. These correlations were small and uninteresting. What is interesting is the contribution of this information to the overall pattern of data. Results of the original discriminant analysis suggest that the OEC exercises may have tapped something of relevance to a successful Army career. The fact that different variables loaded on rank attained at time of discharge among single-term officers and the fact that the OEC variables have almost no relationship to OER scores suggests that the system of rewarding young officers at that time may have been out of step with

TABLE 3

Correlation of OEC Variables with Average OER as 2nd and 1st Lieutenant

Variable	Correlation Coefficient
Highway Traffic Plan	
Factor Total	.11 (p=.042)
Attention to Data Requirements	.04
Office Management	
Sequencing of Operations	-.04
Retained Procedures	-.16 (p=.008)
Site Selection	
Factor Total	-.01
Automotive Inspection	
Factor Total	.08
Identifying Information	.08
Airfield Layout	
Sites Weighted Scale	.07
Basic Geographical Considerations	.05
Operational Hazards	.06
Engineering Considerations	-.03
Computational Accuracy	.13 (p=.022)
Utilization of Terrain Features	-.01
Number of Sites Evaluated	.04
Thoroughness of Runway Report	.01
Total Score	.06
Security Mission	
Firm Handling of Personnel	.06
Effectiveness of Defense Plan	.15 (p=.011)
Total Score	.14
Roadblock	
Attitude and Motivation	.06
Tactical Control	-.06
Instruction of Men	.16 (p=.010)
Handling of Sniper	-.02
Confidence and Forcefulness	-.03
Effectiveness in Establishing Abatis	-.05

Note p values reported only for those correlations having probability levels less than .05. n=233 (all correlations).

some of the important variables of true career success. The possibility that this may still be the case might be an item of concern for Army leadership.

These results are admittedly weak. However, it is encouraging that systematic results were found considering the limitations of the data and the number of background variables which must go into the choices and events of a career lifetime. Perhaps additional analyses based upon the records of the subsample of career officers would shed further light on the subject.

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