LEVEL II

Research Study 63-2

RESEARCH ON COMBAT SELECTION AND SPECIAL FORCES MANPOWER PROBLEMS -- STATUS REPORT

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(6) RESEARCH ON COMBAT SELECTION AND SPECIAL FORCES MANPOWER PROBLEMS--STATUS REPORT

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BRIEF

REQUIREMENT:

DCSPER has a requirement for research to improve the means of selecting and utilizing enlisted men who possess fighter potential, with a special view to limited or other future warfare. In addition, the Special Warfare Center has requested research assistance on attrition and utilization problems among Special Forces personnel.

PROCEDURE:

Research activity has dealt with the following problems:

(1) Construction of experimental tests of personal factors associated with fighter potential

(2) Operational ratings as predictors of combat performance

(3) Feasibility of research on soldier performance under Far North conditions

(4) Psychological factors in Ranger Training

(5) Human factors problems in Special Forces--selection and utilization

ACCOMPLISHMENTS TO DATE:

A battery of experimental tests to predict combat performance has been constructed, and simulated combat situations against which to evaluate the tests have been formulated. Preliminary studies conducted during Arctic maneuver GREAT BEAR indicated the feasibility of conducting some validation studies under conditions of extreme cold.

In view of the demonstrated usefulness of ratings as indicators of combat potential, a portable apparatus for obtaining ratings has been developed which would greatly facilitate obtaining ratings in the field.

A USAPRO research scientist who went through Ranger Training as a participant-observer recorded trainee reactions which appeared to differentiate the poor from the adequate fighter.

The Special Forces Selection Battery was implemented in 1961 with, however, no provision for applying a cutting score. An invitational recruiting procedure designed to increase the number of volunteers so that appropriate selection requisites could be applied was developed, tried out, and recommended for adoption. Meantime, a minimum age requirement of 20 years was recommended.

A system of evaluating Special Forces performance has been developed and is ready for tryout.

RESEARCH ON COMBAT SELECTION AND SPECIAL FORCES MANPOWER PROBLEMS--STATUS REPORT

SCOPE OF THE REPORT

DCSPER has a requirement for continuing research to improve the means of selecting and utilizing enlisted men who possess fighter potential, especially with a view to limited or other future warfare. The combat arms share requirements for talent with other arms and services, particularly the technical services. Overall improvement in the quality of assigned personnel is therefore sought by developing means of identifying a larger number of men with potential for making good combat soldiers, particularly men whose fighter potential differentiates them from other men of generally high caliber. Research to this purpose is conducted by the COMBAT SELECTION TASK of the U. S. Army Personnel Research Office.

A major portion of the COMBAT SELECTION Task effort during FY 1962 has been devoted to research designed to reduce attrition among Special Forces trainees. Research on problems of Special Forces personnel had been conducted under a separate task through FY 1960, when research to develop a selection battery was completed and the Task closed out. Later, however, the Army's emphasis on limited warfare brought about a requirement for additional research on Special Forces selection problems. As a consequence, the Combat Selection subtasks have been subordinated to the more immediate human factors problems of the Special Forces.

The present status report first presents a brief statement of past accomplishments in the combat selection subtasks. The second part of the report describes current research designed to improve the selection and utilization of Special Forces personnel, research which has absorbed major task effort during FY 1962.

COMBAT SELECTION RESEARCH

BACKGROUND

As a result of research beginning in 1949, two new measures had been developed and introduced into the Army Classification Battery (ACB) as a basis for classification to the combat arms (Willemin and Karcher, 1958). The Classification Inventory, a personality questionnaire, is a component of the Infantry Combat Aptitude Area (IN); the General Information Test, which samples knowledge of masculine-type outdoor activities obtainable typically through participation, forms a part of the Artillery, Armor, Engineer Combat Aptitude Area (AE). Subsequent research under the COMBAT SELECTION Task was designed to supplement these two tests as a means of improving the differential identification of men with adequate combat potential.

Approach to the development of new and more sophisticated predictors of combat potential was predicated on results of prior research used to develop the combat aptitude areas. Actual combat studies had given clear indication that improved selection of men for combat duty is most likely to be achieved from research on combat aptitude ratings during early phases of training and from research in the area of personal factors. The two areas have been emphasized in recent Task efforts.

OPERATIONAL PEER RATINGS AS PREDICTORS OF COMBAT PERFORMANCE

In several research investigations in which ratings have been studied, peer ratings have been found to constitute excellent predictors of subsequent Army performance. For example, ratings of leadership abilities among students of the U. S. Military Academy[1/] yielded a correlation coefficient of .50 with measures of combat performance obtained subsequently in Korea. In another study, peer ratings obtained in the 5th week of basic training correlated .60 with performance evaluations 16 weeks later. In recent research on Special Forces selection, peer ratings made during the 5th week of basic combat training had a correlation coefficient of .43 with field performance measured at the end of the Special Forces training course.

Currently attention is being given to improved techniques for obtaining effective ratings. For example a "rating machine" adaptable for field use has been developed by engineers of the Bureau of Standards following specifications outlined by the Army Personnel Research Office. This apparatus permits each man in a 20-man group to rate all the other men in his group, and provides for the instantaneous scoring--and averaging--of all ratings for a given individual.

Further effort toward operational implementation of rating techniques for prediction purposes will be carried out by members of the NCO LEADERS Task of the Army Personnel Research Office, which has already implemented peer ratings for use in identifying basic trainees to be trained as acting NCOs in Advanced Individual Training. Field tryout of the rating machine being constructed by the Bureau of Standards is planned.

COMBAT SELECTION RESEARCH UNDER ARCTIC CONDITIONS

Arctic exercise GREAT BEAR offers opportunity--at short notice--to assess the feasibility of conducting human factors research during future Arctic maneuvers. The Leader of the COMBAT SELECTION Task accompanied elements of the friendly force, CONUS, to Alaska for two weeks while the exercise was in progress. He visited representative

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1/ The Aptitude for the Service Rating (ASR)--a weighted composite of ratings by fellow cadets and the tactical officer on potential leadership in military situations.

elements and areas to observe aspects of performance under conditions of extreme cold and to obtain information useful to the planning of research under similar conditions. To test the feasibility of validation studies under Arctic conditions, an abbreviated battery of tests had been administered to a small sample drawn from the friendly CONUS Battery Group prior to departure of the troops for Alaska. Criterion data in the form of peer ratings of combat effectiveness were collected on the same personnel after their return to rear areas upon completion of the exercise.

Observation of conditions during the exercise led the APRO representative to conclude that an Arctic exercise such as GREAT BEAR is a sufficiently realistic simulation of combat activity to make combat selection research in connection with the exercise worthwhile. The following conclusions were reached regarding the practical aspects of research in the setting provided by a combat exercise of this scope:

1. Peer ratings can be obtained for personnel under study as the men return to rear areas upon completion of the exercise. It was ascertained that ratings can be completed outdoors at temperatures as low as 30 degrees below zero, if blizzard conditions do not prevail. Shelter such as a mess tent is preferable, however. Two squads, or 30 men, can be assembled at one time in a mess tent for rating purposes.

2. To obtain evaluations of individual performance during the exercise, more than the usual advance preparations need to be made. The evaluation system needs to be meticulously designed for application under difficult conditions, and materials prepared and arranged with a view to ease of handling. Noncommissioned officers in adequate number should be selected well in advance of the exercise and trained in observing the men under simulated combat conditions and evaluating their performance by the standard procedure.

It was the conclusion of the APRO research scientist that the psychological aspects of Arctic performance are sufficiently unique to justify consideration of instituting research going beyond attempts to improve selection of personnel. The possibility of considerable combat activity under conditions equivalent to those in Alaska in the event of a major war, and the dramatic differences observed in behavioral factors under such conditions, underlie the urgent need for research directed toward the utilization of the Army's human factor resources in combat systems operating under Arctic conditions.

IMPLICATIONS OF RANGER TRAINING FOR FIGHTER PREDICTION

Significant improvements in means of selecting combat personnel require the creation of a realistic, if simulated, combat situation in which soldier performance can be evaluated. The rigorous Ranger Training Course of the U. S. Army Infantry School provides as close an approximation of combat activities as a peacetime Army affords. To gain the necessary first-hand information and insight into the psychological reactions of the trainees, Dr. Sherwood H. Peres, a civilian research psychologist of the Army Personnel Research Office, enrolled as a full-time student in the eight-week

Ranger Training Course. His observations and conclusions as a participant-observer have been reported in considerable detail in Technical Research Report 1116 (Peres, 1959). In brief, he recorded eight conditions seen as challenging the trainee's will to make tactical use of his skills and resources: extreme fatigue, the necessity of performing in an unstructured situation, conflict situations, need to accept training as real combat, performance with no knowledge of personal progress, inability to leave the course voluntarily, necessity for teamwork, and need to observe and retain military information. He also delineated ten constellations of reactions which appeared to have potential for differentiating the poor from the adequate fighter--malingering, lack of social responsibility, an attitude of martyrdom, unauthorized withdrawal, hostility, fear of injury, uneasiness over the unknown, psychotic-like reactions, failure to assume the combat role, and inability to follow instructions.

An additional outcome of this effort was a request from the Ranger Department that APRO determine the feasibility of predicting success in ranger training. Attempts to validate predictors in two classes during FY 1961 gave inconsistent results. In view of the indecisive results, data were collected on six additional classes during FY 1962. Validity coefficients ranged from .08 to .14. The measures investigated appeared not to be sufficiently valid to warrant their use in selection for Ranger Training. Considering that the Ranger program is well formalized, that prerequisites for entering trainees are stabilized, and that the current number of failures in training is small, further research to reduce attrition further is not considered justified at the present time.

RESEARCH ON HUMAN FACTOR PROBLEMS IN SPECIAL FORCES

BACKGROUND AND CURRENT OBJECTIVES

Under the SPECIAL FORCES Task, completed early in 1961, a selection battery was developed and validated against success in Special Forces Training. The Special Forces Selection Battery was officially implemented in 1961[2/]. However, there was reluctance on the part of implementing officials to apply a research-determined cutting score on the grounds that quotas could not be met if any significant number of applicants were screened out. By late 1961, when the strength of Special Forces was substantially increased, the rate of attrition

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2/ DA Circular 611-41, Implementation of Special Forces Selection Battery, 13 July 1961, and AR 614-62, Selection and Assignment of Personnel to Special Forces Organizations, 21 August 1961, provide for the use of the Battery but do not provide for application of a cutting score.

during early phases of training at the Special Warfare Center had climbed to about 70 percent. Based on this situation, the Special Warfare Center requested that the U. S. Army Personnel Research Office undertake research to increase the applicant pool, to tighten up the screening procedures, and consequently to reduce attrition from the training course.

To examine the basis for research on the problem the Task Leader spent some time at the Special Warfare Center. His observations and fact finding were instrumental in reorienting the required APRO effort to emphasize means of increasing the number of volunteers for Special Forces service so that more effective selection could take place, and toward more effective utilization of Special Forces personnel.

THE SPECIAL FORCES SELECTION BATTERY--DEVELOPMENT AND EVALUATION

The selection battery which became operational in 1961 consisted of four measures which in combination provide a means of effectively screening out volunteers who are not likely to succeed in Special Forces training. Components of the battery were established on the basis of studies in which ten experimental measures, plus current tests and aptitude area composites of the Army Classification Battery, were validated against a criterion measure of performance on field exercises. The tests were administered to a sample of 250 trainees. Upon completion of the basic course, the trainees were required to demonstrate their proficiency in nine principal areas of the training. Score on the following nine performance tests constituted the criterion measure:

Weapons. Assembly, disassembly, and use of infantry weapons.

Communications. Using a transceiver to open a communications net, transmit a message, receive a message, and close down a communications net.

First Aid. Application of proper procedures to treat such conditions as gunshot wounds, drownings, and other accidents.

Survial. Demonstration of proper methods of living off the land and general survival.

Land Navigation. Plotting a course on a map to include 4 points over a distance of 5 miles and to traverse the course on foot, touching each of the four points, within a certain period of time.

Demolition. Identification, selection, placement, priming, and detonation of various explosives.

Organization and Development of Guerrilla Forces. Demonstration of skill in application of basic principles of guerrilla warfare, using a sand-table to select proper locations and to lay out a complete guerrilla complex.

Aerial Resupply. Arranging for an aerial drop of supplies and equipment behind enemy lines, using a sand-table.

Guerrilla Tactics. Demonstrating how to plan and execute raids and ambushes, using a sand-table.

Three of the experimental tests were found to be good predictors of performance at the end of training (Table 1). They are also relatively unique in the psychological dimensions measured. Used as a battery together with the Infantry Aptitude Area, the tests resulted in a multiple correlation coefficient of R = .63, or .55 when corrected for shrinkage (Table 2).

Table 1

VALIDITY COEFFICIENTS OF EXPERIMENTAL TESTS FOR THE SPECIAL FORCES SELECTION BATTERY

(N = 216)

Experimental Tests	r
Special Forces Suitability Inventory	.42
Locations Test	.39
Critical Decisions Test	.35
Basic Military Proficiency Test	.50
Following Directions Test	.38
Situational Judgment Test	.35
Self-Description Questionnaire	.33
Multiple Reaction Test	.26
Self-Description Blank-SF	.22
Activities Inventory	.15

Table 2

COMPONENTS OF THE FINAL SPECIAL FORCES SELECTION BATTERY

Component	Correlation Coefficient
Aptitude Area IN	.49
Special Forces Suitability Inventory	.42
Locations Test	.39
Critical Decisions Test	.35
R uncorrected	.63
R corrected for shrinkage	.55

The selected battery consists of the following measures:

Tests

Special Forces Suitability Inventory. A noncognitive measure designed to tap aspects of personality make-up hypothesized to be germane to suitability for Special Forces activity.

Critical Decisions Test. A measure of risk or chance-taking tendency. Few facts and limited time for deliberation characterize the test which is presented by tape recorder and test booklet.

Locations Test. A measure of ability to perceive space when actual terrain features are used as the visual stimuli. The examinee must orient himself in photographs.

Aptitude Area

Infantry Aptitude Area (IN). A composite score based on two tests of the Army Classification Battery, Arithmetic Reasoning and Classification Inventory, used to identify men who have combat potential for the Infantry.

Chart 1 shows the estimated reduction that would result in number of unsuitable personnel accepted for Special Forces training if the battery were used with a cutting score of 438. The estimate is based on the situation that existed at the time of the validation study when approximately one-half the personnel accepted for training proved to be unacceptable later in the course.

RECOMMENDED ACTION

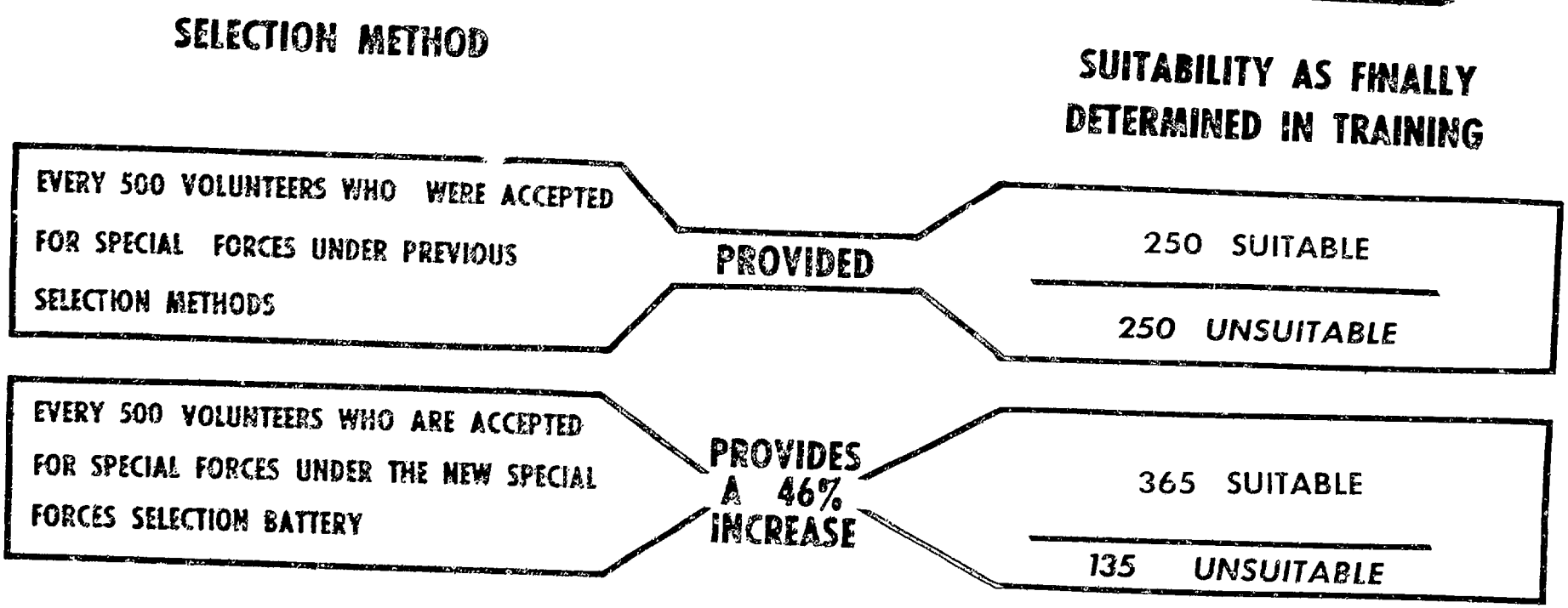
In view of the critical attrition problem during Special Forces training, immediate application of a cutting score of 392 or higher on the Special Forces Selection Battery was recommended in November 1961.

CURRENT SPECIAL FORCES MANPOWER PROBLEMS

When in 1961 the problem of attrition from Special Forces training became acute, it was evident that the research approach should be broadened to include aspects of manpower utilization. The psychological requirements of Special Forces operations, under conditions of limited warfare or full-scale war, are both extensive and relatively unique. Not only must Special Forces personnel be top-notch soldiers; they must also possess the maturity, self-discipline, and dedication required for their special mission. Training of Special Forces personnel is long and expensive. It is costly to the Army to discover, after a sizable block of training has been completed, that individuals are unsuitable to Special Forces assignment. It is also demoralizing to a trainee, who may be an otherwise good soldier, to find that he is not suitable for the assignment for which he is in training.

EFFECTIVENESS OF THE SPECIAL FORCES SELECTION BATTERY

(WHEN 50% OF VOLUNTEERS ARE ACCEPTED)



USAPRO

All enlisted Special Forces personnel are volunteers. Since the volunteer rate approximates the quota, a psychological screening system cannot be applied if quotas are to be met. Attention therefore was focussed on steps that could be taken to increase the number of applicants, so that an adequate screening program could be instituted.

At the time investigation of the recruiting problem began, Special Forces volunteers were coming predominantly from the Third Army, as shown by the following distribution of volunteers by source:

Army	Percent of Volunteers
1st	5.8
2d	2.9
3d	76.3
4th	4.9
5th	2.4
6th	3.8
Other	3.9

Within the Third Army, volunteers came from five installations, in the following proportions:

Installation	Percentage of 3d Army Input
Fort Bragg	33.7
Fort Jackson	29.1
Fort Campbell	17.1
Fort Benning	14.2
Other	5.9
	100.0

Since Special Forces is an airborne outfit, it was logical that a large number of personnel should come from Fort Bragg and Fort Campbell. However, Fort Jackson was also a major contributer. This sample analysis led to further inquiry concerning recruiting policies, from which three pertinent conclusions developed:

1. The Third Army had a more positive recruiting policy than the other Armies.

2. Recruiting personnel at Fort Jackson were exceptionally aggressive in obtaining volunteers.

3. A large source of potential volunteers was apparently untapped. A more uniform Army-wide policy with respect to recruiting could increase substantially the supply of volunteers.

RESEARCH ON RECRUITING PROCEDURES

The Army Personnel Research Office then proceeded with a pilot study comparing the effectiveness of the experimental recruiting procedures with the then-current approach. In May 1962, a team of APRO research psychologists and U. S. Army Special Warfare Center recruiters conducted research on personnel undergoing Advanced Individual Training at Fort Chaffee using one of two approaches. Under the lecture approach, a recruiting lecture was given to all personnel in a company, regardless of eligibility for Special Forces Training. Those who expressed interest were then administered the Special Forces Selection Battery and were further screened according to the current regulations. In the invitational approach, the Special Forces Selection Battery was first administered to all men in a company. Only those who achieved qualifying scores and were otherwise eligible were assembled for a lecture about Special Forces given by a member of the recruiting team. The men were informed that they had already been identified as having the potential for Special Forces assignment. Following the lecture, all men who showed interest were interviewed individually and invited to volunteer. A control group contacted by then-current recruiting procedures served as a base for comparison with men in these groups. This study was replicated at Forts Gordon, Leonard Wood, and Ord. When results for the four installations were analyzed, the control method yielded a volunteer rate of two-tenths of one percent (4 volunteers out of 2242 initial contacts). With the lecture method, the volunteer rate was 3.4 percent, or 70 out of 2066 initial contacts. With the invitational method, the rate was 4.8 percent (82 out of 1717).

Since results with the experimental procedures were definitely positive, implementation of the invitational recruiting method was recommended to DCSPER on 31 August 1962.

PERFORMANCE EVALUATION OF SPECIAL FORCES PERSONNEL

Also involved in the request from the Special Warfare Center was indication of a need for an evaluation system based on uniform standards of performance throughout the Special Forces. Prior to the recent Special Forces build-up, commanders evaluated their personnel without recourse to a formal system. With larger numbers involved, the importance of a systematic basis for judging a man's suitability for retention or transfer was recognized. Complete and accurate records of quality of performance would be useful not only as an aid in identifying unsuitable or marginal personnel; they would also constitute a valuable guide in utilizing personnel in accordance with their capabilities and propensities.

MINIMUM AGE REQUIREMENT FOR SPECIAL FORCES ASSIGNMENT

Experienced personnel agree that, in accomplishing missions such as those entrusted to Special Forces, maturity is critical. In many

cultures in which the men may be operating, age itself is an essential ingredient in commanding respect. The Special Forces Selection Battery, incorporating noncognitive factors associated with maturity of reaction and judgment, could be used to reduce the number of emotionally and socially immature individuals accepted for training. Pending application of a battery cutting score, however, the establishment of a minimum age for Special Forces training was considered.

Soldiers under 20 years of age account disproportionately for more than half the attrition occurring in the five-week replacement training program. When reasons for attrition were examined in all cases occuring since 1 November 1961, many trainees were found to have changed their minds about what their Army career interests were, an instability suggesting the factor of youthfulness in attrition. Academic failure accounted for approximately 20 percent of 449 cases of attrition. General unsuitability evidenced by AWOL, arrests, chronic insubordination, and general inaptitude accounted for about 25 percent. Immaturity of outlook appeared to be the predominant characteristic in the reactions of men withdrawing soon after being assigned to Special Forces training, as indicated in interviews with voluntary withdrawals.

In view of the need for maturity and the problems presented by youthful trainees, it was recommended that the Special Warfare Center be authorized to apply immediately a minimum age requirement of 20 years.

PLANNED RESEARCH ON SELECTION AND ASSIGNMENT OF ARMY MANPOWER IN COMBAT FORCES

The FY 1962 Task effort was limited to personnel problems requiring immediate attention. The need remains (1) for improving means of identifying men who possess qualities required for effective combat performance and (2) for developing measures for the improved selection and utilization of Special Forces personnel.

A set of instruments (in addition to those now in the combat aptitude area of the Army Classification Battery) has been developed to further improve the Army's capability in identifying personnel who will be effective in combat. No suitable criterion is presently available. However, these measures will be validated when an appropriate criterion situation is found. In past research, peer ratings have been found to be related to subsequent combat performance. Additional research designed to further enhance the validity of peer ratings is planned.

Special Warfare operations require personal characteristics over and above those of general soldiering in a conventional combat situation. The Special Forces Selection Battery was developed to measure certain of these characteristics for the purpose of predicting ability to complete the early phases of training. Validation of this battery against later performance in Special Forces operations is indicated. In addition, development and validation of instruments for the prediction of broader aspects of the limited warfare mission is planned.

An experimental study is planned with the objective of identifying personal and interpersonal factors and special abilities related to effective group performance in Special Warfare activities. The objective is to evolve a technique for assigning Special Forces personnel so as to make optimal use of their strengths and experience and minimize the influence of their limitations, considering both the total composition of the detachment and the unique psychological demands of the mission. This effort will include the development of improved evaluation methods and a system for recording and assimilating information important in making Special Forces assignment decisions.

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