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MARGINAL MAN

AND MILITARY SERVICE

A Review



DEPARTMENT OF THE ARMY

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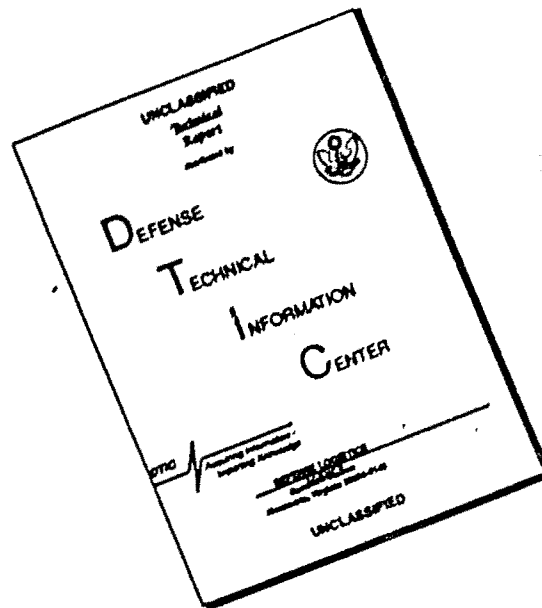


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FOREWORD

This is a report about the usefulness in the Army of men classified as marginal. Based on a review of relevant programs which the Armed Services have conducted from World War I to the present, the emphasis in this report is on Army experience.

Part I is evaluative in nature. It examines the characteristic features and findings of many programs. There follows discussion of the advantages and disadvantages of the different procedures which have been used or which could apply. Some implications of past experiences for future undertakings are also considered. In Part II will be found in greater detail the historical account of the programs which were reviewed. Part I was published separately in January 1965. It is included in the present volume as an overview of the studies reviewed in Part II.

→The condition of marginality as it refers to manpower is one of continuing interest. As technologies advance, the demands upon human resources are affected. What is marginal may be expected to change both in nature and degree. The results of research in this area should not be buried in archives as separate technical reports. Rather, it appeared wise to provide basic summary findings of the range of explorations and research accomplished and a guide to the researcher who wishes to examine more closely the technical aspects of procedures employed. To obtain information for these two parts, agencies outside the Army were included in the search. Among these were the Selective Service System, the Defense Documentation Center, and the National Archives. Some 20 organizational elements of the Army were consulted. These were at both Headquarters, Department of the Army level and field installation level.

Eight principal programs or research studies furnished primary information upon which certain evaluations or conclusions made in this report are based. Six of these studies were conducted by the Army. They included one on basic education, two on Army school training and job performance of low scores on AFQT, one on moral marginals, one on a major proposal to



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research the whole spectrum of marginal manpower, and a final study which surveyed all previous major efforts. The Navy engaged in one important study on literacy training and the Air Force on experimental basic training programs for airmen. These studies are included in the selected references found at the end of this report.

This report was prepared during the fall of 1964 by a working group under the leadership of Dr. Samuel King, Office of the Chief of Research and Development, Department of the Army. Members of the group were Dr. Robert Vineberg of the Human Resources Research Office of the George Washington University, Miss Emma Brown of the Army Personnel Research Office, and Mr. Frank McKernan of the Office of Personnel Operations, Department of the Army. Each of these individuals has contributed to improved Army methods in personnel research and management for many years. As experts in this professional field their analyses of past studies related to marginal manpower, the subject of this report, represent a valuable point of departure for any future interests in the degrees of marginality of manpower as well as the contribution which such marginals may be expected to make under varying circumstances.



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PART I

**EVALUATIVE VIEW OF CONCEPTS, POLICIES, AND
EXPERIENCE BEARING ON MILITARY SERVICE OF
MARGINAL MANPOWER**

CHAPTER 1

INTRODUCTION

The Varying Concept of "Marginal"

Every man is marginal. Most of us are marginal for some things and for most things some of us are marginal. Marginality is a relative concept and can be meaningful only in a defined context. Even within a defined context, the state of being marginal may not be static. In time, the marginal may meet or exceed the standard: the underweight person may gain the needed weight. In time, the standard may be changed: people of less weight per given height will be accepted. There may be nothing permanent about the characteristics of the person which made him marginal; and there may be nothing permanent about the standards which declare him marginal.

In the particular case of being considered marginal for use by the Army, the problem shifts from the philosophical to the empirical. Standards for acceptance into the Armed Services vary principally according to supply and demand. In time of increased mobilization, the age range may be widened, the physical and mental standards lowered, and a more lenient policy established in moral waivers. While the Army has at times inducted men whose utility to the Army was in question, little systematic evidence has been collected on the effectiveness of such men or of the units to which they were assigned.

The experiences of the Army during the first World War and during the training conducted under the Civilian Conservation Corps between the wars demonstrated the need for including men called marginal in any manpower mobilization planning. World Wars I and II showed that when individuals are drawn from all segments of American life through the draft, a startling array of physical, mental, educational, social and other individual differences becomes evident.

At one time or another, the Armed Services have applied the concept of marginal manpower, if not the term, to persons in the following categories:

Physically handicapped.

Physically substandard.

Less than fourth-grade education.

English-speaking, but unable to read or write at fourth-grade level.

Unable to read and understand simple instructions or sign their names.

Fail to achieve a qualifying score on selection tests.

Limited verbal ability or aptitude.

Non-English speaking who are literate in their native tongue.

Non-English speaking; illiterate in native tongue.

Subaverage or slow learners.

Slow to adjust to military life; emotionally unstable or maladjusted.

Morally unacceptable; criminal records.

Conscientious objectors.

It is apparent that there is considerable overlap, lack of uniformity, and an absence of comparable levels in these definitions. Some refer to characteristics or states of a person who is marginal—for example, "slow learner"; some are operational definitions and indicate how marginality is to be assessed—"inability to read or sign one's name"; some are phrased in terms of the way marginal persons are to be handled or treated—those for whom only limited service is appropriate or those who require some form of special training.

The "Limited Service" Concept

The concept of "limited service" developed during World War II out of necessity to accept men who could be useful to the Army even though they were limited in the kinds of work they could do and circumstances under which they could work. The term originally applied to men with either physical or mental limitations, or both. Later, the designation was narrowed to include only those with physical limitations. These men brought to the military service many useful civilian skills which were directly related to the needs of the service. While they could be assigned only to designated positions—which were limited in number—or in some cases were restricted to certain geographic areas, their prior skills and generally higher mental level permitted greater flexibility of assignment than was possible with men who were mentally limited.

The term "limited service" was abandoned in 1943 because of the restricted nature of the term. Its abandonment did not, however, eliminate the problem of special handling of personnel who were physically marginal.

The mental marginal poses a larger training and utilization

problem. Persons so classified have continuously been associated with assignment to the less demanding jobs—jobs selected for the most part on an ad hoc basis. Even for these jobs, or even for satisfactory completion of basic training, the mental marginal may need longer and more intensive training than the man of average ability. He may arrive as a semiliterate. His potential usefulness to the Army is dependent upon his achieving a combination of the basic knowledge and the basic skill required to do an Army job.

The "Special Training" Concept

The pattern of training the marginal man, particularly the individuals with mental or language limitations, frequently took the form of instruction in special training units. Marginals were removed from the normal basic training activities and given such training as would allow them to be later absorbed into regular military life. During World War II, ability to read and write at the fourth-grade level was considered necessary for service men. Special training was instituted to bring those in need up to that level. This educational training was intermixed with training in regular military subjects. Later, other programs such as the prebasic training of insular Puerto Ricans, who had little or no command of the English language, followed a similar pattern. These programs were not experimental. They were attempts to meet compelling needs for an enlarged manpower base. Other programs have followed an experimental design, such as the Transitional Training Program at Fort Leonard Wood in 1953 and a similar Air Force study called Project 1000. Both of these efforts are described and evaluated later.

Problems of Verification

The history of the identification, training, and utilization of marginal manpower in the Armed Forces to date is a record of only partial fulfillment of a goal. If the aim has been to find out who the marginals are, how they may be selected, and what they can do, those ends have never been achieved. Ideally, an account of experience with men whose potential military usefulness was in question would state (1) by what criterion it was decided that certain men should be inducted—selection; (2) how the kind of work they should be trained for was decided upon—classification; (3) how they were prepared for

these jobs—whether special or extended training was given them and what kind of training; and (4) how their contribution compared to that of men of similar ability not so trained. Unfortunately, military experience with marginal men cannot be so neatly cataloged.

The question of utilizing marginal manpower becomes one of scientific verification. Such verification is fraught with problems and possible sources of misunderstanding. Problems of management, of logistics, of administration are frequently encountered by operational personnel in the establishment of programs to utilize marginals and to assess the effect of such utilization.

Another and less generally recognized deterrent to the effective evaluation of the utility to the Army of men in the marginal segment lies in the fact that the marginal man is so labeled. Trainers, cadre, job supervisors may tend to evaluate a man low on performance if they know or think he has previously been classified as marginal. They are likely, consciously or unconsciously, to look more closely for indicators of inapt behavior in such a group than they would in a nonmarginal group. There may also be a tendency to interpret behavior in a marginal as inapt, whereas the same behavior would not be so classified if observed in a nonmarginal. *For example*, during World War II, commanders complained that they were getting too many men in the lowest mental category. The Department of the Army then arbitrarily decreed that the top half of that category would henceforth be classified in the next higher category. Commanders practically ceased their complaints, although they were getting the same number of low quality men as before—but now only half as many were designated as being in the lowest mental category.

Previous Military Programs for Marginal Personnel

Unfortunately, efforts to deal with the problem of utilizing marginal personnel have not been sufficiently searching or sufficiently analytic. With the exception of such clearly different situations as those involving physically handicapped persons, non-English speaking persons, and conscientious objectors, one of the inadequacies characteristic of prior attempts to deal with marginal men has been the tendency to classify and treat such individuals as if they all presented much the same problem. The pitfalls in such an approach are soon evident. Literacy

training for a man who has consistently failed to learn to read while attending school, for example, is likely to pose a totally different set of problems, requiring different treatment, from training for a man who cannot read because of a lack of schooling.

There have been few attempts to evaluate marginals in a comprehensive and systematic manner or to provide a thoroughgoing analysis of the different types of marginals and causes of their being marginal. As a consequence, there has in general been a failure to devise appropriate and effective means for correcting the condition.

Most previous efforts to utilize marginal personnel have been attempts to raise the men's level of ability, in order to permit them to perform a job in the service. These efforts have been focused on men who are presumably marginal because of educational deficiencies—the illiterate or semiliterate. It is generally believed that in order to be an effective soldier a man needs to be able to read, write, and do simple arithmetic—though how much of these skills is actually necessary is far from clear. Because of this, attention has typically been devoted to some form of supplementary literacy training designed to raise a man's educational level to an acceptable standard.

The general value of such educational training to the individual and to society is unquestioned. The General Educational Development Program which has been, and still is, in effect in the Army probably serves this purpose well. The special training given during World War II was a worthwhile effort to make up for widespread lack of educational opportunity. It was sufficiently effective to win the attention of educators. Effectiveness of the program was most evident in the case of those able to learn but who had had little chance to go to school. From the standpoint of ultimate military value, however, the results of such programs must be viewed as largely inconclusive, for the reasons discussed below.

1. In some studies, the only practicable criterion of training effectiveness has been a comparison of a man's measured educational level at the beginning and the end of training. A demonstrated increase in the educational level of a marginal man at the end of special training does not demonstrate either that such a change is permanent, nor that it will have any effect on the man's future military usefulness—adaptability, trainability, or job behavior.

2. In other studies, the only index offered of the success of training is whether a man has completed it. Such evidence indicates only that a man has been exposed to certain material, not necessarily that he has mastered it. It is also important to determine to what extent completion of training is of consequence to subsequent performance.

3. In some instances, aptitude tests administered at time of entry into service are readministered after completion of special training. It is sometimes assumed that an increase in test scores indicates an increased capacity to learn and perform military jobs—an increased capability brought about by the special training. Because a man's skills, knowledges, and interests change, aptitude test scores can, do, and should be expected to change as a result of training, special coaching, and other factors. Such changes, however, may not indicate that a man will be able to learn things that he previously was unable to learn. *For example*, by providing a man with the meanings of words he did not know previously, his verbal comprehension or aptitude score can be raised. He may not, however, be able to learn or to perform military jobs not directly dependent upon his newly acquired knowledge of words.

4. Individual performance tests or job proficiency tests can provide one of the most valid means for assessing the effectiveness of training, but such instruments have rarely been administered to marginal personnel who have received special training. In lieu of adequate performance measures, attempts to demonstrate the value of special training have used ratings of trainees by teachers and cadre. Because ratings are particularly sensitive to various forms of bias, they must be designed and used with extreme care—a requirement that often has not been met in assessing marginal personnel. Findings based upon ratings should properly be viewed as suggestive rather than definitive, particularly when they deal with the utilization of marginal men—an issue likely to arouse strong feelings and stereotyped beliefs.

5. Searches of administrative records (for proficiency and character ratings, promotions, decorations, disciplinary actions, venereal disease infections, type of discharge) have frequently been made in an effort to assess the effectiveness and adaptability of marginal men, both those who have received special training and those who have not. Records, however, are rarely satisfactory as a source of data for evaluating individual perform-

ance. They are likely to be insensitive, if not misleading, when used for this purpose. Not only are they difficult to collect and analyze but they tend to vary widely in meaning from one unit to another. Hagen and Thorndike (1953), who attempted to assess the effects of literacy training among naval personnel in World War II by means of a records analysis, have clearly documented the difficulties of such a procedure. The sample that can be reconstructed from available records is suspect since the records of some persons are not available and their absence might appreciably influence the findings. Studies based on incomplete records cannot be used to conclude that marginals are or are not different from nonmarginal personnel.

6. Efforts to demonstrate the value of special training for marginal personnel have frequently used comments made by the trainees themselves, by persons who have later come into contact with them, or by teachers who provided the instruction. Such comments are likely to reflect the common attitude that "education is a good thing," and may have little significance for estimating the military value of such training.

7. Perhaps the major limitation of most prior attempts to evaluate the effectiveness of special training has been the failure to select groups of men with similar characteristics—some to undergo special training, others not to.

The effects of special training for marginal personnel can be determined only by comparing the performances of men who have, and similar men who have not, been given such training. Satisfactory performance by marginal men who have received special training does not in itself serve as a measure of the effectiveness of the training, since there is no way of knowing how these men would have performed without the training.

CHAPTER 2

PROBLEMS OF SELECTION, TRAINING, AND UTILIZATION

APTITUDE TESTS FOR MILITARY SERVICE

When men of a given range of ability are under consideration for special treatment, questions arise as to just how it is decided that certain men fall in this group and others do not. Very simply, how is it determined that some men are mentally qualified for service and others not? Or that some individuals need longer and more intensive training than others in order to qualify? Some insight into the nature of tests is important to an understanding of their role in a special training program.

Two tests which are probably as well known as any in the United States are the Army General Classification Test (AGCT), which was administered to some 12 million men during World War II, and the Armed Forces Qualification Test (AFQT), which since 1950 has been administered to all enlistees and inductees in the Armed Services.

These are not tests of intelligence nor are they translated in terms of Intelligence Quotient (I.Q.). The purpose of the AFQT, as of its predecessor, the AGCT, is to indicate how ready a person is to profit from training in the Army or in the Armed Services. The test is not a measure of inherent mental capacity, but of likely capacity for military training at the time of administration. Such tests as the AGCT and AFQT have been standardized to accommodate the range in aptitude from practically the lowest to practically the highest. The score is a total general estimate of aptitude, with no indication of what went into its formation.

The score a person makes can be a function of many conditions in addition to inherent capacity, among them educational opportunity and the way in which it has been used; exposure to and influence of newspapers, magazines, television and radio programs, discussion in the home, associates, work engaged in, and undoubtedly many other factors. The more the questions in a test deal in some way with what has been a part of a person's educational, cultural, social, and economic background, the greater the opportunity he has to score higher than a person with the same inherent capacity but with less exposure to the

same kind of experience. These considerations are most important when a group which scores low on these tests is isolated for special attention.

Meaning of the Test Score

The Armed Services screening procedure results not in a determination but in an expectation of future performance. This expectation is derived from information systematically gathered about the individual, including results of mental and physical examinations. The compelling reason for the Armed Services' reliance on tests may be that the tests can be applied quickly and economically with large groups of men. More important to overall military effectiveness, however, a scientifically developed test can organize and condense to meaningful form more pertinent information about a man than an individual examiner could be expected to take into account. Tests also yield a more objective appraisal, uncolored by personal impression. Because of the way a test is developed and used—and the prescription for use is part of the test—a test score carries its own interpretation. Its significance is clearly established. Scores on a test that has been standardized for the population with which it is to be used show where each individual stands with respect to others of the group.

A mental test is essentially a sample of a person's work under given conditions. Selected items of knowledge or behavior are taken as typical of a whole body of knowledge or constellation of behavior. Performance on these items shows what a person has learned and is an indication of how well he can learn. How good an indication the test score is depends in large part on how good the sampling is of what the test should measure.

Test scores are subject to sampling errors as are any other estimates from part to whole—public opinion polls, for example. The reliability of a test refers to the consistency of the measurements it yields. It is also, in a sense, a reflection of the stability of the aptitude or ability underlying performance on the test. Concepts of reliability have several implications for a testing program of the magnitude of that of the Armed Services.

Every test has some degree of inconsistency of measurement. Scores on the tests are assumed to be made by equally motivated people with no indisposing physical or emotional distractions and in identical test-taking situations. This is not always so. A test score should, then, not be thought of as a precise

statement of a person's present ability, much less of his potential performance in training or on the job. And slight differences between two individuals' scores do not necessarily mean that one is superior to the other. Had they taken the test on a different day, their positions might have been reversed.

When Army tests are developed, the amount of error of measurement to which they are subject is calculated. The first use of this calculation is to determine whether a test is reliable enough for use in the selection and classification of men. The second use is in the interpretation of scores. Users of test scores should know the band of error surrounding a score, and the likelihood that a given score falls within that band. If they know this, they are armed against a too narrow interpretation of results. They can think of a score of 85, for example, as lying between 80 and 90 rather than as being exactly 85.

With respect to the significance which should be attached to the scores, a group at the extreme end of a score distribution differs from a less extreme group in two ways. For one thing, a person scoring very low or very high is more likely to have scored in the extreme range of his true ability than a person scoring nearer the average. On retest of the same aptitude, the extremely low scorer may be expected to score higher, the high man to score somewhat lower. For another thing, when a group at the extreme end of a score distribution is chosen for special attention, the performance of that group on what is being predicted will be nearer the average. Among a group identified as unacceptable by low screening test scores, for example, some would be able to perform marginally as soldiers and some to perform acceptably, even without special training.

Users of tests should know that estimates of error apply only to the group for which the test is intended. A test developed to predict the military performance of men liable to induction may not yield the same precision of measurement when administered to a restricted segment of that population, or to a group representative of a different population.

Problems of Retesting

Another problem in the use of tests is the practice of retesting. One way in which the reliability of a test is estimated is to compare scores achieved by men who take the same test twice under identical circumstances. If the two sets of scores rank the men in the same order, or in almost the same order, the test is highly

reliable. Scores on the second administration, however, are likely to be higher than on the first since the men tested have the advantage of familiarity with the test.

When a man is retested for operational reasons, some increase in his score may come from growing familiarity with test taking techniques. True, such familiarity may enable him to give a better sample of his ability, and the retest score may be the better measure. But the test score itself does not show how much of the change is chance fluctuation, how much is due to more precise measurement, or indeed how much is due to change in the individual.

Increase may also come from a studied attempt to train for a particular test. In that case, the test questions no longer function as a representative sampling of the ability the test was intended to measure, and the test changes in meaning—in what it is valid for—as well as in accuracy of measurement. It is important to recognize that the test score has meaning only as it predicts success in training or job. There are seldom grounds for considering the higher retest score to be a better predictor than the original score. On the contrary, it may be a poorer predictor, since the increase may be due to factors unrelated to the objective of the test.

Setting the Qualifying Score

Minimum qualifying scores—cutting scores—for the Army's selection programs are set so as to reflect the supply of men available to the Army and the Army's need for manpower. Some calculated risk is involved in deciding on the point below which men are not accepted. Admittedly, some of the men accepted do not prove capable of learning what is required of them in training. Some of those rejected could absorb the required training. This risk is taken when a decision is made to use a certain score as the standard for acceptance—but some decision is necessary. The misclassification of a few men—and their number can be forecast—is weighed against the uncertainty of classification without such a standard. When the recognized standard is disregarded, or its effect is in any way nullified, just that much more of uncertainty—of uncalculated risk—enters into the selection and utilization of the Army's manpower.

Use of AFQT Scores

At present, the Army rejects men whose overall ability is low, as assessed by means of the Armed Forces Qualification Test (AFQT). For operational purposes, the Army groups test scores into five grades. The grade is a general statement of the range in which a score falls. Limits of the grades were originally set in terms of the distribution of AGCT scores in the mobilization population of World War II. In all subsequent selection tests, the grades—now referred to as AFQT mental categories—have been defined by scores equivalent to the original limiting scores so that the grades have had continuity of meaning since their inception.

The minimum qualifying score for induction of Selective Service registrants is a percentile score of 10.¹ This standard was established by Congressional action (P.L. 51, 82d Congress and P.L. 564, 85th Congress).

Army experience has shown that men who fail to achieve a percentile score of 10 perform so poorly in training and subsequently—if they are retained in service—that they are properly rejected. Here the cutting score is set not only in terms of the Army's manpower needs and the available supply of men, but also on the basic premise that men whose capacity for absorbing training is below a given standard cannot be absorbed into the Army's work force without weakening it. However, failure to achieve a specified score does not necessarily mean that a man is mentally deficient. Nor does it mean that he is permanently cataloged as unsuitable for military service. Considering the variations in test score and possible reasons for such variations, the Army provides additional screening of low scoring registrants to make sure their potential has been properly assessed and cataloged.

Since January 1952, every person tested who scored below the 10th percentile on the AFQT has been given "terminal screening" to determine whether he should be accepted. The decision is based primarily on whether or not he could have passed the test had his motivation been higher or under some otherwise more favorable circumstance. Level of schooling,

¹ A percentile score is a type of norm in which a person's score is expressed in terms of the percentage of the reference group which he surpasses. Thus, a man achieving a percentile score of 10 has a raw score higher than that of 10 percent of the group; or, conversely, 90 percent of the group obtained scores higher than his. The reference population in the case of the AFQT is the entire male population of the United States liable to military service at a given time.

personal interview, and special testing procedures by which deliberate attempts to fail the test may be detected, are used in this terminal screening. The procedures also serve to make it more likely that no true failure—one who fails the AFQT because he genuinely lacks the minimum ability to pass—is accepted for service.

Tests of Special Abilities

Men of marginal ability (AFQT 10-30) who do not have special abilities to compensate for their low average ability are also rejected by the Army. These are men whose profiles of abilities are "flat," who can do one thing about as well as another, but all at a pretty low level.

While the AFQT is the standard for entrance into the Armed Services, each of the services has its own system of classification of the men accepted. Scores on these classification tests—the Army's version is the Army Classification Battery (ACB)—have been related to actual success in job training and to job performance. Each test in the battery measures an aptitude or skill important in one or more Army jobs. The aptitude measures, termed aptitude area scores,² are composites of scores on pairs of tests, each composite being the best available predictor of performance in a particular set of Army jobs.

Beginning in 1958, the Army required that men who score low on general ability have at least two aptitude area scores of 90 or above. Those who failed were deferred, with little prospect of recall except in an emergency. The requirement has considerably reduced the number of lower ability men considered eligible for service in the Army. At the same time, the strong points of the marginal person are now less likely to be overlooked; and many whose AFQT score is low do have special talents which lift them out of the uniformly dull category. Thus, use of scores on the aptitude areas in conjunction with the AFQT is more appropriate than the use of AFQT scores alone for determining the acceptability of the marginally qualifying.

How many below average men have special aptitudes in which they measure up to the Army's requirements for specialist

²The Army Standard Score system takes into consideration both the average score and the spread of scores in a standard reference population. The average is 100. Approximately 17% score between 90 and 100; the same percentage score between 100 and 110. Thus, a standard score is a means of stating how much above or below the average a particular score is.

training? A rough estimate of the percentages to be expected shows 44 percent of the lower marginal range (AFQT 10-20) and 63 percent of the upper marginal range (21-30) achieve at least one aptitude area score of 90 or above. Percentages of these marginals who score at higher aptitude area levels is markedly less—only 4 percent of the lower range and 11 percent of the 21-30 range achieve any aptitude area scores of 110 or higher. Since the higher qualifying scores are required for the more difficult training courses, qualitative selection for these courses is perforce automatic, if somewhat negative. A program for utilizing marginal manpower could emphasize positive selection of men of suitable levels of ability for the less demanding jobs.

Men well below average in general ability appear to need higher special abilities to compensate for this lack. There is indication that for these men the qualifying aptitude area score for a particular course of training should be higher than the qualifying score set for other men. Otherwise, attrition rates in the training class are likely to be unacceptably high.

The poor test performance of the marginal group may be ascribable mainly either to poor education and experience background or to low mental capacity. The distinction between those whose developed abilities are at near-maximum and those who, for whatever reason, have not developed their abilities to the full, has implications for specialized programs for marginals. In the case of the man who is already functioning about as well as he can, the Army cannot gain very much by intensive effort to make him a little more effective. Those whose capabilities are only partially realized, whether because of lack of opportunity or because of poor motivation, hold potential for a higher return to the Army.

Enlistment and Induction Standards as Related to Special Training Programs

There frequently is the implicit—or at times explicit—assumption that those who qualify on a particular standard are all equally qualified. This is patently false, whether one is speaking of civilians of a particular position in a hierarchy, military officers, or men considered marginal for acceptance as recruits into the regular Army.

Current standards for enlistment (volunteers for Army service) and for induction (Selective Service Registrants) into the

Army should be compared with the intended standards for special enlistment or training programs or other similar actions. Such a comparison would allow one to see the extent of any anticipated departure from present standards. (All AFQT scores are percentile designations.)

As of December 1964, a person otherwise qualified is *inducted* into the Army if he scores 31 or higher on the AFQT. If he scores 10-30, inclusive, on the AFQT, he is tested further. If on further testing, he makes a score of 80 (roughly equivalent to 21 on AFQT) or higher in one aptitude area (a composite of tests of reading, vocabulary, and arithmetic reasoning) and scores of 90 (roughly equivalent to 31 on AFQT) or higher in any other two aptitude areas, he is eligible for induction.

For *enlistment* there are four different standards. Two of these apply to choosing a career grouping or particular MOS training. The standards for them are higher than for ordinary enlistment. For ordinary enlistment an otherwise qualified person is accepted if he scores 31 or higher on the AFQT. If he scores 21-30, inclusive, he will be accepted if he is a high school graduate and has any three aptitude area scores of 90 or higher.

Thus, both inductees and enlistees can be accepted into the Army though they make less than the 31 on the AFQT. Further, it is possible for Selective Service registrants to be inducted into the Army even though they score as low as 10 on the AFQT.

AFQT Standards for Induction and Enlistment

INDUCTION	Minimum AFQT percentile score of 10. If 10-30, must have standard score of 80 or above in General Technical Aptitude Area and scores of 90 or above on two additional aptitude areas.
ENLISTMENT	Minimum AFQT score of 31; or AFQT score of 21-30, plus three aptitude area scores of 90 or above and high school graduation.
For ENLISTMENT with career or course options	<i>Career group.</i> 100 or above in prerequisite aptitude area and 90 or above on two additional aptitude areas. <i>Specific course.</i> High school graduation, qualifying score on prerequisite aptitude area, and 90 or higher on three aptitude areas.

TRAINING CONSIDERATIONS

In the preceding discussion about measures of general trainability and of special aptitudes, the training of men classified as marginal was only mentioned in passing. This section emphasizes the training of marginals after they have been so identified, classified, and assigned to a particular kind of training or job duty.

Training methods for the marginal soldier can be grouped around two general approaches. One approach centers on the development of basic skills—educational in the main—on the premise that these skills are necessary for the range of activities that may be required of a soldier. The other approach adheres to a quite different principle—specific selection and training for a specific job or class of jobs.

The Traditional Approach

Since World War II, studies of the selection and utilization of men with limited capabilities, including attempts to provide and evaluate forms of special training, have continued, though in an irregular and generally unsystematic manner. Special training for marginal personnel has emphasized instruction in basic education (reading, writing, and arithmetic). Special coaching and additional study time to compensate for slowness in learning have been provided.

Research on Special Training

The most carefully designed and controlled studies of marginally literate personnel were those conducted by the Army at Fort Leonard Wood and by the Air Force, the latter known as "Project 1000."

The basic purpose of the Fort Leonard Wood studies, described more completely in Part II of this report, was to determine whether special training given to educationally marginal men was effective in increasing their military usefulness. Earlier studies had not fulfilled this purpose, since none had provided a clear estimate of the effects of special training in terms of an unambiguous comparison between the performance

of men who had been given special instruction and similar men who had not.

In the Fort Leonard Wood study, groups of marginally literate men were given 3 weeks of either special literacy training (reading, writing, and arithmetic), special prebasic military training, or a combination of the two. The groups given the various types of special training were then sent on through regular basic training; a matched (control) group went directly into basic training. At the end of 8 weeks of basic training, no differences of practical significance were found in written achievement or performance of the men receiving special training and the men receiving no special training. Also, no differences were found between these groups in measures of attitudes and adjustment to the Army.

Findings of the Air Force study, Project 1000, confirmed those of the Fort Leonard Wood studies. Special training in Project 1000 was of longer duration, and the followup and assessment of men in the study was more elaborate and comprehensive. The Air Force study provided for 6 weeks of special training for airmen of limited aptitude, in addition to the conventional 6 weeks of basic training. This special training consisted primarily of additional basic training but included 45 hours each of training in language arts (reading and writing) and arithmetic. A matched group of airmen was given only 6 weeks of basic training without special training in language arts and arithmetic. The special training was found to have no appreciable effects either at the end of basic training, 6 weeks later, or after 8 months of service.

Experience With General Remedial Education

It has always been extremely difficult to evaluate any form of general education. Part of the problem lies in the difficulty of establishing a situation in which changes in a man's behavior can clearly be ascribed to changes in his educational level rather than to associated factors. Is a man's performance following completion of a program of general education attributable largely to the instruction itself or to the general motivation that either prompted him to seek the instruction or enabled him to complete it?

Further, since instruction in basic education is intended to provide general preparation for a broad range of activities and

behavior, its goals have rarely, if ever, been either stated or perceived in terms of providing a capability to perform specific jobs. Such criteria have neither been viewed as appropriate nor have they been generally sought in attempts at evaluation.

Few would deny that a soldier in a modern army needs to read, write, and do simple arithmetic. However, the precise level of competence needed for specific activities is not known. There may be a considerable difference in the type and level of basic skills needed to perform specific jobs and the type and level needed to live or adjust within a military environment. Such differences could have fairly wide implications with regard to administrative procedures in the management of marginal personnel. They certainly would have implications for the content of special educational instruction. The fact that we do not have a common word to describe the inability to do arithmetic as we do for the inability to read or write—illiteracy—may reflect the lesser importance of arithmetic as a basic skill.

What skills are needed to learn or perform specific jobs? In many instances, the skills and knowledges that are formally prescribed as necessary turn out upon close examination not to be necessary at all. The extent to which this may be true of jobs for illiterates is perhaps worth consideration. Officers have frequently reported anecdotal evidence to the effect that during World War II illiterate or semiliterate men were often excellent riflemen or that such persons sometimes made efficient and capable NCO's. Such reports do not testify to the wide utility of illiterates within the military. They do suggest, however, that there may be a variety of jobs that can be effectively performed with a lower level of education than is commonly accepted, provided motivational or emotional deficiencies are not associated with the educational deficiency.

It is commonly argued that Army instruction depends on lectures, visual aids, training manuals, and therefore requires a certain level of literacy. Does current Army instruction indeed reflect the use of such methods to the extent believed, and if so, need this be the case for all instruction and for all persons? Further, what levels of literacy are in fact required by Army training methods?

Instead of attempting to assess the effect of general instruction in basic education on the later performance of marginal men, it may be more appropriate first to seek a more precise specification of the literacy levels needed by men to learn and

perform selected Army jobs. If more exact literacy requirements could be established and if the goals of basic education for marginal men could be made clearer, instruction could be focused on more specific needs. Such a procedure might result in the identification of more specific content for special training. If there is any likelihood of improving job performance as a consequence of educational training, it would seem more likely that such improvement would occur, and could be demonstrated, if remedial instruction were concentrated on job relevant fundamentals.

Need for More Specific Diagnosis

Previous attempts to provide special training for marginal personnel have been based almost exclusively on a conception of the problem in terms of the immediate and obvious educational deficiencies of most such persons. Attempts at correction have focused on the subject matter needs (reading, writing, and arithmetic) involved in these deficiencies. Little if any attention has been given to attempts either to distinguish the original or the present causes of the deficiencies or to plan training in accordance with these differences.

A man may be deficient because he had little original opportunity to learn or because he was a slow learner. He may have remained deficient for a wider variety of reasons—motivational, social, and emotional. In the past, educationally marginal men have, in general, been grouped together and given roughly the same treatment, treatment that has more or less approximated conventional classroom instruction with perhaps minor adaptations such as the substitution of reading material with adult themes for grade school readers—witness the "Private Pete" texts prepared for World War II Special Training Units.

The educational deficiencies of most of the men in the Fort Leonard Wood studies did not, however, appear to have been due primarily to educational deprivation. Nearly 85 percent of them claimed to have been through at least the fourth grade; as a consequence, almost all were able to read and write, though usually not very well. Other conditions—intellectual incom-

petence, poor motivation, emotional difficulties, personality problems—must be considered as possible sources of deficiency. Special prebasic training designed to deal with these men on the basis of a more comprehensive diagnosis might prove to be more effective than purely educational or military training in increasing their potential military usefulness.

The assumption implicit in these approaches to this problem is that slow learners, educationally deprived persons, persons with limited intellectual ability, and other types of marginal individuals all learn in much the same way as everyone else—only more slowly. This is open to question. Providing additional instruction per se or reducing the rate at which instruction is administered cannot alone be expected to satisfy the individual needs of marginal learners. While many reasons for a person's being classified as marginal emphasize illiteracy, it is infrequently suggested that, from a corrective point of view, the immediate problem may be more one of motivation than of ability to learn. For adults whose previous record of failure in school has been coupled with apathy and indifference to learning, the fundamental problem may be one of finding ways to make them want to learn.

Whatever the original reason for his deficiency may be, by the time a person has become an adult, it is likely that his deficiency will have become far more complex, intertwined with psychological and motivational factors, and more resistant to remedial action than it would have been earlier. An approach that does not take such factors into account is not likely to succeed to any great extent. An adult cannot be expected to profit much from what is in effect a repetition of conventional classroom instruction, if his previous schooling has been a series of frustrations and failures or if, either because of an impoverished childhood environment or one in which academic achievement was not rewarded, he places a low value on academic achievement. If he does now value such achievement, however, he is likely to profit from instruction so far as he can.

Elements of a More Specific and Systematic Approach

A thoroughgoing effort to conduct training for marginal men in accordance with more specific objectives would encompass the following sequence of groundwork, training, and evaluation:

Analysis of the military system. Ideally, a systematic attempt to provide for the effective use of marginal manpower would begin with an analysis of the entire military system to identify jobs for which different types of marginal men might qualify. Reassigning job duties from one position to another would be considered, as would different ways of doing the job. What a person has to do would be stated in exact terms. Information, knowledges, motor coordinations, and other skills required for an activity would be specified. Only in this way could the feasibility of allocating activities of particular types to marginal personnel be correctly assessed. The results of such an analysis would also be essential in other phases of the program—designing jobs and preparing jobs aids and materials, developing screening procedures, establishing training objectives, constructing and evaluating training programs, evaluating job performance, maintaining quality control.

Analysis of job activities. The next phase in such a program would be the identification of jobs or job activities for which various types of marginal individuals might be expected to qualify—or the restructuring of jobs so that marginals could be expected to do them. *For example*, with a limited amount of simple training some marginal men might be used in jobs that have been made simple and routine as a consequence of automation. These jobs may formerly have required special or technical training. Thus, automatic test equipment may make it possible for marginal personnel to be used to remove and replace malfunctioning electronic components—a job from which a marginal man might derive considerable pride and a sense of achievement, but in which a more intelligent man might find little of interest or challenge.

Identification of potential trainees. Next in the developmental sequence would be the identification of men who qualify or can be expected to qualify for particular jobs. For marginal men, selection requirements for a particular job are likely to be somewhat inflexible. To accommodate to reduced aptitude requirements, many tasks will have to be simplified to avoid the necessity for marginal men to learn abstract material and information and to apply it to their jobs. Jobs and training, by design, will not make taxing intellectual demands. In many instances, suitability for work will be in-

fluenced more by motivational than by intellectual factors. As a consequence, perhaps the most important task related to the screening of marginal men will be the development of adequate measuring instruments with which to assess interest, attitudes, and motivation for a successful Army career and success in the job assigned.

Establishing training objectives. Training objectives are set in terms of (1) tasks that a person must learn to perform during training and (2) the level of proficiency that he is expected to demonstrate upon the completion of training.

In general, training objectives specify the capability that a man is to have as an immediate consequence of training, as distinguished from the capability he is to acquire later, either through on-the-job training or as a function of direct job experience. In many instances, it will be possible to reach decisions about training objectives solely on the basis of a careful analysis of the situation; in others, research may be necessary to supply an unambiguous answer as to the best course of action.

Development of the training program. Once the objectives of training have been established, a training program can be developed. Its goal is to provide the trainee with those skills and knowledges that are necessary to support the type and level of performance specified in the objectives. Essential elements in the development of a training program are (1) the selection and organization of the training content; (2) selection of the setting—formal course or on-the-job, or some combination of the two; and (3) selection of the media through which training content is communicated to a trainee.

Probably the single most important phase in the development of training for marginal men—the one that will have the greatest impact upon them and will determine whether training is to succeed or fail—is that dealing with the way in which training is organized, the manner in which training material is presented, and the nature of the overall situation or environment in which learning is to occur. Previous attempts to train marginal men have typically involved instruction organized along traditional lines and administered in a more or less standard classroom setting. Whether such methods are appropriate is questionable, in view of the levels of comprehension, values, motivations, and aspirations of

marginal men. Many of these men have previously failed to learn in just such situations. An important principle is that the ease of learning new information is a function of the extent to which it can be related to what the individual already knows, to the situation, and to the purpose for which the information is provided. Learning is generally easier, faster, and more certain when material to be learned is placed in a specific and clear context. This principle is especially applicable for persons of limited aptitude or limited motivation who may find it virtually impossible to learn when information is presented outside a context which has meaning for them.

One study has provided some information about instructional methods that may be applicable in situations involving marginal men. This study was undertaken to identify effective training methods for men whose aptitude for the course in which they were enrolled was only marginal—for example, a man low in mechanical aptitude receiving instruction in a course for automotive mechanics.

Certain techniques were found to be generally effective under these circumstances. These marginal trainees learned faster and showed greater achievement when the nomenclature and operation of complex mechanisms were taught in an integrated manner rather than separately, as is standard in military training. Trainees profited, both in initial learning and later retention, from the increased repetition of important points in a lesson. They were especially helped by increased student participation during lectures, as well as when mimeographed notes were handed out after (but not before) training material had been covered in class.

These marginal trainees also profited more when material was presented only after a meaningful context had been prepared for it. Presentation of information to be learned proceeded from concrete to abstract, from practice to theory, and from whole to part.

While these findings were derived from a study of men who were marginal for a particular course and would not be considered generally marginal, it is reasonable to suppose that the findings hold also for most marginal men. Considerable further research, however, is needed to determine the applicability of these principles to situations involving marginal men and to develop additional methods of content organiza-

tion suited to increasing the understandability of material to be learned by marginal men.

Certainly, the most meaningful setting in which training can take place is the job itself. Also, more individual attention can usually be given to a person who is learning his job in the role of an apprentice. The opportunity for such continuing and supervised practice may be particularly important in the training of certain types of marginal men.

Unless an individual has occasion to use a skill he has acquired—to keep in practice, in other words—his skill will deteriorate rapidly. Such loss of skill may be particularly serious in the case of the person who has had difficulty in reaching an acceptable skill level in the first place.

Also to be considered in the development of training are the media used to communicate information to the learner and which permit him to practice all or part of his job. Probably the single most important characteristic of a medium to be used in the training of persons with marginal capabilities is the extent to which it is adaptable to individual differences in learning needs and rates. Two media, the instructor and automated instruction, are perhaps best suited for adjusting to the different learning capabilities of individual students.

The instructor is uniquely equipped to stimulate and respond to students, to assess their individual needs and to accommodate to them. Obviously, he should possess rather special skills and aptitudes in order to recognize and respond in an effective manner to the range of problems he is likely to face. He should be sensitive to the difficulties in comprehension, emotional difficulties, differences in cultural background, values, attitudes, aspirations, and motivations of marginal persons. How permissive should he be? How much guidance should he attempt to provide? Experience—and research—will be needed to develop guidelines for the instructor who undertakes to train marginal adults in a military setting.

Many of the trainees in such programs will be members of social, economic, or ethnic groups which have experienced prejudice. The background of a particular instructor may be different from that of a majority of his trainees. Dissimilarities between instructor and trainees, of whatever kind, must be recognized. How adroitly they are accommodated to the purposes of the training will depend in part on the instructor and how he is prepared for his job.

An instructional medium that has received considerable attention is automated or programmed instruction, involving the use of so-called teaching machines. The self-paced aspect of automated instruction, geared to individual rates of learning, would seem to be specially suited to a situation in which individual differences among learners are of particular importance. Also, the presentation of material to be learned in small steps would appear particularly appropriate for persons with limited intellectual capabilities.

Despite these advantages, programmed instruction may not prove uniformly suitable for the teaching of marginal personnel. The materials and what the learner is required to do may be quite foreign to his experience. Considerably more needs to be known about how such persons will respond in a situation involving programmed instruction before it can be recommended for use in training.

TV and training films provide a means of presenting material with a minimum of oral or written instructions—and often in such a way as to require no reading. Typically, however, they expose the learner to the material presented, rather than requiring his involvement in it.

Tests, apart from their standard use for purposes of evaluation, can be designed solely to serve a training function. However, on an a priori basis, competitive situations and tests used as teaching media may be peculiarly unsuited with marginal individuals, many of whom lack confidence in themselves and their ability.

Development of an evaluative system. A part of any training is a testing program designed to assess the adequacy of student learning and the effectiveness of training. Two major types of testing can be identified:

Diagnostic Testing has a purely pedagogical purpose during training. Its purpose is to determine how well a student has acquired those skills and knowledges for which training has been designed and to detect individual deficiencies in order that they may be corrected.

Evaluative Testing has as its purpose the evaluation of the training product both individually and collectively—to determine whether an individual can perform the job for which he has been trained and to determine the adequacy of the entire training program (the translation of performance re-

quirements into training content, methods of organizing and sequencing content, media employed) for preparing a man to perform a job.

Various means can be used to determine the extent to which a man can perform the job for which he has been trained. Supervisor and cadre ratings may be used to estimate a man's readiness for job assignment. However, while ratings give fairly stable results, they are subject to various types of bias and should be viewed as suggestive rather than definitive.

Paper-and-pencil tests to evaluate training should, at best, be regarded as intermediate criteria. They are subject to the effects of "teaching the test," which may cause temporary improvement in test score without improvement in the ability supposedly measured by the test score. The ability may in reality have been raised, but the relationship of test performance to job performance has not been demonstrated.

Actual job performance tests or job-sample measures are not as subject to the criticism cited above as are paper-and-pencil tests. However, care must be exercised to assure that the tests are not compromised. If the trainees are practiced on test exercises, the scores are no longer suitable as evaluation measures. If the performance measures have been carefully constructed and administration is strictly controlled, they can be very useful in evaluating the effect of different training content and techniques.

In addition, performance tests are likely to be particularly appropriate for evaluating the job effectiveness of marginal men for the following reasons:

1. Jobs selected for marginal personnel are likely to involve manipulatory (rather than cognitive) skills. Such skills are frequently measured most readily through the use of performance measures; sometimes they cannot be assessed in any other way.

2. Specific skill and knowledge deficiencies in marginal individuals may, in some instances, be difficult to assess. Training for a particular individual therefore may not have been appropriate.

3. Where marginal individuals are concerned, a person may possess the knowledge necessary for accomplishing a task and still be unable to perform it. He may, for example, lack the confidence necessary to apply his knowledge.

PROBLEMS OF UTILIZATION

Operational Impact

Emphasis so far has been on the rather technical detail necessary to a consideration of problems specific to the classification and training of marginal men. The mental marginal has received most attention—how he is identified, how he is classified, the possibilities of his having compensating special abilities, training approaches which have been used or could be used.

The impact of a decision to use a given selection and classification procedure or to provide training of a particular kind is not always clearly seen. Yet the impact can be enormous. From squad leader to Department of the Army Headquarters, each sees the problem as it concerns him most directly in carrying out his mission. At all levels, commanders are concerned with problems which can arise if policy, planning, and research have not given them the manpower they need—though in times of crisis none of them may have what they really need. Discussed in this section are some of the problems which have faced the Army when standards had to be lowered and previously rejected men—men about whom the Army knew little—were, perforce, accepted.

In peacetime, when the number of marginals in the service is small, each person can be considered on an individual basis. In peacetime or in wartime, Army jobs to be filled, geographical areas of assignment, environmental conditions of the work, physical demands of the particular duty position, possible access to special facilities for medical care, availability of adequate supervision—all must be considered.

Since all marginal personnel are limited in some way in what they can do, the characteristics of the limitations must be described so that the personnel decisions which later must be made will be appropriate. The limitations should then be compared with demands of the job. Yet, the physical and mental demands of Army duty positions suitable for different types of marginal personnel have never been adequately verified. Before an actual assignment is made, therefore, a certain amount of negotiation

must take place between personnel officer and commander. Not only the duty position, but also the actual—or potential—mission of the unit must be considered before a decision is made as to assignment of a soldier classified as marginal.

Once the marginal is assigned, other personnel actions may be required. Although the educational program of the Army may be appropriate for other soldiers, the marginal is likely to need an educational program especially designed for him. Depending upon the individual limitation, increased supervision—on and off duty—may be required of the commander and his staff. Particularly for marginals with some physical impairment, overall assignment and utilization may become a special problem. The positions which they can occupy, based on their physical limitation and the job area for which they are trained, may be few. Normal rotation to different jobs may be impracticable.

Such restriction on the normal rotation of some individuals has an impact on other soldiers in the same job classification who are not subject to restriction. *For example*, other soldiers may be required to move back and forth to oversea assignments more frequently than they would otherwise. Necessity for this type of action would of course be dependent upon number of personnel, by grade, needed to fill requirements in a given military occupational specialty (MOS). For another thing, soldiers in the same type of job as the marginals may perhaps not be given duty assignments which would afford both opportunity and diversity in their Army career. In certain limited career fields, the physically marginal in particular might tend to remain for a long period of time in an assignment to which he was suited, thus limiting promotional opportunities for those below him.

Record keeping for marginal personnel must usually be separate and specialized so that limitations on their assignment may be continuously observed. No one command must be given greater numbers of such personnel than it can absorb. An overabundance of marginals might influence the efficiency of a particular unit.

This somewhat negative picture is sketched here not to discourage the acceptance of marginal personnel who can be useful to the Army, but rather to point out a complicating factor in their utilization: the absence of research findings on the number and kinds of duty positions in particular types of units

which might be filled by marginals without adverse effect on unit capability or even with some gain to the unit. Certain duty positions in service and support areas require limited skills and aptitudes at the lower grades. Since some of these jobs are not challenging, the continued assignment of higher level personnel in these positions creates morale problems and diminishes career advancement. Marginals may well be used to advantage in these jobs. However, the absorption of marginal personnel in specified duty positions remains a matter of study.

Finally, the matter of cost in maintaining and utilizing the marginal soldier must be an overall consideration. This factor also requires analysis and investigation. The necessity of providing special selection and identification procedures, separate records and reports, specialized assignment, and rotation arrangements, all must be balanced against performance in duty position and unit. Research in this area has been so limited that little or no guidance for the present is available.

Experience in World War I, World War II, and, to a less extent, in Korea, demonstrated that when a shortage of manpower developed, those responsible for procurement and maintenance of a proper replacement stream for combat and combat support forces have turned to whatever resources might prove productive. Where existing standards left large numbers of physically and mentally limited men in the civilian population, standards were altered to obtain the numbers required. Even prison populations were combed. Thus, a person's being in service was not always based on his duty performance, but rather on an independent policy dictating the ease or stringency of admission and discharge standards. The problem of "acceptable performance" remained a question mark throughout World War II for the physical and mental marginals brought into the service under the varying standards.

With respect to the illiterate, "fourth grade education" was the standard for acceptance at the beginning of the war. Later, when the original standard for literacy was abandoned, this same standard was used as the goal to be reached in special training units. These special training units attempted to develop a fourth grade reading level for all individuals prior to their joining a regular unit. In the military training phase of the special training, the intent was to train to the maximum

levels of basic training possible. Neither the extent of literacy training or the amount of basic military training was ever evaluated against the ability to perform satisfactorily in a given duty position.

It has been estimated that from 1 June 1943 until September 1945, 302,000 illiterate or semiliterate men received special training in special training units. Of this group, 84 percent successfully completed the course and were assigned to Army jobs. But no objective followup studies were conducted to provide a proper evaluation of the relation between scores on the educational achievement tests administered in the special units and subsequent performance in military duties. The relevance of either fourth or fifth grade educational attainment to military attainment was never established.

Practically no attempts were made to follow up the performance of the graduates of the special training units on the job. Operational problems created difficulties for this effort. The program could only be judged on how successful the individuals were in reaching the desired training standards for graduation, how many graduates won medals during the war, or on general reports of observers. No data were available as to whether the academic subjects selected, or the fourth grade literacy standard, were directly or indirectly related to success of the graduate in basic soldiering or effective performance.

The World War II experience with marginal personnel yields several important lessons. Manpower planning before World War II did not take into consideration the complexity of manpower supply and distribution in a global war; neither did it look early enough into the limitations of the available manpower. Thus, when shortages began to be serious, many of the less physically qualified were placed in physically demanding positions while the more able—who had entered much earlier when standards were higher—were occupying less demanding positions.

To state the problem more concretely, the manpower available to the Army was distributed among three elements—Ground Forces, Service Forces, and Air Corps (then a component of the Army). Air and Service forces, particularly the former,

desired—and were allocated—a much larger proportion of high caliber men, both physically and mentally, than the Ground Forces. Allocation problems were minor, however, so long as the supply of qualified entrants was adequate. The step-up of battle in the Pacific and in North Africa, and the manpower requirement projections for the assault on Europe, produced startling manpower requirements. The number of men available under then existing standards appeared alarmingly small. By the fall of 1943, Army manpower policy had shifted from qualitative considerations to quantitative demands. Induction standards were liberalized; the term "limited service" was discontinued; the literacy standard was dropped. Commanders were directed to screen carefully all personnel considered for discharge for physical reasons and, if possible, to find duties they could perform in order to retain them in service.

Initial high standards had naturally resulted in assignment of soldiers who were physically fit to service units. When the manpower pinch came, many of these men, now trained and experienced in their jobs, were occupying supervisory or technical positions. When troops were needed for oversea assignment, many such men had to be moved from noncombat areas to the combat arms. New men with much less skill and experience took their places in the service and technical jobs.

The manpower situation had fallen heir to consequences of previous policy decisions. These decisions originated under normal considerations of supply and demand. At the beginning of the European war the demand was perceived as steady but not overwhelming, and a standard of general usability seemed appropriate. This standard applied when the draft began in late 1940. The same policy applied in the literacy area. Men were excluded who could not read at the fourth grade level.

When the war became global, the manpower planners cast one eye at the colossal replacement problem and another at the manpower available under existing standards. Standards fell in order to accept more men. By this time, the allocation of manpower which had taken place during 1941 and 1942 had produced a good reservoir of highly qualified men in service-type positions. When the standards fell, the backlog of physical and mental marginals rejected under the old standards flooded the reception stations. Thus, there were crises all along the way—a buildup requirement for special training units to ac-

commodate the marginal, an overflow of marginals into regular units, allocation to the combat arms of the physically and occupationally qualified soldier from other-than-combat positions, and their replacement by inexperienced soldiers. Meantime, the Ground Forces had to absorb large numbers of men who were less physically qualified than those who had entered the service a year earlier. The total manpower problem could perhaps have been more effectively managed had standards been set lower at first and later raised. The reverse occurred and kept occurring throughout the war. Part of the problem stemmed from an honest attempt to equate supply and demand to quality. The concept followed a most logical and universally accepted doctrine of warfare: fight with the highest caliber of men available.

As previously mentioned, after training and assignment, there was no systematic attempt to determine how well the men performed, particularly the marginals. It is precisely the answer to this question, had it been available early in the personnel planning phase, which might have led to different policy decisions. If adequate background studies are not available to planners at the time they require them, decisions must entail added risk. The planners did not have such data in 1941 and they still had not acquired it by the end of World War II.

In sum, skepticism regarding the value to the military service of the marginal man has been the natural outgrowth of a concern for maximum flexibility of personnel movement and utilization worldwide. The necessity for making some determination of the usability of all types of men, through objective research, becomes paramount.

The brief discussions which follow point up some of the special circumstances which can enter into the formulation of policy on the acceptability and Army career management of men who are in some way marginal.

Two Studies on the Mental Marginal in the Army

Two recent attempts have been made to estimate the usefulness to the Army of men of low or low average trainability. One study centered on the extent to which men in these categories performed acceptably in job groups of varying dif-

faculty. The other projected, from training performance in 48 Army courses, the pass-fail percentages of men scoring low on AFQT.

First, the study of job performance. During five months in 1958, over 10,000 enlistees were accepted whose AFQT scores were below the 31st percentile. A representative sample of 1,000 of these men (scoring 21-30) who had gone through training were followed up on their job assignments after 12 to 18 months of service and ratings of job performance obtained from their supervisors. Results are shown in the box below.

The table below shows percentages of lower mental category men meeting standards of "acceptable" performance in various job groups—for the most part requiring a fairly low skill level. The first column (RA 21-30) refers to a sample of men who enlisted under lowered AFQT standards of 1958. The second column (RA 31-50) represents a group of volunteers in the lower range of normally accepted men. The last column (US 10-50) refers to men in the lower AFQT range inducted under existing standards for Selective Service registrants. The number of personnel is given in parentheses and the percentage of them rated at least "acceptable" follows.

<i>MOS Groups Represented</i>	<i>Percent Acceptable</i>					
	RA 21-30		RA 31-50		US 10-50	
	N	%	N	%	N	%
Infantry, Airborne	(216)	50	(128)	52	(77)	60
Engr, Armor, Field Arty,	(181)	49	(85)	49	(90)	65
Air Defense						
Field Communications	(45)	44	(15)	37	(27)	54
Military Crafts	(63)	43	(30)	64	(38)	78
Automotive Maintenance,	(83)	44	(53)	51	(0)	--
Transport						
Administration, Supply	(29)	48	(15)	68	(0)	--
Medical Care, Military	(50)	49	(27)	62	(80)	78
Police						
Combat	(397)	50	(213)	51	(167)	63
Technical	(270)	45	(140)	56	(145)	74

Implications for the selection and assignment of marginal men were summed up in the following statement:

"The manpower resources represented by Category IV men can be utilized to some advantage by the Army during emergencies. .

"Substantial percentages of Category IV men assigned to lower skill combat and technical jobs (50 percent and 45 percent, respectively) achieved acceptable levels of performance. This finding suggests that in assigning these men, consideration should be limited almost exclusively to jobs requiring relatively low skill levels. [It was also suggested] that, if an acceptable level of job performance is to be maintained, men in this category should, insofar as possible, be assigned according to their best aptitude area."

The second study dealt with success in special MOS training courses. A series of studies of Army training courses yielded estimates of percentages of men scoring low on AFQT who would be expected to pass each course. Estimates were based on performance as predicted by AFQT and aptitude area scores.

Most of the 48 courses studied required for entry a score of 90 or above on the aptitude area used for selection for the course. Results emphasized the need for men with low AFQT scores to have compensating special abilities if they are to be accepted for the Army's special MOS training program.

The table below shows the AFQT and aptitude area score combinations which have equivalent predictive values. For example, groups of men with AFQT scores of 50, 31, 21, and 10 would be expected to stand about the same chance of completing training successfully if their aptitude area scores were 110, 115, 120, and 130, respectively. The aptitude area score, of course, would be that used for selection to the training course.

AFQT and Aptitude Area Score Combinations Having Equivalent Predictive Values

<i>Standard</i>	<i>Equivalent combinations</i>		
	<i>AFQT+AA</i>	<i>AFQT+AA</i>	<i>AFQT+AA</i>
50+110.....	31+115.....	21+120.....	10+130
50+100.....	31+105.....	21+110.....	10+120
40+90.....	31+95.....	21+100.....	10+110

As shown above, a higher level in the special aptitude needed for a course can be expected to compensate for low general ability. Conversely, a higher general aptitude can be expected to compensate in a measure for low special aptitude.

Questions of Literacy

The AFQT was developed on the assumption that it would be used with men able to read and write English. Inability to

perform effectively on qualifying tests, failure in training programs, and poor performance in assignments, have been in some way connected with inability to read and write at grammar school level. There is also the practical requirement that a soldier should be able to read instructions essential to ordinary Army functions. A test for which reading ability is essential gives an estimate of how well a man will do with his present educational equipment. It does not indicate what he would be able to do if his abilities were developed through further education. The Army has had in existence for some time a general educational development program designed to raise the educational level of its soldiers.

In view of the possible need for accepting men in greater numbers in the event of mobilization, the Army has until recently had in effect procedures to identify among AFQT failures persons designated as "marginal literates." These are men who could be assigned directly to basic training without special literacy training. Also identified were those who could not become marginally literate even with special training.

The insular Puerto Ricans constitute a special category of non-English speaking registrants. Men whose command of English is not good enough for them to take the AFQT are given a general ability test in Spanish. Those who pass are assigned to a special 8-week prebasic course in Puerto Rico. The course emphasizes instruction and exercises to give the trainee a working knowledge of English. The men who at the end of training qualify on a test of English fluency, and who meet other induction requirements, are sent to the continental United States for basic training. This program, in essentially the form described, has been in operation since the early 1950's. Attrition at the end of the 8-week prebasic program continued to be heavy (56%) through June 1964. The remainder, if they complete basic training in the United States, are given regular assignments in the Army—how successfully is not a matter of available record.

When non-English speaking registrants—or applicants for enlistment—are found to have adequate ability to profit from basic training and are accepted, problems of training and utilization arise: Should they be given special training concentrated on bringing their speaking, reading, and writing of English to a usable level? Should they be assigned in predominately English-speaking units? Answers are not to be found in past

experience. With the insular Puerto Ricans, the problems of assignment policy remained even after English language training, since many of the men acquired only a limited command of English.

Management and the Physical Marginal

Physical standards for acceptance into military service have been related historically to fitness to serve in combat and to general usability in worldwide missions and assignments. During the wars of the twentieth century, the manpower procurement programs have always begun with adherence to such standards.

World War I and World War II both began with concern for developing as quickly as possible a combat-fit Army. Initial stress was on fitness for confrontation with the enemy. The Army required the kind of manpower which could be expected to acquit itself well at every critical pressure point. In the pre-World War II planning stage, there was little anticipation of the global nature of hostilities nor of the resultant demand for men with a seemingly never-ending array of talents, abilities, and stamina.

The effective distribution of the physical marginal was handicapped during World War II by the absence of a system for classifying the soldier according to his physical limitations. Much research went into the development of appropriate mental tests for selection and classification and into the creation of a military occupational classification system. Thus, mental standards and use of civilian acquired skills were associated with particular job demands, whereas physical standards remained generalized.

A classification officer had no way of translating the medical diagnosis into usable information for making assignments. It was at this point that The Surgeon General's Office of the Army developed the Physical Profile Serial or PULHES system. This system came into being only by mid-1944 after a number of major crises had passed. It did enable post-war classification officers to give better recognition to the physical profile as well as to the mental profile. However, a precise method for relating an individual's physical qualifications to physical job demands remains a fundamental problem for research.

The post-World War II period through 1964 gives no evidence of any completed research on the use of the physical marginal in Army jobs. Based on the war experience, screening standards for men with neuropsychiatric difficulties were relaxed to permit acceptance of some of those individuals. A second post-war change was the enlistment of combat disabled veterans of World War II and of the Korean conflict, as well as retention or enlistment of soldiers with service connected but noncombat disabilities.

The number of disabled men enlisted and assigned under special procedures has remained limited to about 600 at any particular time since 1945. If the expressed desire of commanders to retain such soldiers in their units is taken as an indication, the program may be judged successful. However, no general pattern of usefulness to the Army of disabled personnel or of men entering the service with a diagnosis of psychiatric difficulty has emerged from the Army's experience.

The problem of the physical marginal does not necessarily disappear by definition. The dropping of the term "limited service" during World War II still left an assignment and distribution problem for those with physical limitations, expressed or unexpressed. Some men in the Army after 1945 were in effect "limited service" personnel, since they required separate classification and assignment procedures and their utilization was restricted.

In sum, this separate handling of the physically marginal soldier has burdened the personnel manager in filling requisitions, transferring personnel, establishing training quotas, and solving promotion questions. These conditions obtain during peacetime, and they could influence movement of men during wartime. However, the experience of World War II demonstrated that large numbers of physically marginal men must be used. The major problem which remains is: in what numbers and in what jobs can physically (and mentally) marginal personnel be utilized in terms of time and cost of training, cost of supervision, and cost of retention, all related to quality of duty performance. The answers can be found only through comprehensive research, research not confined to the kind and amount

of basic training such men can be given but extended to evaluation of duty performance.

A Further Concern

When persons of relatively low trainability are accepted for service, it can be expected that a larger percentage of them will cause disciplinary problems than of persons of higher trainability. This probability becomes more acute in the case of low scoring individuals who have had disciplinary records in civil life prior to entering service. Perhaps self-evident, but supported by analysis of records, school drop-outs are more likely to incur disciplinary action than are high school graduates, and younger men—17-year-olds—than those older. Scores on selected personality tests also show some relationship to delinquency in the Army. Ratings by cadremen during basic training are perhaps the most useful means of identifying enlisted men who are likely to cause problems during their period of service.

In any program, awareness on the part of management of this associated problem is relevant to planning, whether it is deemed advisable to refine standards for acceptance on the basis of research results or to collect data on which to make subsequent refinements.

CHAPTER 3

SUMMARY AND IMPLICATIONS FOR THE FUTURE

EVALUATING THE PROGRAM

The final proof of a program for utilizing marginal manpower is the sum of the debits and credits which accrue to the Army. In the present context of special training for men currently not acceptable to the Army as volunteers—but inductible by Selective Service standards—the balance should perhaps be viewed nationwide.

In addition to the debits and credits associated with the individual marginal soldier, absorption ratio into the Army, into particular MOS, or into particular units should be examined. This is particularly important if the men now thought marginal on the basis of their AFQT scores prove to be marginal on the job—but yet do not warrant discharge from the Army. The very real danger then exists of flooding a few MOS or units with individuals of marginal usefulness.

The success or failure or technical adequacy of a training program cannot be based on how many or what percent of individuals are judged qualified for service. This may be a specious criterion. The long-range impact on the Army needs to be assessed in terms of difference in reenlistment rate, vertical and horizontal mobility within the Army job structure, concentration in MOS or particular units, and effect on the capability of units to which such men are assigned.

Within the Army context only, questions of what criteria to use take the form of eminently practical problems. Criteria are needed for evaluating the effectiveness of operational and experimental tests for selection and placement, for comparing different training conditions, for developing an effective assignment procedure, and for evaluating the program as a whole. There is overlap among these requirements, but the evaluations should in the end serve one comprehensive objective: to determine who, within a heterogeneous group of men all of whom are judged marginal, with what kind of training, can perform what

jobs in the Army, and how well. This kind of evaluation has never been done. The most logical criteria of the net worth of a program—or of the value of individuals to an organization—are measures to identify and balance profits and costs. A beginning was made in 1955-56 toward the development of criteria of this kind in a study directed by the then Assistant Secretary of the Army. The study was discontinued and the criteria were never used. However, the work that was accomplished in developing objective criteria should be reviewed by anyone who plans to develop criteria of job performance for marginal personnel—not necessarily as a model, but as evidence that criterion measures of net gain or loss resulting from the job performance of an individual are feasible for some jobs, though admittedly difficult to produce.

The job-related debits and credits were to be obtained through carefully controlled, concealed job-sample tests and other prepared checklists to evaluate job performance. Results of the tests were to be related to the standard man concept or manpower units. Appropriate job-related items were to be included for each job in which a marginal served—wastage, breakage, time to complete, time at what expense taken, to correct mistakes, indexes of quality, and the like. Non-job related debits—again to be compared with those for the standard man—included cost of hospitalization, sick call, disciplinary infractions, extra supervisory time, retraining time.

Had the study been completed, comprehensive data would have been available for evaluating the liabilities and assets of using marginal men in a small number of Army jobs. Those results would have provided a good basis for making decisions about accepting such men, and under what manpower needs.

Though the specific data obtained at that time are now out of date, the procedure is not. The thoroughness of the criterion development in that program cannot be gone into in detail here, but is reported more completely in Part II of this volume. However, an example of the completeness of approach is appropriate. Non-job related costs were obtained per appropriate unit of time or occurrence for the following:

- Hospitalization (General, Station)
- Out-patient unit
- Sick call
- Dental procedure
- Detection of AWOL

Investigation of Criminal Cases (overseas, CONUS)
Court Martial (Summary, Special, General) charge and/
or conviction
Detention (Disciplinary Barracks, Stockade)
General Overhead

In addition, concealed job sample tests were constructed. These were standardized observations of the person being tested who worked just as he might any ordinary day. He was not aware that he was being tested, nor was there anything unusual about the work setting, tasks performed, or interaction with his co-workers or supervisors to indicate he was being evaluated. Yet standard conditions—the same for all persons being tested—were maintained.

Next, a zero point—a point of no adequate work—was established. A method was devised for measuring productivity in equal units in order to combine different parts of a given job and to make comparisons across jobs.

Other techniques appropriate for evaluation of performance were devised. One, a standard checklist used by the supervisor, could in some cases be used for 2 or 3 months at no inconvenience to the supervisor.

These techniques, aside from providing a basis for decision making, provide an approach and methodology which can be considered useful in any similar evaluation problem.

Criteria used to determine the effectiveness of tests or to determine the relative effect on later job performance of different nontest qualities of the individuals need not always be as expensive and time-consuming to devise as those criteria which are constructed to give a broader index of utility or payoff. A report prepared under the above-mentioned study criticized the use of ratings as a technique for measuring usefulness. However, it was pointed out in the report that "... Ratings are known to produce evaluations which are fairly reliable as far as stable ranking is concerned, and they can be expressed in terms which seem to reflect units of productivity." Certainly, ratings by trainers or other cadremen or supervisors may be used as criteria against which to refine tests and hypotheses about the characteristics of individuals.

To evaluate differences in the effect on later performance of different training content and techniques, specially constructed criteria are usually required. These are most frequently paper-and-pencil tests of job knowledge or actual performance meas-

ures. The use of paper-and-pencil and performance tests in evaluating the effects of training has been discussed in connection with the previous section on training.

Criteria to evaluate the program as a whole are expensive and difficult to obtain. Yet, compared with the expense of making the wrong decisions, such expense may be relatively minor. Having appropriate criteria does not dictate that correct decisions will be made, but it should increase the possibility that they will.

SUMMARY

Some limitations which should be considered in the *design* of future programs—two personnel *management* implications, and the general status at present

Design

Studies on marginal personnel, even when well designed, were frequently limited in scope or were never completed.

Sufficient information is not available about the skills, knowledges, or other mental and physical requirements of Army jobs with respect to marginal men to permit authoritative statements about what marginals can and cannot do.

The performance of different types of marginals in different types of military duty positions has not been tested satisfactorily.

Inadequate distinction has been made among the different types of mental marginals.

Studies on the mental marginal have focused almost exclusively on educational deficiencies. There has been inadequate recognition of the importance of motivational problems as a major source of difficulty.

No adequate system has been developed for matching the physical limitations of individuals with the physical demands of military duty positions to facilitate proper assignment actions.

Training content and training methods for use with marginals have not been systematically explored nor have their results been determined.

At times, the only index to success of training has been whether a man completed a given course. At other times, success of training has been judged by post-training educational level—not by measures of military usefulness.

Evaluations based on actual performance tests, when made at all, were of performance in Basic Combat Training or in Special Training Units—not on the job.

Appropriate control or comparison groups have been used only to study limited aspects of the problem.

Management

Personnel management problems have been complicated when marginals, previously rejected, had to be accepted for service in sizable numbers. This occurred when standards had to be lowered to meet emergency demands.

Marginal men appear to increase problems of control, discipline, and training, but no studies have verified the extent to which these problems may have impaired Army efficiency.

Status

There does not exist sufficient information upon which to base valid decisions about the usefulness to the Army of marginal men. At any particular time, marginal personnel have been so classified by policy—the advisability of which could not be verified.

No satisfactory analysis has been made of the long-range effects of the acceptance of marginal personnel by the Army in terms of cost, utilization and efficiency.

IMPLICATIONS FOR THE FUTURE

Since 1941, except perhaps for 3 or 4 years immediately after World War II, there has been fairly consistent concern with the problem of utilizing marginals in the Armed Services. Yet, arguments for and against accepting them for military service have been derived largely from emotional attitudes or were based on fragmentary and/or biased data. The few programs designed to answer practical questions about the advantages and disadvantages of accepting such men in the Armed Services were stopped before they were completed or were quite restricted in scope.

Information about these programs is scattered, often not clearly identified as applying to marginal manpower, and at times quite incomplete. In December 1964, roughly the same amount of information of proved worth is available as in 1941 to answer the question: *What kinds of men, among those classified as marginal, with what kinds of training, can do what in the Army, how well, and at what net gain or loss to the Army?* If a program concerned with marginal men is recognized as experimental, and if its activities are so organized and conducted as to provide suitable data for analysis, this question might be answered.

The situation is likely to remain substantially as it is unless a conscious effort is made to answer the question impartially and intelligently and in its entirety. Facilities now available for data processing, information storage, retrieval, and analysis, make the present a propitious time for a comprehensive study of a given segment of the nation's manpower resources. The peacetime Army can provide a most appropriate framework for obtaining—and verifying—facts and principles about the utility of men now classed as marginal.

In the past, standards have been lowered—they are likely to be lowered in the future. Lowered entrance standards for military service affect many men. What happens to these men is important. Their contribution to the Army is important. Important also is what is learned from their experiences and the

Army's experience.

The most cogent implication for the future seems to be that the mistakes of the past should not be repeated. A summary of conclusions concerning previous programs—both operational and research—inevitably takes the form of a list of known inadequacies and omissions—voids in knowledge needed in formulating manpower policy. These voids should be filled.

What are the reasons for these voids? Why were programs designed to yield needed information terminated or scaled down before their objectives could be attained? Here are some of the factors which have governed the amount of effort which went into such programs:

ONE. Too frequently changes in procedure—even experimental changes—are looked upon as directives to be carried out. Interest is in the end product, not in an impartial evaluation of means to the end. Those responsible for special training programs have sometimes been more intent on having trainees make a good showing than in adhering to controls necessary for impartial evaluation. Whenever a training program is considered to be experimental, it should be pursued with scientific rigor to determine objectively the debits and credits which accrue from the program.

TWO. The utilization of marginal manpower is regarded as critical only in times of mobilization. Experimental programs basic to developing personnel policy on marginal manpower compete unsuccessfully for support with programs having more immediate objectives. Use of the marginal is usually viewed only within current procurement requirements. The demands of peacetime operations reflect an emphasis on quality within the limited manpower ceilings.

THREE. Adequate evaluation of the training and utilization of marginal manpower is time-consuming, difficult, expensive and disruptive of normal operations.

FOUR. Concern of the services about the comparative quality of manpower each receives has tended to limit or suppress studies which might encourage the acceptance of men classed as marginal.

FIVE. There is concern that utilization of marginal manpower would impose added restrictions and burdens on personnel management systems.

Current procedures are designed to insure—as accurately as possible—that the men accepted for service have the ability to function at an adequate level. Under these procedures and adhering to present standards, the manpower needs of the Army can probably continue to be met so long as no national emergency arises.

However, should such an emergency arise, the Armed Services would be faced with the necessity of accepting men whom they had hitherto rejected—and assimilating them to a force geared to operate only with relatively high caliber personnel. Also—and this observation applies equally to a peacetime Army—some portion of a uniformly high caliber Army must be presumed to be over-qualified for their jobs. To this extent their abilities are wasted. “That man is idle who can do something better.”

PART II

**HISTORICAL REVIEW OF PROGRAMS, POLICIES, AND
RESEARCH ON THE MARGINAL MAN IN MILITARY
SERVICE**

World War I through 1964

CHAPTER 4

ARMY EXPERIENCE PRIOR TO WORLD WAR II

World War I Manpower Problems

The problem of marginal men in the military service received its first major recognition during World War I. This was the first war fought by the United States in which the full impact of mechanization and industrialization of many human activities was felt. This was the first war also in which a significant segment of the nation's manpower fought on distant foreign shores. A crosscut of the country's manpower resources emerged to fulfill the resultant military demands. Problems of human differences confronted those charged with developing a fighting force.

In the early months of the war, screening for the most part followed pre-war enlistment requirements. However, the proliferation of military duty requirements demanded more specific screening techniques. It is not the purpose of this chapter to discuss the development, in 1917 and 1918, of the Army Alpha and Army Beta tests, predecessors of the AGCT used during World War II. Such tests emerged out of the necessity to provide commanders with some index to the type of men within their organizations and to give those charged with distributing manpower some objective basis on which to make certain decisions. Since the tests were not available during the initial procurement of manpower, many men entered the Army for whom special training had to be provided later.

The History of the Personnel System of the United States Army^{*} clearly outlines the emerging problem of the utilization of the marginal man.

The American Army was a small one and accepted only physically fit men who could read and write. When war broke out, the part our country would play before a settlement could be reached was underestimated.

Starting with the idea that we were to have a relatively small army of 2,000,000 there seemed to be such an unlimited supply of men to draw from that in the early stages we started to use only men of an exceptionally high physical standard, i.e., the Regular Army standard.

^{*} Committee on classification of Personnel in the Army. The Personnel System of the United States Army: Vol I. History of the Personnel System, Washington, D.C., 1919, pages 331-334.

With the Selective Draft system in full swing, it began to be realized that our physical standards were too high and we were falling short in numbers. Again the highly technical character of modern warfare was not realized. This increased specialization almost daily through the introduction of vastly extended use of airplanes, motor transport, new and heavy types of ordnance, gas warfare, and other novel elements. Plans based on the experience of previous wars fought by infantry and a limited artillery of small calibre no longer held. We had to learn it all over and continually modify views and change plans while under way.

Through all this, however, was an undercurrent and growing feeling that we were not utilizing manpower to the best advantage, and that sooner or later our seemingly unlimited supply of men would give out and we must begin to adopt the French and English experience of conserving our manpower in every way. Even if our supply had been truly unlimited, growing industrial needs at home, and the extravagant plan of retaining tens of thousands of strapping, perfectly fit men in non-combat positions in this country or behind the lines overseas became more and more apparent.

The idea was new to many, however, and while here and there this urgent need was recognized, and individuals in various army organizations were earnestly advocating action, it took time to work through the mass and produce a majority sentiment in favor of a broad general policy.

It was, therefore, June, 1918, before a draft call was issued for limited service men.

Almost from the appearance of the first draft men at the camps, notwithstanding most explicit instructions to Draft Board medical examiners, a considerably large number of men of decidedly low mental order slipped through the various checks and began to arrive at the camps. There were several causes for this, the principal ones probably being the variation in human judgment in the case of about 5,000 physicians scattered over the entire United States and possessions, the impossibility under the stress of the large numbers to be handled to be as thorough as desired; for like reason, the impossibility of standardizing the methods of all the examining physicians involved; and finally the frequent changing or substitution of new examining physicians to take the places of those who had finally acquired a thorough working knowledge of the established physical standards. Such substitutions became increasingly frequent as more and more doctors volunteered, or were themselves inducted to serve in medical units here and abroad.

As the physical standards furnished to the Draft Boards were lowered to meet the increasing demand for men, more of such partially defective and unsuitable men began to accumulate.

Development Battalions

The situation just described created an immediate problem in many units. Some commanders took whatever steps were open to them to pass inadequate men on to other elements, engaging in a practice known as "passing the culls." Systematic weeding out also took place when units were being shaped up for oversea movement. The Army formed Development Battalions for handling the substandard men

who were not considered qualified to remain in general service assignments. When, in June 1918, the draft permitted the entrance of limited service men, these men also were sent to the Development Battalions. Those with physical, mental, or moral limitations judged to be remediable within a short time moved directly into these battalions. Included were men who did not have sufficient knowledge of English to perform their duties properly.

The controlling objective of the Development Battalions was to increase the supply of manpower available to the service. Retention in Development Battalions was expressly limited to men whose condition could be improved by treatment, physical training, or instruction. It was the task of the battalions to conduct intensive training designed to fit the men for military service and to assign them a final classification based on the type of service they were capable of performing. Men who failed to achieve an acceptable degree of usefulness by the end of two months were recommended for discharge.

Plans for operating Development Battalions contemplated a careful scrutiny of men in terms of physical disability, mental capacity, degree of literacy, and ability to understand and speak English. While operational procedure was prescribed by the War Department, the battalions had considerable latitude with respect to training, instruction, and physical reconstruction. The program of rehabilitation was characterized by variety of method and content, close accommodation to individual needs, and the mere beginnings of evaluation—this only in terms of judged suitability for assignment to regular or limited service duty.

The ratings assigned at the close of development battalion training were the same as those used in classification centers, and represented an overall assessment of physical, mental, and moral qualities. In practice, this summary estimate was not very useful, since a man might be given a relatively low rating by reason of poor physical condition, illiteracy, or low intelligence, or some combination of weaknesses, each calling for different assignment. (By the end of the war, a more informative classification system had been developed, but this was never put into effect.)

In the approximately six months of their operations (9 May to 30 November 1918), about 230,000 men were in the Development Battalions for varying periods of time. Of this number, a total of 120,672 were rated at the end of their training as warranting retention—38,466 as satisfactory physically, mentally, and morally (Rating 1), 42,737 as usable for any but heavy combat service (Rating 2), and 39,468 as usable for limited service in the United States (Rating 3). While 115,694 men were transferred out of the battalions, no information is available on the kind of assignment made or whether performance was satisfactory.

Evaluation of Developmental Battalions

Because of lack of uniformity of procedures and the nonexistence of evaluative results, no guidelines emerged from this World War I effort. Existence of the Development Battalions does highlight an early attempt to deal with—and utilize—the Army's marginal resources. In sum, this attempt entailed assignment of men requiring special treatment to specialized organizational units where individually prescribed training and treatment was applied in a quick effort to bring each one to the point of usefulness to the Army, followed by reassignment to general or limited service or elimination from the service.

Training Programs Between World War I and World War II

Two programs between the country's major wars, the Civilian Conservation Corps and the Citizens Military Training Camps, are related to the problem of receiving and training men with varying abilities.

The Civilian Conservation Corps. The Civilian Conservation Corps experience in particular provided the Army with the kind of know-how needed to meet the challenges incurred during World War II in the acceptance of marginal personnel. Instructional materials developed for certain groups of men in the Civilian Conservation Corps became the basis for the creation of similar materials for the Special Training Units established to train marginal personnel during World War II.

The Army administered the CCC program, although the purposes of the program were non-military and civilian agencies for the most part determined the selection of personnel, selection of work projects, and the nature of the training.

The CCC involved Army administration of young civilians (unmarried, between 18 and 25 years old), many of whom would likely have qualified as "marginal." It was established by Act of Congress, 31 March 1933, and with comparatively minor changes continued until 30 June 1943.

Although the main purpose of the CCC was to provide employment directed towards the conservation of natural resources, an important facet of the program was to better equip the trainees to find jobs after they left the CCC. This training was of two types. Ten hours a week were allotted to on-the-job training under the supervision of the civilian technical staff. General education was the second type of training. The education program was voluntary, conducted during off-duty hours. Training was the responsibility of the Army—though civilian instructors were normally used. There was no standard method of conducting this training either as among camps nor within a single camp. The courses varied according to need and included reading and writing for illiterates, high school subjects for those more

advanced, and vocational training. During June 1935 there were some 167,000 persons enrolled in the education program.

The approaches used in the training of illiterates in the education program provided the kind of experience upon which the Army could draw for its later requirements during World War II. The Army could not, however, profit from knowledge of how well these men performed later on actual jobs, particularly in civilian life, since the program did not provide for this kind of evaluation.

Citizens Military Training Camps (CMTC). The second program, the Citizens Military Training Camps, provided a means for training civilians, enlisted men, and warrant officers to qualify for appointment as reserve officers and non-commissioned officers of the Army. Additionally, it was thought that the CMTC should bring together young men of all types, "both native and foreign born," in order "to develop close national and social unity." No marginal manpower implications can be derived from this program since its purpose related to entirely different groups of individuals. It is included briefly in this volume mainly to identify an additional effort undertaken by the Army prior to World War II in which individuals from civilian life were trained for specific types of duties.

The Citizens Military Training Camps were authorized by the National Defense Act of 1920 and began operation in the summer of 1921. They were in operation 20 years. Some 625,000 young men, between the ages of 17 and 24, all volunteers, were trained. Thirty days during the summer were spent in training, normally on regular Army posts. The CMTC were conducted purely as a military program with little emphasis on education.

To be eligible for the program, a person had to be "physically fit" and of "good moral character." For the basic course, ability to read and write was required; for the non-commissioned officer's course, a grammar school education; for the officer's course, a high school education or its equivalent.

CHAPTER 5

THE MARGINAL MAN IN WORLD WAR II

The experiences of the Army during the first World War demonstrated the need for including marginal personnel in any mobilization planning. World War I also showed that the Army must use men with startling individual differences. No future manpower planning could ignore the necessity for using such men in any massive buildup of the Armed Forces.

Early Procurement Policy

Mobilization planning for World War II had built into governing documents^{*} provision for the training and utilization of illiterates, non-English speaking individuals, men with physical limitations or evidence of low intelligence, aliens, and conscientious objectors. The vehicle to accomplish this was to be the special training battalion. This provision echoed the Developmental Battalions of World War I.

However, steps to deal with the problem of marginals were delayed much along the pattern of World War I. Early interest was in selecting and training men capable of service without restriction ("general service" as opposed to "limited service"). It was understandable that commanders would desire that battle units be manned by the best mentally and physically qualified men who could be made available immediately. Emphasis was on quality for the manpower which was to bear the immediate brunt of battle.

It was also evident that the nation required establishment of the draft in order to provide flexibility in manpower procurement under crisis and adverse conditions. The nation's first peacetime draft law, 16 September 1940, provided this capability. Again, as in World War I, it was not known what quality of men would be inducted under the new law. When the first draftee group entered the service after November 1940, the only literacy screen applied was demonstration of ability to understand "simple orders in the English language".

Since the aim of the first procurement program under the draft was to provide a new resource for augmenting the active Army units in being or being formed, marginal personnel were absorbed along with

^{*} Mobilization Regulation 1-7, 1 October 1940; Mobilization Regulation 3-1, 23 November 1940.

others directly into units. Six months after the draft went into effect, the Army found that approximately 6,000 men had entered the service who could not read or write and that another 60,000 who were in units or who were undergoing training did not have the equivalent of a fourth grade education.¹⁰ Commanders found that they had to provide additional training for these men, and readily made known their difficulties. The policy for induction was changed, effective 15 May 1941, to prohibit the induction of those "who do not have the capacity of reading and writing the English language as prescribed for the fourth grade in grammar school".¹¹ This policy prevailed until 1 August 1942.

With physical and mental standards set fairly high, men of high caliber found their way into some elements of the Army simply because they were available to meet the requirements of units which were being activated daily. Consequently, the Army Service Forces and Army Air Corps received large numbers of personnel who were well qualified both mentally and physically. Many of these men became highly trained in a variety of positions. When overseas combat manpower demands became more acute in 1943 and 1944, these men already possessed valuable experience in the technical services, representing a decided investment to the Army in needed skilled manpower. An examination of the staff papers at Headquarters, War Department and Headquarters, Army Ground Forces during the period from late 1942 through 1944 demonstrates the dilemma faced by manpower planners: whether to take high caliber men from technical and administrative jobs for which they had been trained and transfer them to combat jobs or to put men inducted under lowered standards into the combat jobs. The consequences—to the man and to the organizations affected—of retraining the more experienced men for combat positions weighed heavily in all decision-making.

This situation reflected the policies established with respect to physical and mental standards. With fairly high standards maintained initially, the support and air elements received highly qualified personnel. When the manpower demands grew larger, mental and physical standards were lowered to obtain more personnel. This downward revision lessened the effective use of manpower. From the problems resulting from the shift, it would appear that lower standards initially would have permitted a more broadly based manpower pool from which more appropriate assignments could have been made. Those with high physical qualifications and the other requisite abilities could have been initially assigned to combat units or high priority support elements and a more orderly replacement

¹⁰ First Report of the Director of Selective Service, 1940-1941, *Selective Service in Peacetime*, 1942, pp. 175-181.

¹¹ Mobilization Regulation 1-7, Change No. 9, 13 April 1941.

flow for these duty positions established. Conversely, the less physically capable and the mentally marginal could have been moved from special training and rehabilitation directly to certain duty positions in noncombat type units where they could serve acceptably.

Early Classification Procedures

Classification regulations (AR 611-26) provided procedures and indexes for classifying non-English speaking men, illiterates, and individuals of limited physical and mental capacity into military occupational specialties on the basis of civilian experience and skills or upon completion of appropriate training. A list of civilian occupations which were convertible to military skills and a list of military occupational specialties suitable for marginal personnel were maintained, but classification specialists had no immediate means of verifying their choices based upon duty performance data. (See app. 3 for the complete list of military occupational specialties in which it was felt that marginal personnel could serve.) However, this initial classification effort did provide decision makers with a much needed tool. For each job selected in which marginal personnel might be trained or assigned, the principal functions and job requirements were identified. The performance level required, the mechanical skill needed, the coordination demanded, and the physical condition expected for proper functioning in each job were specified by indexes arranged from the least to the most demands. The following table outlines these demands.

Table 1. Job Demands Index (1942)

- A. *Performance Level*
 - 1. Ability to follow directions under supervision.
 - 2. Ability to follow directions without supervision.
 - 3. Ability to make independent decisions relative to the job.
- B. *Mechanical Skill*
 - 1. No mechanical skill required.
 - 2. Ability to use handtools.
 - 3. Ability to use portable power tools.
 - 4. Ability to operate power driven machinery.
 - 5. Ability to operate and maintain road machinery.
- C. *Coordination*
 - 1. Gross muscular coordination.
 - 2. Fine muscular coordination.
 - 3. Gross and fine muscular coordination.
- D. *Physical Condition*
 - 1. No physical requirement.
 - 2. Normal health and vigor.
 - 3. Above average endurance.
 - 4. Above average strength.
 - 5. Above average strength and endurance.

Each skill proposed for marginal personnel was classified by each of the above factors. Classification personnel were asked to look

closely at civilian experience as an important guide for usefulness and at known physical and mental capabilities of the individual in relation to the job requirements listed under the recommended military occupational specialties.

AR 611-26 governed operations during the later months of 1942 and through 1943, a period when the standards were eased and the problem of classification and assignment of marginals became more serious. What plagued classification and assignment personnel throughout the war was the absence of data on actual job performance in relation to known physical and mental qualifications of the marginal personnel. The availability of such information would have permitted a more knowledgeable initial classification and assignment judgment and a more meaningful effort toward the conservation of available manpower.

The Army used the term "limited service" as a device for identifying personnel whose assignment was restricted. In 1942 three groups were classified as limited service.¹²

1. Conscientious objectors, as certified by Selective Service Boards (Class A).
2. Physically limited men (Class B).
 - a. Classified unfit for general service but fit for limited service.
 - b. Classified for limited assignment in noncombat duties under MR 1-9.
3. Mentally limited men (Class C).

Limited capability for military service as evidenced by individual tests.

This latter category was rescinded in November 1942 to coincide with a step-up in literacy training.

THE PHYSICAL MARGINAL

Limited Service for physical reasons was defined in 1942 as "physically unfit for general service but fit for limited military service. Individuals who failed to qualify for general service and who do not fall below the limited service requirement in any phase of the examination will be recommended for limited service, unless, because of multiple defects, the medical examiners recommended unqualified rejection as nonacceptable."¹³

Early Wartime Policy

The problem of handling the physical marginal or limited service man was quite different from that of the mental marginal. Reception Center special training units were established largely to accommodate the illiterate, the non-English speaking, and men scoring low on the

¹² AR 615-25, 31 July 1942.

¹³ MR 1-9, 15 October 1942.

AGCT (mental group V). Only the very early special training units at posts, camps, and stations or in divisional units dealt also with the physical marginal. Following 7 December 1941, commanders did try to rehabilitate some who demonstrated soldierly qualities, but they were more inclined to discharge the physically limited soldier at a very high rate because of the then permissive policies. As manpower demands became more acute Army-wide, the War Department sharpened its policy definitions. Table 2 outlines these major policy decisions.

*Table 2. Significant Policy Changes Involving Physical Marginal Personnel
1942-1945*

27 Sep 1942 (Cir. 327).	Limited service personnel to be retained if physically capable of performing in duty positions; to be assigned only to non-combat positions; effort to be made to move men from limited to general service.
5 Dec 1942 (Cir. 395).	Established induction standard for physical marginals: must have civilian skill needed and be physically capable of performing or have physical capability of performing in one for which later trained on a day-to-day basis. Those currently classified could be discharged if they did not meet these standards, provided a replacement was available. All illiterates also classified as limited service for physical reasons to be honorably discharged.
7 Dec 1942 (Cir. 397 & Cir. 39, 1943).	Authorized discharge of men 38 years of age or over who could not perform military service but who could assist in the national war effort. Again reemployed and liberalized, 4 Feb 1943.
14 July 1943 (Cir. 161).	The term "limited service" for physical marginals discontinued. Those not meeting minimum standards for induction to be discharged unless CO desired to retain. Term to be deleted from records.
21 Aug 1943 (Cir. 189).	Disqualified for overseas service those with neuropsychiatric condition of any kind.
9 Nov 1943 (Cir. 290).	Assigned neuropsychiatrist to division staff to screen out those emotionally unfit for military service and to provide for prevention and early treatment.
11 Nov 1943 (Cir. 293)	Major policy liberalizing use of physical marginals. Prohibited discharge of enlisted men who could perform in less exacting positions. Indicated that the elimination of term "limited service" did not mean such men so classified were to be discharged. Provided retention of men in duty assignments even though they did not fulfill the minimum standards for induction under MR 1-9.
24 Apr 1944 (Cir. 164)	Reaffirmed 11 Nov 1943 policy on fuller utilization of men with limited physical capacity. Discharge authority to be exercised with extreme care.
29 May 1944 (Cir. 212)	Provided for retention of combat wounded men if below MR 1-9 standards if they requested and could perform reasonable duty.

*Table 2. Significant Policy Changes Involving Physical Marginal Personnel
1942-1945—Continued*

12 Sep 1944 (Cir. 370)	Provided for discharge of enlisted personnel in U.S. who did not meet minimum standards for limited service in MR 1-9, and for whom no position was available, and the return of such personnel from overseas.
13 Mar 1945 (Cir. 81)	Established major policy for administration and medical disposition of noneffective personnel. Defined the term psychoneurosis for use in deciding disposition. Indicated that a medical defect did not constitute adequate cause for medical discharge unless the defect itself was genuinely disabling for military service. This applied especially to the psychoneurotic. Preventive psychiatry was made a function of command.
2 Jun 1945 (Cir. 162)	Provided major policy for care, treatment, hospitalization and discharge of neuropsychiatric patients.
30 Jun 1945 (Cir. 196)	A major policy declaration governing use of military manpower based upon physical capacity; reaffirmed previous policies, especially 24 April 1944, on more liberal utilization consistent with the military duties available for such utilization.

Assignment of Limited Service Men

As more limited service personnel were inducted, Army policy required commanders to retain individuals who, although qualified as limited service, were physically capable of performing duty in position vacancies.¹⁴ Strong emphasis was placed on need for the commander to give special attention to the limited service man, so that through "appropriate physical training and remedial medical measures" he could fit them for general service. Individuals who remained limited service were to be assigned to predominately noncombat positions. Specific jobs or units were recommended to which they were to be assigned: permanent post activities (except training), recruiting and induction activities, prisoner of war escort companies, port battalions, fixed harbor defense antiaircraft units, aircraft warning units; units involving special services, exchange, bakery, decontamination, sanitation, highway maintenance; engineer base activities; and station and general hospitals and rear echelon support activities in the Communication Zone.¹⁵

When in 1942 the War Department began to consider legislation to induct the 18- and 19-year olds, attention had to be given to the question of whether current resources had been exhausted. With almost 300,000 limited service men in the Selective Service pool, the physical standard was lowered. The resulting influx of physically limited service personnel produced an immediate demand upon the Ground and Service commands in the Zone of Interior to find suitable positions in overhead installations and other units.

¹⁴ War Department Circular No. 327, 27 September 1942.

¹⁵ War Department Circular No. 395, 5 December 1942.

Staff officers, faced with large numbers of limited service men now entering the Army, pondered questions of who should train and where and how limited service men should be utilized. Some officers felt that for some of these men no training was necessary, that they could be absorbed quickly in certain units and trained on the job. Other officers, echoing a concern of the field commander, felt that the unit commander should not be burdened with this additional training.

Many of the physically limited men possessed civilian skills which were convertible to a military requirement. Manpower planners established occupational occurrence rates within the scope of physical limitations, and these were helpful in projecting assignments to duty positions in which such men could be best used. In October 1942, the Army Ground Forces, in reply to a War Department request, identified 140,000 positions throughout all Army Ground Force units to which limited service personnel might be assigned. These figures indicate also the extent of possible dislocation of previously trained personnel of general service ability.

At the time these estimates were being made, the Army Ground Forces revealed that 25,000 limited service personnel were hurriedly assigned to ground units from clogged reception centers as a result of the lowered standards. The Ground Forces were concerned about the probability of assigning numbers of limited service personnel to units destined for overseas, especially those units which might be tactically employed. The Commanding General of the Army Ground Forces concluded that "assignment to tactical units should be based upon the expected employment of units in relation to the enemy rather than upon the ability of this type of personnel to perform a given job."¹⁸ This significant observation tended to accept the need for supplanting general service men in Zone of Interior positions and in nontactical units overseas with limited service men.

Within their physical limitation, the limited service men tended to have a better than average capability for absorbing military training. For example, during the training cycle at the Infantry Replacement Training Center at Fort McClellan, Alabama, 21 December 1942-13 March 1943, a concentrated study of 5,000 trainees revealed the following distribution by Army grades (AGCT).

	Limited Service	General Service
I.....	4.2	3.1
II.....	24.2	17.7
III.....	38.2	27.4
IV.....	31.1	37.1
V.....	4.3	14.7

¹⁸ Memorandum from Chief, Army Ground Forces to Chief of Staff of Army, dated 3 March 1943.

The commander made the following training and MOS assignment recommendations for the limited service personnel undergoing training at this time, based upon prior experience, evaluation by training personnel, and prevailing MOS requirements:

Automobile Mechanic	Stock Clerk
Construction Carpenter	Automobile Serviceman
Clerks, all types	Stenographer
Painter	Clerk-Typist
Receiving and Shipping Checker	Foreman Construction
Truck Driver	Machinist Helper
Machine Operator	Tabulating Machine Operator

The first comprehensive check made through Machine Records Units of the assignment of limited service personnel was completed as of 31 December 1942. This listing, covering all the MOS in which physically limited service men were performing duty at that time, provided an index to guide future classification and assignment procedures—

Electrician	Clerk
Diesel Mechanic	Mail Clerk
Automobile Mechanic	Teletypewriter Operator Repairman
Construction Carpenter	Tool Room Keeper
Cook	Geodetic Computer
Draftsman	Tractor Driver
Machinist	Welder
Meat and Dairy Inspector	Classification Specialist
Photographic Repairman	Personnel Technician
Radio Repairman	Telephone Operator
Radio Operator	Utility Repairman
Film Recorder	Meteorologist
Parachute Repairman	Stenographer
Chauffeur	Storage Battery Electrician
Engine Specialist	Personnel NCO
Armorer	Supply NCO
Chaplain's Assistant	Mess Sergeant
Plotter	Supply Clerk
Recorder	Dental Technician
Stock Room Clerk	Code Clerk
Statistical Clerk	Typist

While this report represents the actual MOS in which limited service men were assigned as of 31 December 1942, there was no evidence of how well they were actually performing. All that may be assumed is that they were occupying duty positions requiring a certain level of performance.

Dropping of the Term "Limited Service"

The problem of identifying the limited service group persisted from early 1943 until 1 August 1943 when use of the term was discontinued.

This action did not miraculously eliminate the problem of utilization of the physical marginal already in the service. The new policy¹⁷ indicated that the term had definite operating disadvantages including the psychological effect upon the soldier and "the tendency of commanders to transfer individuals of this category rather than to endeavor to utilize their services by proper assignment." The War Department also felt that there was a tendency to keep soldiers classified as limited service in restricted assignments rather than to seek to rehabilitate many who could become fully qualified soldiers available for assignment in combat organizations. The new policy permitted induction stations to accept carefully controlled numbers in low physical categories when their potential value to the service was "obvious, due to ability, skill, intelligence and aptitude." This intake was limited to 5 percent of the total assigned to the Army daily, by color, at each Induction Station.

The marginal already in service constituted another problem. This group included those still considered fit for service who had been battle casualties and others who had sustained disease or injury of a nonbattle variety. During the spring of 1943, the Army Service Forces was again concerned with the numbers of physical marginals who were to be placed in installations under its control. It directed on 7 April 1943 that the ratio should be four limited service men (still so classified until July 1943) to one general service man, with reductions in this ratio to be made at the rate of 5 percent of the total authorized enlisted personnel per month. The Army Ground Forces, showing the same concern for the physical marginal now in the service, issued orders to its installations to man 45 percent of their permanent overhead positions with such personnel by 1 October 1943.

Effect of Lowered Physical Standards

As combat losses persisted, the pressures increased in the European theater for more personnel for the assault on the continent. The War Department issued another strong policy statement at the close of 1943.¹⁸ This policy had the effect of lowering standards and continued in effect as long as manpower demands remained strong. The statement maintained that men now in service who were below the current physical standards for induction were extremely valuable to the Army because of their "training, experience, ability, and demonstrated capacity to render service in a specific assignment." A concern for what the War Department felt was an alarming discharge rate for physical reasons prompted the inclusion in a directive of positive and forthright guidance: "The discharge of an enlisted man

¹⁷ War Department Circular No. 161, 1 July 1943.

¹⁸ War Department Circular No. 293, 11 November 1943.

for physical reasons because he is incapable of serving in a physically exacting position when he may well render adequate service in a less exacting assignment is a waste of military manpower and is prohibited. Such men will be retained in the service and given appropriate assignments even though they do not fulfill the minimum standards for induction under MR 1-9." The directive further recognized that the term "limited service" had been discontinued, but made clear that this was not intended to cause limited service men to be summarily discharged, and that the Army would continue to induct and use men who did not fully meet standards for general service.

During the months following the publication of this policy, it was apparent to the personnel managers that the problem was twofold. A too liberal discharge procedure in the field had to be examined carefully along with more positive help to commanders in getting marginals into positions where they could be best utilized. The initial processing procedures needed tightening to insure more careful screening and examination by medical personnel. A more thorough classification system was required to move the physical marginal into suitable initial training and appropriate assignment.¹⁹

The basic overall manpower policy with respect to physically limited personnel was issued by the War Department in April 1944.²⁰ Those who were currently in positions beyond their physical capabilities were to be reassigned to appropriate jobs, not discharged. Personnel not qualified to perform duties in their MOS under field conditions were not eligible for overseas movement. However, those already overseas were not to be returned to the United States if their defects were nonprogressive or remediable. Commanders and surgeons were to "exercise extreme care and judgment in arriving at a decision to discharge an enlisted man on physical grounds." Combat wounded personnel were to be retained if they so requested and if an appropriate duty position was available. Each of the three major forces (Air, Ground, Service) were to make best use of their physically handicapped and to refrain from transferring them from one force to the other without concurrence of the commanders concerned. No individual was to be discharged if he met the minimum standards for induction in MR 1-9. Specific physical standards were established for overseas service. Those who did not meet the standards were to be reassigned to installations, activities, or units assigned to duty in the continental United States until their defects were remedied. "Enlisted men will be assigned to the most active type of duty appropriate to their physical qualifications with due consideration to their civilian training and experience, education, intelligence, aptitude, leadership

¹⁹ The Conservation of Human Resources Project discussed in chapter 7 was especially critical of the changes in policy regarding personnel considered physical marginals.

²⁰ War Department Circular No. 164, 26 April 1944.

ability, and acquired military occupational qualifications. This matter never remains static; hence, all commanders and those staff officers concerned with personnel must review the subject continuously with the objective of up-grading individuals in appropriate cases." Substantially the same policy statement was reissued in June 1945.²¹ It contained a significant addition liberalizing standards for personnel to be sent overseas, including those with mild psychoneurosis performing satisfactorily in their assigned duties and adjusting progressively better.

General policy statements issued from April 1944 until the end of the war reveal that the Army progressively eased restrictions on physical marginals. Policies which once permitted freer discharges were tightened. Eventually, the decision was left largely to commanders, with a firm directive that their choices were to be made on the basis of the usefulness of the individual physical marginal in a duty position where he could perform efficiently on a daily basis, consistent with his skill and his limitations. Thus, the Army's position on the physical marginal from 1944 on was distinctly related to finding proper assignments for such personnel and not to wholesale application of discharge procedures.

THE NEUROPSYCHIATRIC PROBLEM

The marginal soldier with emotional disturbances was of concern to both medical and manpower specialists not only during the initial induction screening, but also after exposure of men to the effects of military life and combat service. The question of emotional or mental breakdown and its effects on the individual and on manpower policy was a major study area of the Conservation of Human Resources Project (ch. 7). Findings, contentions, and conclusions from the study should be read as part of the evaluation of the total physical marginal utilization program during World War II.

Before the entrance of the United States into World War II, it was decided to try to prevent the high rate of discharge of personnel for neuropsychiatric defects and disabilities. The experience of World War I showed that over 97,000 men were admitted to hospitals for neuropsychiatric disorders from 1 April 1917 to 31 December 1919.²² This situation had resulted in considerable cost to the government, since these men became beneficiaries of the Veterans Administration.

Psychiatric Screening

Soon after the passage of the Selective Service and Training Act of 1940, Selective Service headquarters pointed out the need for a

²¹ War Department Circular No. 196, 30 June 1945.

²² Circular Letter 15, Office of The Surgeon General, Washington, D.C., Subject: "Neuropsychiatric Examination of Applicants for Volunteers Enlistment and Selectees for Induction," dated 12 March 1941.

minimum psychiatric examination of all registrants.²³ The Army followed closely with a similar directive on the nature of the neuropsychiatric examination for both applicants for voluntary enlistment and registrants for induction.²⁴ The problem of screening at this point was complicated by the number of men who had to be processed, lack of background information about the individual, unfamiliarity of civilian psychiatrists with requirements of military life, number of returns ordered by local boards to meet quotas, and the forwarding of men on the basis of "straightening them out."

During the early stages of the war, the War Department took a series of steps to deal with the problem.

1. Neuropsychiatric officers were provided, if possible, at induction stations where no competent civilian neuropsychiatrists were available.
2. Standards were clarified, but it was recognized that sound professional judgment was the key.
3. Mental hygiene clinics were set up at Replacement Training Centers in an attempt to detect actual or potential cases early in the training program.
4. Medical officers at all echelons were enjoined to use all means available to detect problem cases.
5. The Office of The Surgeon General established close relations with the Special Service (morale) Division in programs of preventive psychiatry.
6. Cases of combat neurosis were to be treated near the front. For cases thus treated, rate of return to duty was high, whereas a high proportion of men evacuated to the rear for treatment became chronic invalids.
7. The Selective Service System established a medical survey system through which social and medical histories could be made available to examining officers at induction stations.²⁵ Necessity for this later action became apparent when Selective Service System studies indicated a discharge rate of 30 percent to 40 percent for those with mental or emotional disorders many of whom had symptoms prior to their induction.
8. Neuropsychiatrists were assigned to divisions in October 1943. The general manpower crisis in 1943 had caused all staffs to become concerned with proper conservation of available personnel. This concern covered the neuropsychiatric. In April 1944, the War Department issued a comprehensive policy covering the

²³ Medical Circular No. 1. National Headquarters of Selective Service, Washington, D.C., revised 19 May 1941.

²⁴ Circular Letter No. 12. Office of the Surgeon General, Washington, D.C., Subject: "Classification of Psychoses with Constitutional Psychopathic State or Constitutional Inferiority," dated 19 February 1941.

²⁵ Medical Circular No. 4.. Headquarters Selective Service System, Washington, D.C., subject: Medical Survey, 18 October 1943.

neuropsychiatric examination at the Induction Station.²⁶ The bulletin stated in part: "There is accumulating evidence that many individuals with minor personality disorders and mild neurotic trends can be of service in the armed forces. It is believed, on the basis of previous directives, that many such men are now being rejected at induction stations on neuropsychiatric grounds. The acute need for manpower makes it necessary to admit all individuals to serve in the armed forces who have a reasonable chance of adjusting to such service. The neuropsychiatric study should be made on a longitudinal basis and not on a cross section."

The Selective Service System analyzed a 70 percent sample of the 9,000,000 men examined from April 1942 to December 1943. Psychiatric disorders proved to be the leading cause for rejection of registrants. In the period April 1942 to March 1943, one out of every eight rejections was for mental defects; from April 1943 to December 1943, these defects were 18 percent of the rejection rate.²⁷

The rejection rate for neuropsychiatric disorders (including deficiency) rose from slightly over 100 per thousand during the first quarter of 1943 to 200 per thousand during the last few months of that year. It then declined to about 135 per thousand in April and May 1944 and rose again to nearly 170 thousand in June 1944. The rise in rates during 1943 was due to the older age groups examined in the latter part of the year and to changes in examination policies and procedures toward greater search and diagnosis.²⁸ With the issuance of the April 1944 directive indicating that men with minor personality deviations and neurotic tendencies could be of service in the armed forces, the rate dropped. The fundamental problem had become one of distinguishing between selectees who were not suitable for military service because of their inability to adapt themselves to Army life and those whose deficiencies were not expected to prevent their adjustment. The rate in June 1944 rose sharply again, primarily because of changes in the screening standards and tests which had the effect of eliminating more for mental reasons.

Rehabilitation Efforts

The experiences of the 1943 shortage in manpower led to several experiments with men with neuropsychiatric disorders, that is, men disabled because of their emotional and occupational maladjustments. These experiments endeavored to determine whether certain groups

²⁶ War Department Technical Bulletin (TB-MED No. 33), Subject: Induction Station Neuropsychiatric Examination, dated 21 April 1944.

²⁷ Medical Statistics Bulletin No. 3, Headquarters, Selective Service System, Subject: Physical Examination of Selective Service Registrants During War-time," dated 1 November 1944.

²⁸ Report No. 20-1D, Office of The Surgeon General, Subject: "Neuropsychiatric Rejections of Selectees at Induction Stations," dated 1 February 1945.

of individuals, so classified, could be salvaged for further military service. Three Developmental Training Battalions (Experimental), with a capacity of 500 each, were established on 7 February 1944 at the Quartermaster Replacement Training Center, Camp Lee, Virginia, Engineer Replacement Training Center, Fort Belvoir, Virginia, Ordnance Replacement Training Center, Aberdeen Proving Ground, Maryland.²⁹

Personnel to be trained came from Army General Hospitals after a determination that they had a reasonable chance for rehabilitation through individual training in special fields. From Replacement Training Centers came individuals who could not meet the requirements of overseas movement because of psychoneurotic illness.

A special classification group at Camp Lee, Virginia, analyzed individual personnel records and determined the initial training which the men were to pursue and the center to which they were to be assigned. The manpower problem reached considerable proportions, since approximately 1,000 were personnel hospitalized with illness. These men were heterogeneous with respect to Army background, age, AGCT group, and degree of emotional stability. All white personnel were equitably distributed. Negro personnel were assigned to one company at Camp Lee, Virginia.

A number of administrative problems needed immediate attention—furloughs, pay and family allotments, clothing and equipment shortages, discontent with assignment, and incomplete or lost military records. Attention to these problems produced prompt improvement in morale and aided materially in the adjustment of those in training.

Basic training was limited to the capabilities of the individual. "It will not include all-night bivouacs or training requiring exertion beyond the capabilities of the group generally. Where desirable, training schedules will be alternated between the two companies to provide in each company one-half day of technical training and one-half day of basic military training, organized athletics, and time for personal and medical consultation. It is desired that each center develop the training independently to determine the rapidity with which personnel can be trained. Detailed records of the training accomplishment of all individuals will be maintained so that at the conclusion of training the degree of effectiveness of this program and the feasibility of its continuation can be determined."

Battalions in the camps were established according to physical and administrative requirements. The Aberdeen unit operated as a separate battalion under the Commanding General of the Center. The battalion operated its own personnel and classification sections, thus

²⁹ Army Service Forces Cir. No. 40, 5 February 1944.

assuring direct access to vital records for prompt solution of problems. All military training, technical training, and recreational activities were under direct control of the battalion commander, with existing post agencies and schools providing technical training facilities. The Ft. Belvoir unit operated as a semi-isolated separate battalion responsible to the Commanding General of the Army Service Forces Training Center. Technical training was furnished by existing post agencies, offices, and schools. The unit handled military training and recreational activities. The battalion operated its own consultation service, classification section, and all administrative and support activities. The officers and cadre were quartered within the unit area. The unit at Camp Lee functioned within the training regiment. At the conclusion of the program, it was decided that a battalion of a semi-isolated, separate type was in the best interest of the trainees and other troops.

Of the experimental group of 1253 men, 70 percent (880) were made available for limited assignment in noncombat units within the continental United States. Availability of these men was determined on the basis of recovery under the training conditions instituted and was not an indication of performance under regular training conditions. Many of those not reclaimed for military duty also benefited from the program.

Restrictions on the assignment and utilization of men who were trained in these organizations were most explicit—

Assignments for these men as recommended by classification boards at developmental battalions are entered on their W.D., A.G.O. Form No. 20 (Soldier's Qualification Card). Accompanying this card is an abstract of the classification board proceedings with a copy of the psychiatric report to which the board had access. This information is provided to assist not only in recommending judicious assignments, but also in making clear to unit commanders and section chiefs the reasons for the limitations of assignment or other restrictions within which subject personnel are expected to perform.

Within these limitations, personnel will be assigned to such duties as are most likely to prevent a recurrence of their particular disabilities.

Changes in classification or removal of restrictions limiting assignment will not be accomplished solely to permit the detail of an enlisted man to military duties for which additional personnel are desired. Since one purpose of any such change in classification will be to further the man's complete recovery, it will require a thorough review of his medical and military history. Consequently, reassignment to other duties or to similar duties outside the specified restrictions may be made only upon recommendation of a classification board consisting of a line officer or officer of the branch concerned, a medical officer (preferably a psychiatrist) and a classification officer or personnel consultant.

The experiment was accomplished with 62 officers, 250 enlisted personnel, a 20 percent overhead for total personnel, a 26 percent overhead for rehabilitated personnel.³⁰

THE MENTALLY MARGINAL SOLDIER

The mental marginal posed a broad training and utilization problem, whether he was illiterate, non-English speaking, or of low mental capability. Almost always his civilian occupation fell into the general classification of unskilled labor. His potential for military service rested largely on the Army's capability to provide him, through training, with a combination of basic knowledge and skill which would make him a useful soldier.

It has already been noted that the 1940 screening standard, "an understanding of simple orders in the English language" proved inadequate in the light of the training programs then given. During this early period before a full War Department program was launched, literacy training was conducted on a voluntary basis. When the unit commander received a number of men in this category, arrangements were made for the chaplain—or others who may have had educational training—to provide basic instruction in reading, writing, and arithmetic. Such instruction was almost always arranged on off-duty time in order not to retard the unit's primary training. These programs, while often conducted with vigor and true concern for the fellow soldier, were sporadic. Instructional materials followed no uniform pattern; their availability often depended on the ingenuity of the instructor. The amount of training depended mainly on the degree of interest of the commanders whose views of the usability of the mental marginal were diverse. Units had comparative freedom in interpreting standards and in establishing diagnostic procedures. Methods of instruction depended on the professional capability of the staff.

War Department policies with respect to the mentally marginal man, particularly the illiterate, shifted with the demand for manpower. Interest in these persons heated and cooled in direct proportion to pressures of military buildup and projected and actual casualty rates. Once the total quantitative requirements became clear, the War Department recognized that the mentally marginal soldier had to be trained and utilized to relieve the urgent need for the more qualified soldier elsewhere in the total military effort. The following table outlines the changes in War Department policy regarding the illiterate and non-English speaking individual and grade V personnel. This chronology will help fix the framework for a detailed anal-

³⁰ Ltr SPMDV, subject: "Retraining for the Psychoneurotic Patient," dated 29 Jan. 1944. Report: "Developmental Battalions (Experimental)—Camp Lee," dated 2 June 1944 and ASF Circular No. 169, Hqs ASF, 5 June 1944. Part I *Enlisted Men, Utilization of Recovered Psychoneurotics*.

ysis of the standards, selection procedures, and training applied to this group.

Table 3. Policies Regarding Mental Marginals

<i>Standard for Induction</i>	
October 1940	Ability to comprehend simple orders given in the English language.
15 May 1941	Deferment of individuals unable to read at a fourth-grade level upon induction station testing.
1 August 1942	Acceptance of illiterates at below fourth-grade level in a number not to exceed 10 percent of the white and 10 percent of the colored registrants of the number accepted on any day at any induction station. Reduced to 5 percent, 4 February 1943.
1 June 1943	The percentage limitation on the illiterates revoked. The mental standard established in the induction station screening procedures became the only hurdle for the illiterate or non-English speaking registrant. Standard: Mental capacity above the lower 2/5 of Grade V on AGCT.
21 September 1945	The induction of all illiterate and non-English speaking personnel discontinued.

The following table presents a chronological listing of the War Department actions taken to establish Special Training Units.

Table 4. Organization of Special Training Units

<i>Date</i>	<i>Place</i>	<i>Type of trainee</i>
28 July 1941	Replacement Training Centers.	Illiterates. Non-England speaking. Grade V. Physically handicapped. Emotionally unstable.
November 1942	Army's Corps, Service Commands, Divisions, Field Units.	Illiterates in excess of those being sent to Replacement Training Centers.
1 June 1943	Consolidation of all Special Training Units at Reception Centers.	Illiterates. Non-English speaking. Grade V.
December 1945	Special Training Units Discontinued.	

Tables 3 and 4 reflect four basic problems with which War Department planners were faced: (1) development of training objectives for the mental marginal; (2) need to establish the best location for the conduct of special training; (3) the technical problem of designing screening devices for literacy and mental ability; and (4) preparation of instructional materials which would adhere to the over-all objectives of the program. During this early period, the War Department had to consider two groups of mental marginals: those who would be accepted through selective service under prevailing standards and those already in the service.

When the decision was reached in May 1941 to defer all individuals who could not read and write the English language "as commonly prescribed for the fourth grade in grammar school," this standard became a principal objective of all literacy training programs. It was applied to personnel in the service, and after August 1942 when illiterates were again accepted, to those entering the service, as an indication of need for special training.

Early Special Training Units

The problem of locating the best type of organization and place for special training units occupied the Army staff from July 1941 to June 1943. The burden of training of the mental marginal originally fell to unit commanders. A concerted plan was required to deal with mental marginals already in the service. Beginning 28 July 1941, the War Department directed that at least one special training unit be organized at each Replacement Training Center; additional numbers were to be established as required by the flow of marginals into Replacement Training Centers. The mission of these units was to qualify trainees as literate in English at or beyond the fourth-grade level and to train them in certain basic military subjects so that they could take their places successfully in regular training. Additionally, the units were to give appropriate training to men who were emotionally unstable to a degree that prevented their ready adjustment to the normal military program. Finally, they were to provide the physically limited with rehabilitation training designed to prepare them to meet the requirements of the service.

Mobilization Training Program 20-1, dated 17 July 1941, prescribed the training. It applied to men assigned to all the units regardless of their location and branch. The training consisted of two parts: (1) basic military and (2) educational. Military training included nine subjects: military courtesy and discipline, sanitation and first aid, equipment and tent pitching, dismounted drill, interior guard duty, marching and bivouac, defense against chemical attack, marksmanship, and physical training. A daily three-hour period of educational instruction was required in reading, writing, conversation, and arithmetic. The suggested schedule covered an eight-week period, but each trainee was to be qualified for regular training in the shortest time possible. A maximum time limit of three months was allowed to qualify the trainee as literate. The general program could be modified by individual commanders, since some centers would be concerned principally with literacy training and others with more general training. Individuals who showed little promise of completing the training after two months or those who failed at the end of three months were reported to the Replacement Training Center commander for disposition.

When the Army changed its policy in August 1942 to permit limited acceptance of individuals below the fourth-grade standard, the problem of absorption became more acute.³¹ The Replacement Training Center now received more illiterates from the Reception Center. Additionally, tactical units continued to receive some men who needed special training directly from Reception Centers. As a result, field units were again forced to set up their own special training units. The War Department recognized the dilemma by officially permitting army, corps, service command, division, and other unit commanders to establish Special Training Units within their commands (November 1942).³²

How these units operated in the commands is shown by a report from the Commanding General of the 89th Infantry Division, Camp Carson, Colorado, to the Commanding General, Army Ground Forces. A special Training and Development Unit was charged with providing appropriate training to three groups: 1) those handicapped for physical reasons, including lack of stamina, endurance, and coordination; 2) those handicapped for mental or emotional reasons; 3) those handicapped by language difficulties. Individuals were recommended by the commanding officer of their parent unit and admitted by the commanding officer of the special training unit after a physical examination and a psychological interview by the personnel consultant. The instructional staff was organized on a ratio of one instructional officer supervisor to each 50 trainees and one instructor to each group of 20 trainees. Each week, instructors recommended individuals for return to units. Decision was made jointly by the special training commander, the medical officer, and the personnel consultant. For those returned to units a follow-up was made after 10 days, at which time decision was reached to continue the man in regular training or to return him to the Special Training Unit.

The earliest available report on the operation of the program in October 1942 (prior to assumption of the responsibility by the reception centers) showed 26,766 men in special training units: 12,104 in Army Ground Forces units; 3,855 in service or supply installations; and 10,806 in Replacement Training Centers. A second report issued February 1943, four months prior to dropping the standard, showed a special training population of 30,592 at 118 installations. These individuals were classified as follows (percentages not mutually exclusive):

Illiterate.....	81.7%
Non-English.....	12.5%
Grade V.....	18.7%
Physically handicapped.....	6.8%
Personality disorders.....	2.3%

³¹ War Department Circular No. 169, 1 June 1942.

³² AR 615-360, Change No. 1, 14 December 1942.

Special Training Units at Reception Centers

After the operation of Special Training Units at Replacement Training Centers and in field organizations for a period of almost two years, the War Department in June 1943 discontinued this arrangement. Special Training Units were thereafter conducted only at Reception Centers.³³ This change coincided with the change in induction policy. After 1 June 1943, the percentage limitation on illiterates eligible for induction was dropped, and all men possessing mental capacity above the lower three-fifths of Grade V on the Army General Classification Test were qualified for induction.³⁴ The decision to concentrate all specialist training at reception centers reflected a variety of influences. Individuals undergoing training in field units or in Replacement Training Centers were singled out unfavorably by their contemporaries. Attendance at a Special Training Unit on a particular post or in a certain division thus constituted a definite morale problem among many trainees. Additionally, with training scattered over more than 100 installations, the amount and quality of training suffered. Replacement training commanders, burdened with the transformation of the great mass of generally qualified men into soldiers, could not devote time and effort to the Special Training Units in the proportion needed. Again, technical work accomplished within the War Department on instructional materials now permitted a more orderly and concentrated instructional program. Finally, with special training conducted at the Reception Center—at the outset of military service—it was hoped that the illiterate, non-English-speaking, or Grade V man could be given basic educational tools, knowledge about military life, and the rudiments of adjustment before he was plunged into regular training and unit life. He would arrive in his assigned unit as part of the regular flow and not as a specially marked individual who later had to be moved to a special unit for a different type of training than the rest of his company.

Once the Reception Center had been designated as the location for Special Training Units, this arrangement continued until such units were abandoned in December 1945. Original units at reception centers totaled 24. By December 1943, only six months after the new policy went into operation, the number of units had been reduced to 19.

³³ Letter, War Department, file AG 201.6 (28 Apr 43) OC-O. Subject: Mental Induction Standards and Procedures. 11 May 1943. War Department Circular No. 255, 16 October 1943.

³⁴ Letter, War Department, file SPX 353 (14 May 1943) OB-D-SPGAE. Subject: Establishment of Special Training Units, dated 25 May 1943.

Selection Procedures for Special Training Units

The Army required, for each policy governing the induction of mental marginals, suitable screening instruments.³⁵ Table 5 presents in summary form the screening instruments used to determine the acceptability for induction of the illiterate, non-English-speaking, and Grade V personnel who were to be sent to special training units.

Table 5. *Screening Tests Employed at Induction Stations for Identification of Mental Marginals*

Prior to August 1942	MINIMUM LITERACY TEST A practically self-administering test to find whether a man could read and write well enough to learn the duties of a soldier within one year.																						
August 1942	VISUAL CLASSIFICATION TEST (VCT) A test administered in pantomime to illiterate and non-English speakers to determine if they had the ability to learn military duties, and to screen out the very slow learners. CONCRETE DIRECTIONS TEST BLOCK COUNTING TEST DIRECTIONS TEST Supplementary tests for those whose performance on the VCT was inconclusive.																						
February 1943	ARMY INFORMATION SHEET An intermediate screen for those who made the basic score demonstrating ability to read and write English at the 4th grade level and were thus accepted as literate. Those falling below the required score were given the VCT.																						
Prior to April 1945	(A) ARMY GENERAL CLASSIFICATION TEST (Four Forms of AGCT-1) This test was given to all individuals entering the Army from October 1940 until 1945 when a new form, AGCT-3a was introduced. This test categorized individuals in the following manner (TM 12-260, 31 Dec 1942): <table><tr><th>Standard Score</th><th>Army Grade Classification</th><th>Category</th></tr><tr><td>130 and above.....</td><td>I</td><td>Very rapid learners</td></tr><tr><td>110-129.....</td><td>II</td><td>Rapid learners</td></tr><tr><td>90-109.....</td><td>III</td><td>Average learners</td></tr><tr><td>70-89.....</td><td>IV</td><td>Slow learners</td></tr><tr><td>Below 69.....</td><td>V</td><td>Very slow learners</td></tr></table> After 15 July 1942 the last two classifications were changed as follows: <table><tr><td>60-89.....</td><td>IV</td></tr><tr><td>Below 59.....</td><td>V</td></tr></table>	Standard Score	Army Grade Classification	Category	130 and above.....	I	Very rapid learners	110-129.....	II	Rapid learners	90-109.....	III	Average learners	70-89.....	IV	Slow learners	Below 69.....	V	Very slow learners	60-89.....	IV	Below 59.....	V
Standard Score	Army Grade Classification	Category																					
130 and above.....	I	Very rapid learners																					
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Below 69.....	V	Very slow learners																					
60-89.....	IV																						
Below 59.....	V																						

³⁵ In addition to the program for training illiterates, the Director of Selective Service called upon other governmental agencies to develop literacy classes for certain Selective Service registrants prior to their call for induction. State Directors Advice No. 240, National Headquarters, Selective Service System, Subject: School Programs for Illiterate Registrants, dated 15 September 1943. See also Special Report to Chief, Pre-Induction Training Section, Hqs., Army Service Forces from W. F. Russell, Special Consultant, Subject: Upgrading the Illiterate Registrant for Use by the Army, dated 7 January 1943.

Table 5. Screening Tests Employed at Induction Stations for Identification of Mental Marginals--Continued

Prior to April 1945	(B) <i>NON-LANGUAGE TEST 2a, b, c</i> This test was designed to sort out those men truly Grade V in learning ability from those whose score represented limited use and understanding of English. Given to all who scored Grade V on AGCT. Basis for forwarding Grade V men to special training units. Provided also the needed screening device to shift the criterion for acceptance in the Army from literacy to general ability (induction of those who possessed mental capacity above the lower three-fifths of Grade V).
June 1943	<i>THE QUALIFICATION TEST</i> Administered to high school graduates if there was doubt of the registrant's graduation. This test assisted the induction process, since after 1 June 1943 all graduates of English-speaking high schools were qualified without further testing. This test replaced the Army Information Sheet as the initial screen.
June 1944	<i>GROUP TARGET TEST</i> Administered after June 1944 to all who failed the Qualification Test, supplanting the VCT. <i>THE INDIVIDUAL EXAMINATION (IE-1)</i> Administered to English-speaking registrants who failed to achieve qualifying scores on the Qualification Test and the Group Target Test. Those inducted sent to Special Training Units. Those failing IE-1 were rejected. <i>THE NON-LANGUAGE INDIVIDUAL EXAMINATION</i> Administered to non-English-speaking registrants to qualify for induction. Those inducted sent to Special Training Units.

Tables 3 and 5 reveal the interrelation between induction policies and the testing programs developed to support marginal manpower policies. Prior to August 1942, individuals who could not read at fourth-grade level as determined by the Minimum Literacy Test were deferred. After that date, and until June 1943, illiterates were accepted on a percentage basis provided they had sufficient ability to absorb military training. This action reflected a major shift in manpower policy. Ability to undertake military training, not literacy, became the criterion for service.

The Army General Classification Test, discussed later, was administered to all personnel beginning in October 1940. The Visual Classification Test, introduced in 1942, became the additional screen to determine whether illiterates and non-English speakers possessed sufficient capacity to learn military duties. At the same time, the test screened out the very slow learners. From this point onward, the

military requirement became paramount. Individuals who were accepted but who could not meet the fourth-grade standard were still considered illiterate. The Special Training Units were designed to provide the illiterate with skills in reading, writing, arithmetic, and in military subjects sufficient for the soldier to make his way properly through military life as a member of a regular unit. But the key item was his ability to absorb military training and to function creditably in a military duty position.

The acceptance of this criterion was directly related to the need for large numbers of individuals to meet the increased requirements of the Army. As has already been observed, the Army could no longer maintain an educational screen when its manpower shortages became acute. The critical manpower pinch of 1943 was reflected in the abandonment of the percentage limitation on illiterates in June 1943. At this time, the AGCT became the determinant of acceptability. Individuals who scored at Grade V on the test were administered the Non-Language 2a, b, c. Those scoring above the lower three-fifths of Grade V were inducted. Again, this policy reflected the position that a certain portion of Grade V personnel possessed capability for military service. Individuals who lacked literacy skills continued to be forwarded to Special Training Units.

The scope of the tests given at Induction Stations emphasized the Army's critical concern for a proper screening of available manpower. Decisions were made not on one test but on a series of tests. The establishment of several hurdles enabled the Army to obtain the maximum number of men who met the basic criterion of trainability in basic military skills. The gradual refinement of the program, as evidenced by the addition in 1944 of new tests based upon wartime experience, again reflected concern for the proper evaluation of the manpower potential.

The key test administered throughout the war was the Army General Classification Test.³⁶ Four forms (1a, 1b, 1c, 1d) of this test were introduced—1a in October 1940; 1b in April 1941; and 1c and 1d in October 1941. A completely new test, the AGCT 3a and 3b, was developed and placed in operation in April and August 1945.

The AGCT 1a, 1b, 1c, 1d consisted of vocabulary, arithmetic reasoning, and block counting, comprising a total of 150 items. Items were of a multiple-choice type with four alternatives. The Army standard score system developed for expressing the scores on this test became the basic system of scoring practically all classification and screening

³⁶ Technical Research Report 978, Development of the Armed Forces Qualification Test and Predecessor Army Screening Tests, 1946-1950, U.S. Army Personnel Office, 7 November 1952, and, Staff, Personnel Research Section, The Adjutant General's Office, "The Army General Classification Test, with Special Reference to the Construction and Standardization of Forms 1a and 1b," *The Journal of Educational Psychology*, November 1947, pp 385-420.

instruments. The Army Grades or Mental Groups derived from these scores are shown in table 5.³⁷

The Army Grade V on the AGCT is of particular interest to the problem of the mental marginal. The score for this group was originally set from 0-69. In July 1942, the lower limit of Group IV was changed from standard score 70 to standard score 60, and Group V now became 0-59.³⁸ While the action had no effect on the distribution of scores, it did influence the grade distribution. The grade distribution now became more symmetrical, as indicated in table 6.

Table 6. *Grade Distribution of Men Processed Through Reception Centers (N=8,293,879) 1940-1944*

Army grade	Standard score limits	Percentage of total group
I.....	130 and above.....	6.0
II.....	110-129.....	26.5
III.....	90-109.....	30.5
IV.....	60-89.....	27.7
V.....	59 and below.....	9.3

In summarizing the screening procedures for the marginal soldier during World War II, the single most important decision was to screen on the basis of mental ability. While operational demands for manpower forced the abandonment of the literacy standard for induction, the Army did provide subsequent literacy training to fit the marginal soldier to the military environment. However, primary emphasis in the induction process centered on mental ability to absorb elementary military training.

The Academic Curriculum

Subject matter emphasized in the academic area of instruction included language expression, reading, arithmetic, and the study of current events. Handwriting and spelling were included. Instructional materials furnished to special training activities accented these basic subjects.

Instructional materials available for the mental marginals entering the Army during 1941 leaned heavily on the previous publications of the Civilian Conservation Corps, *Camp Life Series*, and a basic reader, *Army Life*, a privately published book. *Army Life* covered reading, writing, and arithmetic in combination test and workbook form. As military personnel became more acquainted with the needs of the

³⁷ The Army Standard Score system is explained in Section III, DA Pamphlet 611-2, Army Personnel Tests and Measurement, June 1962. See also Chapter I, Part I for definition of percentile and Army standard scores, footnotes 1 and 2.

³⁸ Staff, Personnel Research Section, TAGO, "The Army General Classification Test," Psychological Bulletin, Vol. 42, No. 10, December 1945, p. 764.

Special Training Units, a revised text, also privately printed, known as the *Soldiers' Reader*, was developed in August 1942. The basic Army specifications for the revision of the text included grading of the text material, more Army-oriented vocabulary, and short self-administering review tests. The over-all aim was to insure that the text was completely functional and related to Army life.

The Army's own publication, *The Army Reader*, was made available to Special Training Units in May 1943. This text reflected the Army's previous experience with Special Training Units. It emphasized a more succinct grading of materials, more provision for non-English speakers illiterate in their own tongue, and a clearer presentation of the processes of arithmetic. Again, military situations and language were emphasized to provide a means for the soldier's adjustment to Army life. The Reader contained a variety of illustrations and drill exercises closely related to the desired skills in reading, writing, and arithmetic. It was divided into four carefully graded parts designed to expand the vocabulary, to increase the length and complexity of sentences and paragraphs, and to present multiple means of writing phrases, sentences, and paragraphs:

Part I.....	A Day with Private Pete.
Part II.....	Private Pete Writes a Letter.
Part III.....	The Army Pays Private Pete.
Part IV.....	Private Pete Smith of the Army of the United States.

A companion volume of workbook size, *Army Arithmetic*, was published at the same time as the *Army Reader*. The arithmetic book was geared to military situations and presented material flowing from the concrete to the abstract. It did not, however, follow the graded pattern of its companion volume.

Various other supplementary publications were used to enrich the reading program. Many items were modified and improved in the course of the program. Among the principal materials in use throughout 1942-1945 were: *Our War*, an illustrated monthly publication; *Your Job in the Army*, describing fifteen Army jobs suitable for soldiers upon completion of special training; and the *News Map—Special Edition*, containing maps and photographs of the war fronts.

In applying these instructional materials, the aim was to move individuals through the program by four distinct steps represented in the four parts of the *Army Reader*. Test instruments designed to assist in this effort were introduced in July 1942. Table 7 shows the tests used as part of the program.

Table 7. *Army Tests Used in Special Training Units in World War II*

1. Army Illustrated Literacy Test (DST-11a) (Formerly Placement Test, prior to June 1943).	Designed to place the individual in an appropriate grade level in the special training unit, allied to the four sections of the <i>Army Reader</i> .
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Table 7. *Army Tests Used in Special Training Units in World War II—Con.*

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|---|---|
| 2. Unit Tests (DST-12, 13, 14, 15)----- | Designed to evaluate progress in the four parts of the <i>Army Reader</i> . The achievement of an appropriate score on DST-15 (reading) was an indication of completion of the special training unit. |
| 3. Unit Test in Arithmetic (DST-16a)- | Designed to evaluate arithmetic skills learned. The achievement of an appropriate score on this test was also an indication of completion of training. |

Critical scores were established for each unit test.³⁹ As men achieved these scores, they were moved to the next reading ability level. Cumulative progress reports were kept on reading levels, in addition to achievement in military subjects. About 45 percent of the men entering the program began at the third and fourth levels of reading ability, indicating that in this phase of the total program a considerable number were already in a position to graduate fairly rapidly.

Special Training in Military Subjects

Training in basic military subject matter was an essential part of the special training program. These subjects covered the normal items given to all soldiers under training. Instructional approaches were modified in order to accommodate the special problems related to the marginal soldier. Heavy emphasis was placed on demonstration rather than lecture, especially in such subjects as Infantry Drill, Interior Guard, and Rifle Marksmanship. Instructors were generally cautioned to be patient and persistent in their efforts in training marginal personnel and to provide more explanation and more illustrations in presenting their subjects than with non-marginals.

Military subjects were interlaced with academic subjects. During the early stages of the program, military subjects made up about 60 percent of the training effort. Later (1944) the training was revised to give 60 percent of the effort to academic subjects, since experience had shown that the primary deficiency was in reading, writing, and arithmetic.

The inclusion of solid military instruction in the special training program had four essential objectives—

1. Give the man a feeling of belonging to a huge organization which had a basic mission.
2. Provide a taste of basic military skills before the man moved into regular training, and thus facilitate his basic adjustment.

³⁹The critical scores: 21 for DST-15 and 45 for DST-16a, were not to be considered rigidly for determining graduation. Total performance was determined to be the appropriate criterion. War Department Circular No. 297, 13 November 1943; ASF Circular No. 30, 26 January 1944.

3. Familiarize the trainee with technical Army terms and Army methods so that he could better understand the academic instruction which was purposefully related to the practical aspects of Army life.
4. Provide experience in getting along with other men and in handling situations, thus assisting in adjustment to military life.

Teaching Methods, Devices, and Aids

In the instruction given in the special training units, the Army attempted to use the best devices developed through prior civilian and military use. In its guide to teachers on teaching procedures,⁴⁰ the Army recommended frequent use of practice and drill exercises as learning devices but not as ends in themselves. Additionally, all instruction was to be functional, definitely related to activities and situations which arise in Army life. Devices were to be motivating, varied, and practical, so that a participant could gain confidence, a feeling of cooperation, and success. Various teaching aids were suggested and specific means for their construction and use were provided—

1. Flash cards for rapid recognition of words and phrases.
2. Story cards to foster word recognition and arithmetic computation.
3. Word and number wheels for word recognition and multiplying numbers.
4. Spinner for word reading at the point where indicator stopped.
5. Movies providing for the reading of sentences and paragraphs from a scroll.
6. Bingo for matching words and arithmetic computations.
7. Geographic reading exercises for matching geographic places with their appropriate locations on a map.
8. Calendar for reading and arranging months in the proper order.

Since reading was the core of the academic program, instructional guides placed heavy emphasis upon diagnostic and remedial procedures. Language problems centered around sound, meaning, and usage. The individual's use of oral expression to relate his own camp experiences and to communicate with others was emphasized: written expression was often in the form of letter writing to relatives and friends. The teaching of reading was related to the teaching of oral and written expression. Reading habits among trainees were judged on the basis of recognizing a basic list, understanding new words, reading and following basic directions, noting detail, obtaining specific information, and understanding the meaning of whole chapters. Instructors were cautioned to be on the lookout for faulty habits such

⁴⁰ War Department Pamphlet 20-2, 30 December 1943.

as incorrect pronunciation of vowels and consonants, reversals of letters or words, addition and omission of sounds, substitutions, repetition, or omission of words. Similar guides were provided in the fields of spelling, handwriting, and arithmetic. The objective in spelling was to develop "relative accuracy in spelling frequently used words." The main goal in handwriting was "a clearly legible product."⁴¹ Both manuscript and cursive writing forms were taught.

The principal objectives of arithmetic instruction were as follows: "To provide (1) knowledge of vocabulary and symbols which are basic to arithmetic; (2) understanding of the meaning and application of numbers in military as well as civilian life; (3) skill in reading and writing numbers; (4) skill in recognizing situations requiring application of arithmetic ability; (5) skill in the fundamental processes of arithmetic—addition, subtraction, multiplication and division—in examples involving whole numbers; (6) skill in solving simple arithmetic problems found in Army life."⁴²

In addition to teaching aids and guides, courses of study with lesson plans for each subject of the curriculum, supplementary teaching materials, instructional methodology aids, and rating materials were furnished to all instructors.

Summary of Training Program

The maximum period allowed for training was twelve weeks. From November 1943 to November 1944, a unit could retain an individual up to sixteen weeks. Emphasis was on qualifying an individual in academic and military subjects for movement to a regular training unit as soon as he demonstrated his capability through tests and evaluations. Each unit followed a normal military organizational pattern. Most of the instructional staff were military, although the War Department took steps to increase the civilian staff after March 1944. Every attempt was made during the life of the program to secure qualified instructors who, after selection, were given pre-teaching orientation and normally biweekly in-service seminars or conferences.

Some 302,000 men received training from 1 June 1943 until the close of the program in 1945 (see app. 4). Of these, 54 percent were white and 46 percent were Negro. Of this number, 254,272 were successfully graduated from the program to take their places in Army units.

The established criteria used by Disposition Boards for discharging men from Special Training Units were—⁴³

1. Academic. Has the individual achieved the critical scores set forth on the appropriate academic lists?

⁴¹ War Department Pamphlet No. 20-8, 1944, pp. 17 and 23.

⁴² Samuel Goldberg, *Army Training of Illiterates in World War II*, Contributions to Education, Teachers College, Columbia University, No. 966, New York, 1951, pp. 215-216.

⁴³ *Ibid.* pp. 259-260.

2. **Military.** Has the individual demonstrated the required military proficiency?
3. **Physical.** Can the individual discharge the duties of a soldier and do a full day's work?
4. **Social and Emotional.** Is the man able to get along with others in the Army, abide by rules, and perform creditably?
5. **Intelligence.** Does the individual have sufficient intellectual capacity to become a soldier?
6. **Skill.** Does the man have a civilian skill of particular use and need in the Army?

The scores achieved in academic and military subjects were not final in considering discharge. Borderline cases were normally judged on the basis of the above criteria. During the initial stages of special training units, standards were followed rather rigidly by many commanders in graduating men into regular training. However, when the War Department determined that a number of useful men were apparently being discharged on the basis of failure to achieve the exact scores, policy on scores was liberalized by indicating that scores were not absolute measures (1944).

Since some non-English speaking men were assigned to special training units, problems of grouping arose. After considerable experimentation, men were grouped according to level of ability in use of English. Native tongue was not an item to be considered. Men were required to express themselves in English.⁴⁴ The visual aids and devices previously described provided the best means for instructing this group. In all, this group required the longest periods of instruction and the greatest concentration of effort by the instructors.

Evaluation of the Special Training Program

1. The program has been reported as apparently fulfilling its immediate objectives of teaching men to read at fourth-grade level, providing them with language skills for getting along with commanders and their own associates, enabling them to transact business involving the use of money and other actions requiring rudimentary arithmetic skills, and preparing men to adjust to military life by giving them a basic understanding of their purpose in uniform.
2. The training program, while geared to fourth-grade level, adapted its materials and methods to an adult group in an Army situation.
3. Funds and personnel were made available in the amounts necessary to undertake and accomplish the necessary training—after

⁴⁴ War Department Pamphlet No. 20-8, 1944, p. 20.

- 1 June 1943 when the Army recognized that the marginal group represented a vast reservoir of salvageable manpower.
4. By concentrating on the marginal group for 24 hours a day for 12 weeks in a separate training organization, the Army seemingly was able to achieve results more quickly than through the original sporadic, off-duty, or scattered training programs.
 5. The curriculum of the Special Training Unit was made as functional as possible to provide maximum adjustment to all phases of military life.
 6. Class size was maintained at an average of 15, thus permitting individual attention and maximum remedial efforts.
 7. Instruction was diversified in an effort to keep presentations from being tiring or boring.
 8. Personnel moved along differentiated levels of achievement so that teacher and trainee could measure and note progress.
 9. The shifting of Special Training Units from regular units to Replacement Training Centers back to some regular organizations and finally to Reception Centers created an undue amount of management difficulties. Part of the problem arose from a rather late recognition of the need for the marginal pool to buttress the fighting forces when manpower requirements became acute. The shift of policy from admission to exclusion and then back to admission created burdens on regular units earnestly attempting to train quickly and efficiently. The management problem of coping with these manpower shifts tied up many staff officers whose efforts could have been directed more profitably to solving other acute problems in meeting mounting worldwide demands.
 10. The single most important shortcoming in the special training program of World War II was the failure to follow up a significant number of graduates in their assigned units. The effectiveness or ineffectiveness of the training program could be judged only on the basis of ultimate duty performance.

CHAPTER 6

THE UNIVERSAL MILITARY TRAINING EXPERIMENTAL UNIT, FORT KNOX, KENTUCKY

During the early post-World War II period, the Army began a systematic effort to find the best means for obtaining personnel. One plan involved the concept of universal military training (UMT). Considerable interest in the UMT concept was shown by the Congress. The Army established a UMT experimental unit at Fort Knox, Kentucky in 1946 to serve as a model for testing and refining procedures in the event that Congress did adopt a UMT plan.

The general plan under which the Army developed its experimental unit called for white enlistees in the Regular Army between the ages of 17 and 19 who would undergo six months' military training. The general qualifications for selection included the following:

1. Enlistment period—18 months to 3 years.
2. Upper age limit—19 years, inclusive.
3. Physical Profile—A.
4. AGCT Score: 95 or higher. An exception was made for enlisted men designated for assignment to the Special Training Unit (40 trainees with scores of 69 or less).
5. Previous military training: No previous military experience or active duty in any of the Armed Services.
6. Interest: An expressed interest for duty in an arm or technical service.
7. Appearance: Soldierly appearance and good physique which would reflect credit on the uniform of the United States Army.⁴⁵

All trainees were given the basic classification battery of tests which then included—

1. Army General Classification Test.
2. General Mechanical Aptitude Test.
3. Automotive Information Test.
4. Shop Mechanics Test.
5. Examinations for Motor Vehicle Operators.

⁴⁵ Letter. The Adjutant General, War Department to CG, Army Ground Forces. file AGP-WDGPA 353 UMT (10 Oct 46) Subject: Selection of Trainees for UMT Experimental Unit, dated 4 December 1946.

6. Clerical Aptitude Test.

7. Army Radio Code Aptitude Test.

Some 2,000 young men—664 in the first cycle—began six months' training in this experimental unit. During the first cycle, the training was in five parts: pre-cycle training (one week); basic training (eight weeks);⁴⁶ branch training (11 weeks); unit training (three weeks) and post-cycle training (one week). Some changes were made in the second and third cycles, including four hours per week of required on-duty educational or vocational training as opposed to the voluntary off-duty educational and vocational training of the first cycle.

Of special interest here is the Special Training Unit (STU), which was later called the Pioneer Platoon. Trainees accepted for this unit all had AGCT scores of less than 70. All other trainees in the Experimental Unit were required to have AGCT scores of 95 or higher. The purpose and operating experiences of this unit are best summarized in the following excerpts from an interim report prepared by the Commanding General of the UMT Experimental Unit.⁴⁷

The Special Training Unit was activated as the fourth platoon of the Fourth Training Company on 27 January 1947. The personnel received for this platoon were not illiterate as had been contemplated. They all had AGCT scores of less than 70, but their average education was 7.67 years. The literacy training schedule which had been prepared was therefore inapplicable. A new schedule was prepared which utilized the three hours of each training day which had been set up for literacy training for manual training, elementary psychology, and coordination exercises.

The manual training consisted of instruction in the use of handtools and simple power tools and was selected as the basic subject in the revised course. It was felt that further formal education could not be expected to increase the effectiveness of these men, the majority of whom had attended high school, while it was felt that reasonable success might be attained in teaching them to work with their hands.

The course in elementary psychology was designed to show the trainees, through class discussion stimulated by slides, film strips, and recordings, the basic motivating influences on human behavior. As a result of a more complete understanding of his fellow man the individual should become more patient and tolerant in his relations with his associates. The need for this instruction appeared obvious, since men of their limited mental capacity show a marked inadaptability to their surroundings and particularly to close community living. Such a course was being conducted for prisoners in the local Disciplinary Barracks as a part of the rehabilitation program. It appeared logical to assume that if such a course would help prevent a man from re-entering the Disciplinary Barracks after his release, it should help prevent a man

⁴⁶ A military knowledge test was administered to all personnel at the completion of the eight weeks of basic training. The qualifying score on this test was 65. The average score for the entire unit during the first phase of the program was 63.45. The Special Training Unit average was 62.22.

⁴⁷ Brigadier General John M. Devine, Interim Report U.M.T. Experimental Unit, Fort Knox, Kentucky, 1 August 1947. pp. 9-10 and p. 50.

of the type which furnishes the greatest number of inmates from getting into the guardhouse in the first place.

The coordination exercises consisted chiefly of a specially prepared drumming course supplemented with calisthenics and athletics. This meets a definite need of the average mentally substandard person, and the results of this training prove its worth.

The alphabetical abbreviation of the term "Special Training Unit," as it appeared on the barracks sign, was entirely too suggestive: STUpid. The search for a more innocuous designation for the platoon produced the name "Pioneers." This characterized their training as infantrymen and elementary engineers. The name "STU" was therefore changed.

A careful study of the home life and general background of the Pioneers was conducted. It was found that nearly all had come from either broken homes or those in which argument and violence were common. Several of the young men had been affected by over-control, nagging, and excessive physical punishment. More had been affected by insufficient control. Almost all of them had found it necessary to go to work at an early age. Four had prison records. Only three of the 40 had ever learned to play baseball and other common games. A defeatist attitude in competition characterized the entire group. As a group they were easily swayed. Among the usual complaints, the one most frequently heard was, "I am expected to learn too much"; the next in importance concerned their dislike of their segregation into one unit which followed an entirely different training schedule. However, at the end of the 22 weeks training period, all of the 12 who were discharged under the provisions of AR 615-369 for inaptness requested that they be retained in the service. Of the 40 who entered the platoon, one was rejected because he had had previous military service, four were transferred because they could not make up the training lost due to hospitalization, one was discharged because of dependency, and five were discharged because they were under age. Of the 17 who completed the training, 16 raised their AGCT score upon final retest to 70 or above, and of this group five were scored between 80 and 87. It appears that approximately 50 percent of this type personnel might be salvaged as partially effective soldiers if special treatment and training were provided. Perhaps 10 percent of all men whose AGCT is less than 70 could adapt themselves to the conditions and training of a standard UMT unit, but certainly, if this personnel must be inducted, the vast majority should be separated in Special Training Battallions as is now planned. Since there is at present no better method of testing to identify the approximate 10 percent, I believe that it is better to follow the present plan to segregate all with AGCT scores below 70. Many of the problems encountered here were caused by the fact that the unit was a platoon and was thrown into too close contact with other trainees. If the unit were battalion size, there would be some, but less, feeling among "Pioneers" of the stigma associated with segregation.

In order to experiment with drumming as an aid to the bodily coordination of the men of the Pioneer Platoon, an elementary drum class was scheduled for the platoon. This class met one hour a day, four days a week, for a total of ten weeks or 40 hours instruction. It was soon determined that the men of the Pioneer Platoon were not capable of forming

an adequate drum corps that could be used at parades and drills. However, it was also determined that the six men in the platoon who were the poorest in coordination showed a remarkable degree of improvement.

Of the 664 trainees who started the training cycle, 611 completed it. The losses occurred for the following reasons:

<i>Discharged</i>	<i>Transferred</i>
6—Dependency	16—Failure to meet basic WD
1—Unfit	criteria
7—Minority	5—Excessive hospitalization
15—Inapt	
1—General courts-martial	
2—Conviction by civil court	

As far as can be determined from the results presented in this report, 12 of the 40 persons with AGCT scores below 70 were discharged as "inapt," whereas only 3 of the remaining 624 trainees with AGCT scores of 95 or higher were discharged as inapt. The report does not state precisely what the criteria were for classifying a person as inapt. However, whatever the criteria, those scoring less than 70 were disproportionately inapt when compared with the higher scoring group.

To what extent the difference may be attributed to the fact that the Pioneers were known by their instructors to have made relatively low scores on the AGCT is not known. Such knowledge may have predisposed the cadremen in a given direction. That is, a pattern of behavior which caused persons in the low group to be classified as inapt might have been perceived differently by the supervisors if exhibited by persons in the high group. The low scorers may also have been watched more closely, so that more evidences of inaptness were seen. These are possibilities, not facts.

The findings about the Pioneers in the Experimental Unit are of limited value in evaluating the gains and losses accrued by accepting such persons. The unit was an experimental one—in many ways a "model" of which the Army was justifiably proud. It was also much in the spotlight. Evaluations of trainees were made on the basis of a pre-duty training period. Many of those considered inapt might have performed acceptably on the job—how well is not known since they did not serve on a job. Similarly, it is not known how those Pioneers who successfully completed training compared with others on the job.

The Pioneers received special training in coordination exercises (emphasis on "drumming"), manual arts, and a popularized course in psychology. The only controlled experiment reported was in the psychology class. The Pioneers in this class did not show as much gain (on various measures of adjustment) over Pioneers not in the class as did non-Pioneers in the class compared with other non-Pio-

neers. The following conclusions were reached regarding the psychology class—previously described—by General Devine in his report:

On the whole, the evidence shows that the Psychology Class was successful from the point of view of the students' subjective opinions and from the objective test results. Those changes which were presumably (though not positively) attributable to the Psychology Class were not in any instance imposing. Nevertheless, a certain consistency appeared from which tentative conclusions may be drawn. In general, it can be said that, although the test group's subjective dissatisfaction with UMT life did not decrease as did that of the control group, their actual adjustment as measured by the amount of sickness, real or imagined, did decrease significantly. Also, the class members felt themselves to have fewer problems of a mental health nature and showed improvement in interpersonal relationships. A particularly effective part of the course was the series of sessions on sex hygiene.

In comparing the effects of the class upon the Artillery Platoon with those on the Pioneer Platoon, we found that the Pioneer men, as studied by our own criteria, did not profit from the course nearly as much as the Artillery Platoon.⁴

Little is learned from the report on the drumming exercises: "While it was definitely shown that the members of the Pioneer Platoon were not suitable material for possible use as a unit drum corps, even men with the poorest coordination were greatly benefited by the exercises." A statement similar to the above quote from the interim report could possibly have been made about non-Pioneers had they also received this training. No evaluation was reported of the effect of the manual training program. In any summary comparisons between the Pioneers and non-Pioneers during the first cycle of training, it should be remembered that rather extreme groups were being used: all non-Pioneers, AGCT 95 or higher; Pioneers, AGCT less than 70.

In subsequent cycles, the lower scorers were integrated with the higher scorers because of the adverse morale effect on being specially designated. Also, in subsequent cycles, the "non-Pioneer type" were required to have an AGCT score of 90 or higher rather than 95 or higher as in the first cycle. The "Pioneer" in subsequent classes was defined as scoring between 70 and 90 rather than less than 70. No evaluations were reported of the trainability in subsequent cycles of these low scorers.

⁴ Ibid. p. 63.

CHAPTER 7

THE CONSERVATION OF HUMAN RESOURCES PROJECT

The Conservation of Human Resources Project established in the Graduate School of Business, Columbia University in 1949 must be considered in a survey of marginal manpower within the Army. The project centered its attention principally on World War II experiences and the problem of manpower availability and utilization. "The experiences of World War II had emphatically indicated that a very large number of young men in this country are handicapped by one or another type of disability. Of the more than 18 million men who were examined for military service, over 5 million were rejected by the Armed Services. This devastating fact suggested one of our major approaches—the study of work performance of marginal groups."⁴⁹

The project took its point of departure from an examination of the vast manpower pool of almost two million men whom the military services examined during World War II and found to be illiterate or very slow learners who could barely read or write. In addition to this group, the project estimated that a million young men were rejected because they were considered emotionally disturbed, while another 750,000 already in the service were discharged by reason of ineptness or personality disorders.

Building from this overall observation, the project developed four volumes⁵⁰ which addressed themselves to the impact of these losses on the individual and on the military services and their implications for manpower conservation and utilization.

The Uneducated

In the study of the uneducated, the project examined the background, the military performance, and the overall effectiveness of personnel who were in Special Training Units. The sample consisted of 400 men divided equally between whites and Negroes drawn from the deep South, from the North, and from border states. One half

⁴⁹ Graduate School of Business, *Conservation of Human Resources, Progress Report, Summer 1953*, p. 7. Columbia University, New York, 1953.

⁵⁰ Eli Ginzberg and D. W. Bray, *The Uneducated*, Columbia University Press, New York, 1953.

Eli Ginzberg, *The Lost Divisions*, Columbia University Press, N.Y., 1959; *Breakdown and Recovery*, Columbia University Press, N.Y., 1959; *Patterns of Performance*, Columbia University Press, N.Y., 1959.

the group were inducted in the latter part of 1943; the other half came into the service during the last six months of 1944. Most of the men came from rural backgrounds. One in four had migrated to a larger community. The majority were native born, in their early twenties, and had attended school at least to the fifth grade. Performance of this group, for study purposes, was measured on the basis of length of service and type and time of discharge, together with time lost for medical and disciplinary reasons. The study concluded: "51 failed early and another 41 failed later (after graduation from STU)—a total of 92; this is a sizable figure until one sets it into perspective by emphasizing that 290 men gave acceptable, good, or very good service. In short, three out of four proved successful. Even more significant is the fact that 125 men, or approximately one in three, gave good or very good service. Clearly the use of the poorly educated during World War II was a success."⁵¹

The study projected its evaluation through 1952 with respect to the educationally marginal soldier, thus including the Korean experience. "During the eighteen months from July 1950 through December 1951, just over 2 million Selective Service registrants were examined for induction. Of this number about 1.3 million were accepted and slightly more than 700,000 rejected. More than half of all those rejected, 54 percent, had failed to pass the new mental examination called the Armed Forces Qualification Test (AFQT)."⁵² The study indicated that there was no mystery in these failures. "A study of their examination papers revealed that they had been able to read only haltingly and they therefore completed but a small number of questions. They had attended school for a number of years, varying from three to eight, but it had been a long time since they had read a book or taken an examination. They repeatedly stated that they were 'not much on reading books,' but they thought they knew more and could do more than they had demonstrated on the test. There is no doubt that they were right, for this was the only possible conclusion after a study of their civilian work records."⁵³

The study on the uneducated concluded that the Armed Services position on the educationally marginal personnel was based upon five assumptions. Relatively few men could become acceptable soldiers; the cost involved in special training outweighed the value of the services of the men; acceptance of men with the fewest handicaps was preferable currently (1951), leaving until mobilization the acceptance of the marginal; the AFQT (1951) was adequate for determining training potential; research should be conducted (during Korean build-up) to determine minimum intelligence needed to absorb military

⁵¹ *The Uneducated*, p. 86.

⁵² *Ibid.*, pp. 204-205.

⁵³ *Ibid.*, p. 207.

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training, but no policy change was to be made until valid results were obtained from the research.

Conclusions on Military Policies with Respect to the Uneducated

In responding to these assumptions, which covered the World War II experiences specifically with some overtones of the Korean War, members of the project group set forth five major points.

First, they felt that the data related to rejections and selections for military service and the evidence of European countries did not bear out the contention of the unacceptability of the educationally marginal individual.

Second, on the cost of special training, they pointed out that the initial investment was only eight weeks' training, which might be covered by a voluntary extension of service or which might not count at all toward required minimum service. These would be special adjustments; additionally, some hidden costs were involved in rejection of the poorly educated. However, basic jobs which must be done in the military service were better adapted to the marginal group than to better qualified personnel who found such jobs frustrating and wasteful of their ability.

Third, they considered that the Armed Forces handicapped themselves by an overevaluation of formal educational background. There appeared to be no positive correlation between the amount of education received and willingness and competence to serve as a fighting man.³⁴ Backlogging of large numbers of the uneducated was considered objectionable. In addition, when standards were lowered as in World War II, the flood of personnel of this type from the available manpower affected the efficiency of a going organization.

Fourth, they contended, the initial screening test indicated how literate people might perform in certain types of Army training, but did not do the same for those illiterate or poorly educated.

The fifth conclusion was that the research need in the area of the educational marginal was for "live experiments in which the performance records obtained in the unit environment would assess the usefulness of a significant number of illiterate or poorly educated men who were taken into the service and trained."

Observations on implications for public education as well as public policy considerations were presented in the study. From the point of view of the Armed Forces, the conclusion was that some corrective action with respect to the uneducated could be undertaken through the use of special training units. This would be in addition to actions which might be taken by civil communities to enable a large number of illiterate youths to obtain a basic education.

³⁴ Ibid, p. 218.

The Emotionally Disturbed and the Inapt

The second area of concern to the Conservation of Human Resources Project involved the soldier who was considered ineffective because of emotional disturbance, inaptitude, or behavioral disorders. Part of the study developed further the analysis and findings on the uneducated soldier covered in the volume, *The Uneducated*. The remainder of the study focused attention on the emotionally disturbed. According to the study group's estimates, the deficiencies of individuals rejected for service by reason of educational or emotional shortcomings, and the limitations of manpower policies and procedures with respect to such personnel, resulted in the loss of the equivalent of 55 divisions.⁵⁵

The causes of this loss were manifold. Inadequate educational background, the result in many cases of diverse educational opportunities in civilian life, contributed to the ineffective performance of individual soldiers. Manpower planning prior to World War II did not examine the true nature of the nation's human resources and relate such findings to future requirements. Once the war had started, the Armed Forces were forced to improvise as they went along. Granted that war could not be adequately planned for, the study maintained that more could have been accomplished toward determining requirements. Such determination was essential, since selection criteria had to be in accordance with manpower resources and military needs. However, the Armed Forces relied too heavily, it was felt, upon selection instruments. Training and assignment could be expected to fit men into positions within an organization where they could perform effectively. Selection could be expected to screen out those severely handicapped for any reason. More weight in a selection program should have been given to the individual's civilian background and record of performance, although the magnitude of the Army's daily processing load, it was recognized, prevented as full utilization of this source of information as might have been desirable. Finally, the failure to follow up adequately the effectiveness of personnel policies with respect to utilization of manpower contributed to the problem. The study recognized that the staff was reluctant to invest "even modest resources in evaluating the personnel policies in effect, because among other reasons it did not want to interfere with important operational missions."⁵⁶ However, this point of view precluded rapid change in policy which was frequently found wanting.

The War Department Policies Examined

The study targeted much of its analysis toward policies governing separation from service. By studying policy changes relating to dis-

⁵⁵ *The Lost Divisions*, pp. 202-203.

⁵⁶ *The Lost Divisions*, p. 200.

charges, it attempted to demonstrate that "ineffectiveness" was frequently not the condition of the soldier but rather a matter of policy. Beginning in September 1942, seriously disturbed patients were to be discharged, a practice which resulted in energetic blanket removal of many in the category of the more "mildly upset" who might have been salvaged. By December 1942, limited service personnel who did not possess usable skills—or the intellectual or physical capacity to acquire them rapidly—were discharged. Again, in April 1943, the War Department reaffirmed its policy that ineffective men could be identified before they actually broke down, and tightened screening at induction stations so as to reject larger numbers of personnel. In July, it authorized the discharge of all men classified as limited service whose records indicated that they did not meet current mental or physical standards for induction, except those qualified to perform in their present jobs. The monthly discharges for limited service jumped from 0 to 20,000; for physical reasons from 10,000 to 40,000; and for psychiatric grounds from 4,000 to 18,000. *By September 1943, the easy separation policy had resulted in the Army's requirement to induct 100 in order to secure a net increase of 5 enlisted men, according to the study. Men were being accepted who did not meet general duty standards at the same time that men were being released for the same disabilities.* In November 1943, the Army drastically reversed policy, and cut down on the discharge rates, since the available manpower could not support the loss of three quarters of a million men in twelve months. Every man was now to be assigned to a position where he could render effective service. The discharge criterion became inability "to perform a reasonable day's work for the Army." Additional instructions were issued through Surgeon General channels concerning excessive admissions to hospitals for neuropsychiatric reasons, and rehabilitation units were established. The study further indicates that the stringent policy was again changed in September 1944 when many units bound for overseas were found to contain excessive numbers of ineffective soldiers. In March 1945, the Army carefully defined psychoneurosis and developed what the study concluded was the definitive document for handling ineffective personnel. The policy could not be tested, since the war was almost over.

The thesis behind the recital of the Army's successive separation policies was that "ineffectiveness in not solely or even primarily a function of the qualities that characterize a man nor the order of stress with which he is faced. Certainly, some men failed because of their own inadequacies, and others could not cope with the stress and strain of prolonged fighting. But the sudden and spectacular changes in the numbers declared to be ineffective could only reflect changes in organizational policy and procedures."⁵⁷

⁵⁷ *The Lost Divisions*, pp. 84-85.

The Role of the Psychiatrist

Psychiatrists, according to the writers, interpreted the manpower policies too liberally and therefore screened out men who might have been effective. On the other hand, since motivation was an essential ingredient of a patient's recovery, the study concluded that the psychiatrist could conserve manpower only if he knew to what training or job the personnel officer would assign recovered patients. This relationship, because of the magnitude of the distribution problem during World War II, could not be effectively established. The psychiatrist was called upon to become more deeply involved in a massive personnel distribution and utilization problem for which he was not professionally trained.

The Examination of Discharge Records

In examining the statistical records of personnel who had been discharged, the study concentrated its attention upon the major diagnostic causes for separation⁵⁸ and the kinds of environment to which men had been exposed—service in the United States, foreign service in combat or noncombat areas. Based upon available data, the study concluded that ineffective soldiers should not be considered as an homogeneous group. The inept were almost a total loss to the Army: they remained in the United States, served for short periods, and rarely advanced beyond the grade of private. The psychoneurotic, however, presented a different utilization and performance pattern. As the largest group (54 percent of the total separations), almost one-half were in the Army for at least eighteen months, 60 percent were overseas, and 22 percent achieved the status of noncommissioned officers. "More than half as many psychoneurotics as soldiers in the Army as a whole were promoted to one of the three top noncommissioned grades."⁵⁹ Of those individuals separated by reason of psychosis (12 percent of total group), 60 percent served overseas for 18 months or more prior to breakdown, 53 percent served overseas, and 1 out of 6 achieved noncommissioned officer status.

Factors Affecting Performance and Utilization

In the volume, *The Lost Divisions*, an attempt was made to show that even emotionally stable soldiers, as determined by induction standards, could become ineffective while in service, depending upon the situations in which they were placed. A companion volume, *Breakdown and Recovery*, presented 79 case studies of men who broke down during service and succeeded in achieving a satisfactory level

⁵⁸ Psychoneurosis, Psychosis, Undesirable habits and traits, Inaptitude.

⁵⁹ *The Lost Divisions*, p. 102.

of performance in civilian life. From an analysis of these life histories, the project reached these conclusions—⁶⁰

1. An individual's assets and deficiencies, his physical, intellectual, and emotional qualities, and his degree of motivation determine whether he can meet the minimum demands of a going organization.
2. Individuals change with time. Prediction on the basis of current assessment has certain built-in inadequacies, since individuals may change according to the environmental situations with which they are faced.
3. Well conceived and executed organizational policy can promote successful performance; inadequate policies can result in failures. Distribution and utilization of individuals must consider their individual capacities. Over- or under-assignment can seriously affect the level of performance.
4. Organizations must recognize, in the light of the multiplicity of tasks to be done and the resources available, that there may be limits to which they can assist individuals in utilizing their capacities. The aim should be, however, to "facilitate the work of those who can contribute the most while making efforts to increase the contributions of all others."

The final study in the trilogy, *Patterns of Performance*, further integrated statistical data and analysis presented in the two preceding studies and examined in greater detail the factors determining effective and ineffective performance. Based upon this further examination, the study group listed certain steps which they felt would lead to an improved utilization of manpower—

- A screening system to provide greater concentration by the examiners on the marginal group.
- More definitive procedures for sorting out marginal personnel either for proper training in the light of their limitations prior to entering regular units, or for discharge during the early months of training.
- Better use of the assignment system in fitting marginals into useful military positions.
- More precise concentration on the combat veteran.
- Close integration of the personnel and medical systems.
- Greater indoctrination and training of leaders in the individual differences and capacities of soldiers and the decisions to be made in regard to them.
- Greater stability in personnel policy.

⁶⁰ *Breakdown and Recovery*, pp. 270-274.

Implications for the Utilization of Marginal Manpower

The broad implications for military organizations derived from the overall study on the ineffective soldier by the Conservation of Human Resources Project were felt to be ⁶¹—

1. Less should be expected of the initial selection system as the proportion of individuals to be screened increases.
2. The selection system becomes less reliable as the assignments for which men are selected become broader and less specific. A screen can eliminate men who will not perform effectively at a simple job. Setting the sights higher may needlessly reject useful people.
3. Personnel charged with the initial selection process must know the nature of the manpower pool and the real manpower requirements of the Army. The limitations of the pool must be recognized in setting the demands.
4. Educational achievement is an acceptable index for future performance. It must, however, be considered in its application within the limitations of impediments and motivations under which it was or was not acquired.
5. Psychiatric appraisal is not indicated for appraisal of the potential performance of all men. It should be accomplished only when there is evidence of disturbance or instability.
6. Indoctrination and training of supervisory personnel are essential, since performance of large groups of individuals is directly associated with the quality of leadership.
7. The effective utilization of manpower can be enhanced by exploiting more fully the wide range of duty positions available for assignment and reassignment of personnel.
8. Situations which best motivate individuals in a work environment should be emphasized. The creation or continuance of conditions which weaken individual motivation should be distinctly avoided.
9. Policies should be established with the equitable treatment of individuals in mind. A consideration of those who have done their best enhances the level of future performance.
10. Manpower utilization, to be effective, must be the result of careful consideration of the future as illuminated through long range planning.

The research designs of the studies, the methodology employed in arriving at the findings, and the interpretations derived from the statistical data are, as in all studies of this nature, subject to review and analysis.

⁶¹ *Patterns of Performance*, pp. 157-159.

However, in presenting the salient features of the study of the ineffective soldier, no attempt has been made to examine critically the findings or conclusions. They have been presented as a point of view which might be given close consideration in studying the problem of utilizing the marginal soldier. As in any investigation based upon World War II experience, the records vary in adequacy. In some cases, they are detailed; in others fragmentary. The Conservation of Human Resources Project used official Army records and statistics together with case studies based upon questionnaire replies, military unit histories, and personnel and medical records of the Veterans Administration and the Army in the study of the ineffective soldier. Studies of this type are thus limited by the number, type, and accuracy of the records which must be used during periods when the individual involved has long since been separated from his records.

CHAPTER 8

STAFF CONSIDERATIONS AND RESEARCH PROPOSALS ON THE MARGINAL MAN, 1949-1957

Beginning in 1949 and continuing for almost a decade, the Department of Defense and the services either individually or collectively gave attention to the problem of the marginal man, particularly in mobilization planning. Chapter 9 describes Army, Navy, and Air Force studies about the training of marginal personnel during the period.

The present chapter is concerned primarily with certain staff considerations, characterized by an attempt to define the problem and to set certain limits on the extent to which the problem would be explored. Some Army staff attempts to develop a research program covering a good portion of the problems associated with the identification and utilization of marginal manpower are also described.

Development and Implementation of Policy on Retention

During early 1950, the Chairman of the Personnel Policy Board of the Department of Defense requested the Executive for the Military Personnel Policy Committee of the Personnel Policy Board to study the retention by the services, under conditions of mobilization, of individuals who could not be trained to a minimum level of literacy within a reasonable length of time. The request was responsive to the desires of the Secretary of Defense expressed earlier.⁴² The Executive in turn assigned the project to a special subcommittee with representation by Army, Air Force, Navy, and Marine Corps. During July 1950, the Committee pondered a number of questions which are pertinent to an understanding of the approaches required at the staff level.⁴³

Did the problem include induction as well as retention? The subcommittee concluded that it must.

What is the minimum level of literacy acceptable? The subcommittee set up two standards: (1) ability to read and understand simple instructions, and (2) ability of a person to sign his name.

⁴² Memorandum for Chairman, Personnel Policy Board, Subject: "Request for Policy Decision on Planned Disposition of Illiterates," dated 1 June 1950.

⁴³ Minutes, Sub-Committee of the Military Personnel Policy Committee 13 July 1950 in Project Report to the Military Personnel Policy Committee, 22 July 1950.

How long a period should be devoted to instruction of an individual before deciding whether he should be retained in service? The subcommittee concluded that 13 weeks was an appropriate period.

Must the training include teaching individuals how to read and write? The subcommittee concluded that there was no universally accepted definition for illiteracy insofar as utilization was concerned. It was therefore agreed that literacy would not be used as a criterion, but rather that the potential capacity of an individual should be the basis for decisions on retention and assignment.

A further explanation of this position was made: "In the case of borderline personnel, illiteracy is not an acceptable criterion. Many individuals who cannot read or write are capable of absorbing instruction while others who can read and write lack the capacity to indicate progress when given training."

Would the literacy level be the same for all services? The subcommittee concluded that the same standard should be applied by all the services, noting that acceptance of mental incompetents would be detrimental to the carrying out the mission of any service.

More important, the subcommittee now saw the problem as one of research. This attitude is reflected in the *Statement of the Problem*: "In the event of mobilization, illiterates will be used in the Armed Forces. It is desirable that the potential capacity of individuals to absorb military training be known."

Additionally, the subcommittee concluded: "The Research and Development Board should devise the methods to determine the minimum amount of intelligence which an individual must possess in order to understand simple instruction and absorb military training in a sufficient amount to be of benefit to the Armed Forces."

All the above conclusions were reflected in the recommendations.

The recommendations made by the subcommittee were adopted by the Chairman of the Personnel Policy Board, Office of the Secretary of Defense, and sent to the Secretaries of the three Services.* These policy statements were—

1. That 13 weeks be fixed as a minimum time allowable for an individual to attain the ability to read and understand simple instructions and absorb military training.
2. That any individual failing to pass the prescribed tests be rejected.
3. That any individual failing to attain the required proficiency within 13 weeks be rejected.
4. That the induction screening instruments used at the end of World War II be employed until a new system is devised.

* Memorandum from Chairman, Personnel Policy Board, OSD. Subject: Retention with the Services Under Conditions of Total Mobilization of Men Who Cannot Be Trained to a Minimum Level of Literacy in a Reasonable Length of Time (M-16-30), dated 9 October 1950.

The Army, in following through on this policy, approved three courses of action in its own planning.⁵⁵

a. Validation of the tentative cut-off scores. These cut-off scores to be established with a view toward insuring the selection of individuals, insofar as practicable, so that they can satisfactorily complete the 13 weeks specialized training or that portion necessary of such training preparatory for entry into the regular basic military training program of the Services and the successful completion of same.

b. Development of the procedural regulations covering the establishment and operation of Special Training Units for marginal personnel allocated the Army (contemplated location, Reception Centers) at the earliest practicable date based upon the validation made in a above.

c. Objective techniques for the identification of any malingerers who have failed the Non-Language Qualification Test and have been recommended for rejection for such failure. Prior to rejection, each such individual will be interviewed and the necessary techniques should be developed for use at this point so that the interviewer is provided with all assistance possible in making his decision.

Army Concern About the General Objective

Within the Army during this period, some legitimate differences of opinion developed over the most effective way of accomplishing the ultimate goal—to determine the usefulness of the marginal man to the Army.⁵⁶

One position is partially quoted to illustrate the flavor of the concern:

1. Conferences have been held recently on the establishment of Special Training Units for mentally sub-standard personnel, and the Chief of Army Field Forces has been directed to prepare a Special Training Program of pre-basic training encompassing both military subjects and basic reading, writing and speaking of the English language. It is envisioned that individuals upon successful completion of this special training would be placed in the replacement stream and trained and assigned in the same manner as all other personnel.

2. The problems of locating facilities for these STU's and of training specialized instructor personnel raises a question of whether there might be another approach to the overall problem. Instead of using funds, manpower and facilities to attempt to bring these individuals up to desired standards, perhaps it would be more economical to adopt another approach to the utilization of this personnel. These individuals are gainfully employed by civilian industries and are making a living. In a total mobilization, it would seem that the Army would have positions for this type of personnel, similar to jobs in such industries as General Motors, U.S. Steel, Ford, etc. If such jobs do exist in a Mobilized Army they must be filled by someone. Why not utilize individuals of low AGCT's only in certain positions and not try to educate them to a certain literacy level before assignment Army-wide? It is

⁵⁵ DF from G-1 to TAG, File G-1 327 (17 Jan 49). Subject: Standards and Procedures for Determining the Minimum Mental Capacities Required for Induction Into the Armed Forces and Establishment of Special Training Units, dated 26 October 1950.

⁵⁶ DF from ACS, G-3 to ACS, G-1, file G-3 (27 December 1950). Subject: Training and Utilization of Defective Personnel, dated 27 December 1950.

doubtful whether the Army should attempt and can afford to raise the educational level of the country. A similar problem exists relative to the utilization of physically handicapped personnel. One of the main difficulties would appear to be that of distribution of both of these types of personnel.

Inter-Service Discussions

During this period of Army Staff discussion on the marginal problem, inter-service discussions continued in an effort to arrive at a joint arrangement to solve the problems posed by the Personnel Policy Board. The Army memorandum of one such meeting (28 November 1950) is quoted to catch the tenor of the discussions—

1. A rough plan for the establishment of an experimental Special Training Unit and for validation of mental test scores was presented by Department of the Army personnel. Copies of the plan were distributed.
2. Problems were discussed at length, but no agreements were reached.
3. Department of the Army personnel expressed themselves as being in favor of a joint experimental STU and a joint program for the validation of mental test scores. Navy and Air Force personnel indicated that they could not commit their department to such a program.
4. Since no basis existed for reaching an agreement, the meeting adjourned with the understanding that if further exploratory discussions were considered desirable by either the Air Force or the Navy, Department of the Army representatives would schedule future meetings at the request of either department.

The problem was still unresolved 13 June 1951, when a meeting was held of members of Military Advisory Council. The chairman of the Council was also chairman of OSD Personnel Policy Board. This Council meeting was attended primarily by officers of general and flag rank in the three services. Minutes of this meeting were prepared by an Air Force representative:

The Navy and Air Force members were strongly opposed to establishing cut-off scores for training, induction, or rejection at this time. It was firmly held that the validity of the cut-off scores proposed had not been established, and therefore research and study should continue.

It was agreed that there are wide differences in the categories of personnel now classified 4-F, and that more accurate identification of these categories is highly desirable.

It was noted that the Universal Military Training and Service Act lowers the passing requirement for the Armed Forces Qualification Test to a percentile score of 10, which corresponds to the previously used General Classification Test of 65. It was estimated that this will require re-examining approximately 290,000 in the selective services age group who have been classified 4-F's, since no record is available to indicate the degree or cause of non-acceptability of those so classified.

It was agreed that—

- (a) The cut-off scores proposed not be approved at this time.
- (v) Each department take aggressive action to screen and test those submarginals that are now in the services, in order to determine a valid cut-off score for special training.

- (c) The panel on Personnel of the Committee on Human Resources be urged to accelerate its study and research toward establishing a valid cut-off score.
- (d) The Department of the Army devise a method by which more accurate identification of categories of 4-F's could be made a matter of record.
- (e) The method devised by the Army be used to establish records on those presently classified 4-F's who are to be re-examined as well as future registrants.

Major Research Proposed for Joint Service Action

During the latter half of 1950 and during 1951, the Army—and the other services—spent considerable time developing their plans, each service independently of the other. These plans focused heavily on the use of Special Training Units, educational and literacy requirements, and basic military proficiency. However, one research plan was developed cooperatively. This plan was set forth in considerable detail in the "Program Plan, Joint Research Relating to the Utilization of Personnel with Marginal Mental Deficiency", dated 14 December 1951. The planning was done under the auspices of the Research and Development Board, OSD, but the research itself never proceeded beyond the program planning stage.

The overall research design called for a representative sample of men entering the service with AFQT raw scores from 0 to 38. About 1,500 men would be in the AFQT raw score range 0 to 26. Each service, Army, Navy, and Air Force, was to receive an equal number, equated insofar as possible by distribution on specified factors. The following steps were part of the design:

1. Establishment of experimental special training units in each service.
2. Induction of samples into each service and assignment to experimental special training units.
3. Administration of predictor tests at the units.
4. Collection of criterion data.
5. Assignment to basic training.
6. Collection of criterion data for basic training.
7. Assignment to regular services.
8. Collection of criterion data in regular service.

Certain special studies to be performed included—

1. Determination of the relationship between measures of achievement in experimental special training and criteria of performance in basic training.
2. Determination of relationship between measures of achievement in the experimental units and criteria of performance in regular service.
3. Determination of relationship between predictors and achievement measures in experimental training, basic training, and regular service.

4. Development of norms and critical scores on selected predictors for use at induction to categorize individuals for acceptance under conditions for special training or rejection."

Summary

The preceding portion of this Chapter on staff considerations has attempted to outline very briefly representative service reactions to the announced policies with respect to marginal personnel in the event of mobilization. The period under consideration was characterized by caution and concern, interwoven with a reluctance to proceed too quickly toward an inter-service approach to the marginal problem.

THE ARMY MARGINAL MANPOWER WORKING GROUP, 1953-1954

Despite the prevailing staff reaction within the other services, the Army established its own working group to study the whole problem of marginal manpower including the physical, mental, and moral marginal.⁶³

This group was established within The Adjutant General's Office, with the approval of the Assistant Chief of Staff for Personnel (G-1), on 30 June 1953. Its purpose was to develop a plan of action for a coordinated attack on the problem of marginal personnel. Contributions to the solution of the mobilization problem and a delineation of voids which must be filled were to be emphasized. To this end, members of the group were to consider policies and procedures and selection tests, as well as follow-up studies of performance in training and on duty.

The group normally consisted of five regular members, military and civilian, with research and military management backgrounds. They had some 33 formal meetings and concluded their planning and operations on 9 July 1954. They did not succeed in presenting a program to higher authority since the Assistant Secretary of the Army requested in June 1954 that all marginal manpower projects be prepared within a framework specified by his office. However, much of the information gained and the planning accomplished was reflected in the subsequent program of the Assistant Secretary of the Army discussed later in this chapter.

The products of the Marginal Manpower Working Group were rather comprehensive in some areas. While they were not specifically action oriented, they did indicate voids in knowledge or in policy and suggested research directions. Since findings were never presented

⁶³ Working Group on Program Plan for Research on Marginal Personnel. Program Plan: "Joint Research Relating to the Utilization of Personnel with Marginal Mental Ability", Committee on Human Resources, Sub-Panel on Coordination of Personnel Research, Research and Development Board, OSD, 14 December 1951.

⁶⁴ The deliberations of the Army Marginal Manpower Working Group are contained in unpublished materials found in Program Books I, II, III, Marginal Personnel, U.S. Army Personnel Research Office, and Program Book on Marginal Personnel, Personnel Research and Procedures Division, The Adjutant General's Office.

for approval, they cannot be construed as necessarily reflecting official policy for that period.

Work was generally divided in this manner—

1. Methodological considerations in mental screening, training, and utilization of marginals.
2. The physically marginal.
3. The morally marginal.
4. Conscientious objectors.
5. Miscellaneous-neuropsychiatric problems: limited service program during World War II; other special reviews.

Only the first topic is considered in the present chapter. The remaining four topics are included in the overall treatment of physical and moral marginals.

Methodological Considerations in Mental Screening, Training, and Utilization of Marginals

The working group soon found itself faced with the same dilemma which had confronted previous groups working in this area. The information available, or in process of being gathered at the time, was considered inadequate for building a sound program. For the most part, studies dealt with only one of several possible methods of training marginal personnel and did not take into account the possible methods of utilizing marginal personnel after training. Earlier studies had been almost exclusively concerned with the development of tests to predict success in special training units or with development of devices to aid in literacy training in those units. Such studies had limited value for solving the larger question of the usability of marginal personnel. The group compiled the following list of deficiencies of previous studies as they related to the larger problem of military usability of marginals:

- Inadequate distinction among different types of marginal—illiterate, non-English speaking, low in intelligence.
- Use of only one type of training program.
- Inadequate data on possible methods of controlling assignments.
- Inadequate verification against job performance.
- Inadequate information on types of occupational training required.

A prime need deduced from the deficiencies listed above was to determine whether selection, training, and assignment should be different for marginals of different types. If essentially the same approach and procedures were determined to be adequate for all men classed as mental marginals, what particular method would be most beneficial to the Army? If, on the other hand, the undifferentiated

approach should be judged—or proved—to be inadequate, a number of questions arise—

- Should mental marginals be sub-classified? Should different training and assignment procedures be applied to different sub-classifications?
- What tests or other procedures would be useful for determining sub-classifications and for predicting success within sub-classifications in training and on the job?
- What training content and method is most appropriate for each of the types of marginals and for each assignment?
- What levels of proficiency should the training program try to achieve by assignment and marginal sub-classifications?
- What assignment procedures are most beneficial to the Army for the sub-classification of marginals and level of training achieved?

In subsequent sections of the report by the Working Group, certain generally accepted assumptions were challenged and alternative hypotheses advanced. For example, it is generally assumed that soldiers must be minimally proficient in reading and writing English to be an asset to the Army. Lack of such basic skill, it is believed, will make the acquisition of military skills and performance of duty difficult if not impossible, and will also hamper proper adjustment to Army life. However, the basis for the assumption might be questioned depending on the level of proficiency expected from the marginal, the type of duty, and the type of unit to which he is assigned. These three conditions often determine the level of literacy required. Different levels of literacy might be a useful basis for assigning men to different training courses, or to types of duty, or to units of appropriate composition.

Assignment and Training

Regarding assignment policy, the Working Group challenged the assumption that men whose assignment is restricted increase the administrative burden. A number of circumstances—overall military situation, manpower supply, training time available, among others—affect the assignment of marginals. Several methods for controlling assignment were cited:

- Percentages of marginals to be assigned given units of a given type can be specified.
- Their assignment can be restricted to certain geographical areas.
- Restrictions for MOS.
- Restrictions to special units, such as those in which a particular foreign language is used, or labor-type units.
- No special restriction for those who prove apt in the service and at their job.

The group did not deal with the problem and variety of training for marginals to any great depth. The group did note that it was generally accepted—but not proved—that additional training in literacy or basic military skills must be given to make marginals useful. Too, any program designed to provide solutions to the marginal manpower problem would require exploration of different content and techniques of training. If assignment is to be restricted, many subjects can likely be dropped from basic training—and it could well be that literacy skills and other special subjects for some marginals could be discontinued.

Recognition was given by the group to the need to distinguish different types of mental marginals as defined by low score on a test of trainability. Though other and more complete classifications were possible, the group specified three major sub-classifications:

1. *Literate marginals.* Persons who can pass a minimum English literacy test. This group is not homogeneous, and great variation is found in years and quality of education, ability in non-verbal reasoning, exposure to English, and other factors.
2. *Illiterate marginals.* Persons whose regularly spoken language is English yet who fail a minimum English literacy test. These men vary in many of the same factors as the literate marginals.
3. *Non-English speaking marginals.* Persons whose regularly spoken language is other than English. These men will vary both in command of English and literacy in English as well as in literacy in their own language.

When different groups and sub-groups of marginals are considered, it is highly unlikely that the same training and assignment procedures would be equally effective for all.

The question of criteria was not fully treated by the Working Group, but certain deficiencies in earlier programs were noted: Selection tests had been validated only against success in Special Training Unit literacy and pre-basic training. Additionally, the Special Training Unit program itself had not been adequately validated against any criteria. It was recognized that many other criteria were needed to prove the worth not only of the selection tests but also of the training and assignment procedures. Some possible criteria suggested were:

1. Objective end-of-training measures to prove the degree of success in literacy and in basic training both at the time of completion of training and at later dates.
2. End-of-training evaluations by cadre.
3. Measures of unit effectiveness after assignment to units.
4. Training time required to reach given levels of proficiency.
5. Administrative factors, such as VD rate, hospitalization, disciplinary actions, cost.

Brief attention was also given to other factors which the use of marginals would entail. Among them were: determination of "cutting scores" for acceptance, possible "shred-out" of MOS, selection and training of cadre, and the concept of resultant group effectiveness of a presumably nonmarginal unit to which a marginal is assigned.

In summing up the direction a research program on marginals should take, the Working Group emphasized that there are many factors which would have to be subjected to experimental investigation before the Army could be certain what return to the Army would accrue from the services of marginal personnel. Some of the proposals made by the group were subsequently reflected in studies directed by the Assistant Secretary of the Army.

ASSISTANT SECRETARY OF THE ARMY STUDY, 1954-1957

In May 1954, the then Assistant Secretary of the Army directed attention to many of the unanswered questions about the usefulness of marginal manpower.⁴⁰

1. I have become increasingly concerned with the problem of the utilization of the so-called "marginal" personnel during large scale mobilization. The situation, as I see it today, is one in which the three military departments are urging higher and higher standards of acceptance for military personnel on the one hand, and influential governmental agencies such as the Office of Defense Mobilization, the Selective Service System, and the National Security Training Commission are urging a reappraisal of our requirements for military personnel with the view of making greater use of the so-called "marginal" group of people.

2. I am, of course, sympathetic with the Army's current efforts to raise the quality of manpower made available through induction and enlistment. It is not unrealistic to assume, however, that under conditions of full mobilization, or partial mobilization comparable to Korea, the manpower pool will not be able to support the services' demands for high caliber manpower. The following statement from the report to the Director of the Office of Defense Mobilization by the Committee on Manpower Resources for National Security dated 18 December 1953, points up this fact: "Reduction of mental and physical requirements to the lowest possible level consistent with the realistically determined needs of the military services is essential to realization of our maximum national strength." It is questionable, in my view, whether the military services could justify an inordinate drain of high caliber manpower at the expense of the civilian war effort and essential economy, particularly in view of the fact that the United States might become a theater of operations or at least sustain substantial casualties within the continental limits in the onset of a general war.

3. One of the difficulties in justifying the rejection of lower caliber personnel is the fact that the Armed Services, including the Army, have little or no statistical data to indicate the effectiveness of training pro-

⁴⁰ Memorandum from The Assistant Secretary of the Army to Chief of Staff, U.S. Army. Subject: "Utilization of Army Military Manpower in Large Scale Mobilization," dated 29 May 1954.

grams specifically designed for "marginal" personnel. Although many opinions exist, the twelve-week program conducted in World War II for lower quality manpower is devoid of any scientific follow-up to determine the effects of this program on utilization. The Korean War has produced no data. Some isolated progress has been made with respect to the non-English speaking Puerto Ricans and a limited basic educational experiment for low level personnel is under way at Fort Leonard Wood. However, it is my belief that until scientifically conducted programs produce data which will determine what jobs this level of individual can perform, the training required to bring them up to a suitable level of utilization, and the cost attributed to the limited usability of these people, the Army will be constantly criticized for failing to provide a realistic program designed to insure the maximum utilization of the available manpower of the country. For its own benefit, it would appear highly appropriate to experiment during this period of partial mobilization to determine what methods can be instituted to insure that we are getting the most out of the manpower made available to the Army, particularly under conditions of full mobilization.

4. I am fully cognizant of the real anxiety in some staff sections that if the Army unilaterally conducts a program of this sort, there is reason to believe that the other services will use this as a justification for Army acceptance of the bulk of the "marginal" personnel. However, a scientifically evaluated determination of the relationship between "marginal" personnel and specific jobs could be used to justify equally the use of such personnel in positions in the other services having a direct or close counterpart to jobs so identified by the Army.

5. I, therefore, consider it desirable that a research program be undertaken under the leadership of an established operating agency concerned with the identification, classification, and utilization of our military manpower. All the personnel research organizations of the Army should be utilized, however, in a coordinated manner. I consider that the following broad sub-programs should be included in such a program:

a. Determine the minimum standards for acceptance of "marginal" personnel by scientifically relating specific jobs in the Army to mental and physical abilities.

b. Design and conduct a specialized training program for those personnel of low mental or physical aptitude to insure maximum usability in those jobs determined suitable in a above. An on-the-job follow-up of such a program should be conducted to determine its validity.

c. Determine the feasibility of accelerating basic training for those in higher mental aptitude areas in order to lessen pipeline time.

d. Determine to what extent in our development of highly-complicated equipment full recognition is given to the mental capacity of the anticipated user under mobilization conditions.

The basic question prompting the conduct of such an investigation had been orally stated by the Assistant Secretary as "Will we or will we not utilize all manpower in the event of a future emergency?"

The marginal research program was never completed as directed. It was closed in January 1957—a few weeks prior to the date set for the planned induction into the Army of some 1500 men classified as mar-

ginal who were to constitute the experimental group. The marginal research project was discontinued "until some future time when conditions within the Army are more suitable for continuation of the research."

Planned Research Program

In response to the initiating memorandum of 28 May 1954 by the Assistant Secretary, a proposed research program was submitted 1 July 1954 which set forth in some detail 26 integrated and phased studies necessary to accomplish the objectives of the program. These proposed studies were subsumed under four categories—

- A. Minimum standards for marginals.
- B. Specialized training for marginals.
- C. Accelerated training for high aptitude personnel.
- D. Equipment design for manpower mobilization.

Under the first two categories, which are particularly pertinent to marginal manpower, the proposed research was organized in the following manner:

A. Minimum standards for marginals—

- 1. Identification of jobs deemed suitable for study as potential assignments for mentally marginal personnel.
- 2. Identification of jobs deemed suitable as potential assignments for physically marginal personnel.
- 3. Development of standards of on-the-job utility for marginal personnel.
- 4. Development and selection of tests for use with marginal personnel.
- 5. Development of a physical capacities classification system.
- 6. Evaluation of mentally marginal personnel upon completion of the present basic training program.
- 7. On-the-job follow-up of mental marginals after regular basic training.
- 8. Follow-up studies of physical marginals after job assignment.
- 9. Determination of optimum numbers of mentally and physically marginal personnel that can be absorbed by the Army.
- 10. Development of personnel management procedures for the utilization of marginal manpower.

B. Specialized training for marginals—

- 1. Development of a special basic training program for marginal military personnel.
- 2. Development of special training programs to prepare mentally marginal personnel for specific duty positions.
- 3. Evaluation of mentally marginal personnel upon completion of a special basic training program.

4. On-the-job follow-up of mental marginals after special training.

Planning for each of the above 14 research areas was accomplished with differing degrees of thoroughness as relative time phasing, judged importance, and total funding support allowed. Brief descriptions of the 14 research areas are included in appendix 14.

Selecting the Appropriate Jobs for Marginals

Which jobs were suitable as potential assignments for marginals was the subject of much discussion. During this period, the preparation of job analysis schedules for enlisted duty positions in all MOS was a continuing task. Trained Army officers would analyze jobs in their respective branches with the cooperation of skilled civilian job analysts. Consultations were held among these individuals and the research workers responsible for other phases of the program. There was fairly quick agreement on some five or six likely MOS to serve as a starting point. Trips to Army installations were conducted to discuss with field personnel the tentatively selected MOS; incumbents in relevant positions were observed and their duties discussed; first and second line supervisors were interviewed; basic training cadre were consulted in addition to the cadre of Transitional Training Units; discussions, particularly about non-job related aspects, were held with The Adjutant General, G-1, Provost Marshal, Judge Advocate, and Medical personnel.

In general, field visits confirmed what was known or was thought likely—

Since an MOS covers a series of grades and a variety of job demands, consideration had to be given to duty positions. Thousands of duty positions could be identified and an extensive list for likely assignment of marginal personnel prepared. However, policy objections were raised on two points: One, the stated policy need for providing entry level jobs with individuals who are potentially promotable into the advanced jobs filled from the entry duty position; two, the uncertainties of combat (loss of leader, separation from others) mitigated against assigning a marginal person to combat MOS even though the normal job requirements might be suitable for marginal personnel.

It was also thought quite likely that the requirements of many jobs might change during times of full mobilization—aside from the obvious rigors of combat. For example, during relatively peaceful times many supply handlers had to do some inventory checking, which required rudimentary mathematics and limited reading ability—requirements which some marginals would have difficulty meeting. However, it was hypothesized that during mobilization the increase in material moved would necessitate an increased number of supply handlers and that a division of duties would occur. Some handlers

would only move material, others would only check. On the other hand, some positions which seemed suitable for marginals would become more demanding—for example, hospital ward attendant in a combat zone. Irrespective of the validity of the examples chosen, the concept appears to be a valid one.

Related to the above was the frequent response that some marginals could be used quite effectively in the jobs under consideration, but that there should be an appropriate balance between marginals and non-marginals—that is, the concentration of marginals in one place was to be avoided.

In choosing the jobs for study, consideration was given to placing some marginals in some higher-level jobs. One of the arguments in favor of this placement was that it would forestall any criticism of not giving the marginal a fair chance in a more challenging job. The argument against it was to the effect that if men are not good enough to be admitted for service now, they should have to prove themselves in the least demanding jobs. No higher-level jobs were selected. The work under A-1 and A-2, which called for identification of jobs deemed suitable for mental marginals and for physical marginals, respectively, was completed through the first phases. Jobs were selected for use in the experiment. A list of additional jobs for possible use was compiled, but final determination was to await the outcome of the first experiments. The jobs finally selected for use of marginals were—

Food service jobs—cook's helper prototype.

Supply handler jobs—supply handler prototype.

Field Artillery basic jobs—cannoneer prototype.

Medical service jobs—hospital orderly prototype.

Electrical maintenance jobs—wireman prototype (criterion development for this job began later).

The jobs were selected on the basis of estimated ability required, authorized spaces, and estimated mobilization requirements. The third research area, A-3, Development of Standards of On-the-Job Utility for Marginal Personnel, was by far the largest effort of the program.

Utility to the Army

The underlying assumption of the entire research program was that such a study requires the application of measures of utility to the Army. To evaluate this utility, objective, quantified criteria would have to be developed. For each of the jobs chosen for marginals, three aspects of utility were to be considered. They were—

1. A man's assets in terms of productivity when actually on the job.

2. A man's liabilities in terms of expense incurred due to the man's performance when on the job—e.g., wasted or damaged material.
3. A man's non-job related liabilities—expense incurred when not on the job, such as costs of being AWOL or hospitalized.

Several procedures were explored for obtaining the information to determine a man's utility. These were—

1. Job-sample tests. A special test constructed on those aspects of the job which are important, feasible to measure, frequent, and on which people differ in the way they perform. Such tests were to be administered without the job incumbent's being aware that he was in a test situation.
2. On-the-job observation checklists. These could be completed at times by the regular supervisor, although spot checking by disinterested observers was usually preferred. In some jobs, it was possible for the supervisor to use such checklists for two or three months at no particular inconvenience to him. Under these circumstances, fairly stable estimates of performance could be obtained.
3. Ratings by supervisors. Ratings of different aspects of performance were recorded in some quantified way.
4. Administrative records of on-the-job costs, such as costs occasioned by waste or damage.
5. Administrative records of off-the-job costs due to such factors as AWOL and hospitalization.

Each of the four jobs on which work was originally begun was ranked on the applicability of each technique for the job. For some jobs, all techniques could be used effectively; in other jobs, some techniques were of dubious value since application might be impractical, too expensive, or produce biased information.

In essentially all the jobs, special conditions unique to the job had to be accounted for. An example of this was the supply handler's job. Generalizations can be made from the two examples below to other difficulties and to other jobs:

1. Mobilization versus non-mobilization duties.

The relative importance and frequency of the duties and tasks in a given duty position differ for mobilization and peacetime situations. Ordinarily, supply handlers in units in the United States spend considerable time in training. During wartime, most of their time would be spent in receiving, storing, and issuing supplies. The ammunition handler in an Ordnance Ammunition Company, during wartime, would spend 90 percent of his time in the receipt, storage, and issue of ammunition, and less than 5 percent in the renovation of ammuni-

tion. During peacetime, it was estimated that more than 50 percent of his time was spent on renovation of ammunition, and only 10-15 percent in receipt, storage, and issue of ammunition. Therefore, approximations had to be made as to which duties and tasks best reflect mobilization conditions.

2. Types of units and duty positions.

There were 13 different types of units which used the selected MOS in considerable numbers at the time the study was made. In these units, there were 15 different duty positions which were fairly populous. (Additionally, the same duty positions, with the same titles, could be in other organizations but manned by people with MOS other than those under consideration in the study.) Because of these differences, decisions had to be made as to which units and which duty positions should be studied and how best to derive equivalent criterion measures.

A concealed job-sample test developed for the field artillery cannoneer illustrates procedures used to develop and try out tests of this kind—the test situation was arranged so that the cannoneers were unaware they were being evaluated, a condition conducive to the measurement of normal duty performance. The test consisted of three series of six fire missions which had been carefully selected and which could be scored objectively.

For a field tryout, a field standing operating procedure, a manual for administering the tests, scoring sheets for each fire mission, a still photograph supplement, and a moving picture supplement with tape narration were developed. This was necessary to assure uniformity of testing conditions, to orient and train officers and men assisting in the field, and to allow use of specially trained assistants to run the tests. But the primary purpose of some of these aids was to insure an "independent life" for the test, that is, to provide enough information so that any competent researcher could set up and administer the test solely on the basis of the materials provided.

The test was not one designed for the entire gun crew, but specifically for three cannoneers of the crew. Enlisted observers (represented as Fire Direction Control trainees) recorded the speed of performance; safety officers recorded the accuracy of performance. The three cannoneers rotated positions after six fire missions at one position, and evaluations were based on total performance in the three positions. Each cannoneer was evaluated specifically on preparing and placing ammunition on the ready tarp; selecting the properly fuzeed projectile, removing the safety wire from time fuzes, cutting the charge, assembling the round, and placing the round at the correct position; setting the fuze; setting the site and elevation, and leveling bubbles.

Specific instructions were given for the observation, scoring, and recording of all data.

Considerations for Development of Selection Tests

Very little development of new tests was accomplished under A-4, "Development and Selection of Tests for Use With Marginal Personnel." No new empirical data were obtained because of cancellation of the program. However, some of the consideration given the problem of developing tests for screening marginal personnel is applicable to any such program. A few of the more salient—and in some cases obvious—points are noted below—

The tests should require a minimum of verbal or literary skills. Sentence complexity and vocabulary must be watched. Tests should be constructed so that they can be given to groups of people rather than to one individual at a time. The tests should be capable of being administered in an uncomplicated manner and in a short time. They should be easy to score, and the scores should have an adequate spread so that differences among the men in the sample can be identified.

In general, the emphasis in the study was on taking advantage of existing research evidence and existing tests in order to revise rather than develop new tests for use in the program.

None of the tests planned for use would require reading ability. All were to have simple oral instructions. One test hypothesized to measure general military trainability by nonverbal methods was a test of ability to follow directions. Another was a "picture abstraction" test, requiring the examinee to identify in a series of four or five drawings the one that did not belong there, or to count the number of blocks in a drawing, or to substitute one symbol for another. These tests required a minimum of verbal ability, and represented an attempt to minimize the influence of previous experience, in view of the differing backgrounds of the men who were expected to take them.

Another test was to have been one of eye-hand coordination. This was to be used on the hypothesis that motor skills and physical coordination were more important to the functioning of these people than in the non-marginal group.

A third type of test planned for use was an attempt to measure personality, attitudes, or beliefs thought to be related to the general adaptability of these men in the Army.

Summary: Assistant Secretary of Army Program (1954-57)

The program directed by the Assistant Secretary of the Army, briefly described above, represented the most comprehensive attempt to establish a unified research effort during the post-World War II period. Emphasis was on thoroughness. Since the research effort

fell within the time period when all services were concerned with the then current qualitative distribution of personnel and a greater share of higher ability men, the desire to probe the mobilization aspects of the possible usefulness of marginal manpower did not occupy a priority position.

CHAPTER 9

TRAINING AND THE MARGINAL MAN

This chapter is concerned primarily with a variety of investigations directed toward the experimental evaluation of special training programs for the illiterate, the educationally marginal, or the mentally marginal. The studies conducted by the Army, Navy, and Air Force form the basis for certain observations and conclusions reached in Part I of this volume, principally in the analysis of the training considerations for programs involving marginal personnel.

The studies conducted by the Army at Ft. Leonard Wood and Project 1000 of the Air Force are presented in considerable detail. They represent the most comprehensive and systematic attempts reported to evaluate the effects of special or remedial training for marginal military personnel. Numerous tables and details of the effect of kinds and lengths of training are given for reference purposes.

THE FORT LEONARD WOOD STUDIES

Introduction

The Basic Education Project, a special experimental project in remedial education, was initiated by the Army at Ft. Leonard Wood in January 1953. It was designed to evaluate the effects of special pre-basic training on the military usefulness of marginally literate men. After the initial phase, conducted under the Office of Troop Information and Education (TI&E), the Human Resources Research Office (HumRRO) participated in the evaluation of the project from June 1953 until its closing in June 1954. Beginning in September, 1953, HumRRO, the Personnel Research Branch of The Adjutant General's Office (now the U.S. Army Personnel Research Office), TI&E, and the local command at Ft. Leonard Wood pooled their resources in a joint effort.⁷⁰

⁷⁰ James S. Goffard. An Experimental Evaluation of a Basic Education Program in the Army. Technical Report 23. April 1956. The Human Resources Research Office. Washington, D.C. 1956.

James S. Goffard. Basic Education and Military Proficiency—Phases I and II. Staff Memorandum, July 1954. The Human Resources Research Office. Washington, D.C. 1954.

Mary A. Morton, and others. Predicting Proficiency of Enlisted Men of Limited Ability. Technical Research Report 1099. February 1957. Personnel Research Branch, The Adjutant General's Office. Washington, D.C. 1957.

Phases of the Project

The Basic Education Project can be divided into six phases. The following summary indicates the procedures used for selecting subjects and assigning them to groups, the various special training curricula, and the criteria of effectiveness employed in each of the phases. Findings of the study are summarized following the description of each of the phases.

Phase I. January to June 1953. This phase was planned by TI&E and administered by the local command at Fort Leonard Wood. Its purpose was twofold: (1) to increase the effectiveness of the educational program by sending men to Basic Education School on duty time before they entered basic training;¹ and (2) to estimate the effects of the training in terms of the military usefulness of the men.

All men who came to Fort Leonard Wood for basic training whose Aptitude Area I scores were below 70 and whose scores on the USAFI-2 test showed less than fourth-grade level were to be included in the study. These men were to be compared with a control group made up of 14 percent of the men who had entered the study during January and February, and who had, on the average, the same racial, educational, and physical characteristics. The control group was sent directly to basic training without receiving special educational training.

The special training was strongly academic, consisting almost completely of classroom instruction by civilian instructors in basic academic skills—reading, writing, and arithmetic—with only minimal military training outside the classroom, for example, sufficient drill to enable them to march back and forth to school in orderly groups. About 80 percent of training time was spent on academic subjects, 20 percent on basic military skills.

Men who did not reach a fourth-grade level in 96 hours of classroom instruction were classified as nongraduates. While they were sent on into basic training with graduates, they were required to attend evening school during basic training until they had reached fourth-grade level.

Criteria on which special training and control groups were to be compared were proficiency tests given during the eighth week of basic training, ratings by their company commanders and cadre, and records

¹Previously the USAFI Test of Educational Achievement No. 2 had been given after induction to all men who had not completed the fourth grade or whose Aptitude Area I (AA-I) scores on the USAFI test did not indicate educational achievement above fourth-grade level. Such men were expected to attend Basic Education School at night during their 16 weeks of basic training until they reached fourth-grade level on the USAFI-2 test. As Goffard (1956) has indicated, "In practice, only a small fraction of these 'basic-level' men actually succeeded in reaching this minimum level of educational achievement during basic training. Conflicts in schedules, transportation difficulties, limitations on space, and fatigue usually prevented their attending night school consistently enough to reach the fourth-grade level. At Fort Leonard Wood, for example, during the last three months of 1952, only 30 percent of the men eligible for special training were ever enrolled in the school and fewer than five percent ultimately graduated from the fourth grade."

of disciplinary action. Attrition in the control group was so heavy, however, that it was almost impossible to make adequate comparisons on any of the criteria. Also, irregularities in the administration of the proficiency test made the scores invalid. Consequently, there were no findings from Phase I.

Phase II. June to July 1953. Phase II represented a continuation of Phase I with improvements in methods, procedures, and experimental design.

Criteria for selection of subjects remained the same as in Phase I (AA-I score below 70 and less than fourth-grade level on USAFI-2). Control subjects were selected from input to the school during every week and at random rather than purposively as before. Also, the size of the control group was increased to include 50 percent of the men who entered the study.

Special training remained the same as in Phase I, except that non-graduates were not required to attend night school during basic training. This was done to eliminate bias in the ratings of these men by their company commanders and cadre that had been introduced as a consequence of this special requirement.

Criteria to be used in comparing special training and control groups were changed as follows: 1) steps were taken to eliminate irregularities in administration of proficiency tests, and test scores were recorded for analysis; 2) rating systems were revised and rating scales were improved; 3) a "Troublesomeness" checklist was substituted for the reports of disciplinary action; 4) attitude questionnaires were developed to be administered to special training and control subjects at the time of initial placement and late during basic training. These questionnaires were designed to assess attitudes and opinions in areas such as personal morale, attitudes toward education, attitudes toward the Army, and optimism.

Phase III. September 1953 to January 1954. It was in this phase that a comprehensive study began of the basic education program. Almost all procedures were altered and most of the changes continued into the succeeding phases.

The basis on which subjects were selected was changed from a score of 70 or less on Aptitude Area I to a score of 75 or less on Area Aptitude III. The latter measure, an average of the Reading and Vocabulary and Arithmetic Reasoning tests of the Army Classification Battery (ACB), was believed to be a better measure of academic aptitude. Men with scores below 75 were then given USAFI tests Nos. 2 and 3 for grades 3-7 and 6-8 respectively. During this phase alone, all men with Aptitude Area III scores below 75, except those few who showed an educational level equivalent to the seventh grade, were included as subjects. Certain special groups of men—among them, those who did not speak English and those with prior military service—were eliminated.

The remaining men were classified into subgroups according to race and grade level on the USAFI tests. Men from each of the subgroups were then assigned on a random basis to special training and control groups. In addition, a group of average trainees, that is, non-marginals, was included in this and subsequent phases of the study to serve as a baseline for evaluating scores of special training and control subjects.

Special training gave greater emphasis to purely military subject matter during this phase, with half the classroom time devoted to military subjects—in contrast to Phases I and II in which special training was primarily academic in nature. Men received special training for a 12- to 15-day period, completing a two-week cycle and then repeated a portion of the first week. No special treatment was given to men who failed to reach fourth-grade level during special training. They were sent on to basic training. The program of instruction for Phase III is indicated in table 8.

Table 8. Program of Instruction for Phase III of the Basic Training Project at Fort Leonard Wood

Subject	Hours of training		
	First week	Second week	Third week
Academic instruction.....	25	25	25
Military subjects taught by civilian instructors—			
Military justice.....	1	1	1
Character guidance.....	1	1	1
Interior guard.....	2	0	2
Adaptation and group living.....	1	1	1
Achievement and traditions of the Army.....	1	0	1
Map reading.....	1	3	1
Range estimation.....	0	1	0
First aid.....	1	3	1
Subtotal.....	8	10	8
Other military subjects—			
Dismounted drill.....	2½	3½	2½
Personal hygiene.....	1	1	1
M-1 rifle.....	2	2	2
Command conference.....	1	1	1
Rifle marksmanship.....	3	0	3
Supply procedures and economy.....	1	1	1
Military courtesy.....	3	1	3
Inspection.....	0	2	0
Physical training.....	3	3	3
Subtotal.....	16½	14½	16½
Total Hours.....	49½	49½	49½

Criteria for Phase III and subsequent phases were modified as follows:

Standardized proficiency tests were substituted for those used in Phases I and II and were given to all men at Fort Leonard Wood during the eighth week of basic training. The new tests were an individual performance proficiency test (the Individual Proficiency Test) and a paper-and-pencil proficiency test (the Basic Military Proficiency Test). The composition of the Individual Proficiency Test is indicated in table 9.

Table 9. *The Individual Proficiency Test*

Subtest	Score points
1. Hand Grenades.....	9
2. Bayonet.....	9
3. CBR Warfare.....	7
4. Map Reading, Compass, and Range Estimation.....	6
5. First Aid.....	10
6. M-1 Rifle—Assembly and Disassembly.....	10
7. M-1 Rifle—Sight Consistency.....	5
8. 30 Caliber Machine Gun—Assembly and Disassembly.....	6
9. 30 Caliber Machine Gun—Sight Setting and Laying.....	5
10. Signal Communications.....	6
11. Rocket Launcher.....	10
12. Mines and Booby Traps.....	10
13. General Combat Skills.....	8
Total.....	101

The Basic Military Proficiency Test was composed of items sampled from a longer test with subsections concerned with Army organization and customs, care of self in combat, combat training, special skills, weapons, intelligence and security, and care of self and personal equipment.

Three other changes were made. The rating scales used in Phase II were eliminated; the "Troublesomeness" checklist used in Phase II was expanded; and the attitude and opinion questionnaires of Phase II were revised.

Phase IV. February to March 1964. This phase is of interest only as a prerequisite to subsequent phases. Only changes in the composition of the special training were introduced during this phase. Final changes introduced in this phase are indicated in table 10.

Table 10. Program of Instruction for Phase IV, for the Academic Pre-Basic Training in Phase V, and for Phase VI

Subject	Hours of training		
	First week	Second week	Third week
Academic instruction (including citizenship)	25	25	25
Military subjects taught by civilian instructors—			
Military justice.....	2	0	2
Character guidance.....	1	1	1
Guard duty.....	1	1	1
Adaptation and group living.....	2	1	2
Achievements and traditions of the Army.....	1	0	1
Map reading.....	1	3	1
First aid.....	0	2	0
Military vocabulary.....	1	0	1
Subtotal.....	9	8	9
Other military subjects—			
Dismounted drill.....	3	3	3
Personal hygiene.....	1	1	1
Supply procedures and economy.....	1	1	1
Military courtesy.....	2	1	2
Inspection.....	0	2	0
Physical training.....	3	3	3
Subtotal.....	10	11	10
Total hours.....	44	44	44

Phase V. March to May 1954. This phase differed from all other phases. Its purpose was to evaluate two different types of special training, one in which academic methods and skills were emphasized and one in which military methods and skills were emphasized. No other changes were introduced. The special academic training was the same as in Phase IV (see table 10). The program of instruction involved in the special military training is indicated in table 11. A trainee spent 12 to 15 days in the training cycle as in Phases III and IV.

The command at Fort Leonard Wood established the following conditions as necessary:¹³

- a. It is mandatory . . . that these trainees be kept separate from the rest of the Basic Education Project Trainees, and from basic trainees.

¹³Goffard, An Experimental Evaluation of A Basic Education Program In The Army (1956). p. 60.

Table 11. Program of Instruction for Military Pre-Basic Training in Phase V

Subject	Hours of training		
	First week	Second week	Third week
Orientation.....	1	0	0
Military justice.....	1	1	0
Guard duty.....	3	2	0
Adaptation and group living.....	1	0	0
Achievements and traditions of the Army.....	1	0	0
Map reading.....	3	3	2
First aid.....	1	4	2
Range estimation.....	1	1	0
Military courtesy.....	4	4	1
Personal hygiene.....	1	1	0
Supply economy.....	1	2	1
M-1 rifle and preliminary rifle inspection.....	2	0	11
Dismounted drill.....	7	7	4
Bayonets.....	2	2	0
Grenades.....	2	1	1
Squad tactics.....	0	4	0
Marches.....	2	2	2
Inspection.....	4	2	3
Physical training.....	6	6	4
Commanding officer's time.....	1	2	1
Total.....	44	44	32

after selection and during the time they are in the company, and that any inference or implication that they are an "awkward squad" be avoided.

- b. Subjects should be taught which have been found troublesome to this type of trainee during basic training.
- c. Instruction should consist of demonstration by instructor and performance by trainee. Conferences and lectures should be held to an absolute minimum
- d. To obtain the results desired, several repetitions of a few important items are considered better than a single exposure to a wide range of subjects.

Phase VI. May to June 1954. This phase was supplementary to previous phases and maintained the same academic program of instruction as in Phases IV and V. Men were allowed to graduate at the end of two or three weeks of training if they attained fourth-grade level; otherwise, they received training for four weeks. Only a few control subjects were included—no average or baseline trainees. No other changes were introduced.

Results and Conclusions

Performance Proficiency Tests. Mean scores on the local Proficiency Test (Phase II) and the Individual Proficiency Test (Phases III-VI) are presented in tables 12 through 16.⁷³

Table 12. Mean Scores on Local Proficiency Test, Phase II

Group	Number of men	Mean score	Standard deviation	Increment over control group (percent)
Special training.....	108	108.3	13.1	3.0
Control.....	107	105.1	13.6	-----
Difference.....		3.2	-----	-----
t diff.....		1.75	-----	-----
p.....		.08	-----	-----

Table 13. Individual Proficiency Test Mean Scores, Phase III

Group	Number of men	Mean score	Standard deviation	Increment over control group (percent)
Marginal trainees ^a —				
Special training.....	563	41.0	6.6	2.8
Control.....	519	39.9	6.3	-----
Difference.....		1.1	-----	-----
t diff.....		2.81	-----	-----
p.....		.01	-----	-----
Low subgroup ^b —				
Special training.....	108	40.0	6.6	2.0
Control.....	114	39.2	6.5	-----
Difference.....		.8	-----	-----
t diff.....		.96	-----	-----
p.....		.10	-----	-----
Average trainees ^c	544	43.0	6.5	7.8

^a Trainees below 75 on AAIII.

^b Three men with less than fourth-grade completion on the USAFI test.

^c Trainees above 75 on AAIII.

⁷³ Ibid. pp. 25 ff.

Table 14. Mean Individual Proficiency Test Scores, Phase IV

Group	Number of men	Mean score	Standard deviation	Increment over control group (percent)
Marginal trainees—				
Special training.....	151	45.9	6.5	5.0
Control.....	105	43.7	6.5	-----
Difference.....	-----	2.2	-----	-----
t diff.....	-----	2.61	-----	-----
P.....	-----	.01	-----	-----
Average trainees.....	168	50.2	5.8	14.9

Table 15. Mean Individual Proficiency Test Scores, Phase V

Group	Number of men	Mean score	Standard deviation	Increment over control group (percent)
Marginal trainees—				
Special training—Academic..	147	41.9	9.8	2.9
Special training—Military..	171	41.4	10.2	1.7
Controls.....	75	40.7	9.5	-----
Difference—				
Academic vs Control.....	-----	1.2	-----	-----
t diff.....	-----	.84	-----	-----
P.....	-----	.10	-----	-----
Difference—				
Military vs Control.....	-----	.7	-----	-----
t diff.....	-----	.47	-----	-----
P.....	-----	.10	-----	-----
Average trainees.....	210	45.5	9.8	11.8

Table 16. Mean Individual Proficiency Test Scores, Phase VI

Group	Number of men	Mean score	Standard deviation	Increment over control group (percent)
Marginal trainees—				
Special training.....	135	39.8	7.4	2.6
Control.....	9	38.8	6.4	-----
Difference.....	-----	1.0	-----	-----
t diff.....	-----	.39	-----	-----
P.....	-----	.10	-----	-----

Results on the performance proficiency tests are substantially in agreement from all phases of the Fort Leonard Wood study. They indicate—

1. Average trainees were somewhat more proficient than trainees of low intellectual and educational level.
2. Special training for marginal men, whether academic, military, or half academic and half military in emphasis, in general increased performance on proficiency tests slightly.
3. This effect, while consistent, was small and of limited practical significance.

The Written Proficiency Test. Mean scores on the Basic Military Proficiency Test (Phases III-VI) are indicated in Tables 17 to 20.⁷⁴

Table 17. Mean Scores on Basic Military Proficiency Test (BMPT), Phase III

Group	Number of men	Mean score	Standard deviation	Increment over control group (percent)
Marginal trainees—				
Special training.....	548	46.0	7.4	3.4
Control.....	509	44.5	7.8	-----
Difference.....		1.5	-----	-----
t diff.....		3.33	-----	-----
p.....		.001	-----	-----
Low Subgroup—				
Special training.....	105	40.5	6.6	4.9
Control.....	112	38.6	6.3	-----
Difference.....		1.9	-----	-----
t diff.....		1.94	-----	-----
p.....		.06	-----	-----
Average trainees.....	541	59.2	7.1	33.0

Table 18. Mean Scores on Basic Military Proficiency Test, Phase IV

Group	Number of men	Mean score	Standard deviation	Increment over control group (percent)
Marginal trainees—				
Special training.....	148	40.3	6.6	-4.0
Control.....	104	42.0	7.0	-----
Difference.....		-1.7	-----	-----
t diff.....		1.92	-----	-----
p.....		.06	-----	-----
Average trainees.....	165	59.9	7.1	42.6

⁷⁴ Ibid., pp. 33-35.

Table 19. Mean Scores on Basic Military Proficiency Test, Phase V

Group	Number of men	Mean score	Standard deviation	Increment over control group (percent)
Marginal trainees—				
Special training—Academic	168	39.7	6.8	2.1
Special training—Military	193	39.6	7.3	1.8
Control	86	38.9	7.3	-----
Difference—				
Academic vs Control	-----	.8	-----	-----
t diff	-----	.82	-----	-----
p	-----	.10	-----	-----
Difference—				
Military vs Control	-----	.7	-----	-----
t diff	-----	.66	-----	-----
p	-----	.10	-----	-----
Average trainees	240	61.0	6.9	56.8

Table 20. Mean Scores on Basic Military Proficiency Test, Phase VI

Group	Number of men	Mean score	Standard deviation	Increment over control group (percent)
Special training	142	42.6	7.9	0.9
Control	11	42.2	6.2	-----
Difference	-----	.4	-----	-----
t diff	-----	.16	-----	-----
p	-----	.10	-----	-----

Results from the written proficiency test indicate that in general men who received special training tended to make slightly higher scores than control subjects. However, men receiving special training did not show more than a five percent improvement over control subjects during any phase of the study. This special training for men of low intellectual and educational level had at best only slight effect upon their capacity to acquire military knowledge.

The "Troublesomeness" Checklist. Based on the results of the "Troublesomeness" checklist completed by commander and cadre, the proportion of special training, control, and average trainees who were classified as troublesome in any way is indicated in table 21.¹⁸ These results suggest that special training and control subjects were about

¹⁸ Ibid., p. 38.

equally troublesome to the commanders and cadre of their training companies.

Table 21. Percentages of Men Classified as "Troublesome"

Phase	Special training group (percent)	Control group (percent)	Average trainees * (percent)
II.....	67	75	-----
III.....	67	64	44
IV.....	67	66	57
V—Academic.....	74	-----	-----
V—Military.....	69	80	60
VI.....	80	73	-----

* No average trainees were selected for Phases II and IV.

Attitude and Opinion Surveys. Analysis of the results obtained from the administration of attitude questionnaires prior to training and late during basic training indicated that special training had little if any effect on the attitudes and morale of the men trained.

On-the-Job Performance. A follow-up study of special training and control subjects was conducted after these men had been performing on the job for six months. Ratings by supervisory and cadre personnel indicating how well a man could get along with others and how well he actually did his job²⁸ duties indicated no differences of practical significance between these groups.

THE AIR FORCE "PROJECT 1000" STUDY

In 1952, the Air Force undertook a rather comprehensive experimental study of the effects of special training for marginally literate airmen. The subjects in this study were 1000 airmen who had an aptitude index of 3 (approximately the 21st percentile) or lower on each of eight job clusters (similar to the aptitude areas in the Army Classification Battery). One-half the subjects received basic training in an experimental six-week curriculum and the other half in an experimental 12-week curriculum. Experimental groups were matched with respect to age, race, marital status, and prior education.

The Training Programs

The two programs differed in that the 12-week course included 45 hours each of language arts and mathematics whereas the six-week course had no such content. Also, the 12-week course contained 35 hours of instruction in military fundamentals, whereas the six-week course contained 18 hours of such instruction. The 12-week experi-

²⁸ Morton and Others, *Predicting Proficiency of Enlisted Men of Limited Ability* (1957).

mental program differed from the 12-week basic training program then in effect for regular ability airmen in that it deleted certain hours of instruction and added 45 hours of instruction in language arts and 9 additional hours of arithmetic. Table 22 shows the number of hours devoted to each type of instruction in the six-week and 12-week experimental basic training courses. For purposes of comparison, the hours in the standard 12-week basic training program are also provided."

Table 22. *Six-Week and Twelve-Week Experimental Basic Training Courses and Standard Twelve-Week Course*

	Group		
	6-wk. (E)	12-wk. (E)	12-wk. (S)
Development of Attitudes—			
Chaplain's indoctrination.....	3	3	3
Character guidance.....	10	6	6
Air Force citizenship in action.....	10	10	12
Air Force discipline, leadership, and loyalty....	10	10	13
History of the Air Force.....	5	5	8
Organization and mission of the Air Force.....	4	2	4
Types and purpose of Air Force combat weapons.....	0	4	12
Conservation of food, clothing, and equipment.....	2	2	2
Resistance to psychological warfare.....	1	1	5
Accident prevention.....	2	2	2
Examination.....	0	0	1
Total hours.....	47	45	68
Adjustment to Air Force Life—			
Air Force personal affairs.....	8	7	7
The USAF career program.....	2	4	13
Military security.....	3	3	4
Military law.....	8	8	13
Air Force clothing and equipment.....	6	6	6
Air Force customs and courtesies.....	8	9	9
Examination.....	0	1	1
Total hours.....	35	38	53
Development of Physical Fitness.....	15	36	36
Basic Preparatory—Language arts.....	0	45	0
Mathematics (arithmetic).....	0	45	36

" S. Mastropaolo and Others, A Study of the Relative Effects of Six-Week and Twelve-Week Experimental Basic Training Programs on a Single Sample of Limited Aptitude Airmen: Part I Basic Training Analyses, Part II Six-Week Follow-up Analyses, Technical Report AFPTEC-54-36 Sept. 1954. Air Force Personnel and Training Research Center, San Antonio, Texas, 1954. Tables 22-29 are extracted from this study.

Table 22. Six-Week and Twelve-Week Experimental Basic Training Courses and Standard Twelve-Week Course—Continued

	Group		
	6-wk. (E)	12-wk. (E)	12-wk. (S)
Military Fundamentals—			
Flight discipline.....	0	2	2
Survival under CBR attack.....	0	5	9
Personal hygiene and military sanitation.....	6	7	7
Airman's role in defense against attack.....	0	6	6
First aid.....	5	10	10
Internal security.....	7	4	4
Examination.....	0	1	1
Total hours.....	18	35	47
Development of Military Skills—			
Drill and ceremonies.....	25	60	72
Inspection and corrections.....	3	24	24
Squadron orientations.....	2	8	8
Weapons and marksmanship.....	16	28	28
Total hours.....	46	120	^a 132
Practical Field Application—			
Chemical warfare demonstration and gas chamber drill.....	2	4	4
Field sanitation demonstration.....	1	2	2
Camouflage demonstration.....	1	2	2
Field training.....	4	24	24
Total hours.....	8	32	32
Total training hours.....	169	396	396
Administrative Requirements—			
Processing.....	51	56	56
Career testing and counseling.....	20	20	20
Student support activities.....	24	56	56
Total administrative hours.....	95	132	132
Total training hours.....	169	396	396
Total program hours.....	264	528	528

The two experimental groups were compared on a number of variables both before and immediately after basic training. They were then assigned to 19 different air bases with approximately 25 graduates of the 6-week program and 25 graduates of the 12-week program going to each of the different bases. They were again compared on a

variety of criterion measures after 6 weeks and after 8 months on the job. In addition, a control group of normal ability airmen were also included in the study for comparison purposes. They were assigned to the same air bases following standard basic training and were administered selected criterion variables during the follow-up phases of the study.

Measures on Which Groups Were Matched and Results Assessed

In addition to others, pre- and post-basic training test-retest comparisons and group comparisons were made on tests reflecting aptitude (Airman Classification Battery); interest (Airman Activity Inventory); and attitude (Attitude Survey). The Airman Classification Battery (AC-1B) is the standard test battery used by the Air Force in classifying airmen in terms of aptitude for success in Air Force technical schools. From it, eight different aptitude index scores are derived. These scores were used in the Project 1000 study both to determine the equivalence of the two experimental groups and as a measure for evaluating success. The Airman Activity Inventory is a 132-item inventory indicating previous experience and interest in a wide variety of jobs which are subsumed under eight occupational areas. The Attitude Survey is a 32-item instrument designed to reflect attitudes toward a variety of Air Force activities.

Primary post-basic training comparisons were made on the following criterion instruments:

The California Achievement Test. A 385-item multiple choice achievement test with reading, arithmetic, and language arts subtests. It was administered immediately after basic training and during the 8-month job follow-up.

The Comprehensive Achievement Examination. Two 50-item tests covering military fundamentals and the development of attitudes and adjustment to the Air Force. Both were designed to measure retention of information acquired during classroom instruction. They were administered after basic training and during the 6-week and 8-month follow-up.

The Personal Happiness Scale. A self-rating attitude scale designed to assess feelings and attitudes along a variety of dimensions (optimism, health, people, energy, etc.). It was administered immediately after basic training and during the 6-week and 8-month follow-ups.

The Psychological Change Scale. A 30-item self-rating scale designed to measure attitude change by asking the subject about changes that may have occurred since his entry into the Air Force.

Questions relate to attitude stereotypes (worry, anger, self-confidence, happy, cheerful, etc.). Test was administered after basic training and during the 6-week and 8-month follow-ups.

The Psychosomatic Complaints Scale. 100 true-false items taken from the Minnesota Multiphasic Personality Inventory. Test yields two scores, one reflecting anxiety content (The Anxiety Scale), and the other internal consistency (the "Lie" scale). It was administered at the end of basic training and during the 8-month follow-up.

The Basic Training Interview Record. Used in conjunction with a one-hour semi-structured interview conducted after basic training. Questioning in the interview covered two general areas: attitudes toward basic training and adequacy of prior civilian adjustment.

The Individual Interview Record. Used in conjunction with a 40-minute semi-structured interview conducted during the 6-week and 8-month follow-ups. Questioning in the interview covered three general areas: job satisfaction, attitudes toward the Air Force, and personal esprit.

The Supervisor Interview Record. Used in a 40-minute semi-structured interview with supervisors during the 6-week and 8-month follow-ups. It was administered to assess job proficiency. Supervisors were asked questions related to four general areas: the airman's job knowledge, productivity, interpersonal relationships, and promotion potential.

The Job Rating Scale. Administered to job supervisors during the 6-week and 8-month follow-ups to assess job proficiency. It was a 20-item rating scale in which supervisors indicated which one of six word descriptions most nearly described the airman being rated on some aspect of job performance (keeping military appearance, obeying orders and directives, attending to duty, ability to learn, etc.).

Results

Pre-test and post-test comparisons at the beginning and end of basic training. Test and retest statistics and retest comparisons of the performance of 6- and 12-week experimental basic training groups on the Airman Classification Battery are presented in table 23. There are no differences which are statistically significant at the .01 level. Further, pre-test-post-test gains on the ACB for the two experimental training groups were found to be attributable to statistical regression and/or practice in test taking rather than representing true gains.

Table 23. Test-Retest and Group Retest Comparisons, with Post-Test Means Adjusted, for Two Groups of "Project 1000" Airmen on Eight Aptitude Index Scores of the Airman Classification Battery, AC-1B

Aptitude index	6-wk. group (N=420)				12-wk. group (N=420)				Group retest differences—adjusted post-test means
	Pre-test		Post-test		Pre-test		Post-test		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Critical ratio * 6-wk.-12-wk. (N=858)
Mechanical.....	1.58	0.64	2.20	0.92	1.55	0.64	2.12	0.93	0.68
Clerical.....	1.65	.75	2.23	1.15	1.61	.73	2.14	1.11	.67
Equipment operator.....	2.22	.75	2.98	1.36	2.19	.76	2.87	1.25	.77
Radio operator.....	1.46	.67	2.30	1.16	1.45	.65	2.24	1.13	.59
Technical specialist.....	1.56	.73	2.16	1.07	1.54	.72	2.18	1.07	-.25
Services.....	5.00	1.63	5.01	1.76	4.94	1.69	4.94	1.79	.29
Crafts.....	1.95	.75	2.58	1.17	1.84	.74	2.60	1.16	-.99
Electronics technician.....	1.56	.74	2.04	1.01	1.51	.67	2.00	.98	-.12

* A Critical Ratio of 2.58 is required for significance at the .01 level of confidence.

Test and retest statistics and retest comparisons of the performance of the experimental groups on the Airman Activity Inventory and the Attitude Survey are presented in table 24. With the exception

Table 24. Test-Retest and Group Retest Comparisons, with Post-Test Means Adjusted, for Two Groups of "Project 1000" Airmen on Eight Airman Activity Inventory Scores and Score on the Attitude Survey

Activity or attitude measure	6-wk. group (N=420)				12-wk. group (N=420)				Group retest differences—adjusted post-test means
	Pre-test		Post-test		Pre-test		Post-test		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Critical ratio* 6-wk.-12-wk. (N=858)
Mechanical.....	4.89	2.18	5.08	2.03	5.09	1.96	5.48	2.05	-1.76
Clerical.....	5.30	2.11	5.48	2.11	5.18	1.90	5.62	1.94	-1.67
Equipment operator.....	4.96	2.10	5.28	2.20	5.09	1.99	5.38	2.17	+ .08
Radio operator.....	5.26	1.98	5.47	2.02	5.17	1.92	5.70	1.96	-2.07
Technical specialist.....	5.18	2.24	5.38	2.23	4.97	1.98	5.51	2.11	-1.88
Services.....	4.86	2.16	4.65	2.19	4.96	1.96	4.61	2.01	+ .75
Crafts.....	4.96	2.24	5.14	2.19	5.05	1.96	5.30	2.17	- .55
Electronics technician.....	5.23	1.98	5.32	1.95	5.18	1.92	5.65	1.95	-2.62
Attitude survey...	5.58	2.10	5.60	2.08	5.34	2.00	5.26	1.99	+1.26

* A Critical Ratio of 2.58 is required for significance at the .01 level of confidence.

of a single score (Electronics Technician) on the Activity Inventory, no differences were statistically significant at the .01 level.

Comparisons at end of Basic Training. Comparisons of the 6- and 12-week experimental training groups on the California Achievement Test and the Comprehensive Achievement Examination at the end of basic training are presented in table 25. The 12-week experimental group achieved a significantly higher score on the arithmetic subtest of the California Achievement Test. However, the groups performed comparably on the reading and language arts subtests, as well as on total test. Presumably, the 45 hours of instruction in basic arithmetic received by the 12-week group produced some effect, whereas the 45 hours of instruction in language arts did not.

Table 25. Results on Selected Achievement Tests Administered to "Project 1000" Airmen at the Completion of Basic Training

(N=820)

Test	6-wk. group (N=410)		12-wk. group (N=410)		Critical ratio 6-wk.-12-wk.
	Mean	SD	Mean	SD	
1 California Achievement Test—					
Reading.....	5.06	1.22	4.97	1.18	1.07
Arithmetic.....	5.65	.92	5.84	.93	-2.92
Language arts.....	5.58	1.06	5.44	1.06	1.89
Total.....	5.42	.98	5.46	.94	-.60
Comprehensive achievement.....					
Development of attitudes—AAF.....	5.16	2.04	4.46	2.14	4.49
Military fundamentals.....	5.06	1.83	5.68	2.25	-4.08

On the Comprehensive Achievement Examination, the 12-week group was significantly higher on the military fundamentals section, whereas the 6-week group made significantly higher scores on development of attitudes and adjustment to the Air Force. In this connection, note that the 12-week group had received twice the number of training hours in military fundamentals as the 6-week group. Both groups received approximately the same number of training hours in the area covered by the attitude test. The superiority of the 6-week group on the attitude test proved to be transitory in nature. The difference had disappeared when the 6- and 12-week training groups were again compared at the time of the 6-week follow-up.

Comparisons of the 6- and 12-week experimental training groups on the Personal Happiness Scale, the Psychological Change Scale, and the Psychosomatic Complaints Scale are shown in table 26. There were no statistically significant differences on the Personal Happiness Scale. On the Psychological Change Scale, there was evidence

of a greater degree of change in the 6-week group, though when considered in relation to direction of change or over-all change scores, the 6- and 12-week experimental groups were not significantly different. On the Psychosomatic Complaint Scale, the 6-week group obtained significantly higher "anxiety" scores.

Table 26. Comparisons Between Two Groups of "Project 1000" Airmen on Certain Attitude Variables Obtained at the End of Training

	6-wk. group (N=410)		12-wk. group (N=410)		Critical ratio 6-wk.-12-wk.
	Mean	SD	Mean	SD	
<i>Measure</i>					
Personal happiness scale—					
Feeling.....	4.99	2.12	4.74	1.87	1.79
Attitude.....	5.09	1.94	4.83	1.75	2.02
Total.....	5.04	2.05	4.76	1.80	2.07
<i>Variable</i>					
Psychological change scale—					
Direction.....	5.13	2.02	5.41	2.18	—1.90
Degree.....	37.45	6.35	35.17	6.56	5.06
Change.....	26.34	8.09	25.53	7.97	1.44
Psychosomatic complaint scale—					
Anxiety.....	4.90	2.08	4.48	2.05	2.90
Lie.....	5.19	1.90	4.88	2.06	2.25

Comparisons of the 6- and 12-week experimental groups on the Basic Training Interview Record used in conjunction with the interview conducted immediately after basic training are given in table 27. There were no significant differences between the groups on either of the part scores or on total score. Thus, insofar as interview scores reflect satisfaction with basic training and adequacy of civilian adjustment, the two groups performed in a comparable manner.

Table 27. Comparison of Six-Week and Twelve-Week Groups on Three Scores of the Basic Training Interview Record

Measure	6-wk. group		12-wk. group		Critical ratio 6-wk.-12 wk.
	Mean	SD	Mean	SD	
Basic training attitude score.....	16.37	2.70	16.04	3.08	1.70
Civilian adjustment score.....	17.78	2.61	17.60	2.61	1.12
Composite personal interview score...	34.14	3.89	33.67	4.83	1.59

Comparisons after Six Weeks on the Job. Comparisons of the 6- and 12-week experimental training groups on the Job Rating Scale, Supervisor Interview Record, Individual Interview Record, the Psychological Happiness Scale, the Psychological Change Scale, and the Comprehensive Achievement Examination, after 6 weeks on the job, are given in table 28. There were no significant differences between these groups on the Job Rating Scale, Supervisor Interview Record, Individual Interview Record, Psychological Happiness Scale or Psychological Change Scale. The 12-week experimental training group was significantly superior to the 6-week experimental training group on the military fundamentals subtest of the Comprehensive Achievement Examination. This finding is consistent with the superiority of the 12-week group on the same subtest immediately after basic training. As indicated previously, the statistically significant difference that had been found immediately after basic training between the 6- and 12-week experimental groups on the Development of Attitudes and Adjustment to the Air Force subtest was no longer evident at the time of the 6-week follow-up.

Table 28. Mean-Difference Comparisons Between Six-Week and Twelve-Week Groups of "Project 1000" Airmen on Measures Obtained Six Weeks After Initial Duty Station Assignment

Measure	6-wk. group			12-wk. group			Critical ratio 6-wk.- 12-wk.
	N	Mean	SD	N	Mean	SD	
Job performance—							
Job rating scale.....	478	4.61	1.78	457	4.64	1.87	-0.27
Supervisor interview record..	438	4.84	1.87	424	4.76	1.88	.62
Attitudes and adjustment—							
Individual interview record..	476	4.93	1.76	465	4.90	1.88	.30
Psychological happiness scale..	473	5.50	1.99	451	5.57	1.93	-.51
Psychological change scale....	466	22.93	8.71	454	22.79	8.55	.25
Achievement—							
Military fundamentals.....	448	5.43	2.08	432	5.99	2.29	-3.75
Development of attitudes.....	446	5.09	2.21	430	5.24	2.22	-1.03

The control group of non-marginal airmen (AFQT percentile scores of 30 or more) who were performing duties similar to those performed by members of the experimental groups were included in the study for comparison purposes. To permit comparisons, the 6- and 12-week experimental groups were pooled and derived mean scores were compared with those of the control group. Results of this comparison are shown in table 29. Statistically significant differences in favor of the control group (airmen of normal ability) were found on the Job Rating Scale, the Supervisor Interview Record,

and the two subtests of the Comprehensive Achievement Examination. However, the consolidated experimental group showed significantly higher scores on the Individual Interview Record, the Personal Happiness Scale, and the Psychological Change Scale.

Table 29. Mean-Difference Comparisons Between Experimental and Control Groups of Airmen on Certain Criterion Measures

Measure	Experimental group			Control group			Critical ratio experimental-control
	N	Mean	SD	N	Mean	SD	
Job performance—							
Job rating scale.....	935	4.62	1.84	473	5.42	2.02	-7.27
Supervisor interview record..	862	4.80	1.88	425	5.63	2.13	-6.34
Attitudes and adjustment—							
Individual interview record..	941	4.92	1.81	478	4.65	1.87	+2.59
Psychological happiness scale.....	924	5.53	1.97	478	5.24	1.84	+2.73
Psychological change scale..	920	22.86	8.63	472	20.66	9.72	+4.14
Achievement—							
Military fundamentals.....	880	5.70	2.22	452	7.71	1.68	-18.44
Development of attitudes..	876	5.16	2.23	451	7.17	1.99	-16.75

Summary of Six-Week Follow-Up. The absence of statistically significant differences between the 6- and 12-week experimental training groups on job performance and on attitude and adjustment suggests that the two training programs produced comparable results. Supervisors, however, tended to rate airmen in the control group more highly than airmen in the experimental groups on job performance. This is probably due, in some degree, to all of the following factors: (1) Control group airmen performed in a superior manner; (2) supervisors were better acquainted with control group airmen (they had been performing their duties prior to the arrival of experimental group airmen); and (3) supervisors' ratings may have been influenced by stigma associated with experimental trainees' limited aptitude status.

The superiority of the experimental trainees on the attitude and adjustment variables may have been due to one or more of the following possibilities: (1) Normal ability airmen may have felt greater dissatisfaction at having to perform menial duties; (2) normal ability airmen may have felt that those jobs had been downgraded following the assignment of experimental trainees; (3) experimental trainees may have felt higher satisfaction because they were the focus of research attention (the "Hawthorne" effect); (4) limited aptitude men are generally happier in the Air Force; and (5) happiness is inversely related to length of service.

Table 30. Comparisons Between Six-Week and Twelve-Week Groups on Achievement and Aptitude Measures After Eight Months on the Job

Measure	6-wk. group			12-wk. group			CR 6-wk.- 12-wk.
	N	Mean	SD	N	Mean	SD	
Job performance—							
Job rating scale.....	411	4.62	2.19	411	4.57	2.17	0.35
Supervisor interview record..	411	4.41	2.26	411	4.42	2.24	-.08
Attitudes—							
Individual interview record..	411	4.64	1.77	411	4.64	1.81	.02
Attitude survey.....	396	3.55	1.96	394	3.33	2.00	1.57
Personal happiness scale.....	411	4.42	2.17	411	4.27	2.30	.97
Psychological change scale..	411			411			
Direction of change.....		3.79	2.42		3.90	2.43	-.69
Degree of change.....		33.48	7.63		33.47	7.27	.01
Composite score.....		18.98	9.36		18.97	9.30	.01
Psychosomatic complaints scale.....	318			312			
Anxiety score.....		5.36	2.15		5.32	2.10	.24
Lie score.....		5.02	1.94		5.05	1.98	-.19
Achievement—							
California Achievement Test.	394			394			
Reading.....		4.94	1.09		4.91	1.12	.29
Arithmetic.....		5.73	.87		5.81	.89	-1.25
Language arts.....		5.50	1.08		5.47	1.10	.44
Total score.....		5.41	.90		5.43	.92	-.29
Comprehensive achievement test—							
Development of attitudes.....	409	5.32	2.37	410	5.30	2.41	-.42
Military fundamentals..	414	5.42	2.33	411	5.87	2.42	-2.72
Interest (Airman Activity Inventory).....	391			391			
Mechanical.....		4.55	1.82		4.60	1.76	-.40
Clerical.....		5.23	2.00		5.14	1.87	.67
Equipment operator.....		4.50	2.06		4.28	1.97	1.48
Radio operator.....		5.47	1.86		5.49	1.80	-.16
Technician specialist.....		5.36	2.16		5.31	1.98	.31
Services.....		4.38	1.88		4.45	1.93	.58
Crafts.....		5.00	2.02		4.92	2.03	.62
Electronics technician.....		3.35	1.92		5.39	1.78	-.32
Aptitudes (AC-1B).....	395			395			
Mechanical.....		2.31	1.02		2.37	1.04	-.75
Clerical.....		2.35	1.12		2.37	1.22	-.27
Equipment operator.....		2.17	1.39		3.00	1.38	1.70
Radio operator.....		2.56	1.26		2.64	1.30	-.98
Technician specialist.....		2.27	1.09		2.26	1.11	.09
Services.....		4.84	1.87		4.91	1.85	-.48
Crafts.....		2.83	1.25		2.79	1.28	.40
Electronics technician.....		2.10	1.05		2.18	1.10	-1.10

Comparisons after Eight Months on the Job. Comparisons of the 6- and 12-week experimental training groups after eight months on the job on a variety of performance, adjustment, achievement, interest, and aptitude measures are given in table 30. With the single exception of the Military Fundamentals subtest of the Comprehensive Achievement Examination, there were no significant differences in the performance of the groups.⁷⁸

The 6- and 12-week experimental training groups were also compared on four adjustment scores derived from information in their Personal Record Blanks; a Grade Status Score where a low score indicated a favorable promotion status; a Crime and Punishment Score where a low score reflected a low incidence of disciplinary infractions and punishment; a Supervision-Retainability Score reflecting retainability and amount of supervision required, a high score indicating that a man had been rated as retainable; and a Sick Call Score reflecting loss of duty time as a result of sick call and/or hospitalization. Results of this comparison are presented in table 31. There were no significant differences between the 6- and 12-week experimental training groups on any of these scores.

Table 31. Comparisons Between Two Groups of Limited-Aptitude Airmen on Four Adjustment Measures After Eight Months on the Job

Adjustment measure	6-wk. group		12-wk. group		Chi square*
	N	Percent	N	Percent	
Grade status score—					
1-2.....	7	1.47	7	1.54	-----
3-4.....	404	84.87	386	85.40	0.073
5-6.....	22	4.62	14	3.10	-----
7-8.....	43	9.03	45	9.96	-----
	476	-----	452	-----	-----
Crime and punishment score—					
0.....	338	71.01	317	70.13	.082
1-9.....	82	17.23	61	13.50	-----
10-18.....	42	8.82	54	11.95	-----
19-27.....	11	2.31	15	3.32	-----
28-36.....	3	.63	5	1.10	-----
	476	-----	452	-----	-----

See footnote on page 146.

*S. Mastropaolo and Others, A Study of the Relative Effects of Six-Week and Twelve-Week Experimental Basic Training Programs on a Sample of Limited Aptitude Airmen: Part III Eight-Month Follow-up Comparisons, Technical Report AFPTRC-TR-54-37 Sept 1954, Air Force Personnel and Training Research Center, San Antonio, Texas. 1954. Tables 30-39 are extracted from this study.

Table 31. Comparisons Between Two Groups of Limited-Aptitude Airmen on Four Adjustment Measures After Eight Months on the Job—Continued

Adjustment measure	6-wk. group		12-wk. group		Chi square*
	N	Percent	N	Percent	
Supervisors' rating—retainability—					
1.....	34	7.14	40	8.85	-----
2.....	114	23.85	110	24.34	.456
3.....	183	38.43	191	42.26	-----
4.....	145	30.46	111	24.56	-----
	476	-----	452	-----	-----
Sick call score—					
0.....	262	55.25	239	52.88	.481
1-8.....	189	39.71	187	41.37	-----
9-16.....	25	5.23	25	5.53	-----
17-24.....	0	0	1	.22	-----
	476	-----	452	-----	-----

*A chi square value of 6.63 is required for significance at the .01 level of confidence.

Results of the comparison of 6- and 12-week experimental training groups on job knowledge tests after eight months on the job are presented in table 32. The groups were comparable with respect to the percentage passing tests in the six career fields containing the largest number of experimental trainees. The results were the same when the groups were compared on job knowledge tests covering all career fields to which experimental trainees were assigned.

Table 32. Comparisons Between Six-Week and Twelve-Week Groups in Terms of Percent Passing Job Knowledge Tests in Six Air Force Career Fields

Career field	12-week group				6-week group				CR
	No.		Percent		No.		Percent		12-wk.-6-wk. (percent pass)
	Pass	Fail	Pass	Fail	Pass	Fail	Pass	Fail	
55.....	5	17	22. 73	77. 27	10	14	41. 66	58. 34	- 1. 38
60.....	32	54	33. 30	66. 70	26	62	29. 55	70. 45	. 56
62.....	8	24	25. 00	75. 00	8	34	19. 05	80. 95	. 62
64.....	18	34	34. 60	65. 40	27	38	41. 54	58. 46	- . 77
95.....	11	11	50. 00	50. 00	10	8	55. 55	44. 45	- . 35
96.....	20	43	31. 70	68. 30	9	24	27. 27	72. 73	. 45
All others.....	11	42	20. 75	79. 25	6	53	10. 17	89. 83	. 49
Total.....	105	235	30. 88	69. 12	96	233	29. 18	70. 82	. 45

Tables 33 and 34 indicate that the 6- and 12-week experimental training groups did not differ appreciably in incidence of absence without leave (AWOL) or venereal disease (VD).

Table 33. Incidence of AWOL for Three "Project 1000" Groups as Reported on Personal Record Blanks Covering an Initial Eight Months of Duty

Group	Sample N	Airmen going AWOL		Frequency of AWOL	
		No.	Percent	No.	Percent
6-week.....	464	46	9.9	54	11.6
12-week.....	464	42	9.1	52	11.2
Total sample.....	928	88	9.5	106	11.4
Control group.....	222	19	8.6	23	10.4

Table 34. Incidence of VD Reported for Three "Project 1000" Groups Over an Eight-Month Period of Military Service

Group	Total sample	N	Percent
6-week.....	464	15	3.23
12-week.....	464	12	2.59
Total sample.....	928	27	2.91
Control group.....	222	2	.90

As in the 6-week follow-up, a control group (airmen of normal ability) was compared with a combined experimental group during the eight-month follow-up. Comparisons between these groups are presented in table 35. As in the 6-week follow-up, supervisors rated the control group more highly on job performance than they did the experimental group. The control group also scored significantly higher on achievement and aptitude tests. Consistent with the 6-week follow-up, however, the experimental group showed a significantly higher level of interest in the more technical job areas of the Airmen Activity Inventory. Comparisons of attitude test scores produced equivocal results.

Table 35. Comparisons of Experimental and Control Groups on Achievement and Aptitude Measures After Eight Months on the Job

Measure	Control group			Experimental group			CR Control-experimental
	N	Mean	SD	N	Mean	SD	
Job performance—							
Job rating scale.....	222	5.69	2.06	822	4.60	2.18	6.91
Supervisor interview record.....	222	5.91	2.10	822	4.41	2.25	9.28

Table 35. Comparisons of Experimental and Control Groups on Achievement and Aptitude Measures After Eight Months on the Job—Continued

Measure	Control group			Experimental group			CR
	N	Mean	SD	N	Mean	SD	Control-experimental
Attitudes—							
Individual interview record.....	222	4.81	1.84	822	4.64	1.79	1.23
Attitude survey.....	222	3.00	1.82	790	3.44	1.98	-3.12
Personal happiness scale.....	222	4.40	1.99	822	4.35	2.24	.32
Psychological change scale.....	222			822			
Direction of change.....		3.74	2.45		3.84	2.42	-.54
Degree of change.....		34.50	6.86		33.47	7.46	1.95
Composite score.....		18.33	9.78		18.97	9.35	-.87
Achievement—							
California achievement scale.....	222			788			
Reading.....		6.65	1.36		4.92	1.20	17.21
Arithmetic.....		6.76	1.04		5.78	.88	12.76
Language arts.....		6.54	1.02		5.49	1.09	13.34
Total score.....		6.65	.96		5.42	.91	17.22
Comprehensive achievement test—							
Development of attitudes.....	222	7.40	1.96	819	5.27	2.39	13.66
Military fundamentals.....	222	7.72	1.82	825	5.64	2.39	14.09
Interest (airman activity inventory).....	222			782			
Mechanical.....		4.90	1.77		5.58	1.79	-5.04
Clerical.....		4.72	1.94		5.18	1.94	-3.12
Equipment operator.....		4.84	2.11		4.39	2.02	2.83
Radio operator.....		5.20	1.95		5.48	1.83	-1.91
Technician specialist.....		5.02	2.15		5.33	2.07	-1.91
Crafts.....		4.36	1.92		4.42	1.90	-.41
Services.....		5.37	2.05		4.96	2.02	2.64
Electronics technician.....		5.18	1.97		5.37	1.85	-1.28
Aptitudes (AC-1B).....	222			790			
Mechanical.....		4.51	1.88		2.34	1.03	16.56
Clerical.....		4.27	1.85		2.36	1.17	14.61
Equipment operator.....		5.41	2.22		3.08	1.39	14.86
Radio operator.....		4.30	2.00		2.60	1.28	11.99
Technician specialist.....		4.20	1.95		2.27	1.10	14.15
Crafts.....		5.19	1.94		4.87	1.86	2.19
Services.....		4.78	1.91		2.81	1.26	14.52
Electronics technician.....		4.25	1.91		2.14	1.08	15.77

Comparison of control and experimental trainee groups on the four adjustment scores is shown in table 36. Control group airmen lost less duty time through sick call and hospitalization, and were declared to be more retainable than experimental group airmen.

Table 36. Comparisons Between a Residual Control Group and a Consolidated 6-Week and 12-Week Experimental Group on Four Adjustment Scores

Score	Experimental group		Control group		Chi square
	N	Percent	N	Percent	
Grade status—					
1-2.....	14	1.51	55	24.77	-----
3-4.....	790	85.13	145	65.32	-----
5-6.....	36	3.88	6	2.70	-----
7-8.....	88	9.48	16	7.21	-----
	928	100.00	222	100.00	1.82
Crime and punishment—					
0.....	655	70.58	167	75.23	-----
1-9.....	143	15.41	31	13.96	-----
10-18.....	96	10.35	19	8.56	-----
19-27.....	26	2.80	3	1.35	-----
28-36.....	8	.86	2	.90	-----
	928	100.00	222	100.00	1.76
Supervisors' rating on retainability—					
1.....	74	7.97	1	.45	-----
2.....	224	24.14	16	7.21	-----
3.....	374	40.30	59	26.58	-----
4.....	256	27.59	146	65.76	-----
	928	100.00	222	100.00	54.26
Sick call—					
0.....	501	53.99	141	63.52	-----
1-8.....	376	40.52	80	36.03	-----
9-16.....	50	5.39	1	.45	-----
17-24.....	1	.10	0	0	-----
	928	100.00	222	100.00	6.54

As indicated in table 37, a significantly higher percentage of airmen in the control group achieved passing scores on job knowledge tests.

Comparison of control and experimental groups on several indexes of adjustment is presented in table 38. These statistics indicate slightly poorer adjustment for the experimental group. Whether greater differences on these indexes should have been expected is not clear. Absence of such difference may be related to the fact that the caliber of airmen in the control group was somewhat lower than that of an average group—their performance was significantly below that of a normative Air Force population on a variety of achievement, aptitude, and mental ability tests.

Table 37. Comparisons Between Experimental and Control Groups in Terms of Percent Passing Job Knowledge Tests in Six Air Force Career Fields

Career field	Control group				Experimental group				CB
	No.		Percent		No.		Percent		Control-experimental
	Pass	Fail	Pass	Fail	Pass	Fail	Pass	Fail	(percent pass)
55.....	7	4	63.63	36.36	15	31	32.61	67.39	1.90
60.....	53	18	74.60	25.40	58	126	31.52	68.47	6.23
62.....	12	15	44.40	55.60	16	58	21.62	78.37	2.27
64.....	49	14	76.80	23.20	45	72	38.46	61.54	5.04
95.....	13	7	65.00	35.00	21	19	52.50	47.50	.92
96.....	25	13	65.00	35.00	29	67	30.21	69.79	3.79
All others.....	37	28	56.92	43.08	17	95	15.18	84.82	5.82
Total.....	196	99	66.44	33.56	201	468	30.04	69.95	10.58

Table 38. Summary Data Derived from an Eight-Month Follow-Up Study of Two Groups of "Project 1000" Airmen

Index	Group		Remarks
	Experimental (N=804) (percent)	Control (N=222) (percent)	
Demotions.....	10.5	7.1	Originated by Air Police. 11.4 percent includes 7 deserters.
Delinquency reports.....	10.9	8.9	
AWOL (total incidence).....	11.4	10.4	
Squadron punishment.....	27.2	24.1	Summary, special, and general.
Courts martial.....	12.0	9.4	
Discharges.....	3.1	1.3	All reasons. See text for breakdown.

Conclusion

On the basis of data obtained immediately after basic training and after six weeks and after eight months on the job, it was concluded that the 6-week and 12-week experimental courses produced equivalent results. Marginal men who received added training in language arts and mathematics during basic training were not found to be appreciably different in skills, knowledges, and adjustment to the Air Force than marginal men who had not received such additional instruction during basic training.

COMPARISON OF EIGHT-WEEK AND FOURTEEN-WEEK BASIC TRAINING FOR MARGINAL MEN IN THE AIR FORCE

In 1952, the Air Force conducted a study in which marginal airmen who had completed the standard 8-week course then in effect were compared with marginal airmen who had completed a special 14-week basic training course.¹⁹ This study was carried out prior to the more extended study reported above—"Project 1000." The results obtained in "Project 1000" supported the findings of this earlier study.

The purpose of the study was to determine the effects on marginal men of covering the same material as was covered in the 8-week course at a slower pace by extending the course to 14 weeks. Thus, except for differences in the time spent in basic training, the curriculum, materials, teaching methods, and so forth were the same for both courses. The distribution of training time in the 8-week standard or control course and the 14-week experimental course is indicated in table 39.

Table 39. Training Programs for Experimental and Control Groups in 1952
Air Force Study

Phase of training	Control (8-week)		Experimental (14-week)	
	Weeks	Total hours	Weeks	Total hours
Processing (in-processing, medical and psychological tests, counseling).....	1-8	74 (40 in 1st wk)	1-14	92 (44 in 1st wk)
Language arts.....	1-4	45	1- 9	90 (1 hr in 1st wk)
Mathematics.....	2-5	30	1- 8	70 (1 hr in 1st wk)
Adjustment to Air Force life....	1-8	29	1-14	58
Development of military skills....	1-8	95	1-14	175
Marksmanship.....	5	27	9-10	40
Development of attitudes (citizenship, character guidance; history, government and traditions; and mess and special details) (48 hours for each group).....	2-8	60	2-13	91
Development of physical fitness..	1-8	24	2-14	56
Total.....		384 (eight 48-hr wks)		672 (fourteen 48-hr wks)

¹⁹ Donald B. Gragg and Others, *The Fourteen-Week Exploratory Study of Marginal-Airmen Basic Training*. Research Report AFPTRC-TN-55-10, June 1955, Air Force Personnel and Training Center, San Antonio, Texas. 1955.

A group of 280 American-born airmen with California Achievement grade placement scores below 5.5 and AFQT percentile scores below 31 were divided into two groups of 140 each—one to take the standard 8-week course and the other to take the 14-week experimental course. The groups were matched with respect to scores on the AFQT, scores on the Cooperative Inter-American Tests of Mental Ability and the California Achievement Test, education, age, cultural group (race and first language learned), civilian occupation, Army area of birth, and Army area of enlistment.

Marginal trainees in the experimental and control groups were compared on the following criteria after completion of 14-week and 8-week basic training, respectively:

1. Retention—Discharge. Retention in the Air Force for at least 14 weeks after the beginning of basic training or discharge during this period.
2. A/3C vs non-A/3C. Promotion to A/3C during basic training or non-promotion during this period.
3. Marksmanship. Qualifying-round score with the M1 carbine during basic training.
4. Comprehensive Achievement for Orientation Area. A test measuring information in American history and civics, principles of democracy, directives governing airman activities, customs of the Air Force, and familiarity with Air Force equipment.
5. Military Science and Tactics Examination. A test measuring information in areas such as close order drill, general orders, security, articles of war, survival, leadership, hygiene and first aid, and psychological warfare.
6. The Comprehensive Qualifying Examination. A test measuring the same content as the Orientation Examination and the Military Science and Tactics Examination combined.
7. The Armed Forces Qualification Test.
8. The eight aptitude indexes.
9. Basic Mathematics Examination. A test measuring achievement in mathematics designed to test preparation for technical schools with mathematics curricula.
10. Review Arithmetic Examination. A test designed to measure achievement in mathematics for use with Category IV personnel. The items are simpler than in the Basic Mathematics Examination.
11. The California Achievement Test. A 335-item achievement examination with subtests in reading, arithmetic, and language.

With the exception of the Basic Mathematics and Review Arithmetic Examinations, there were no appreciable differences between the 8-week and 14-week groups on any of the criteria. Other differences between the groups were either not statistically significant or,

if they were statistically significant, they were small and of no practical significance. It can be concluded that in this study, with the exception of mathematics achievement, reducing the rate at which instruction is given appears to have little effect on the skills and knowledge acquired by marginally literate men.

EFFECT OF NAVAL RECRUIT PREPARATORY TRAINING ON BASIC BATTERY TEST SCORES AMONG MORAL MARGINAL PERSONNEL

In 1952, a Navy study⁸⁰ was undertaken to determine the effect that Recruit Preparatory Training—the Navy's version of pre-basic literacy training—would have on the scores of marginal men on the Basic Test Battery. Two groups of men who scored below 36 (approximately 14th percentile) on the General Classification Test were selected for this study (see app. 1 for interpretation of Navy GCT scores). The first group consisted of men who had obtained a score of less than 38 on the Literacy Test and were sent to Recruit Preparatory Training. The second group, intended as a control, scored above 38 on the Literacy Test and were sent directly to recruit training. Both groups were given the Basic Test Battery upon entering training centers. Each group was later retested with the same form of the Basic Test Battery—the experimental group at graduation from Recruit Preparatory Training, the control group at the end of regular recruit training.

Certain inadequacies of the study could severely restrict the generality of the findings—

1. The control group was not comparable to the experimental group.
2. Differences between the groups on Basic Test Battery scores cannot be attributed to the effects of Recruit Preparatory Training since the control group itself received a form of training—recruit training.
3. The same form of the Basic Test Battery was used during retesting.

However, the study is of some interest since, while there was some improvement in test scores at the time of retesting—" . . . some (and possibly all) of the increase in this situation may be attributed to the regression effect."—There was no direct evidence that literacy (RPT) training affected scores on the Basic Test Battery.

⁸⁰ Personnel Management Branch, Bureau of Naval Personnel. Effects of Recruit Preparatory Training on Basic Battery Test Scores. Personnel Research Memorandum. Pers. 152 Memo 55-2, May 1955 Bureau of Naval Personnel, Washington, D.C. 1955.

STUDY OF WORLD WAR II NAVY CAREERS OF SPECIAL TRAINING GRADUATES

The Navy, on the basis of data available in personnel and medical records, attempted to study the World War II naval careers of illiterates who had received literacy training and to assess the extent to which this training contributed to their effective performance in the Navy.⁵¹ The records of 1,026 illiterates who entered the Navy during the fall of 1944 and who received literacy training at Camp Peary were compared with those of 1,021 normal control cases who entered the Navy at the same time and from the same parts of the country. In an effort to provide a group with characteristics comparable to the illiterates but who did not receive literacy training, the records of 999 marginals who entered the Navy at approximately the same time as the illiterates were also selected.

Unfortunately, certain limitations in the methodology and data restrict the utility and validity of the findings. The control group of normals was supposed to represent a cross-section of literate men who entered the Navy at the same time as the illiterates. However, there were almost no enlistees in the control sample. Also, the control group included a disproportionately large number of men from rural areas of the South and Southwest. The average age of the control group was more than one year higher than that of the illiterates. The control group overlapped the illiterate group somewhat in intellectual ability as measured by the Navy General Classification Test.

The marginal group not given literacy training was supposed to be composed of men of the same general level of ability as the illiterates, since it was to be used as a standard for assessing the effectiveness of literacy training. However, the marginals had not been classified as illiterates, indicating that they were different from the illiterates in intellectual effectiveness. "... the marginal group is much superior to the illiterate group not only in the level of literacy but also in general intellectual ability. It is also superior to the illiterate in educational level." The marginal group also differed from the illiterate group in age and background variables.

The most severe restriction of the study stems from the fact that it was based solely on data taken from records.

These records were five or more years old, gathered for a variety of other purposes, and subject to all the losses and distortions which characterize a large-scale record system of an organization engaged in active combat and manned by a changing and relatively inexperienced personnel. Many entries were lacking; others were incomplete; others were inconsistent. No new information could be gathered to overcome

⁵¹ Elizabeth P. Hagen and Robert L. Thorndike. A Study of World War II Navy Careers of Illiterates Sent Through Literacy Training, Research Report April 1953. Classification and Survey Research Branch, Bureau of Naval Personnel, Washington, D.C. 1953.

these deficiencies. The amount of trust to place in any entry was always a matter of question. . . . The test records presented some particular problems. Most of the special tests used with the illiterates were available in only rare cases for the other groups.

Results of the study showed that in many respects the illiterate group did far less well than the control (normal) group during their Navy careers. They received fewer promotions, and if promoted to petty officer, they were in a limited range of non-technical rates. They received lower average proficiency ratings. Illiterates received more disciplinary actions and more frequently lost time due to misconduct. They less frequently received an honorable discharge, and were more likely to receive a medical survey and incur a venereal infection.

In other respects, there was little difference between illiterates and control groups. They were similar in frequency of sea duty and time spent in each duty assignment. Illiterates did not show an excess of hospitalization, and difference between illiterates and controls in incidence of Veterans Administration claims was not great.

The marginal group occupied an intermediate position nearer the illiterate than the control group on most of the factors that differentiated illiterates from controls. Marginals received slightly more promotions than illiterates, had somewhat higher average proficiency ratings, fewer medical surveys, and made fewer Veterans Administration claims. However, in disciplinary actions the marginals did appreciably less well than the illiterates. They got into more trouble and more serious trouble than did illiterates. This difference may have been due in part to the relative immaturity of the marginal group. Also, some potential trouble makers among the illiterates may have been weeded out during literacy training at Camp Peary.

EVALUATION OF LANGUAGE ARTS ASPECT OF THE AIR FORCE BASIC TRAINING PROGRAM

The Air Force conducted a study in which the effects of the inclusion of 45 hours of language arts training during basic training for marginal Air Force personnel was examined.²² Airmen participating in this study were those having scores on the Armed Forces Qualification Test falling between the 10th and 30th percentile (Category IV). Three groups each consisting of approximately 140 men participated in the study.

The first group received basic training that contained 45 hours of instruction in reading, writing, and spelling. Each hour of instruction was designed to accomplish two things—teach language skills and

²² Don C. Shanley and Robert G. Smith, Jr. An Evaluation of the Language Arts Aspect of the Basic Training Program. Research Report AFPTRC-TN-55-36 February 1955, Air Force Personnel and Training Research Center, San Antonio, Texas. 1955.

teach military information designed to augment that covered in other classes.

The second group received instruction paralleling that of the first group. All the military information contained in the first program was covered, but no attempt was made to teach reading, writing, or spelling.

The third group received basic training similar to that usually given to Air Force recruits, although curriculum materials were adjusted to the level of Category IV trainees.

Upon completion of basic training, the three groups were compared on reading comprehension as measured by the California Achievement Test and on knowledge of military subject matter as measured by the C-4 Comprehensive Achievement Examination. The group that had received 45 hours of instruction in language arts in general showed relatively greater improvement in reading comprehension. However, there was considerable variation in degree of improvement among airmen in this group. Some men showed a sizable amount of improvement, other almost none at all. Obviously, a critical problem is the identification of men who may benefit from such instruction and those who are not likely to benefit. No data are available on the degree of permanence of improvement in reading comprehension obtained in this study. No significant differences were found between the groups with regard to knowledge of military subjects.

CHAPTER 10

OPERATIONAL PROGRAMS AND STUDIES AFFECTING LOW SCORERS ON AFQT, 1951-1964

During the period 1951 through 1959, the Army adopted certain policies and procedures which aimed to identify malingerers at the time of induction and to eliminate from the service men with poor career potential. A third program was essentially a research effort to determine the effectiveness of low scorers on the AFQT in Army school training and on the job.

These three efforts identified as appropriate candidates for long-range study men classed as marginal under prevailing standards. These standards were related to malingering, possession of too few aptitude area scores to qualify for retention, and low AFQT scores.

The Army's World War II experience with the mental marginal (ch. 5) emphasized the basic shift in standards from literacy to learning ability—a term which incorporated those factors important for military success. Illiteracy indicated an inability to meet fourth-grade standards for expression in, and understanding of, the English language. This shift in the basic standard did not, of course, eliminate the necessity for determining who the slow learners and illiterates were and for providing subsequent special training for absorption into military life.²² From August 1942 on, preliminary interviews, qualification tests, visual classification tests, individual tests, and final interviews of rejectees by personnel psychologists provided progressive screening to classify men as acceptable or unacceptable and to identify those suspected of malingering.

Administrative Acceptee Program

This World War II experience became the guidepost for the post-war administrative acceptee program. From July 1946 until July 1950, the Army depended exclusively on voluntary enlistments except for a limited number of inductions in November and December of 1948 and January and February 1949. However, in July 1950, with the Korean War breaking, involuntary inductions again became

²² For a complete listing of Army mental standards for induction 1941-1964, see appendix 9.

heavy. The Army again was faced with a decision concerning men who failed to meet minimum standards for induction but who were still considered acceptable. Three groups of individuals fell into this category. The malingerer was considered to be one who deliberately failed to reveal his true ability, feigned illness, or exaggerated defects in a conscious attempt to escape military service. The second group were those physically or emotionally upset at the time of examination. The third group included high school graduates and men who had successfully completed 12 grades of schooling, but who failed to attain a qualifying score on the AFQT.

By Army policy, registrants failing to attain the minimum qualifying percentile score of 13 on the Armed Forces Qualification Test (introduced in 1950), and suspected of deliberately intending to fail, were declared administratively acceptable. Determination of acceptability became the responsibility of the commanding officer of the induction station. Special vigilance was called for with respect to those who had completed significant schooling. Regulations called attention to studies on the general draft population of World War II which showed that only 1 percent of those who had completed 12 years of school scored below the 13th percentile; of those with an eighth-grade education, 13 percent scored below the 13th percentile; of those with 5 years of schooling, 55 percent. Work history was a second evaluation standard. Close scrutiny was to be given to those in the professions, draftsmen, salesmen, electricians, machinists, and clerical personnel, since most of these were above the 13th percentile, based on World War II experience. Finally, very low test scores received additional attention as indicators of attempts at deliberate failure.¹⁴

Even closer screening to identify men who should be accepted administratively was required after an examination of the growing failure rate on the Armed Forces Qualification Test. The prevailing belief both in Congress and at Selective Service headquarters was that too many individuals were being rejected by the Armed Forces for failure to meet mental standards. Consequently, during late 1950 and early 1951, the acceptance standard based upon years of education shifted. At first, all who failed the AFQT but who had completed 12 years of school or graduated from high school were acceptable regardless of test score.¹⁵ Later (2 January 1951), the educational requirement was lowered to successful completion of the 9th grade. Finally (14 March 1951), the standard became completion of the 9th grade or successful work performance in semi-skilled or skilled occupations which in the opinion of the interviewing officer would enable the registrant to complete basic training and perform military duty.

¹⁴ SR 615-180-1, 27 April 1950.

¹⁵ SR 615-180-1 and changes thereto beginning at change 3, 2 November 1950.

The whole process of lowering acceptance standards finally culminated on 18 July 1951 in setting a converted score of 10 on the AFQT as the standard for induction through selective service, and suspension of the whole administrative acceptee program. On 1 December 1951, the minimum qualifying score became a percentile score of 10 under the Universal Military Service and Training Act of 1951.

Despite these changes in standards, the problem of the administrative acceptee persisted. The lower standard did not solve the problem of the suspected malingerer or the poorly motivated individual. With selection based on a single measure, deliberate failure was always a possibility in the case of men who might be inclined to avoid induction into the military service. The key problem remained: how to identify for rejection true failures unable to absorb military training and how to identify for acceptance those who, on the basis of their skills and abilities, could be expected to serve acceptably.

On 28 November 1951, the Army again moved to reestablish successful completion of 12th grade or graduation from high school as the standard for administrative induction regardless of failure to attain a percentile score of 10 on the AFQT.

Role of the Personnel Psychologist

A major attempt to deal with the administrative acceptance problem was made in January 1952. Registrants who failed to achieve a percentile score of 10 on the AFQT could be administratively accepted upon terminal screening by qualified personnel. At this time, the Army procured from among its own personnel and from civilian life professionally trained psychologists and assigned these officers to Armed Forces Examining Stations. Before entering their duties, these men received a comprehensive orientation in the techniques and procedures in effect with respect to the administrative acceptance of Selective Service registrants.

"The authority to accept administratively those registrants who do not receive a qualifying score on the AFQT has been delegated to the Commanders of the Armed Forces Examining Stations. A personnel psychologist assigned to the Armed Forces Examining Station is professionally responsible for determining administrative acceptability. He should be encouraged by local commanders to carry out his mission, which is to accept administratively only personnel who meet present standards. It is not intended that the psychologist predict ability of registrant to fulfill successfully his obligations to the Armed Forces."²² The intent of this directive was to emphasize to AFES commanders

²² Letter, Headquarters, Department of the Army, File AGSP-P 210.1. Subject: Administrative Acceptees, dated 28 December 1951, and also Memorandum from The Adjutant General to Chairman, Armed Forces Policy Board, File AGSP-P, Subject: "Summary of Present Regulations Concerning Induction of Administrative Inductees," dated 5 December 1951.

the importance placed upon the administrative acceptee program by the Department of the Army and to insure that the personnel psychologist adhered to his task of deciding whether the individual met the existing standard. The program did not contemplate modification of standards by the judgment of the personnel psychologist concerning the individual's capability of service in the military environment.

"Terminal Screening" Procedures

The screening procedures established to supplement the AFQT reflected the Army's effort to refine its selective process and to detect malingerers. A Verbal Arithmetic Subtest (based on the AFQT) and a Non-Language Qualification Test were given to those scoring 0 to 9 and 4 and below, respectively, to determine whether they could be considered eligible for service if an emergency should necessitate their recall. Beyond this, a terminal screening procedure was applied to all individuals who were considered unacceptable under minimum mental standards. The personnel psychologist conducted an interview according to the format prescribed in "A Guide for Terminal Screening at Induction Stations." Based upon the evaluation by the interviewing officer, a determination was made whether results were at variance with the individual's test scores. The officer could recommend induction or seek further verification of interview findings from the registrant's local Selective Service Board before a final decision was reached. Five basic factors received attention—

1. School history. Level reached, reason for leaving.
2. Work history. Jobs held, duties, wages, length of time employed, stability of employment.
3. Personal and family life. Independence, handling of own affairs, responsibility for self and others, handling of finances, property ownership.
4. Spare-time activities. Membership in organizations, reading habits, hobbies, recreational activities.
5. General behavior. Language facility, presentation of ideas, attitude toward military service, grasp of questions and directions, mental alertness.

A little more than a year after introduction of the new administrative acceptee program, procedures were further tightened. One major problem was lack of uniformity in application of established Department of the Army policies and procedures in the terminal screening process. Field surveys showed the need for additional objective screening devices, since some stations resorted to unauthorized steps. In addition, the wide range of socio-economic conditions prevailing throughout the country complicated determinations. Differing educational opportunities, differing economic and health conditions, differing openings for success affected the program. In areas where educational

opportunities were more limited, administrative inductions tended to be larger. Determination to induct was sometimes made on the basis that failure to pass the AFQT resulted from lack of education rather than low mental ability. This in spite of the fact that deficiencies in education did not fall within the category of permissible exceptions to AFQT score as the standard for acceptance. Moreover, the tendency to use unauthorized screening instruments reflected a desire to explore the degree of literacy required for acceptable military service. Here again, the basic program did not permit this latitude.

What commanders and personnel psychologists encountered every day at induction stations caused them to believe that many men who did not meet the prescribed standard could and should serve. This belief was based upon factors other than those officially prescribed for acceptance and rejection. In some instances, those officials tended to introduce considerations about the acceptance of marginal men beyond that permitted by prevailing policy.

A policy statement dated 5 May 1952 pointedly reminded personnel psychologists that they were "not expected to evaluate native intelligence potential and literacy separately, when determining whether a registrant is mentally qualified for induction. Analysis of the pattern of answers on the AFQT will not be made for the purpose of determining whether the score was achieved as a result of relatively greater success on one type item in comparison with other types."⁸⁷ The principal acceptance standards received renewed emphasis. High school graduates or those successfully completing the twelfth grade in any school system (if the principal language was English) were accepted. Others scoring low on the AFQT were accepted only under the following conditions:

1. A clear basis exists for determining that the registrant deliberately failed to reveal his ability on the AFQT and, had he been properly motivated, his test score would have been equal to or higher than the required score.
2. A clear basis exists for concluding that the registrant was physically or emotionally upset during the testing period, and, had he not been upset, his test score would have been equal to or higher than the required score.

The policy specifically excluded all non-English speaking registrants and English-speaking registrants who could not read or write English. Deliberate malingerers were to be administratively accepted, or if the registrant refused to cooperate, he could be referred to the Selective Service local board for legal action.

⁸⁷ Letter, Department of the Army, file AGAO-S 220.04 (25 Apr 52)—M, AGPP-P. Subject: Administrative Acceptees, dated 5 May 1952.

New Tools for Determining Acceptability

Special AFQT Motivation Keys were issued in August 1953 to help in differentiating individuals who failed the AFQT because of low mental ability from those who failed as a result of poor motivation. The keys were used to re-score answer sheets of examinees who made low scores on the AFQT. The obtained scores became guides for determining the extent to which the original AFQT score represented a true measure of ability. Extremely low scores on the keys was taken to mean that the failing AFQT score originally obtained was consistent with the examinee's true ability. Extremely high scores indicated that the true ability of the examinee was probably higher than was shown by the original score. Scores in the middle range required more extensive interview, since they indicated that the examinee's motivation to pass the AFQT was uncertain.⁸⁸

In addition to the Motivation Keys, the first of a series of Technical Guides was issued to emphasize the necessity of uniform application of all Department of the Army procedures governing administrative acceptance. The first of these guides⁸⁹ listed types of error to be watched for—

1. Errors arising out of the situation or circumstances under which a particular test was administered.
2. Errors arising from the individual being examined.
3. Errors arising from special impairment of function or from other deficit conditions (psychological or neuropsychiatric).
4. Errors resulting from imperfect motivation (such as malin-
gering).

In July 1954, a new Terminal Screening Guide⁹⁰ was introduced which included the Motivation Keys and the Individual Picture Recall Test (IPRT). Scores on the IPRT indicated the probable capacity of examinees to achieve a passing score when adequately motivated. In the midst of this change in procedures, mandatory acceptance of high school graduates and those completing 12 years of high school was modified to permit referral to a board established by the commanding officer of the Armed Forces Examining Station (AFES) of men the personnel psychologist believed to be unsuited for military service. This action followed studies at various AFES of high school graduates who failed the AFQT but who were nevertheless inducted. For example, in Montgomery, Alabama, from May 1953 to November 1953, 343 high school graduates who failed the AFQT were inducted under the current policy, although the personnel psychologist, on the basis of

⁸⁸ Letter, Department of the Army, file AGTP-P (M) 220.01 (15 Jul 53). Subject: AFQT Motivation Keys, dated 21 July 1953.

⁸⁹ Technical Guide No. 1 for Personnel Psychologists at Armed Forces Examining Stations, file AGTP-P (M) 220.1 (9 Jun 53), dated 16 June 1953.

⁹⁰ DA AGO PRT 2689.

tests, had determined that they were near illiterate and not malingerers.⁹¹ The change in standard reflected the extreme differences found among high school graduates from different schools and geographical areas. Differing promotion policies and various types of vocational training compounded the problem. When board procedures proved too cumbersome, the personnel psychologist acting alone determined acceptability, basing his decision upon test results and interview findings (1956). Finally, in June 1957, the Department of the Army redefined the entire administrative acceptee program.⁹² The new program used a new guide for Terminal Screening, new procedures for Administration and Scoring the Individual Picture Recall Test (IPRT), and new Failure Keys replacing the earlier Motivation Keys.⁹³ The Failure Keys were scoring keys applied to AFQT answer sheets to derive the appropriate failure category: True Failure, Deliberate Failure, or Undetermined. Administrative acceptance was limited to those who were determined to have failed the AFQT deliberately and who, if they had tried, would have attained scores within the upper half of the Group IV range (Group IV=AFQT 10-30). The policy now emphasized that "under present conditions only those registrants who can adequately assimilate military training and completely perform in a military specialty will be administratively accepted." Only those non-high school graduates falling in the deliberate failure category were further screened. Screening procedures were applied to all high school graduates, with the personnel psychologist making the determination of acceptance.

These procedures prevailed until July 1958, when the Army shifted its standards for induction. The operation and maintenance of new weapons and equipment demanded more highly skilled personnel. To identify as large a resource of manpower as possible meeting these requirements, additional induction tests were administered to men scoring in AFQT Group IV. The purpose was to determine whether the individual had the special aptitudes to qualify for training in Army specialist schools. Under this procedure, men in Group IV who achieved two Aptitude Area scores of 90 or higher on the Army Classification Battery were eligible for induction.⁹⁴ The Terminal Screening Guide continued to furnish objective guidance to the personnel psychologist in determining administrative acceptance.

These procedures continued until May 1963, when an additional standard was added to the initial screen for induction. A minimum score of 80 on the General Technical Aptitude Area (GT) and scores of

⁹¹ Letter, Headquarters Third Army to The Adjutant General, Department of the Army, File AGTP-P 220.01 (26 Oct 53) Subject: Evaluation of High School Graduates Who Did Not Meet Minimum Requirements Prior to Completion of High School, dated 29 Dec 1953.

⁹² AR 601-270, Change 6, 14 June 1957.

⁹³ DA Pamphlet 611-37, Terminal Screening Guide, July 1956.

⁹⁴ JMT&S Act as amended by Public Law 85-564—85th Congress, 28 July 1958 and Executive Order 10776, 1958.

90 or higher on two additional aptitude areas was required for all scoring between 10 and 30 on the AFQT.⁹⁵ The Army Qualification Battery (AQB), consisting of short tests more suitable to relatively low ability than tests of the longer Army Classification Battery (ACB), supplanted tests of the ACB at Armed Forces Examining Stations. Those who failed to attain the required scores were given terminal screening by the personnel psychologist. Both those attaining the required scores on the AQB and those who failed but were determined to be acceptable were designated "Administratively Accepted." All registrants who failed to attain the 10th percentile on the AFQT were also screened under the Terminal Screening Guide.⁹⁶ The complete screening procedure in effect in 1964 for administrative acceptees is shown in appendix 18.

Research on Administrative Acceptees

The principal studies on the performance of administrative acceptees grew out of the desires of the Armed Forces Policy Board in 1951. Although the Navy and Air Force did not depend upon induction, and therefore did not admit administrative acceptees, the Board was concerned about the implications of mobilization as discussed in chapter 3.

On 19 July 1951, the Policy Board established a Working Group composed of representatives of all services to study the performance of administrative inductees. The problem faced by the Board centered on the possibility that under mobilization conditions all services would be obliged to induct personnel. The problem of the deliberate failure would then be generalized and administrative acceptance would induct large numbers of personnel whose subsequent usefulness would be of concern to all the Services. The basic plan was to study the relative performance on classification tests and in basic training of administrative and other inductees so as to form a preliminary estimate of the usefulness of individuals with substandard scores and of the amount of malingering on AFQT to be expected.

Two separate studies, one Army, one Marine Corps, evolved. Since training methods, personnel records, classification systems, and organizational structure differed in the Army and Marine Corps, the Working Group designed the two separate studies to be as similar as possible. The two services carried out the studies on their own personnel, following research plans prepared and approved by the entire Working Group. The Armed Forces Policy Board received reports dealing with the classification tests in October 1951, and reports dealing with basic training performance in May 1952.

⁹⁵ DA Message 336065, 26 April 1963.

⁹⁶ DA Pamphlet 611-45.

The Army study, in its first phase, compared performance of administrative and other inductees on classification tests. The second phase compared inductees on measures of basic training proficiency. Administrative and other inductees were described in terms of education, race, civilian occupation, and Army area from which inducted.⁹⁷ This study was also intended to check the findings of earlier studies which had indicated that administrative inductees did not differ markedly from true AFQT failures. In one such study,⁹⁸ 85 percent of a group of administrative inductees scored below minimum standards when retested on the AFQT and Aptitude Area I.

Men in the Army study had been inducted in September 1951 when Congress had established a standard score of 70 as the minimum qualifying score for induction. An Army standard score of 70 was equivalent to what was then an AFQT converted score of the 13th percentile. Administrative inductees in the study were those whose AFQT scores were below the 13th percentile but who were nevertheless accepted. Regular inductees were men whose AFQT converted scores were 13 or above. After the men in this study were inducted, the minimum qualifying score was reduced from a standard score of 70 to a standard score of 65. A standard score of 65 was comparable to what had previously been an AFQT converted score of the 10th percentile. In general, the administrative inductees of September 1951 represented a higher mental ability group than those inducted later under different standards. For example, 20 percent of those in the Army study would have been considered regular inductees rather than administrative inductees under later standards (65 rather than 70) for induction.

In the study of classification test performance, three groups were compared with respect to scores on Aptitude Area I: administrative inductees, other inductees, and AFQT failures.

Administrative inductees scored lower as a group than did the other inductees. (The range of scores on Aptitude Area I was 55-125 for the administrative inductees and 65-155 for other inductees.) A comparison of the administrative inductees with the AFQT failures showed that only slightly more of the administrative inductees achieved higher Aptitude Area I scores. Most administrative acceptees and AFQT failures were "true" AFQT failures as judged by scores on Aptitude Area I.

The study of basic training performance compared the three groups on the following measures: rank in platoon on overall performance (ranking by staff), performance rating, written proficiency test

⁹⁷ Technical Research Report PRB 1080, Test Performance of Administrative Inductees, Personnel Research Branch, The Adjutant General's Office, Department of the Army, October 1953.

⁹⁸ Technical Research Report PRS 959, Follow-up of the Standardization of the Armed Forces Qualification Test, Department of the Army, 18 June 1952.

score, performance proficiency test records, elimination nominations, discharge completed or pending, previous civilian occupation, race, years of education, and Army area of induction. The findings were—

1. Among the lower level administrative inductees (inducted after September 1951), 74 percent were both ranked and rated below the average of their platoons; of the higher level administrative inductees (inducted prior to September 1951), 69 percent were ranked and 65 percent were rated below the average. Of the other inductees, 45 percent were ranked below average and 48 percent were rated below the average.
2. On the written Basic Military Training Proficiency Test, 92 percent of the "Low," 97 percent of the "High" and 46 percent of the other inductees achieved below average scores. Of these groups, 82 percent, 73 percent, and 42 percent respectively, scored below the average on performance tests of basic military proficiency.
3. Of the three groups, 24 percent, 19 percent, and 9 percent, respectively, were nominated for elimination.
4. On discharges, there were no significant differences.
5. Of both "Low" and "High" administrative inductees, 75 percent had been in unskilled, semi-skilled, and agricultural occupations as compared to 49 percent of other inductees.
6. Finally, 25 percent of the total administrative group had less than eighth grade education as compared to 5.5 percent of the other inductee group. Fifty-eight percent of the administrative group and 95 percent of the other inductee group were non-Negro. The highest percentage of administrative inductees came from the southern region of the United States.

The U.S. Marine Corps study was based on 1,729 administrative inductees, comprising 8.97 percent of the recruits who entered the Marine Corps from August through September 1951. (The Marine Corps permitted administrative acceptees to enter the Corps from August 1951 through May 1952.) This study differed from the Army study in that four separate training programs were established—for slow learners, for non-English speaking recruits, for extreme slow-learners, and for regular trainees. Findings of the study are summarized as follows:⁹⁹

1. In platoon ratings, the administrative inductees were heavily concentrated in the lower half of the ratings, ranging from 70 percent to 80 percent.
2. In rifle scores, 28 percent of the administrative inductees failed as compared to 11 percent of all recruits.

⁹⁹ U.S. Marine Corps, *Follow-Up of Marine Corps Experience with Administrative Acceptees in Basic Training*, 1953.

3. AFQT scores gave a reasonably accurate reflection of the relative abilities of the administrative inductees and all other recruits.
4. The rate of discharge for administrative inductees was more than two and a half times as great as for all other recruits.
5. When education was related to rank in platoon, individuals with eighth grade education or less did not do as well as those who had completed the ninth grade or more.
6. The cost of training the administrative inductee was estimated to be 16 percent greater than the cost of training another recruit.

Analysis of the Administrative Acceptee Program

An analysis of the administrative acceptee program from its inception in 1950 to 1964 reveals the following:

First, the program dealt primarily with the problem of insuring that those who met existing standards would be inducted. Conversely, it aimed at excluding all those who truly failed to meet existing standards for induction. The program reflected the concern of the Congress and Selective Service about military service for all those who did in fact qualify. It was not a program deliberately to increase the numbers inducted.

Second, the early Terminal Screening Guides were successively revised on the basis of findings. Although the resulting screening process was somewhat complicated, it did provide hurdles designed to identify those who should serve.

Third, the introduction of the personnel psychologist at Armed Forces Induction Stations gave the program the kind of professional assistance it needed. These officers provided the same kind of technical guidance in the testing and evaluation program that the medical officer gave to the physical examination process. It was important that the products of selection research, such as the Terminal Screening Guides and associated instruments, should receive proper use and that the final critical evaluation, through interview, be in the hands of individuals trained to elicit relevant information.

Fourth, a considerable number of men were inducted under the administrative acceptee program. At its very inception, between May 1951 and June 1952, the Army administratively inducted 39,501. During fiscal year 1953, an additional 46,466 were inducted. From August 1951 to May 1952, the Marine Corps took in 5,625 administrative acceptees. (For complete figures through FY 1963, see app. 19.) The large numbers taken into the Army caused concern in the Army that the screening was less stringent than was intended. These initial figures triggered improvement of the screening devices, introduction of the personnel psychologist, and the Army's insistence that all decisions be made only in relation to existing standards with primary

emphasis on detecting the malingerer. Also, the figures affected the Qualitative Distribution of Manpower program (see app. 22). The administrative acceptees were considered below Mental Category III, but were not in a definite mental category. However, all administrative acceptees were, for reporting purposes, classed as AFQT Category IV—thus distorting the meaning of Category IV. But beyond a distortion of data, the Army was in fact receiving a disproportionately large number of personnel who were of low mental ability. This led to a tightening of standards and screening procedures.

Fifth, and last, aside from the studies discussed in this chapter, no intensive follow-up analysis of the performance of administrative inductees in military duty positions or in a unit environment was made. How these individuals actually performed, compared with others within their organization, was never determined.

JOB PERFORMANCE POTENTIAL PROGRAM

The Department of the Army, in August 1957, initiated the Job Performance Potential Program, in order to operate under a reduced number of active duty personnel—a reduction which was to become effective in July 1958. If personnel ceilings were to be lowered, it was essential to retain men of the best quality. Individuals who did not meet minimum standards could be discharged involuntarily.¹ Commanders were permitted to retain those men who in their judgment possessed ability to absorb further training and to perform satisfactorily in a position for which trained. Men with no aptitude area scores above 90, or with only one or two aptitude area scores above 90, became eligible for discharge. Categories were designated ACB-0, ACB-1, and ACB-2. The three ACB categories permitted the setting of priorities of eligibility for discharge. Regular Army personnel in their initial enlistment and all non-Regular Army personnel who did not have a recorded score of 90 or higher on at least two aptitude areas were eligible for discharge. All other Regular Army personnel were required to possess 90 or higher on three aptitude areas. All individuals separated under this program were discharged, transferred, or returned to a reserve component. Exempted were enlisted men in the grade of sergeant or equivalent specialist grade with 10 years of service, medal winners, the combat disabled, and other categories such as those in hospitals or eligible for discharge for other reasons. Men undergoing initial training or not yet assigned to a company could be discharged immediately. Others already assigned to units fell under a quota system.

¹ Department of the Army Circular 635-2, 19 August 1957, as amended 3 April 1958.

Several significant facts emerged from a field evaluation² of the program. Elimination did reduce the burden of special training, instruction, and personal attention required during basic training for personnel of low potential. Failure rates in lower level courses at service schools dropped markedly. Significant downward trends in AWOL, confinements, and courts-martial rates resulted, along with reduction in administrative and disciplinary problems at company level. Additionally, the program acted as a definite motivating force for those ACB-0 and ACB-1 personnel retained, stimulating them to improve their over-all proficiency through off-duty and on-duty courses. It was felt that career soldiers realized that a limited size post-war Army required individuals with promotion potential.

On the other hand, some commanders believed that there were duty positions to which ACB-0 and ACB-1 men could be assigned and in which they could perform satisfactorily. Men with high aptitude scores had to be assigned to these positions, causing some concern or resentment and lowered morale. Some commanders also contended that discharge of personnel of long service created serious problems for the individual. For the future, they recommended that such programs be implemented in basic training centers—if an initial tryout of such groups was desired—or by outright rejection at the time of induction or enlistment. Subsequent policies did follow a pattern of providing appropriate scores on the Army Classification Battery or Army Qualification Battery as an additional screen beyond the AFQT (see app. 9).

An analysis of the grade structure as of 30 September 1957 when the program began is shown in table 40. Of those with ACB-0 or ACB-1 scores, about 6.5 percent had achieved promotion to E-7 or E-6, 20 percent to E-7, E-6 and E-5, and about 37 percent to E-7, E-6, E-5 and E-4.³

Table 40. Enlisted Men by Grade in ACB-0 or ACB-1 Group (as of 30 September 1957)

ABC Level	E-7	E-6	E-5	E-4	E-3	E-2 and 1	Total
0.....	345	2,211	6,742	8,333	17,573	12,054	47,258
1.....	781	3,397	7,418	8,934	16,857	18,818	56,205
Totals.....	1,126	5,608	14,160	17,267	34,430	30,872	103,463
Percent.....	1.09	5.42	13.69	16.69	33.27	29.84	100

² Fact Book prepared by The Adjutant General, April 1958, based upon DF, DCSPER to TAG, File DCSPER-PDD, Subject: Effects of Army Policy with respect to Elimination of Lower Category Mental Groups, (ACB-0 and ACB-1 Personnel), dated 2 April 1958, pp. 1-36.

³ Personnel Survey of Army 53-7221, data expanded to Department of Army Strength as of 30 September 1957.

Personnel in the grades indicated were affected by the program, and provision was made for commanders to retain men who were performing satisfactorily. The figures tend to indicate, however, that low aptitude was not necessarily a bar to promotion, even though twice as many men in AFQT categories I, II, III reached grades 7 and 6 as in Category IV.⁴ Appendix 17 shows the impact of the program for the years 1958 and 1959.

While the Job Performance Potential Program served to stimulate personnel who were retained to engage in educational programs, it also influenced the discontinuance of the Transitional Training Units.⁵ These units had been established, primarily at reception stations and initial training installations, to furnish instruction in basic military subjects and the basic academic subjects of reading, writing, and arithmetic to individuals who possessed less than fourth-grade education.⁶ These units had been, in effect, a modification of the World War II Spécial Training Units.

Elimination of the Transitional Training Units foreshadowed the tightening of screening procedures at Armed Forces Examining and Induction Stations (AFES). Since an individual had to achieve at least two aptitude area scores of 90 to be retained—with certain stated exceptions—initial acceptability standards also had to be changed. Following legislation by the Congress, the Army Classification Battery was introduced at AFES in August 1958 and administered to all Category IV personnel prior to induction. Those who failed to score 90 or higher on at least two aptitude areas were deferred.⁷

In summary, the Job Performance Potential Program had two basic purposes, to facilitate the reduction of Army strength by July 1958 and to improve the general quality of the enlisted corps. The two purposes were interrelated, since reduction in overall strength required the build-up in quality to perform the same or expanding missions with fewer people. The program did have a marked effect in reducing the number of disciplinary cases. The program eliminated from the service a significant portion of the marginal manpower who by definition failed to possess a requisite number of aptitude area scores above 90.

JOB PERFORMANCE OF MEN SCORING LOW ON AFQT— A FOLLOW-UP STUDY

Army enlistment standards (score of 31st percentile or higher on AFQT) were modified during August through December 1958 to per-

⁴ Fact Book, The Adjutant General's Office, p. 16.

⁵ DA Message 557338, 8 Aug 1957.

⁶ AR 355-30, 10 August 1955.

⁷ Technical Research Report 1117, Development of the Army Qualification Battery, AQB-1, Personnel Research Branch, The Adjutant General's Office, October 1959.

mit acceptance of volunteers with no prior service who scored from 21 to 30, inclusive, on the AFQT. However, such low scorers were accepted only if they scored 90 (approximately equivalent to the 31st percentile) or higher on two or more aptitude areas.

A longitudinal study was begun in late 1959 to try to determine the effectiveness on the job of the low scorers who were accepted during that period.⁸ Of the 10,669 volunteers accepted for the Army, a sample of 1000 men was selected for study.

These 1000 men were selected so as to be represented in the same proportions of rural-urban and number from different geographic areas as they were in the 10,669. For example, if 15 percent of the 10,669 were from a particular geographic area, then 15 percent of the 1,000-man sample would be from that particular area. From within the stratifications of urban-rural and geographic area, men were selected randomly in order to be as representative as possible of the total group.

These men underwent the regular eight-week training course (Army Training Program or Common Specialist Training Program); they did not go into the more difficult special training programs for specified MOS. Thus, in their assignments after training, they were not allocated to the more difficult MOS.

The 1000-man sample was followed up on the job 12-18 months after entry into service to obtain job performance ratings and military discipline records. Ratings and test data were also obtained on co-workers of these men. That is, for each man in the sample, co-workers were identified in the same MOS, under the same supervisors, who had been on the job approximately the same length of time. Of course, at times one co-worker might serve as a control for more than one man in the sample being studied. This would occur when more than one man in the sample was in the same squad. The co-workers to be used for comparison purposes had to differ from the men in the sample in either of two respects: (1) The co-workers were also Regular Army (RA), the same as the men in the sample, except that co-workers must have had an AFQT score between 31 and 50, inclusive, whereas the men in the sample scored 21 to 31, inclusive; (2) The co-workers had been inducted under the Selective Service Act (commonly designated "US") and had AFQT scores between 10 and 50.

Of the 1000-man sample, 137 had been discharged prior to completion of their obligation—during the first 12 to 18 months of service. Of the remainder, 667 were in sufficiently populous MOS groups for analysis. For the men in the sample and their selected co-workers, three or four ratings were obtained from immediate and very close supervisors. The men in combat MOS groups were rated on combat

⁸W. H. Helme and A. A. Anderson. Job Performance of EM Scoring Low on AFQT. Technical Research Note 146, May 1964. U.S. Army Personnel Research Office, Department of the Army, Washington, D.C., 1964. Tables 41 and 42 are extracted from this report.

aptitude; the men in the non-combat MOS were rated on job knowledge, job performance, and promotability. The raters did not know the purpose of the study.

Arbitrary criteria were established as indicating "acceptable" performance and "career level" performance. The acceptable level was that rating which was predicted for men scoring at the 31st percentile on AFQT—since an AFQT score of 31 is the standard for initial acceptance. The career level of performance was that rating predicted for men scoring at the 50th percentile on AFQT.

Table 41 shows the percent of lower mental category men meeting the standard for acceptable performance. The column headed "RA 21-30" is the sample who volunteered for enlistment under the lower standards on AFQT in existence from August through December 1958. The column "RA 31-50" are those volunteers in the lower range of normally accepted men. The column "US 10-50" are those in the lower AFQT range accepted under existing standards for Selective Service registrants. The number of men in each MOS group is given in parentheses and the percentage of these men with a rating equal to or higher than the acceptable level is then given.

As can be seen from table 41, the "US" co-workers were rated better in all MOS groups than either of the "RA" categories. The "RA 31-50" co-workers were rated practically the same as the special sample in the two combat MOS groups (the 1st two groups), but were rated higher in the non-combat MOS groups—with but one exception. However, of the special sample (RA 21-30), 50 percent were judged acceptable in combat MOS groups and 45 percent in technical or non-combat groups.

Table 41. Percent of Men Meeting "Acceptable" Performance Standard

MOS groups represented	Percent acceptable					
	RA 21-30		RA 31-50		US 10-50	
	N	Percent	N	Percent	N	Percent
Infantry, Airborne.....	(216)	50	(128)	52	(77)	60
Engr, Armor, Field Arty, Air Defense.....	(181)	49	(85)	49	(90)	65
Field Communications.....	(45)	44	(15)	37	(27)	54
Military Crafts.....	(63)	43	(30)	64	(38)	78
Automotive Maintenance, Transport.....	(83)	44	(53)	51	(0)	-----
Administration, Supply.....	(29)	48	(15)	68	(0)	-----
Medical Care, Military Police.....	(50)	49	(27)	62	(80)	78
Combat (total).....	(397)	50	(213)	51	(167)	63
Technical (total).....	(270)	45	(140)	56	(145)	74

Table 42. "Career Level" Ratings by Category

MOS groups represented	Percent career level		
	RA 21-30	RA 31-50	US 10-50
Infantry, Airborne.....	43	43	55
Engr, Armor, Field Arty, Air Defense.....	42	43	57
Field Communications.....	39	31	49
Military Crafts.....	39	55	75
Automotive Maintenance, Transport.....	39	46	-----
Administration, Supply.....	43	63	-----
Medical Care, Military Police.....	44	55	74
Combat (total).....	43	43	56
Technical (total).....	40	50	70

Table 42 shows the percent of men in each MOS group rated "career level" for each of the three categories of men. The table parallels the findings for the "acceptable" level of performance.

Further examination of the data revealed that the differences between the two RA categories on aptitude score levels for particular MOS groups may account for some of the differences obtained between the performance of these two categories of "RA" in the non-combat MOS groups—but not in the combat MOS groups. Differences in aptitude score levels could not account for differences between the "US" and the two "RA" categories. Perhaps these differences were more likely to be caused by differences in motivation to score well at the time the tests were taken, or to perform their jobs well after entering service.

SCHOOL TRAINING PERFORMANCE OF MEN SCORING LOW ON THE AFQT

The purpose of this study^{*} was to assess the extent to which men who score low on the AFQT can be successfully trained in Army MOS school courses. Most of these courses required for entry a score above 90 on the aptitude area used for selection of men to enter the course. Additionally, unlike the course of training given the 1,000-man sample reported above, these courses were usually longer than eight weeks. The training courses themselves were therefore a challenge to men below average in general trainability.

From 1953 to 1957, lower enlistment and induction standards allowed the acceptance into the Army of men who scored below the 31st

^{*} W. H. Helms, Army School Training Performance of EM Scoring Low on AFQT. Technical Research Report 1140. October 1964. U.S. Army Personnel Research Office, Department of the Army, Washington, D.C. 1964.

percentile on AFQT. Some of these men were selected for different types of MOS training which required for entrance differing aptitude area score levels.

Using results on training performance in 48 different MOS training courses, estimates were made of the percentages of men with different AFQT scores who would be expected to pass each course. Passing, for all courses, was a grade of 70. Then, for the different AFQT levels, the aptitude area score level was identified which would be sufficient to supplement a lower AFQT score in order to assure sufficiently high probability of success that attrition during training, for a class as a whole, would be within permissible bounds—usually less than 10 percent.

Table 43 shows the AFQT and aptitude area score combinations which have equivalent predictive value. For example, it would be predicted that groups of men with AFQT scores of 50, 31, 21 and 10 would stand about the same chance of successfully completing training if their aptitude area scores were 110, 115, 120, and 130, respectively. The aptitude area score, of course, must be that used for selection into the MOS training course.

As shown in table 43, low AFQT scores reduce the level of expected performance predicted by the aptitude area score. That is, if all that was known was that one group of men had aptitude area scores of 110 for a given course and another group had scores of 90, it would be predicted that the group scoring 110 would do better in the training course than would the group scoring 90. Yet they would probably do equally well if the men in the first group had scores of 10 on the AFQT and the latter group had scores of 40. Thus, AFQT can compensate for aptitude scores and aptitude scores can compensate for AFQT.

The likelihood of the type of compensation illustrated above is lessened by the fact that the AFQT is positively related to aptitude area scores. Table 44 shows the percentages of men in below average AFQT intervals who score at given aptitude area score levels in at least one aptitude area.

Table 44 suggests that those who score 31-49 on the AFQT are rather usable. Those who score 21-30 on the AFQT seemingly can be used fairly well if given supplemental screening, dependent on the Army needs.

Table 43. AFQT and Aptitude Area Score Combinations with Equivalent Predictive Value

AFQT	AA	AFQT	AA	AFQT	AA	AFQT	AA
50 +	110.....	31 +	115.....	21 +	120.....	10 +	130
50 +	100.....	31 +	105.....	21 +	110.....	10 +	120
40 +	90.....	31 +	95.....	21 +	100.....	10 +	110

Table 44. Percentages of Men at Varying AFQT Levels Who Score at Given Levels on at Least One Aptitude Area

AFQT percentile scores	Aptitude area score		
	90 or higher	100 or higher	110 or higher
40-49.....	83	57	25
31-39.....	72	44	17
21-30.....	63	33	11
10-20.....	44	18	4

Expected failure rates were computed for courses of given levels of difficulty and varying combinations of AFQT and aptitude area requirements. In general, men scoring less than 31 on the AFQT cannot be used effectively in high difficulty courses. In courses of low to moderate difficulty, they can be used fairly well if they have compensating aptitude area scores.

CHAPTER 11

IDENTIFICATION AND UTILIZATION OF THE PHYSICALLY MARGINAL SOLDIER SINCE WORLD WAR II

The Physical Profile System

One procedure which grew out of World War II necessity had a decided effect upon the physically marginal soldier. This was the Physical Profile Serial System. From October 1940 throughout the war, the Army had a system for assessing the learning capacities of men. The instruments used allowed selection standards to be expressed by test scores and permitted identification and appraisal of the mental marginal groups. No such elaborate method existed for the management of the physically marginal soldier. The medical examination results provided information about the physical status of the soldier, but no means existed for translating these findings into personnel classification language. Training determinations and assignment decisions required a useful coding arrangement which would allow consideration of limitations along with mental and occupational capacities.

Army Ground Forces expressed sharp disagreement with the World War II system which emphasized distribution based primarily on mental ability and occupational experience. That command, which suffered from a severe maldistribution problem, contended that the Army Service Forces and the Army Air Corps had much to gain under a system in which the physical job demands of the combat forces were not highlighted. The mental and occupational distribution systems which had enriched the Army Air Corps and Army Service Forces could no longer be maintained as the sole means for meeting manpower demands. The result was the development of the PULHES system by The Surgeon General of the Army who based it on an existing physical classification system formulated by the Canadian Army.¹⁰

The basic elements of the current PULHES system are shown in appendix 13. The system was officially introduced into the Army in 1944. Very simply, it uses the rating of men on six aspects of health through the use of "Grade Factors" or "profiles." Grade 3 factor

¹⁰ A concise summary of the development of the PULHES system, together with a detailed citation of relevant documents is contained in, Bernard D. Karpinos, "Evaluation of the Physical Fitness of Present-Day Inductees," United States Armed Forces Medical Journal, Volume IV, No. 3, March 1953, pp. 415-430.

(Profile C) represents borderline defects, while the 2 factor (Profile B) indicates mild non-progressive defects. The grade 4 factor (Profile D) identifies functional capacity below existing physical standards for entrance into the military service. Of most importance to the physical marginal problem is the Profile C.

The Physical Profile System from the beginning suffered from definite limitations. It did allow for the gross allocation of manpower by A, B or C categories. It did permit somewhat more refined linkage between job demands and physical capabilities. It did provide the Ground Forces with a basis for contending for manpower through quantifiable means. However, it did not give medical and personnel officers a truly effective means of translating medical findings into information useful for assignment, particularly in the case of the physically limited soldier.

Necessity for Utilization of Limited Service Men

Some of the lessons learned during World War II found their way into the medical standards for acceptance in the post-war period. Historically, physical standards always related to the ability of men to perform duty in the combat elements of the Army. However, experience during World War II demonstrated that certain required duties had to be performed—and could be performed—by limited service men. This experience led to a certain shift in the concept of “medical acceptability.” While “fitness for combat duty” remained the essential criterion, the medical position recognized that “military service additionally demands and provides for a variety and multiplicity of tasks, about as comparable to those in civilian life.”¹¹

The latitude for military service was broadened for those with physical limitations. While Profile C personnel were in effect “limited service,” the physical profile serial system permitted use of a more meaningful and generally acceptable vocabulary.

Congress provided the foundation for post World War II medical standards in the Universal Military Training and Service Act of 1951.¹² Minimum standards for physical acceptability to the Army were to be set no higher than those which applied to persons between the ages of 18 and 25 in January 1945. The shift in the position on “medical acceptability” after World War II made the prevailing standards more liberal than those specified in the Act. The impetus to this change came primarily from follow-up studies^{13 14} conducted on soldiers with certain psychiatric limitations during World War II.

¹¹ Bernard D. Karpinos, “Qualification of American Youths for Military Service,” Medical Statistics Division, Office of The Surgeon General, Department of the Army, 1962, pp. 7-8.

¹² P.L. 51, 82nd Congress 1951, Universal Military Training and Service Act.

¹³ Leonard Carmichael and Leonard C. Meade, editors: The Selection of Military Manpower. A Symposium, National Academy of Sciences—National Research Council, Washington, D.C., 1951, pp. 133-148 and pp. 149-156.

¹⁴ Karpinos, “Qualification of American Youths for Military Service,” pp. 8-9

In addition to a more liberal policy regarding those with certain psychiatric conditions, the Army developed a program for enlistment of the combat disabled and retention on active duty of other physically disabled soldiers.

THE COMBAT DISABLED SOLDIER

A major concern of command and staff during World War II was the combat soldier. Problems arose over the amount of time a man could be expected to remain in combat and perform effectively, recognition of service through pay, awards, and other means, and care and treatment of the wounded. As casualties mounted, many men who had been wounded and disabled returned to their units; others were evacuated for more prolonged hospitalization or eventual discharge. A third group, the combat disabled, who were capable of performing certain duties upon recovery and desired to remain in service, were provided for by a War Department policy issued in May 1944. At that time, commanders were ordered to screen carefully all personnel and discharge those who could not be expected to render useful service. However, those who were combat disabled were specifically exempted. Such individuals who fell below minimum physical standards could be retained in service if they specifically requested retention. The basic criterion was: "provided their physical condition permits any reasonable useful employment."¹⁵ Combat wounded personnel were defined as those who received or were eligible for the award of the Purple Heart. This policy remained in effect for the duration of the war and was reaffirmed at the conclusion of the European hostilities.¹⁶

Following the end of the war, many individuals who had been discharged as combat disabled expressed an interest in returning to Army service. One individual, who had become disabled through loss of an arm, wrote to the Chief of Staff in the summer of 1946 concerning his desire to remain in service. Despite his prosthesis, he said, he knew he could discharge his former duties as communications chief. He felt numerous other servicemen with combat-incurred disabilities were in a like situation. He asked that some way be found for them to re-enter the service.

The Chief of Staff's reaction to this communication was swift. He directed the General Staff to prepare the necessary policies and procedures to permit enlistment of combat disabled World War II veterans. The program was established 1 November 1946.¹⁷

¹⁵ War Department Circular No. 212, 29 May 1944.

¹⁶ War Department Circular No. 196, 30 June 1943.

¹⁷ War Department Letter, File AGSE-P, 342.06 (28 Oct 46). Subject: Enlistment and Assignment of Partially Disabled Combat Wounded Veterans of World War II, dated 1 November 1946.

The basic plan called for acquisition of up to 5,000 physically disabled combat veterans. From the point of view of utilizing marginal personnel, it is important that standards for enlistment emphasized the contribution these men could make to the military effort. The physical standards for general military service had to be met, with the exception of specific combat-incurred disability. The men had to be capable of attending to their personal needs unaided. Their physical condition from combat-incurred disability was not expected to need further hospitalization. Major emphasis was placed on physical capacity to perform useful service in the MOS for which they were selected at enlistment. The Army staff felt that there were distinct advantages in utilizing these men immediately following the war. Their experience, leadership ability, and enhancement of morale were factors to be considered, in addition to the prime consideration, opportunity for the Army to fill key and specialist positions with competent and well motivated men.¹⁸

Classification of Combat Disabled Soldiers

Classification procedures at the reception centers were very specific.¹⁹ The War Department staff felt that commanders at reception centers had to be given continuous guidance and assistance on MOS criteria for the "delicate task" ²⁰ of classifying combat disabled personnel for certain MOS. It was expected that a relatively small number of applicants would actually have an MOS listed as critical, since large numbers of the men would have been infantry soldiers or air crewmen. Stress, therefore, was to be placed on selection of the best possible potential MOS, with alternative MOS also to be selected, giving proper consideration to leadership and supervisory talent. Field commanders in the United States were to indicate positions to which these men could be assigned.

In December 1946, the War Department issued a detailed guide for selecting the appropriate MOS.²¹ The guide provided a list of MOS for which individuals would be qualified through previous military or civilian experience or in which they could be school trained if they possessed no previous experience. Men considered for formal school training were required to be able to read, write, and hear verbal instruction under all training situations.

¹⁸ Preliminary staff discussions had been held on the combat disabled prior to the Chief of Staff's decision. The Adjutant General to Director of Personnel and Administration, WDGS, File AGSE-C, 342.06 (13 Jun 44), Subject: Enlistment of Partially Disabled World War II Veterans, dated 22 June 1946.

¹⁹ The provisions of the 1 November 1946 War Department letter were later incorporated into War Department Circular No. 6, 7 January 1947.

²⁰ Director of Personnel and Administration, WDGS to TAG, File WDGP 342 (13 Jun 46), Subject: Enlistment of Partially Disabled World War II Veterans, dated 1 November 1946.

²¹ War Department Letter, File AGAM-PM 342 (1 Nov 46), AGPP-M, Subject: Guide for the Enlistment and Assignment of Partially Disabled Veterans, dated 24 December 1946.

The guide also provided an index to classes of physical disabilities which were considered disqualifying for certain MOS. These covered lower and upper extremities, vision, hearing, and other areas. Additionally, the guide outlined for each MOS the prerequisites for direct assignment or for school training. The classification officer could determine the defects which were not disqualifying for assignment to a particular MOS and arrive at a number of possible MOS selections. These could be applied against the individual's other capabilities and decision made on the best area for assignment or training.

The detail and attention given to the classification process reflected the War Department's concern for the proper utilization of this group of soldiers. An individual's real usefulness to the Army had to be determined at the time of enlistment. The objective was to place a man in a position where he would be able to make a distinct contribution to the military effort, even though his assignment was restricted to overhead installations such as depots, ports of embarkation, administrative headquarters, training installations, and repair facilities.

Inclusion of Additional Categories of Disabled

The initial period of enlistment for this group was for three years. In 1948, this was extended to four, five, and six years. Again in 1950, the program was expanded to include non-combat veterans. When the Korean situation arose, the policy was again changed²² to include veterans who had previously been discharged for combat wounds. Additionally individuals whose disability was of a permanent nature and incurred by combat wounds or by diseases, injuries, and infirmities incurred while in the military service could be retained provided they could render satisfactory service.²³ The standards for retention followed the policies of the 1946 program.

The first complete appraisal of the program was made in 1953 when the initial impact of the Korean fighting could be determined. Table 45 shows enlisted personnel retained in the Army as of 31 January 1953, by diagnostic group, for the World War II and Korean veterans and for the non-combat group.²⁴

Table 46 presents the military occupational specialties in which partially disabled soldiers were performing during this period. The table presents only the MOS in which there was highest incidence of assignments, normally 10 or over. In all, 467 enlisted personnel were in about 110 military occupational specialties.²⁵ Sixteen individuals were holding a Light Weapons Infantryman MOS. These soldiers were in duty positions in which they were training combat personnel.

²² SR 615-125-1, change No. 1, 24 April 1952.

²³ In effect 1 April 1952, AR 40-100; AR 40-105; AR 40-115; SR 600-450-5.

²⁴ The regulations permitted the retention of officer and warrant officer personnel also. Of the 630 partially disabled men reported in January 1953, 163 or 25.9% were officers, including 19 warrant officers.

²⁵ Health of the Army, July 1953.

Table 45.¹ Partially Disabled Personnel Retained by the Army on Active Duty by Diagnostic Group and Type of Personnel as of 31 January 1953

Diagnostic group		Enlisted personnel			
		Combat incurred		Non-Combat	Total
		World War II	Korea		
I	Eye Impairments.....	15	20	22	57
II	Defective Hearing.....	4	1	2	7
III	Upper Extremity Defects.....	43	33	7	83
IV	Lower Extremity.....	83	35	25	143
V	Upper and Lower Combined.....	4	8	1	13
VI	Residuals.....	36	16	10	62
VII	Circulatory Diseases.....	3	8	10	31
VIII	Diabetes.....			5	5
IX	Ulcers.....			5	5
X	Other Diseases.....	3	2	49	54
XI	Diseases and Impairments Combined.....	4		3	7
	Total.....	197	122	148	467

¹ Report of Physically Disabled Personnel RCS-AG-(OT)-235, 9 January 1953. Adapted from Health of the Army, Office of The Surgeon General, U.S. Army, July 1953.

Policy governing the partially disabled remained much the same from 1946 through 1962. As already indicated, the program originally included only the combat wounded of World War II, but was later extended to Korean veterans and to those with disabilities incurred in a non-combat situation. Normally, soldiers were eligible for duty in overhead installations in the Zone of Interior or overseas. Only the combat wounded individuals who required prosthesis for loss of eye, arm, or leg were not assigned overseas. The same policy applied to men with specific disability which would render their service undesirable because of some factor associated with a particular overseas command.

The 1963 Program

In 1963, a new program²⁸ provided for the continuance of the system of retaining on active duty men eligible for separation from the service for physical disability, particularly those with over 18 years of service. Such individuals had to have a basically stabilized physical condition or only slow progression of disability. All were required to meet normal criteria for retention, except for their specific disability. Their usefulness to the service was again a matter of suitable occupation. They had to be capable of performing in an MOS in which they were currently qualified or could be trained. Qualifications fol-

²⁸ AR 616-41, 26 September 1963. This regulation also was applicable to officer and warrant officer personnel as previous programs.

Table 46. Military Occupational Specialties of Partially Disabled Personnel Retained on Active Duty as of 31 January 1953

Military occupational specialty	Number of personnel
Administrative NCO.....	69
Laborer.....	21
Unit supply specialist.....	20
Cook.....	20
Personnel management specialist.....	16
Light weapons infantryman.....	16
Wheel vehicle mechanic.....	15
Heavy vehicle driver.....	15
Medical technician.....	14
Personnel administrative specialist.....	14
Clerk-typist.....	12
Ordnance supply specialist.....	11
Postal specialist.....	10
Wheel vehicle repairman.....	10
Miscellaneous.....	204

lowed the general pattern established in 1946 when the program began. Training could be given in a service school or on the job, but all retraining was to be completed prior to a new assignment. All those retained were subject to world wide assignment or training in relation to their physical limitations and capabilities.

All requests for retention were handled on an individual basis. Medical agencies in the Department of the Army made recommendations on assignment limitations. Personnel officers selected assignments which fitted the individual's limitations and capabilities, such as assignment only to an area containing a facility capable of servicing a prosthesis, or to a location where a specific diet could be provided, or where the prolonged use of combat rations was not expected.

Table 47 shows the status (31 Jul 1963) of 599 enlisted personnel who were retained on active duty although eligible for separation by reason of physical disability.²⁷ At that time, 87 percent of the group were in grades E-5 (sergeant or specialist) and above, with E-6 the predominate grade. Over 38 percent had over 20 years of service. The highest numbers of assignments were in the administrative, personnel, supply, food service and medical fields.

No specific follow-up studies have been made in terms of the effectiveness of physically disabled soldiers retained on active duty. The program was sustained since 1946 largely on the decisions of unit commanders. Since their judgment was a principal factor in initiating request for retention, it can be inferred that the performance of these soldiers in specific duty positions met unit commanders' requirements.

²⁷ Adapted from DCSPER-EX-408, 31 July 1963, Continuation on Active Duty of Partially Disabled Personnel Under AR 616-41.

Table 47. Disabled Enlisted Personnel Serving on Active Duty as of 31 July 1963 (AR 616-41)

GRADE

Grade.....	E-2	E-3	E-4	E-5	E-6	E-7	E-8	E-9
Number.....	1	37	39	143	191	151	25	12
Percent of total (599)...	0.17	6.18	6.51	23.87	31.9	25.2	4.17	2.0

ARMY AREA

Area.....	First	Second	Third	Fourth	Fifth	Sixth	MDW	Overseas
Number....	38	101	90	64	62	108	43	91
Percent....	6.4	16.9	15.0	10.7	10.3	18.0	7.5	15.2

MOST FREQUENT DUTY MOS

MOS	Title	Number
717	Administrative Specialist.....	68
941	Cook.....	60
768	General Supply Specialist.....	52
911	Medical Specialist.....	35
716	Personnel Specialist.....	19
111	Light Weapons Infantryman.....	17
631	Wheel Vehicle Mechanic.....	13
951	Military Policeman.....	13
075	Recruiter and Career Counselor.....	11
764	Quartermaster Supply Specialist.....	10
	Miscellaneous.....	311*

GRADE IN RELATION TO TOTAL YEARS OF ACTIVE FEDERAL SERVICE

Grade	Under 10	10-20	Over 20	Total
E-9.....	-----	2	10	12
E-8.....	-----	12	13	25
E-7.....	-----	64	87	151
E-6.....	3	119	69	191
E-5.....	14	86	43	143
E-4.....	20	10	9	39
E-3.....	34	1	2	37
E-2.....	1	-----	-----	-----
Totals.....	72	294	233	599

* The complete list involved duty positions in 148 MOS from a total of 400 MOS.

The program thus appears to have been successful in one segment of the physically limited manpower group. From a personnel assignment point of view, the program required very special handling. Each case had to be considered on an individual basis, involving complete medical evaluation, a thoroughly developed assignment pattern within individual limitations, and a comprehensive record keeping system. Since the majority of the men were in rather senior grades, they were assignable to only a limited number of positions and these had to be within their physical capabilities. Rotation was frequently limited, so that the advancement of physically qualified career soldiers holding the same technical qualifications often was hampered. Assignment of these career men to geographical areas in which the physically limited could not be assigned was also sometimes accelerated.

During the period 1945-1964, little research was conducted on the physically marginal soldier. Thus, while the program received the support of commanders, no long-range study on the effectiveness of these men was attempted.

EXPERIMENTAL AND RESEARCH APPROACHES TO THE PHYSICALLY MARGINAL SOLDIER

During the period after World War II when persons who did not meet current physical standards were barred from induction or enlistment—except for the combat disabled—the problems of training and utilizing Profile C personnel persisted.²⁸ These soldiers met current physical standards but had certain defects which limited their range of training and assignment.

Experimental Basic Training for the Physically Limited

An experimental company was set up in 1951 to attempt to improve the physical condition of Profile C soldiers during their basic training period. On 1 April 1951, Company Q was activated within the 101st Airborne Division whose mission at Camp Breckenridge, at that time, was to conduct basic training. Company Q took only Profile C personnel referred to it from other training companies. It had an average strength of 100 to 300 men for each eight-week training cycle. Initially, all men arriving at Camp Breckenridge were screened for verification of their physical profile by a Pre-Profile Board before being assigned to a regular training unit. During regular training, all men who, in the opinion of the company commander, could not participate fully in all phases of regular basic training were also sent to this Pre-Profile Board. This board recommended to the classification and assignment officer the modified basic training to be provided in Company Q.

²⁸ The physical profile system adopted by the Army in 1944 during World War II was discussed in chapter 5.

Most of the men assigned to the Company suffered from chronic leg and back ailments. Infantry training given these men for the first eight weeks was modified to allow for these physical limitations. Training remained geared to the physical capacities of the individual soldier. In some cases, men responded so well to the physical conditioning that they could be reprofiled from C to B or A and could assume regular Light or Heavy Weapons Infantry training. Soldiers who proceeded through the complete modified basic training program received a profile review near the end of their seventh week of training. At that time, a Physical Profile Board consisting of a line officer (company, platoon, or training officer), a medical officer, and a classification officer made the determination on reprofiling, assignment to regular eight weeks advanced individual training, or—for those remaining in C profile—assignment to on-the-job training. (This Board also functioned as the pre-profiling board to determine whether individuals originally assigned to regular training should be reassigned for physical reasons to modified training in the Q Company.)

Those soldiers who retained their C profile received, for their additional eight weeks, assignments in duty positions commensurate with their specific physical limitation. Training in these positions took place throughout the post, on an on-the-job basis. The experience gained became the basis for the recommendation of a potential MOS which the Department of the Army used in determining an appropriate regular unit assignment upon completion of the second eight weeks of training.

Company Q maintained complete flexibility in its training programs. Experimentation and modifications were practiced throughout the Company's existence. The program reflected the physical limitations of each new group of trainees; the progress of each individual soldier received careful periodic checking. The aim was to train to the nearest point of the regular program, but extreme care was taken to insure that all training fell within the soldier's individual physical capability.

Company Q continued in operation from 1 April 1952 until 1 December 1963.²⁹

Research Proposals and Studies on the Physical Marginal

No specific long-range research studies on the physical marginal grew out of the Korean experience. No maximum quotas were set on the numbers of such men who could be forwarded for induction. However, men with C profile were excluded from assignment to Infantry divisions and to the combat arms for training. The precedent

²⁹ Command Reports, 53rd Airborne Infantry Regiment, 101st Airborne Division, Camp Breckenridge, Kentucky, File 3101 (Inf) 53, 1951 and 1952.

set for retention of combat wounded World War II personnel was extended to the Korean veteran as well.

Report on Manpower Resources

The Korean experience did, however, highlight once again the possible need for large numbers of men for service. A report to the President by the Office of Defense Mobilization, "Committee on Manpower Resources for National Security," in 1954 underlined this concern. It noted that the Korean rejection rate of 21 percent for physical and mental causes among men 18½ through 26 years old was reasonably consistent with the World War II rate of 22 percent for the same causes in the same age bracket. Such rates of rejection in the most usable segment of the manpower pool produced a cogent observation by the committee.

The problem of mental and physical standards for military service is highly complex and cannot be resolved by an easy generalization. It is, of course, true that military technology is producing an ever increasing number of highly specialized military occupations in which physical specifications need not be the same as those for combat infantrymen. On the other hand, many of these specialist jobs require extraordinary physical capacity as well as mental acuity.

Another factor which must be considered is that the military mission is different from that of civilian industry and military personnel must be qualified to perform effectively through a range of working and living conditions with which civilian personnel are seldom confronted. This requires on occasion the performance by military personnel not normally engaged in arduous activities of duties which demand at least normal physical capabilities.

On the other hand, it is evident that there are large numbers of military jobs which can be performed effectively by men having physical or mental deficiencies which now bar them from military service. Arguments are frequently made that although this is true, utilization of such personnel increases costs, and tends to place on the Nation additional long-term costs in veteran's benefits. There is undoubtedly some basis for such arguments. However, in time of full mobilization the imperative need for full utilization of manpower becomes a factor of overriding importance. It would, therefore, appear necessary and desirable to experiment systematically prior to full mobilization with utilization of men who do not meet all existing standards.

The report then concluded for one of its findings:

"Reduction of mental and physical requirements to the lowest possible level consistent with realistically determined needs of the military services is essential to the realization of our maximum national strength."³⁰

Most of the research investigations on marginal personnel planned about the time of this report on manpower resources reflected the basic observations made in the report. One plan involving the physical marginal is described to illustrate a thoroughgoing analysis of classifi-

³⁰ A Report to the President by the Director of the Office of Defense Mobilization, "Manpower Resources for National Security," Washington, D.C., 6 January 1954, p. 40.

cation and utilization of this segment of manpower. The study, planned in 1956 as part of an extensive research effort on the whole marginal area, did not move beyond the planning stage.

ANALYSIS BY THE WORKING GROUP ON MARGINAL MANPOWER

The outline of purpose and the items which required research are pertinent to any program for utilization of physically marginal, particularly under emergency conditions. Table 48 lists the factors which the study posed as points of departure for an approach to the physical marginal problem. The number of items which have other than a pure medical orientation is noteworthy.

Table 48. Factors Influencing Planning and Research on Physically Marginal Manpower

1. Determination of occupation physical requirements of military positions.
2. Variations in physical requirements in units having widely divergent missions.
3. Secondary missions of units.
4. Changes in requirements occasioned by changes in equipment design.
5. Organizational and doctrinal policies affecting units.
6. Differential levels of severity for a multiplicity of injuries or diseases.
7. Progressive tendencies of certain types of diseases.
8. Costs of physical disability support programs.
9. Variations in work efficiency and work capacities of individuals with similar defects.
10. Feasibility and necessity for special training.
11. Effects of WAC and civilian utilization policies.
12. Effect of activation and deactivation of different type units on assignment.
13. Length of service through enlistment or induction.
14. Stability of positions at fixed and semipermanent installations.
15. Requirements for assignment mobility resulting from manpower emergencies.
16. Capabilities and limitations of the classification and assignment system.

The limitations of the Physical Profile system received careful attention in the proposed research approach. It was felt that the defects subsumed under each of the six factors (PULHES) were so numerous and so widely differentiating in their effect upon an individual's functional capacity that an individual's profile level on any factor could not be used as a measure of his capacity to perform in any single military occupational specialty. Also, use of the system in making meaningful large scale assignments was limited by the large number of different possible profile combinations. The problem hinged on a workable amount of information conveniently expressed in a form not so gross or voluminous as to mar its effectiveness as basis for an efficient assignment tool.

Attention also needed to be directed to training policies, classification and assignment procedures, and policies to govern world-wide

rotation and overall manpower requirements. The Working Group questioned whether all individuals ought to be required to complete the full basic combat training program. Such a training policy ought to be examined to determine whether or not it was too restrictive. There appeared to be no clear evidence that physical breakdown during basic training precluded service in a given military job. The problem seemed to be related to the amount of field training which could be eliminated from individual MOS training and still produce a useful and effective soldier for a specific duty position.

Procedures adopted for the classification and assignment of the physical marginal could make or break the system. If the scope of the entry MOS classification were broadened to provide a more versatile replacement pool, then a special program for the physical marginal might be all but eliminated—unless very special conditions prevailed. If the system recognized stabilized MOS and unit assignments and permitted only reasonable rotation from and to similar duty positions, the program could prove feasible. However, the Working Group recognized that rotation was a most critical item. The proportion of the Army strength which had to be “generally usable” governed the number of physically marginal who could be utilized.

The largest segment of the “generally usable” were the men for combat replacements, and policies governing their combat and foreign service tours influenced the whole problem of the kinds of manpower acceptable to the Army. Additionally, the requirement rates for MOS in combat units during World War II and Korea demonstrated the ever present need to maintain the replacement flow of qualified soldiers.

The age range for the selection of military personnel also affected any program for physical marginals. Consideration might profitably be given to the use of older age groups if they had skills of critical value to the Army and if physical standards were adjusted to accommodate them.

Finally, two basic technical shortcomings and failures during World War II and Korea were recognized: (1) The inability to acquire detailed knowledge about the varying physical demands of Army jobs as they were being performed under real operating conditions and (2) the failure to tie in the physical capacities of soldiers performing these jobs and an evaluation of their effectiveness, within varying degrees of impairment, in these military duties. Had it been feasible to obtain the desired information and to match the elements of information, meaningful policies and procedures for the utilization of the physically marginal might have resulted.

Planned Research Program (1956-1957)

With these factors in mind, a research program was formulated in 1956-57 with six major objectives. Although the research was never carried out, the objectives are valuable as future guidelines. The objectives were—

1. To develop a list of duty positions, under specified conditions of unit mission, which can be performed by physically marginal personnel.
2. To develop a system of classification of physical capacities of individuals which, when related to known physical demands of jobs, will permit the selection of physically marginal individuals for assignment to specific military duties.
3. To study the actual effectiveness of physically marginal personnel assigned to jobs as against predicted performance.
4. To determine the maximum number of physical marginals which can be absorbed by the Army under any specified condition of mobilization.
5. To develop comprehensive operational procedures governing the procurement, classification, personnel processing, assignment, utilization, and disposition of physically marginal personnel.
6. To develop selection instruments and other devices, including personal inventories, which would assist in the personnel management of the physical marginal group.

As part of the overall plan, a survey of the relevant literature on physical and mental marginals was undertaken.³¹ The pertinent findings are enumerated below. They highlight the limitations of some of the World War II studies in the physical marginal area, particularly those based on examination of military records of individuals previously discharged.

1. In career data studies based upon record searches, the eventual sample becomes that which can be constructed from the records available. Although the variables considered may well be relevant to the overall problem of determining the usefulness of a marginal soldier, the circumstances under which the record entries were made are frequently suspect.
2. Data provided in follow-up studies on the job may suffer from the following difficulties:
 - a. The manner of performance in the assigned job is really not being measured, since it is first assumed that those making the initial assignment correctly prejudged the contribution which might be expected of each soldier.

³¹ Personnel Research Branch, "Survey of Literature on Development of Criteria for Marginal Manpower," Technical Research Note 54, March 1956. Personnel Research Branch, The Adjutant General's Office, Washington, D.C., 1956.

- b. The data reported usually cite the MOS but not the pertinent duty positions; thus, it is impossible to infer capacity from a knowledge of a recorded MOS.
 - c. An MOS recorded in a record may not truly represent the job being performed, especially for the marginal soldier who may be assigned duties not identified by MOS code.
3. "The necessary and sufficient method for determining whether or not specified personnel are usable in specified situations is to construct absolute measures of on-the-job usefulness (involving direct comparison of productivity and costs expressed in commensurate units) and to relate these measures to appropriate predictor tests in a sample genuinely representative of marginal personnel."

Other Studies

Two studies which were completed have some limited application to the problem of the physical marginal. The first represents an occupational search effort.

This study²² dealt specifically with the development of a list of MOS which would be suitable for the physically handicapped. For purposes of this study, the term "physically handicapped" was defined as referring to disability of any part or function of the body which would disqualify for military service under existing standards, whether the cause of the impairment was organic or functional. The MOS were derived by comparing the physical demands of various MOS duty positions with the functional losses and residual ability of individuals physically handicapped in one of the 18 areas identified in a disability checklist. This list identified three broad areas of physical handicaps: orthopedic, eyes, and ears. The orthopedic area covered amputations and disabilities of the arm, hand, fingers, thumb, leg, foot, with additional areas of the back, hip, or shoulder. The list identified only single handicaps. No individuals with multiple handicaps were considered. Out of 405 MOS authorized for enlisted personnel, at least 250 included at least one duty position which could be performed satisfactorily by an individual with at least one of the handicaps identified. This list applied to soldiers having an impairment more serious than indicated by a C Profile. However, it did not include those whose impairment involved special medical maintenance (excessive hospital or out-patient treatment), special supplies or equipment, inability to serve within the normal Army framework and live harmoniously with other men. MOS peculiar to combat, to combat zone, or requiring flight duties were eliminated.

Several considerations are important to use of this list. First, it

²² Personnel Research Branch, Enlisted MOS Suitable for the Physically Handicapped. Research Study 56-6, December 1958, Personnel Research Branch, The Adjutant General's Office, Washington, D.C., 1958.

was designed for use in mobilization. Second, the study was the first in a contemplated series of studies exploring new sources of military manpower for emergency situations. Third, the research was concerned with identifying a variety of duty positions which might be useful in the assignment of physically limited personnel in the initial phases of any conflict. This study was addressed to a very small but significant area: identifying duty positions, principally in service-type activities, which the physically fit could by-pass for more proper utilization elsewhere. As in many studies of this type, however, an important shortcoming was the inability to follow physically limited individuals into these designated duty positions in order to test, on the job, their ability to perform.

A second study³³ involved an attitude and opinion survey of the commanders of 2,000 soldiers selected at random in the U.S. Army in Europe who had a "3" in their physical profile. The questionnaire asked for diagnosis of the "3" profile, number of hospital and sick call visits, extent to which physical condition interfered with satisfactory duty performance, willingness of the commander to take the individual into combat, necessity for reassignment to another unit or MOS, and advantage to the Army of discharging the man for medical reasons. A similar questionnaire was prepared for 1,000 individuals selected at random who possessed an all "1" profile.

Briefly, the study indicated that most of the men were working in a proper duty assignment commensurate with their primary skill; their commanders felt that taking them into combat posed no problem and that medical separation or reassignment was not indicated nor requested. Of those who they felt could not perform duty satisfactorily, more than half were over 30 years of age. More than 60 percent of the men the commander would decline to take into combat were also above this age. Studies of this nature frequently have definite limitations, primarily in the size and nature of the sample. However, the queries were sufficiently simple to reveal a general feeling among commanders in units of all types (although the preponderant number of C Profile personnel in Europe were not in combat units) that the C Profile group made up a usable segment of manpower. There may have been many imponderables in these opinions, but the questions were clear enough to reflect any definitely negative reaction.

Other Considerations

The problem of C Profile personnel not only continued to be of field concern but it also received recognition in the preparation of manning documents in the period following the Korean conflict.

³³ Thomas W. Inmon, "A Study of Marginal Manpower," Medical Bulletin, U.S. Army Europe, Vol. 20, No. 3, March 1963.

Since 1955, all Department of the Army Staffing Guides have provided for the identification of positions which can be filled by C Profile personnel.³⁴ In establishing such identification, consideration was also given to various specific and local factors which would likely influence the utilization of this group, such as unusual work conditions, location, situation, special job requirements, qualifications, or responsibilities. Thus, for certain areas of assignment, where staffing guides were available, an actual requirement for C Profile personnel could be established for guiding assignment actions. As a further guide, the Army continued to provide procedures for the selection of men with Profile B or Profile C for initial training by establishing minimum physical profile prerequisites for the basic entry jobs in the MOS structure.³⁵ (See app 10 for these groups.)

In April 1962, the Army dropped the "3" factor in the physical profiling for those entering the service. Those who had some moderate assignment limitation under the new standards received a "2" in the appropriate portion of the PULHES.³⁶

Tables 49 and 50 indicate the prevalence of Profile B and Profile C personnel among those entering the Army for the periods cited. From

Table 49. *Percent Distribution of Youths Who Entered the Army by Physical Category and Mental Group (August 1953 through June 1960)*¹

Mental group	Physical category			Total (percent)
	A (percent)	B (percent)	C (percent)	
August 1953 through July 1958				
I.....	5.9	1.8	1.3	9.0
II.....	18.0	4.4	3.0	25.4
III.....	28.3	5.5	3.5	37.3
IV.....	21.1	3.3	2.3	26.7
Administrative acceptees.....	1.3	.2	.1	1.6
Total.....	74.6	15.2	10.2	100.0
August 1958 through June 1960				
I.....	5.3	1.9	1.3	8.5
II.....	16.1	4.9	3.1	24.1
III.....	34.8	8.7	5.0	48.5
IV.....	14.2	2.8	1.8	18.8
Administrative acceptees.....	.1	0	0	.1
Total.....	70.5	18.3	11.2	100.0

¹ Adapted from *Qualification of American Youths for Military Service*, p. 52.

³⁴ Department of the Army Pamphlet 20-500 Series.

³⁵ AR 611-201, Change 9, 29 May 1963.

³⁶ AR 40-507, Chapter 9, 1 April 1962.

Table 50. Percent Distribution of Army Inductees and Enlistees by Physical Category and Mental Group¹

A. INDUCTEES

Mental group	A (percent)	B (percent)	Total(percent)
I.....	3.7	1.4	5.1
II.....	17.6	6.0	23.6
III.....	29.1	8.2	37.3
IV.....	27.7	5.2	32.9
Administrative acceptees.....	1.0	.1	1.1
Total.....	79.1	20.9	100.0

B. ENLISTEES

Mental group	A (percent)	B (percent)	Total(percent)
I.....	4.7	1.3	6.0
II.....	25.0	6.3	31.3
III.....	45.9	9.6	55.5
IV.....	6.1	1.1	7.2
Total.....	81.7	18.3	100.0

¹ Adapted from Supplement of Health of the Army, "Results of Examination of Youths for Military Service, 1963. Office of The Surgeon General, U.S. Army, May 1964, p. 18 and p. 24.

1953 through 1958, approximately 25 percent of all men entering the service were either in Profile B or C, while for the period 1958 through 1960, approximately 29 percent fell in these categories. Again in 1963, although the C profile category was dropped, 20.9 percent of inductees and 18.3 percent of enlistees continued to be classified in Profile B.

The trend indicated in these tables shows that from 20 to 25 percent of the men entering the Army in any one year tended to have less than physical Profile A. These percentages represented a considerable segment of the available manpower. They also demonstrated that military management, although somewhat removed from the complexities of a World War II or Korean situation, continued to be confronted with the problem of assigning a sizable number of soldiers who had some physical limitation. The problem of those already in the service with similar physical limitations constituted an additional problem. Thus from World War II to 1964, as long as the standards permitted admission or retention of men with certain physical limitations, the problem of providing for their utilization as some type of physical marginal remained.

CHAPTER 12

ARMY-WIDE UTILIZATION OF PUERTO RICAN ENLISTED MEN

The induction of enlisted personnel on the island of Puerto Rico has been a matter of special consideration since the inception of the Selective Service system during World War II. Because the Spanish language predominates in the culture of Puerto Rico, many men eligible for service do not have sufficient command of English to be fully usable in English-speaking units.

A policy of imposing the same standards as for inductees in the continental United States generated serious problems both for Puerto Rican Selective Service boards and for Army training centers. When induction calls were high, as during the Korean conflict, quotas could not be filled without including a disproportionate number of inductees who were qualified by administrative decision, usually by waiver of the language requirement.

Some of these "administrative inductees" were illiterate in English; others had failed even to attempt the test, probably because of total unfamiliarity with written tests; others failed to meet the standards for various reasons. At training centers in the continental United States, communication difficulties interfered with the utilization of the Puerto Ricans in regular units. The Puerto Ricans were being required to serve under conditions in which they must use a foreign language and conform to what was in many respects an alien culture. Thus, inductees who could not be used except in Spanish-speaking units and registrants whose acceptability hinged chiefly on the extent of their working knowledge of English constituted a special segment of the marginal manpower resource of the Nation.

Selection and Assignment Policy During World War II

Prior to World War II, only English-speaking insular Puerto Ricans were enlisted in the Army. This policy remained in force until early in 1944, when a program of more extensive assignment of the island troops went into effect. Historical accounts indicate that special selection procedures, including the Spanish version of the Army General Classification Test, AGCT-1a, were applied, and that special training was conducted for those with little or no command of English as well as for those illiterate in Spanish. The special training course

conducted in Puerto Rico lasted 12 weeks and included instruction in English along with pre-basic military training. The course was followed—for those who qualified—by 10 weeks of basic training, also given in installations in Puerto Rico.

There is some indication that the English language training did not serve its intended purpose, despite the fact that such training was more comprehensive than at any time since the war. Training cadre were reported to have resorted habitually to Spanish in order to make sure that the basic military content of the course was understood. Whether or not the Puerto Ricans who completed the program could have performed adequately in English-speaking units, most of them served for the duration of World War II in Spanish-speaking elements in the Caribbean area. For this reason, there was no basis for gauging the effectiveness of the Army language training as a means to less limited assignment of the Puerto Rican trainees.

Complications Arising from the Korean Action

From 1948 to 1950, Department of the Army restrictions on recruitment in Puerto Rico limited the number of recruits. The few who enlisted were given the regular Infantry Basic Training, lengthened to 19 weeks to permit inclusion of 70 hours of instruction in English. The program did not attempt to qualify all the trainees for assignment to English-speaking units, and Puerto Ricans were still assigned predominately to Caribbean units.

Selection from 1950 to 1952 relied on the English language Armed Forces Qualification Test (AFQT), introduced operationally in 1950 and used by all the services as the measure of general trainability.³⁷ During this period, only men classed as English-speaking were made available for Army-wide assignment. As the Korean action developed, most Puerto Ricans were sent to the 65th Infantry Regiment in the Far East or to Spanish-speaking units in the Caribbean area.

Regular U.S. Army screening procedures stipulated rejection of men who would require specialized training or restricted assignment. Between a high failure rate on the AFQT and out-of-hand rejection of non-English-speaking registrants, there was a distinct possibility that the high draft calls would soon exhaust the number of available Puerto Rican Selective Service registrants. At the same time, the caliber of inductees declined because of the heavy reliance on administrative induction—the only way quotas could be met. Many of the administrative inductees—as well as some of those who obtained chance passing scores on the AFQT—were marginal in English, and their presence in regular English-speaking units presented problems of communication both in training and in action.

³⁷ U.S. Army Personnel Research Office, Department of the Army. *Induction—Puerto Rican Personnel*. Program Books I, II, III, PR 3401. Washington, D.C. 1952-1956.

Pressures for trained troops for the Korean action brought about a reexamination of policy affecting the acceptance and training of insular Puerto Ricans. This action was coincidental with a change in personnel management policy requiring Army-wide assignment of Puerto Rican enlisted men. Conflict between the changed policy and existing selection practices had to be resolved.

The Armed Forces Qualification Test, developed and standardized on an English-speaking continental United States sample, had been an appropriate selection test for Puerto Ricans so long as the objective was to select only men sufficiently competent in English to profit from a basic training program conducted in English. However, Army policy had now changed to require induction of Puerto Ricans who had the potential to make good soldiers and who, in a short time, could be taught sufficient English to go on to the regular basic training course. The AFQT rejected substantial numbers who could have qualified for military service if tested in their own language. A selection test appropriate to the altered criterion was therefore in order.

The difference in the induction rates which such a test would make was shown by a simple experiment. The Spanish version of the outmoded AGCT-1a of World War II and the AFQT were both given to an unselected sample of 1,000 Puerto Rican registrants. Whereas only 29 percent attained the required score on the AFQT, 52 percent achieved the equivalent score on the Spanish language test.³²

Scope of the Selection Research Program

Research supporting the policy of Army-wide use of Puerto Rican enlisted personnel called for the development and standardization of tests and procedures to select men for induction and to classify those rejected for later recall in case of need, and the validation of instruments and procedures against both performance in training and subsequent performance in an Army assignment. Also needed was a test of English fluency which could be used to determine which inductees had a sufficient command of English to be assigned directly to training in an English-speaking unit. The test would also be used at the end of a period of instruction in English to determine which men should go on to regular basic training and which should be discharged.

Revision of the training given in Puerto Rico was undertaken in order to include a limited amount of instruction in English.

The Army Liaison Office in Puerto Rico

In April 1953, a Department of the Army office was established in Puerto Rico to facilitate the collection of research data and to assist in the development of an appropriate personnel management program for Puerto Ricans. Known as DALROU (Department of the Army

³² Ibid.

Liaison and Research Office), the office was manned by an officer-in-charge and two enlisted technicians. It supplied a close and easy linkage between Department of the Army elements in Puerto Rico and in the continental United States.

Personnel of DALROU coordinated field aspects of the research to develop appropriate tests. They were on the spot to aid in redesigning processing procedures as new tests became available. They could deal with immediate problems. Their presence signified to Puerto Rican personnel the immediacy of the problems. By the time DALROU was deactivated in 1955, the Puerto Rican selection program had been modified to provide for the induction and special training of numbers of registrants who were marginal only in the sense that they did not have adequate knowledge of English and for the assignment of successful trainees in English-speaking units.

Revisions of the Training Program

The first step toward intensified training in English was based on the premise that English instruction and basic military training could be carried on at the same time, and that military training given in English would help the trainees acquire a specialized working vocabulary. To this end, 70 hours of English training were introduced into the Basic Combat Training. The plan did not prove workable. At this period, most of the training instructors were Puerto Ricans whose command of English varied considerably, and for the most part their speech differed noticeably from that of the continental United States.

In January 1952, the basic training program for Puerto Ricans was revised to include 110 hours of instruction in English. A second revision was put into effect 1 November 1954.³⁹ The new program was in two stages. The first stage was an eight-week pre-basic course given at a Puerto Rican installation, and included 184 hours of English language instruction. This was followed by 16 weeks of basic and advanced individual training in the continental United States where the insular Puerto Ricans were interspersed with other basic trainees. At this time, approximately 100 additional instructors were brought to Puerto Rico from the continent to provide more consistent training in English as spoken in the United States.

Selection Tests in Spanish

With the changed emphasis in training, there was even greater need for suitable selection tests. On 1 October 1953, a Spanish language test, developed and standardized to yield scores comparable to those of the AFQT, was introduced operationally. The Examen Calificación de Fuerzas Armadas, ECFA-1, was shown in subsequent research to be

³⁹ Letter, AGTP-P, 220.01, DA TAG to CG, USA, Caribbean, subject: "Procedures for processing personnel enlisted and inducted in Puerto Rico." Dated 3 Nov. 1954.

useful in predicting achievement in English and performance in basic training.⁴⁰ It was also effective in selecting insular Puerto Ricans who demonstrated satisfactory performance in duty assignments four months after completion of basic training.⁴¹

Use of a nonverbal selection test was also considered, and several were tried out as part of the research. However, where a primary selection objective was to identify men who would be able to achieve a working knowledge of English in a short time and to complete a basic training course conducted in English, reliance on a nonlanguage test seemed inappropriate. A test of this nature, the Nonlanguage Test NLT-2ab, was selected for administration as a secondary measure to those rejected for immediate induction. The purpose was to classify rejectees into standby categories for later recall should the demand for manpower warrant. The test is a shortened form of a similar test which was used at Armed Forces Examining stations in the continental United States.

The English Fluency Battery

Need for a measure of ability in English was met by development of the English Fluency Battery (EFB) introduced 1 July 1954. The test yields three separate measures of ability in English—reading, comprehension of spoken English, and speaking. Men attaining a qualifying score (a raw score of 40) were considered capable of getting along in an English-speaking unit and were subject to assignment throughout the Army. The score also marked off the lowest 20 percent of those accepted—the maximum that could be absorbed in the Caribbean area.

At first, the test was used at the end of the 20-week basic training course to establish language qualification for general assignment. Under the combined pre-basic and Basic Combat Training program in effect after 1 November 1954, the English Fluency Battery was used prior to the initial training period to place men in homogeneous groups for English instruction. Those who passed the English Fluency Battery at the end of pre-basic went on to regular basic training. Those who failed were given two more weeks of English training. If they still could not pass the EFB, they were discharged for "inaptitude." Alternate forms of the battery were made available to permit the retesting.

⁴⁰ K. F. Schenkel, H. B. Leedy, N. Rosenberg, and J. P. Mundy. On-the-job Evaluation of the Puerto Rican Screening Test (ECFA) against success in training. Technical Research Report 1097. U.S. Army Personnel Research Office, Department of the Army. Washington, D.C. January 1957.

⁴¹ K. F. Schenkel, L. A. Meyer, N. Rosenberg, and A. G. Bayroff. Evaluation of the Puerto Rican Screening Test (ECFA) against success on the job. Technical Research Report 1106. U.S. Army Personnel Research Office, Department of the Army. Washington, D.C. June 1957.

Incidental to the validation of the EFB, some indications were obtained concerning the effect of the formal English language training. Over the eight-week pre-basic period, trainees in a representative sample were found to register significant gains on the reading, speaking, and listening tests of the EFB. There was little gain from the end of pre-basic to the end of the 16 weeks of basic combat and advanced individual training for which the insular Puerto Ricans were assigned to units with English-speaking trainees. Nor did ratings on English language proficiency obtained at the end of training and again four months later on the job indicate any measurable gain in command of English over this period.⁴² Of two groups of trainees, one having had the eight-week English training program, the other the 20-week combined language and military training, the 8-week trainees were on the average superior in English achievement, particularly in speaking the language. The eight-week trainees were also rated higher than the 20-week trainees after four months in infantry assignments in English-speaking units.⁴³

Later Revisions of Selection and Training

Figure 1 shows the successive steps toward Army-wide assignment of insular Puerto Ricans from late in the World War II period. The English language training program for the Spanish-speaking acceptees has continued with little change.⁴⁴

The most important innovation has been the introduction into the screening procedures of tests of special aptitudes. Since August 1957, the Army has required at least two aptitude area scores of 90 or above for retention in the service. This requirement necessitated more intensive screening both of applicants for enlistment and of Selective Service registrants, particularly of men in the AFQT Category IV (10th to 30th percentile). In August 1958, Army Classification Battery tests (ACB) were introduced at all Armed Forces Examining Stations as a means of screening Category IV personnel to meet special aptitude requirements. In September 1961, the Army Qualification Battery (AQB), composed of short tests, more appropriate to a limited range of ability than were the ACB tests, replaced the ACB tests.

Application of the requirement was somewhat modified to fit the Puerto Rican conditions. All registrants are tested with the AFQT or the ECFA, whichever is appropriate in individual cases. The

⁴² J. E. Robinson, N. Rosenberg, H. Kaplan, and R. G. Berkhouse. On-the-job evaluation of the English Fluency Battery for Insular Puerto Ricans. Technical Research Report 1098. U.S. Army Personnel Research Office, Department of the Army. Washington, D.C., April 1957.

⁴³ H. Kaplan, N. Rosenberg, J. E. Robinson, and R. G. Berkhouse. Further on-the-job evaluation of the English Fluency Battery for Insular Puerto Ricans. Technical Research Report 1108. U.S. Army Personnel Research Office, Department of the Army. Washington, D.C., November 1957.

⁴⁴ Army Training Program ATP 21-119. Prebasic Training Program (8 wks) for Puerto Rican Male Military Personnel without Prior Service, 29 November 1957.

commanding officer of the Armed Forces Examining and Induction Station is responsible for establishing procedures for determining in which language an individual will be tested.

Registrants whose primary language is determined to be English are tested with the AFQT. Those scoring between the 10th and 30th percentiles take the Army Qualification Battery to find whether they meet the special aptitude requirement. These procedures—and the established qualifying scores—correspond to those in effect in the continental United States.

Spanish-speaking registrants are tested with the ECFA. The qualifying score was raised from 42 to 60 on 15 November 1961⁴⁵ in a general effort to reduce attrition of Puerto Ricans during training. At the same time, an English Reading Test—a subtest of the English Fluency Battery—was made a part of induction screening. The reading test is used as a supplementary measure to identify registrants who have had enough exposure to English to have a good chance of learning enough English during pre-basic to qualify for training or service in English-speaking Army units.

For men tested with the ECFA, there is further mental screening at the Reception Station to identify those who can be sent on to the continental United States for basic training without the pre-basic English language training in Puerto Rico. Only those who have made a score of 60 or above on the ECFA at the Armed Forces Induction and Examining Station are considered for such assignment. An additional requirement (raised 15 November 1961) established a raw score of 85 on the English Fluency Battery and two aptitude area scores of 90 or higher. The aptitude area requirement, originally applied only with men in the lower mental group, is imposed on all inductees regardless of mental group or ECFA score.⁴⁶ With this change, special procedures for classifying in standby categories men not currently acceptable were discontinued.

Figures 2, 3, and 4 show the procedures applied as a result of the 1962 changes.

Men who went through the 8-week pre-basic training in Puerto Rico were given the aptitude battery after completion of pre-basic to determine whether they should be sent on to basic combat training in continental units or separated from the service. For retention in the Army at this point, inductees had to achieve a passing score on the English Fluency Battery (raised from 40 to 80 in November 1961) and have the required two aptitude area scores of 90 or above.

⁴⁵ Letter AGTP-A 201.6 (6 Nov 1961) Hq. Department of the Army, 9 Nov 1961, subject: "Mental testing procedures for registrants in Puerto Rico," as changed by DA Letter, same file and subject, 24 November 1961.

⁴⁶ Letter, AGTP-A 201.6 (26 Feb 62) TAG to CG, USA CARIB, subject: Mental Testing Procedures for Registrants and RFA ACDUTRA Personnel in Puerto Rico, dated 14 June 1962.

Pre-1944	1944-1946	1946-1950	1950-1952	1952-1954	1954-1957	1957-1961	1961-
SELECTION							
Only Spanish-speaking insular Puerto Ricans accepted; mental test in English	Selection test in Spanish (AGCT-1a, Spanish version)	Enlistment only	English language test (AFQT-1); Non-language test (NLT 2abc) to categorize rejected registrants for possible recall in case of full mobilization	Spanish language test (ECFA-1) NLT 2ab	ECFA continued NLT 2ab cont'd English Fluency Battery used (1) to identify men eligible for basic training in English-speaking units; (2) placement for English instruction	Added requirement of two aptitude area scores above 90 for Mental Group IV	ECFA qualifying score raised (from 42 to 60); added screen on an English Reading test Two aptitude area scores above 90 for all inductees regardless of mental group
(DALROW), established April 1953							
TRAINING							
Special training units—12 weeks STU for those ill-	Training in Spanish-speaking units	Basic training same as in continental	20-week Basic Training course to	8-week pre-basic training in Puerto Rico, including	continued; 8-weeks pre-basic to include 160	continued	

DA Liaison and Research Office in USARPANT				
Mainly Caribbean area	ST U trainees chiefly to Caribbean area; a few to English-speaking units	Within U.S. Caribbean area	UTILIZATION	
			English-speaking Puerto Ricans eligible for Army-wide assignment, others to insular Puerto Rican elements	Army-wide in English-speaking units
literate in Spanish and Spanish literates without knowledge of English, plus 10 weeks basic training, all given in Puerto Rico	U.S.; 19 weeks, including about 70 hours of English language training	include 110 hours of English language training	ing 184 hours of English, plus 16-weeks basic combat training and advanced individual training in Continental U.S.	hours of English language instruction
			continued	continued

Figure 1. Steps toward Army-wide utilization of insular Puerto Ricans, 1948 to present.

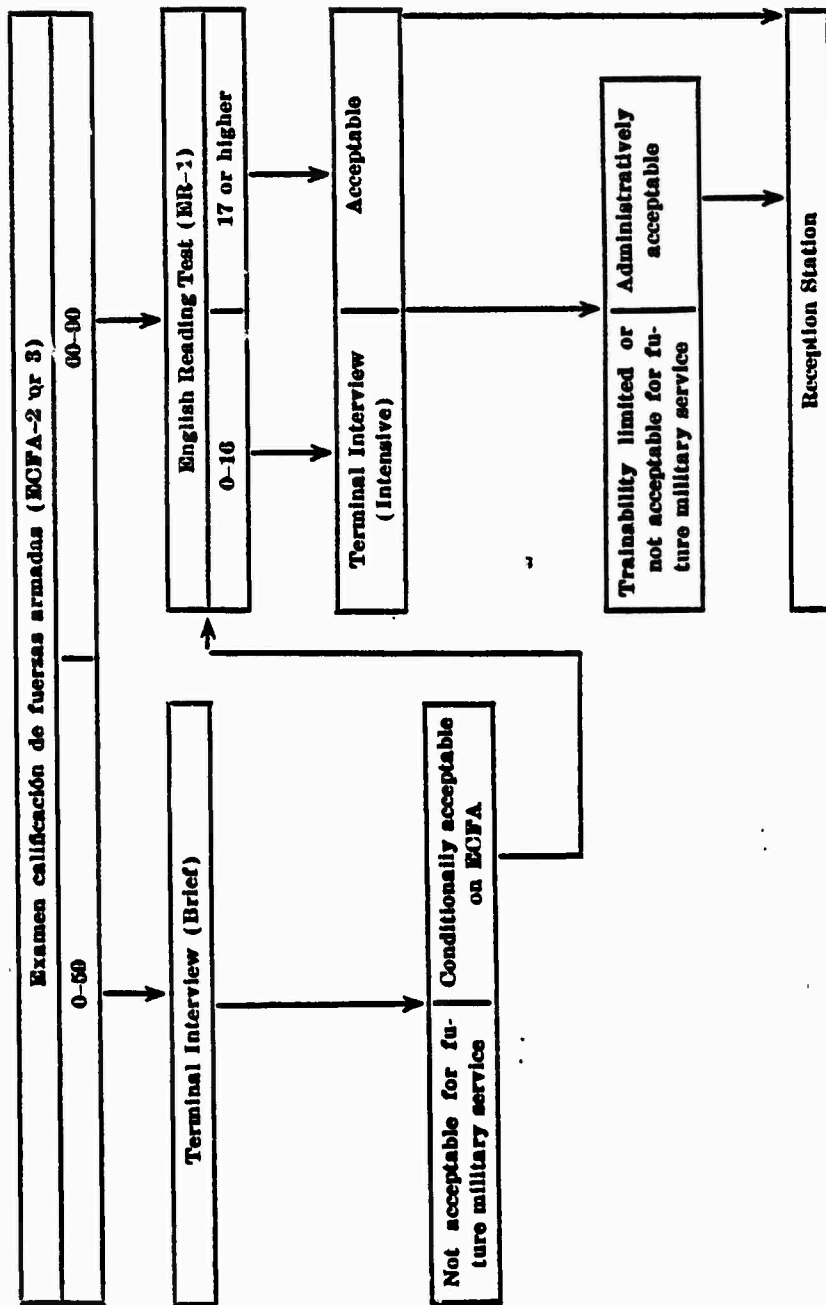


Figure 2. Mental testing of insular Puerto Rican registrants (Spanish-speaking) at Armed Forces examining and induction station (1964).

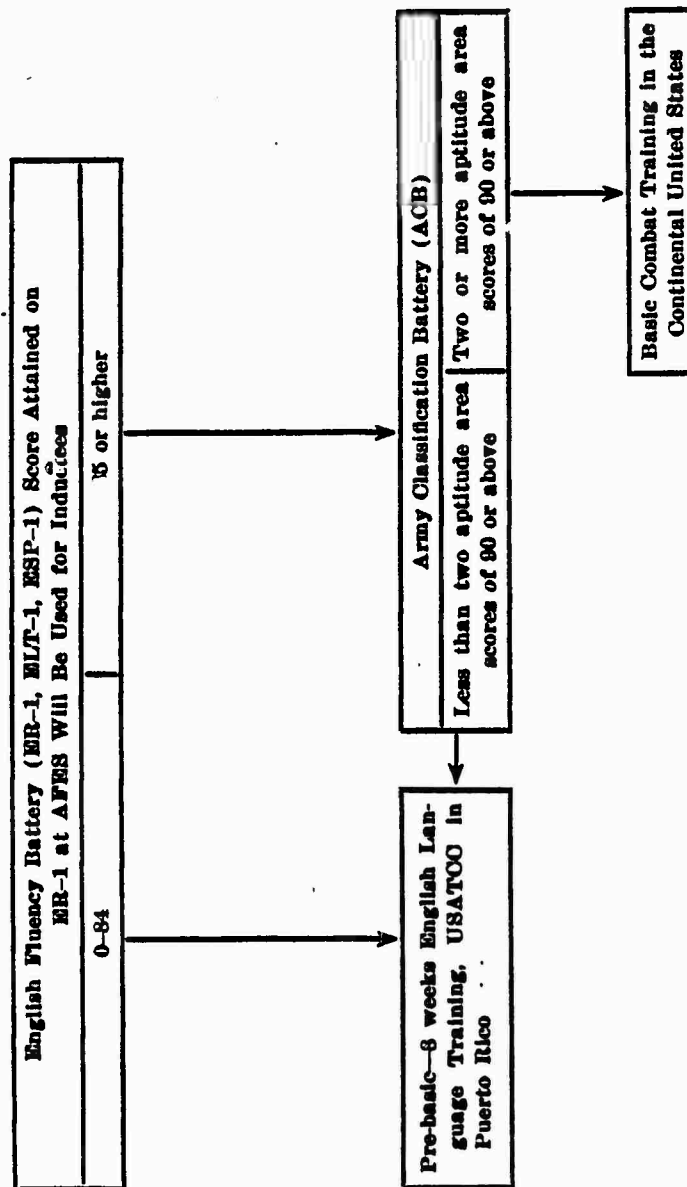


Figure 3. Processing of personnel (Spanish-speaking) in Puerto Rico at reception station (1964).

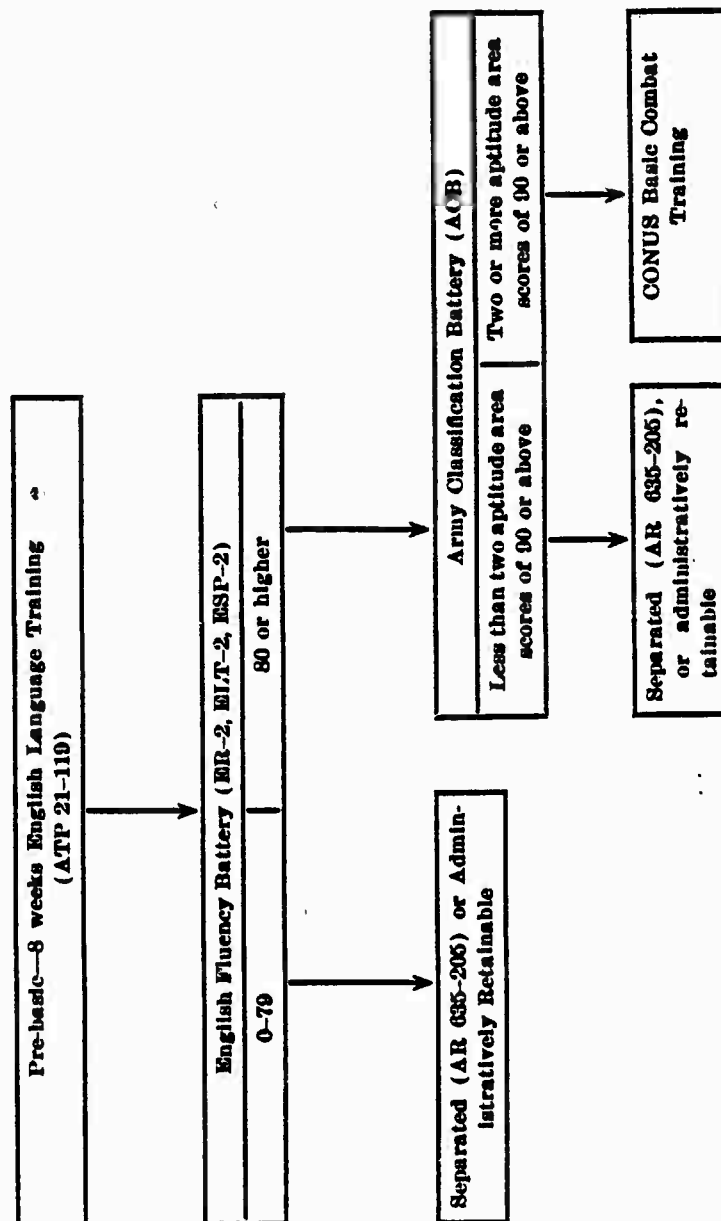


Figure 4. Testing of insular Puerto Ricans undergoing pre-basico training, U.S. Army Training Center, Caribbean (1964).

With these higher standards in effect, the following results were reported for the period February 1962 through December 1962:⁴⁷

The proportion of inductees qualifying as English speakers for direct shipment to the continental United States for Basic Combat Training increased from 16 percent to 29 percent.

The discharge rate at the end of the 8-week pre-basic English language training in Puerto Rico remained about as before—64.5 percent vs 64.7 percent.

The Unresolved Problem

Efforts to obtain enlisted personnel qualified for Army-wide assignment from among the Puerto Ricans eligible for service continue to be expensive in terms of training and administrative efforts. Over the period July through December 1962, inductions averaged 77 per month. According to results on the revised standards, approximately 22 men (about 29 percent) out of the 77 could be expected to qualify for regular basic combat training in the continental United States. Of the remaining 55 who receive pre-basic training in Puerto Rico, 17 would likely complete the special training and go on to regular basic training. In short, about half of those inducted reach basic combat training in an English-speaking unit.⁴⁸

As of 1964 studies were directed toward the problem of reducing the loss of insular Puerto Ricans who, after English language training in Puerto Rico, fail to attain minimum standards for retention and assignment to basic combat training. Adoption of the English language tests (AFQT and AQB)—and standards used with English-speaking registrants—was designed to reduce the percentage of insular Puerto Rican examinees qualifying for basic combat training in the continental United States from 26 percent to 9.5 percent.⁴⁹ In view of this figure, focus of study shifted to means of reducing the failure rate from pre-basic while maintaining quality control by means of a Spanish language mental test. The major problem, however, is how best to identify those registrants who can perform acceptably both in training and on the job when assigned in English-speaking units. The problem of reducing attrition is but part of the broader problem of selecting individuals usable under special conditions—conditions in which they are at the disadvantage of using a foreign language and functioning in a foreign environment.

The question remained unresolved at the close of 1964.

Implications of Experience with Puerto Rican Inductees

Where sizable numbers of non-English-speaking individuals belonging to a single language group are to be considered for service

⁴⁷ DF, OPOSSES (20 Mar 63) OPO to DCSPER, subject: "Mental testing procedures for registrants in Puerto Rico," dated 8 June 1964.

⁴⁸ DF, OPOSSES (20 Mar 63), OPO to DCSPER, subject: "Mental testing procedures for registrants in Puerto Rico," dated 8 June 1964.

with the Armed Forces, the history of the Army's experience with insular Puerto Ricans points to improvements that can come from dealing with each such group on an individual basis and from mutual accommodation of selection and assignment procedures and Army requirements and facilities. The same history also indicates that continued accommodation to fluctuating military requirements does not produce a stable means of access to the manpower resource in question.

Successive modifications in selection and training programs were all directed at qualifying for service more Puerto Rican registrants who, though deficient in the use of English, were mentally capable of absorbing military training. The utilization problem was complicated by educational deficiencies, amounting in many cases to illiteracy in the native tongue. However, measures taken were directed chiefly at the problem of insufficient knowledge of English to function effectively in an English-speaking unit.

Such measures have helped alleviate difficulties arising out of particular combinations of Army requirements and characteristics of the Puerto Rican mobilization population at given periods. Should mobilization of the insular Puerto Rican manpower resource be again required, selection and utilization policy would need to be reexamined and its appropriateness to current potential inductees and enlistees determined. What was useful with the population eligible for service in the 1950's might have limited applicability under an improved educational system in which the teaching of English has been stepped up. Even under conditions of improved literacy, the suitability of regular Army selection and classification instruments—based on findings on a continental English-speaking population—could not be taken for granted. If the Puerto Rican experiences have present meaning, it is to emphasize the role of cultural and language differences in determining the usefulness of test results and training and assignment practices. The demonstrated disadvantages of applying uniform measures established on one population to a culturally different people opens the question of the advisability of such a policy as applied to all segments of a mobilization population, even within the bounds of the continental United States.

This is not to minimize the contributions of research and developmental efforts with the insular Puerto Ricans. The more useful steps can be singled out from a review of successive stages of the program:

1. The English language selection tests in use with insular Puerto Ricans at the inception of the program rejected large numbers of men acceptable for service in all respects except the ability to communicate in English. The course taken was to shift to a selection test in the Spanish language and give those inducted sufficient training in English to enable them to function in Eng-

lish-speaking units. The new psychological tests had the effect of increasing the rate of acceptance, and fewer men had to be examined to meet manpower procurement objectives. More, the men selected were on the average more competent.

2. The imposition of higher and higher standards, while reducing loss during training, is in a sense an expedient which leaves the basic problem untouched. The basic issue faced in screening the insular Puerto Ricans for service in the U.S. Armed Forces is the problem of adjustment to differences in language and culture in addition to the normal problem of adequate general mental level and usable specific aptitudes.

In a paper discussing the desirability of higher requirements in the use of English,⁴⁸ the following comment appears:

Imposition of a realistic requirement in English Fluency for IPR trainees will draw attention to the problems involved in the pre-basic training program. Application of appropriate standards in general trainability and English knowledge at the pre-induction screening will restrict input to training to IPR personnel who generally can learn. It will then become possible to investigate the content, methods of instruction, and setting for the pre-basic training program. It would be important to see whether the program is sufficiently challenging to more apt trainees—whether refresher instruction in written English should⁴ be added, whether more hours of training in English should be provided in the training day. . . . Another major problem in the pre-basic training program is the setting. At its present location in Puerto Rico, the pre-basic idiom is used generally in other instruction and in off-duty living. Experimentation with location of this training program at the installation in CONUS might show significant improvement in English fluency of IPR trainees as a result of the reinforcement provided by the use of English in the elements outside the formal training. . . .

3. The eight-week concentrated program of English instruction followed by basic combat training in English-speaking units was more successful in improving the English language ability of the Puerto Rican trainees than were attempts to give adequate training in English and in basic military subjects at the same time.
4. A diagnostic test of ability to read English, to understand spoken English and to speak it, proved a helpful tool in selecting men for the pre-basic program, placing them at appropriate levels, and determining their readiness for Army-wide assignment.
5. Training and selection were a continuously integrated process. As an example, the classification battery was administered at the close of pre-basic training rather than at the beginning of training as on the continent.
6. The establishment of DALROU within the Antilles Command insured that the research program reflected realistically the man-

⁴⁸ Attachment to Comment 2, DF File 201.6, DCSPER to TAG, subject: "Mental testing procedures for registrants in Puerto Rico," dated 28 July 1960.

power problems as they existed in the area. Perhaps more than the practical advantages of having an office as the seat of the problems, the establishment of DALROU demonstrated the importance which the Department of the Army attached to problems of the Puerto Rican Selective Service organization and of training centers on the island, and thus stimulated local efforts.

7. The attitude which prevailed in all Department of the Army quarters, as reflected in official—if informal—directives and correspondence, was that of a business-like acceptance of the program. Assessments of insular Puerto Ricans made by commanders and cadre had a generally favorable tone: The Puerto Ricans made good soldiers, they sincerely wanted to be a part of the U.S. Armed Forces, they adjusted well to Army conditions, even to the point of not complaining about the rarity of beans and rice on the menu. A generally cooperative attitude, epitomized in the function of DALROU, permeated relations between Puerto Rican military elements and Army elements everywhere.

CHAPTER 13

THE MORALLY MARGINAL SOLDIER

The history of admission of the morally marginal individual into the Army follows fairly closely the manpower demands made upon the Army at any one period. In times of less stress, particularly during the absence of war, policies remained exclusive. When emergency manpower measures became necessary, searches even extended to convicts who could be paroled from penal institutions for induction into the military service.

Prior to World War II, enlistment policies permitted entrance of men with a record of juvenile delinquency and occasionally of those convicted of adult misdemeanors of minor importance. An old statute which had continued in force since 1877 provided that no person who had been convicted of a felony "shall be enlisted or mustered into military service."⁵⁰ State law in a number of states defined a felony as a public offense punishable by death or imprisonment in a penitentiary or state prison. In others, it was an offense punishable by any imprisonment in excess of one year. In the U.S. Criminal Code, all offenses punishable by death or by imprisonment for more than one year are felonies. All other offenses are classified as misdemeanors.⁵¹

The Selective Service and Training Act of 1940 reflected old law. The approach of war necessitated examination of the concept embodied in that law. As the problem of flexibility in procurement became more pronounced, the War Department sought and received enabling legislation (29 July 1941) to authorize exceptions in special cases, so that some persons convicted of felonies could be accepted for military service. For the first time since 1877, men convicted of a felony could enter the Army, provided The Adjutant General granted the necessary waiver.⁵²

Under the new policy of admission, a large number of ex-prisoners without serious delinquency records, most of them first offenders, were classified 1A and inducted into the Army. As the war progressed, the policy became even less stringent. In September 1941, men who were still under the control of civilian authorities could be inducted. When

⁵⁰ Section 1118 of the Revised Statutes (10 U.S.C.A. 622) in force since 27 February 1877.

⁵¹ U.S. Criminal Code. Section 335 (18 U.S.C.A. 541).

⁵² Special Monograph No. 14, Enforcement of the Selective Service Law, Selective Service System 1940, p. 69.

the critical point in the manpower demand was reached during World War II, the whole felon population in and out of penitentiary walls became a possible source of military procurement. By August 1944, the policy excluded only those who were under confinement as a result of heinous crimes such as treason, murder, rape, and kidnapping.⁵³

Special Panels

The decision to induct felons created serious screening problems. Since the barrier had been lifted in order to make as many men as possible available, exclusion could be limited to those who were genuinely unfit for military service. During the critical manpower year of 1943, 126 Special Institutional Selective Service Boards were established in 20 Federal institutions and in 106 state prisons. These panels originated out of a pilot study conducted through the local Selective Service Board having jurisdiction over the Federal Penitentiary at Lewisburg, Pennsylvania. This first panel, consisting of members of the local board, the associate warden, and a permanent citizen of the community, screened and classified all inmates whose release was imminent. Of the 46 recommended for induction, 16 were accepted by the Army on 19 December 1942.⁵⁴

As finally established, each panel included one officer of the institution and two recognized citizens of the community in which the institution was located. These panels worked closely with parole authorities to identify men whose institutional records warranted consideration for military service. Mobile War Department physical examination teams visited some prisons; in other cases, inmates were sent to the local board for a pre-induction physical examination under a non-uniformed guard.

Induction Policies

The induction of men under the new law did not, however, follow a too lenient policy. Individuals who had committed certain crimes were not acceptable, except on waiver, until they had demonstrated their adjustment by exemplary community living for at least six months after release from prison. A second group which had served sentences of more than one year could be inducted after a 30-day community adjustment period if first offenders, or 90 days if other than first offenders. An order was required terminating or suspending civil custody before an individual could be inducted who had been on parole, conditional release, probation, or suspended sentence. Determinations were made whether the inmate should be given opportunity to go directly from prison to military service or should go into civilian life for a period prior to induction. Those who requested immediate

⁵³ AR 615-500, 10 August 1944.

⁵⁴ Special Monograph No. 14, Enforcement of the Selective Service Law. Selective Service System 1960, p. 71.

induction were considered volunteers. The Commanding General of the Service Command reviewed applications for waivers from persons for direct induction from prison when discharged, conditionally released, or paroled. The local board, not the special panel, handled the induction action, avoiding the implication that military service was an alternate form of punishment. Later, in 1944, the requirement for screening waivers was eliminated, and all were considered morally acceptable except those with certain types of conviction.

Among prisoners screened through the special panel procedures, the rejection rate was high. Many were rejected for neuropsychiatric deficiencies. However, it was the feeling of some panel members that many men selected were disqualified at induction stations by a too rigid procedure which did not permit an adequate interview or adequate review of the background information. In some cases, a member of the penal institution accompanied an inmate to the induction station in order to insure a more complete understanding of the case than the records could reveal.⁵⁵

The Army accepted and inducted over 2,000 men directly from prisons. In addition, 100,000 men who had been previously convicted of a felony served during World War II. The Selective Service System felt that "honorable service in the military forces of the United States meant vindication to some extent for any crime they had committed and their reestablishment in the eyes of society."⁵⁶ Induction from prison populations continued until the panels at institutions were deactivated in December 1946.

How well did those inducted directly from prison perform? A study was instituted by the Illinois Division of Correction in 1950, but never fully completed. It showed that when the parole violation rate of the 1,307 men paroled to the Armed Forces from the Illinois penitentiary system during 1943-44 was compared with the violation rate of 2,070 parolees to civil life during the same period, the rate of parole violation was 5.2 percent for the military group and 22.6 percent for the civil group. In another random sample of 785 felons inducted, only 4.2 percent were convicted after they left service. Eighty-seven percent of all parolees from the Illinois system received honorable discharges from the Army. Over half the group inducted received battle stars. Of the 30 percent who were in combat, 98 percent received honorable discharges, one-third received the Purple Heart, and the percentage killed in action was one and one-half times greater than for the Army as a whole.⁵⁷

A similar study of the New York State Division of Parole covered all parolees who were in military service all or part of the time from

⁵⁵ Ibid. p. 73.

⁵⁶ Ibid. p. 73.

⁵⁷ Lohman, Ohlin, Reitzea. Policies, Regulations, and Selection Procedures Relating to the Induction of Felons in Appendix 116 to Report of Working Group on Human Behavior Under Conditions of Military Service, pp. 30-32.

the beginning of Selective Service until 1 February 1946. This study indicated that 91 percent received honorable discharges, 40 percent were promoted, and 20 percent were awarded decorations.³⁸ Both the Illinois and New York studies must be considered on the basis of adequacy and depth. A general examination of the percentages derived would tend to indicate that those convicted of a felony did not become a serious problem when inducted into the Army. They could be assumed to have rendered generally acceptable service. However, such studies are made principally after discharge from service and are based upon an examination of service records, primarily with respect to disciplinary actions, wounds incurred, promotions received, awards presented, type of discharge, and subsequent offenses. No studies were made of the convicts inducted while they were in the Army in order to compare their duty performance and behavior with others in their units.

Following World War II, under diminishing manpower ceilings, the Army returned to a policy of almost complete exclusion of felons from induction.³⁹ This policy continued in effect until the enactment of the Universal Military Training and Service Act of 1951. This Act provided that "No person shall be relieved from training and service under this title by reason of conviction of a criminal offense, except where the offense of which he has been convicted may be punished by death, or imprisonment for a time exceeding one year." Following the enactment of this law, the Army issued its basic regulation⁴⁰ indicating that unless the disqualification was waived, any registrant convicted by a civil court, or in receipt of an unfavorable adjudication by a juvenile court for any offense punishable under the stipulation of the UMS&T Act, was morally unacceptable for service. Those who had a history of alcoholism, drug addiction, or sexual misconduct were likewise unacceptable, but this disqualification could be waived by Army commanders. Those on parole or probation from any civil court, or on conditional release from any term of confinement, were barred from service. Waiver requests for registrants whose convictions fell under the punishment categories of "punishable by death or imprisonment for a term exceeding one year," were forwarded to a Joint Induction Screening Group established by the Department of Defense in November 1951.⁴¹ The group included three members representing the three services. All cases were handled individually.

³⁸ Ibid. p. 32.

³⁹ Changes 3, AR 615-500, 30 December 1948.

⁴⁰ SR 615-180-1, 5 November 1951.

⁴¹ The Joint Induction Screening Group existed from 21 November 1951 until 1 May 1958, when its duties were assumed by Moral Waiver Determination Boards in The Adjutant General's office. DOD Directives 5120.3, 2 July 1951 and 1143.2, 15 November 1955. Memorandum from Secretary of Defense to All Services, Subj: "Committees", dated 1 May 1958.

From November 1951 through March 1954, which included a considerable portion of the Korean period, 17,463 requests for waivers were processed. During 1953, 8,242 waivers were considered and 60 percent approved.

The Findings of the Working Group on Human Behavior

At about the same time that the moral acceptance provisions of the UMS&T Act of 1951 and the waiver screening procedure went into effect, the subject of moral marginals received attention in the joint project of the Research and Development Board and the Personnel Policy Board in the Office of the Secretary of Defense. The Working Group on Human Behavior Under Conditions of Military Service which studied the moral marginal problem noted, among a variety of considerations, that "From the point of view of the crucial question of allocation between civilian production and the Armed Forces, prisoners are a flexible source of developed manpower."⁴³

The Working Group maintained that the potential of prisoners and those released would and should be a continuing source of manpower during an emergency, even though the exact composition of the force at any given time was difficult to estimate. It estimated on the basis of 1940 and 1950 census figures that the number of men in state or federal prisons or reformatories averaged 200,000⁴⁴ of which 57 percent were in the 18 to 34-year age group. It noted that the health of the prison population was equal or superior to that of comparable groups, and that the intelligence and aptitudes of the inmates compared favorably with those of the general population, based upon studies made prior to 1951.⁴⁵ (See also app. 5, 6, 7 and 8 for the distributions of prison populations during World War II and after with respect to age and mental ability.) The Working Group concluded that the prison population in the eligible age group would be a continuing source of manpower in an emergency.⁴⁶

One study prepared for the Working Group was an evaluation of World War II criteria for the induction of former offenders. It concluded that—

The entire program for the selection and induction of felons during World War II represented a significant innovation in the recruitment of military personnel. It made available a hitherto untapped reservoir

⁴³ Report of Working Group on Human Behavior Under Conditions of Military Service. A Joint Project of The Research and Development Board and The Personnel Policy Board in the Office of the Secretary of Defense, Washington, D.C., June 1961, p. 38.

⁴⁴ The 1962 census figures indicated a male population of 211,029.

⁴⁵ Report of Working Group on Human Behavior Under Conditions of Military Service and Appendix 115 thereto, Lohman, Ohtin, Reitzes, "Description of Convicted Felons as a Manpower Resource in a National Emergency" 1958.

⁴⁶ Ibid., p. 38.

of men physically and mentally qualified for honorable military service. In the absence of a body of previous experience with the selection and induction of felons, it proved necessary to develop new criteria and new procedures of selection by simple processes of trial and error.

The study group made the following analysis of the experiences of World War II:⁶⁶

1. The nature of the crime committed was a major criterion used to determine acceptability. It was objective and clearly defined, but it emphasized the legal rather than the behavior aspect of classification. There was little predictive value in the legal categories alone.
2. The length of the criminal record of an offender represented a second criterion for admission or rejection. However, "careful interpretation is required to determine conditions under which the record was acquired, the implications it provides of the personal and social development of the offender, and the possibilities implied in the reorientation of his behavior. In some instances, a limited criminal record may result from the successful evasion of arrest rather than the absence of a developed criminal orientation, while an offender with a more extensive record may have given positive indications of change, which would give greater promise of successful adjustment in the armed forces. This indicates the necessity for relating the criminal record of an offender to various other factors in his personality, background and situation, which are associated with adjustment to military life."⁶⁷
3. An evaluation of an offender's behavior for a period of time in his civilian community became a third criterion for judging suitability for induction. This process had certain advantages, since parole violations have been determined to be most likely to occur during the initial phase of a parole period.
4. The fourth screening standard involved refusal to accept offenders who were under the supervision of civil authorities. The study felt that this provision was unsound. Follow-up studies conducted in Illinois disclosed the fact that offenders discharged from confinement at the expiration of their sentence were convicted of new offenses twice as often as men released on parole. Since parole supervision in many states extends over a period of several years, many parolees pass the current age limit for induction before they become morally acceptable for military service. For these men, a delay in induction amounts to exclusion."⁶⁸

⁶⁶ Lohman and Others, Policies, Regulations and Selection Procedures Relating to the Induction of Felons, Appendix 116 to Report of Working Group.

⁶⁷ Ibid., p. 35.

⁶⁸ Ibid., p. 37.

The study concluded, on the basis of this analysis, that development of objective screening devices would prove more useful tools for determining the suitability of former offenders for military service than application of criteria applied during World War II and after. A recommendation based on this conclusion was included in the final report of the Working Group. Further, the study maintained that if criteria such as were outlined continued to be employed, it was mandatory for correctional authorities, selective service officials, and induction station commanders to have a more uniform understanding and interpretation of existing regulations and a means of closer working relationships. The study criticized most heavily the waiver system in operation for a period during the war, characterizing it as "cumbersome" and more of an "obstacle than an aid." The wealth of experience with the successful adjustment of felons in the armed forces by 1944 led, it noted, to elimination of the waiver system except for those convicted of "heinous" crimes.

Recommendations of the Working Group

The Working Group made four specific recommendations regarding the utilization of felons:

1. That an objective screening instrument be devised based on the experience of civilian parole authorities with the conditional release of convicted offenders and on an intensive study of factors related to the actual adjustment (in service) of inducted felons during World War II.
2. That special procedures be developed to screen and utilize felons undergoing confinement.
3. That special panel boards, organized along lines which proved largely successful in World War II, be established in correctional institutions to administer the classification of inmates.
4. That permanent mobile screening units of induction station examiners be organized in each state to make final determination of the physical, mental, and moral acceptability of eligible felons undergoing confinement.²²

The findings and recommendations of the Working Group must be considered in the light of the limitations of the early findings of the Illinois and New York parole authorities which it reflects. However, the recommendation for an objective screening instrument was recognized in subsequent research proposals.

Limited Research Studies

In September 1956, a research task was initiated to identify former delinquents who might prove of value to the military service. This

²² Report of Working Group, p. 336 and Appendix 116, thereto. Lohman, Ohlin, Reitzes. "Policies, Regulations and Selection Procedures Relating to the Induction of Felons."

research was never completed. However, during the course of the study several significant findings resulted in the area of military delinquency related to prior offenses.⁷⁰ Based upon a study at Ft. Leonard Wood of 2209 enlisted men entering the Army in 1953 and 1954, it was found that 8 percent had received other-than-honorable discharges. Of this group (177), 11.9 percent had records of offense prior to entering the Army. The study concluded that personnel possessing pre-service disciplinary records are more likely to receive unfavorable discharges than those with clear records. A similar study made in 1958 showed that, of the 446 enlisted men who received other-than-honorable discharges at Ft. Dix, New Jersey from July to October 1958, 13.2 percent had records of offense prior to entering the service. In the same year, enlistment records and civilian criminal histories of 212 military prisoners sentenced to punitive-type discharges were examined. Nine percent (19) showed records of offenses prior to service. However, a later check with civilian authorities showed that of the 193 men (91%) who had no checks indicating prior offenses on their records, 62 or 32 percent did actually have a record of civilian offenses.

These studies indicated that close screening of prior offenders was essential to insure that, within available screening procedures, only those who could be useful would be accepted. However, no devices similar to those recommended by the Working Group on Human Behavior Under Conditions of Military Service, have been forthcoming.

Moral Standards Since 1956

Men under parole, probation, suspended sentence, or conditional release from any term of confinement were still unacceptable under standards in effect in 1954. However, the Selective Service System could send to the induction station for consideration of waiver the cases of men with records of offenses other than felonies.⁷¹ In 1956, at the discretion of Army Commanders, commanding officers of induction stations were delegated authority to grant waivers involving minor offenses. These offenses included single cases of drunkenness, vagrancy, truancy, peace disturbance, or other minor offenses for which no civil restraint existed. This action was taken to ease decision making at the point of induction where evaluation could be made in instances where only one offense of a minor nature had been committed.

By 1962, moral standards regarding registrants generally followed the basic pattern set since 1951. The principle of unacceptability

⁷⁰ Summary of Studies contained in DF From TAG to Deputy Chief of Staff for Personnel. FILE AGTL-D dated 6 Nov 1963. Also: Walter A. Kleiger and A. V. Duhlinson. "Civilian and Military Factors as Predictors of Army Failure." Research Memorandum 60-22, Nov. 1960, U.S. Army Personnel Research Office, DA, Washington, D.C. 1960; Walter Kleiger and others, "Correlates of Disciplinary Record in a Wide-Range Sample." Technical Research Note 125, Aug 1962, U.S. Army Personnel Research Office, DA, Washington, D.C. 1962.

⁷¹ SR 615-180-1, Change 6, 7 September 1964.

for those convicted of an offense punishable by death or imprisonment for a term exceeding one year continued to apply unless the disqualification was waived by the Armed Forces Moral Waiver Determination Board. The waiver principle applied to other categories of individuals: those convicted by a civil court or by a juvenile court, those under parole, probation, suspended sentence, or conditional release for offenses other than felonies, or under probation or suspended sentence imposed by a court for violation of the UMT&S Act, those with single minor offenses noted previously, and those with a history of frequent difficulties with law enforcement agencies.

Summary

The moral standards for induction into the Army mirrored to a considerable extent the pattern established for the physical and mental areas. Wartime and emergency conditions produced increased scrutiny of the civil manpower resources, particularly when the problem of replacement became acute. However, a greater degree of selectivity characterized all periods when lower manpower ceilings demanded full consideration of quality. The UMT&S Act of 1951 set the general pattern of moral acceptability as it did for mental acceptability of inductees. However, the waiver principle became the real screening device, once the Selective Service System itself had applied the basic screen. Depending upon the degree of offense, waivers were reviewed at Department of the Army level, at Army Headquarters, or at the Induction Station.

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The official documents, particularly for World War II and the period immediately following, are located in the World War II Records Division of the National Archives and Records Service at Alexandria, Virginia. These include Headquarters, War Department, Army Ground Forces and Army Service Forces.

Related statistical information, particularly for the period after 1950 on certain aspects of the physical, mental, and moral marginal, is found in the statistical offices of the Office of The Surgeon General of the Army, Office of The Provost Marshal General of the Army, and the Selective Service System. The *Health of the Army* published by the Office of the Surgeon General of the Army is a valuable source of information about the physical and mental characteristics of accessions to the Army since 1951. It also contains, together with bibliographical references, valuable comments on changes in policies, procedures and selection instruments which may have affected the quality of input into the Army. *The Annual Reports of the Qualitative Distribution of Military Manpower Program*, for fiscal years 1952 through 1963, likewise provide both statistics and interpretative information about the qualification and rejection of personnel under prevailing standards. These reports give comparative data on the other Services.

A number of historical volumes, such as the *Procurement and Training of Ground Combat Troops*, a volume on the Army's history of World War II, the *Memoirs of the National Academy of Sciences for World War I* and other volumes on the handling of replacement prob-

lems, particularly for World War II, are included in the bibliography. They provide the necessary background for the changes which occurred in procurement policies and the subsequent admission or exclusion of marginal men. The utilization of marginals, particularly in mobilization and wartime, can only be understood by a knowledge of the circumstances which permitted their entrance into the service under a variety of standards.

Official Army Regulations, War Department or Department of the Army Circulars or Pamphlets cited in the footnotes of the text have normally not been repeated in the bibliography. Most of the principal research studies utilized in describing the Army's experience with marginal men, although recognized in the footnotes, are listed in the bibliography. Official Department of Defense, War Department, or Department of the Army correspondence is cited only in the footnotes except in a few cases where a significant historical policy announcement is included in the bibliography itself.

Most of the research studies by the Army, Navy, Air Force and other research agencies cited herein contain their own valuable bibliographies pertinent to the subject at hand. The Goldberg study on *Special Training Units During World War II* is the most complete study on literacy training and associated problems during that period and contains a comprehensive bibliography on World War II materials.

Certain documents indicated as Program Books contain miscellaneous files covering pertinent data on particular subjects. These Program Books for the most part are compilations of all relevant information, usually background in nature, on certain research projects either planned or executed. Normally they contain the authority for the projects, explanatory data, correspondence between agencies or offices concerned and indications of problems encountered. These Program Books are in single copies and are available only within the office of the agency having possession. The majority of these Program Books or miscellaneous files by specific subject matter are in the U.S. Army Personnel Research Office, The Office of the Deputy Chief of Staff for Personnel, or the Office of Chief of Personnel Operations of the Department of the Army.

The Defense Documentation Center, Cameron Station, Alexandria, Virginia, has only a limited number of references directly related to this area of marginal man at the time of preparation of this publication. The Office of Chief of Military History also has limited documentation, although the official Histories of the United States Army in World War II provide much valuable background material, particularly those on mobilization, the initial organization of the Army during World War II, and the replacement system. The *Annual Reports* of the Director of the Selective Service System likewise provide

pertinent background, particularly with reference to manpower procurement problems related to the marginal area.

The information about the training of marginals, particularly the mental marginal where the data are more abundant, must be obtained from the research studies included in the pertinent footnotes for the training programs discussed and in the bibliographical listings. The same plan applies to any limited follow-up studies on the utilization of marginal men.

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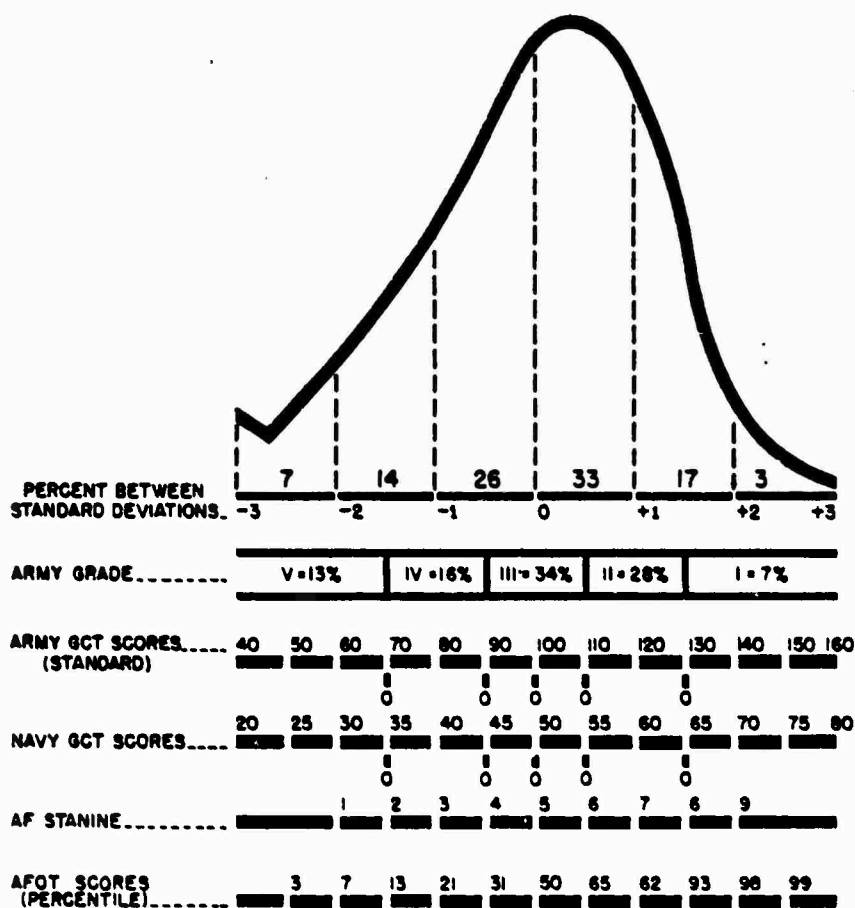
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APPENDIX 1
ARMED FORCES
WORLD WAR II DISTRIBUTION
OF
AGCT SCORES
1 JANUARY 1945
(INCLUDES OFFICERS)



APPENDIX 2

RELATIONSHIP BETWEEN AGCT SCORES AND EDUCATION

Distribution of total enlisted men in AGCT grades, by education, March 1941-May 1946*
(By percent within and between grades)

Educational level	Total		AGCT grades									
			I		II		III		IV		V	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total.....	9,787,583	100.00	880,287	100.00	2,038,363	100.00	2,864,346	100.00	2,514,406	100.00	866,211	100.00
Non-English speaking.....	16,148	0.16	167	0.02	164	0.01	764	0.03	2,843	0.08	6,771	0.79
Illiterates.....	87,237	.89	47	.01	676	.03	2,341	.08	8,873	.23	45,237	5.28
Some schooling only.....	1,848,848	18.86	2,843	.31	44,277	1.82	233,301	8.16	964,766	34.26	531,452	64.19
Completed grade school.....	4,171,540	42.76	54,973	6.20	744,006	29.20	1,517,973	54.21	1,530,166	64.02	233,329	27.16
Completed high school.....	3,069,256	31.36	234,609	26.71	1,458,660	57.44	867,763	32.43	279,509	9.93	18,728	2.18
Completed college.....	237,800	2.42	114,000	21.17	175,587	6.91	37,402	1.25	6,761	.20	540	.06
Completed technical college.....	8,507	.08	2,369	.43	2,972	.16	1,620	.06	487	.02	29	.00
Post-graduate work.....	54,773	.56	23,027	4.11	26,831	1.06	4,300	.15	405	.01	20	.00
Completed night or business school.....	208,342	2.13	22,663	4.06	83,008	3.77	68,603	2.39	32,165	1.14	2,925	.34

Distribution of total enlisted men in each educational level, by AGCT grades, March 1941-May 1946*

Educational level	Total		AGCT grades									
			I		II		III		IV		V	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	9,757,563	100.00	599,257	5.74	2,249,353	23.05	2,964,246	30.38	2,514,495	25.84	859,221	8.81
Non-English speaking	15,145	100.00	107	1.06	164	1.02	744	7.43	2,242	23.05	5,771	66.72
Illiterates	57,257	100.00	47	.08	679	1.17	2,341	4.09	5,572	15.00	45,257	79.15
Some schooling only	1,548,545	100.00	2,543	.16	48,277	2.50	283,301	18.33	994,758	62.19	541,552	34.83
Completed grade school	4,171,549	100.00	45,973	1.10	744,005	17.84	1,617,973	38.79	1,520,160	36.44	232,529	5.59
Completed high school	2,659,248	100.00	234,589	8.84	1,458,000	54.90	987,702	37.16	270,500	10.18	15,728	.61
Completed college	237,890	100.00	118,500	50.00	175,587	73.85	37,403	15.78	5,761	2.43	540	.23
Completed technical college	5,507	100.00	2,309	41.93	3,198	58.07	1,600	28.89	487	8.73	29	.51
Post-graduate work	54,773	100.00	22,627	41.33	28,531	52.11	4,300	7.87	405	.74	26	.05
Completed night or business school	209,362	100.00	22,653	10.82	53,008	25.32	65,608	31.34	22,165	10.59	2,625	1.25

* Estimate, based on population of 1,340,000 men processed June 1941 through August 1942.

** Less than 0.01.

LIMITATIONS OF DATA IN ACCOMPANYING TABLE

Although AGCT scores and highest level of education were recorded for approximately 10 million men in World War II, tabulations of AGCT grades and education for given individuals were made for special periods only.

In the table attached, the total number of men tested and their distribution by AGCT grade are actual counts. Similarly, the percentage distributions of (1) The Total and of AGCT grades by education, and (2) educational level, by AGCT grade, are actual percentages computed for 1,340,698 enlisted men processed June 1941 through August 1942.

On the basis of these percentage distributions, estimates based on the 9,757,583 population of enlisted men processed March 1941-May 1946 were computed. It should be emphasized that these entries are estimates only and are subject to distortions unavoidable in such a method. The entries of 47 illiterates in AGCT Grade I and the 670 in Grade II are explained in part on this basis. Isolated instances of card-punching errors when blown up can account for anomalies of this type.

A second factor must be noted. On 15 July 1942, the lower limit of Grade IV was extended downward an additional half standard deviation from Army Standard Score of 70 to 60. The 1,340,698 men processed June 1941 through August 1942, include 14 months intake with 70 as the cutting point between Grades IV and V and one month's intake with 60 as the cutting point. It is obvious that an educational distribution by AGCT grade is affected by the dividing line between grades. This would show up more strongly in the blow-up to 9,757,583.

A third factor to be emphasized is that the 9,757,583 enlisted men processed March 1941-May 1946 include groups inducted under varying procedures with respect to illiterates. Prior to August of 1942, men who did not have the capacity of reading and writing the English language as commonly prescribed for the fourth grade in grammar school were rejected. Subsequent to August 1942, the emphasis was placed on mental capacity rather than on literacy. Men who had not successfully completed the 4th grade level of schooling were given tests of mental ability and if they attained a passing score certain percentages (based on varying quotas from time to time) were inducted and sent to Special Training Units where they were trained to a fourth grade level in reading and writing. Those attaining this level were classified on the basis of their AGCT scores and were assigned to regular Army duty. Men failing at the special training were discharged from the Service.

Although the total 9,757,583 men represented on the accompanying table include men inducted under varying mental standards of inductibility, the 1,340,698 men used as the basis for the blow-up to this total included very few illiterates since they were processed prior to August 1942. This characteristic of the smaller population consequently results in a distortion in the estimated distributions of the 9 million by education, and by education by AGCT grade.

APPENDIX 3

LIST OF OCCUPATIONS FOR NON-ENGLISH-SPEAKING MEN ILLITERATES, MEN OF LIMITED MENTAL CAPACITY

(AR 615-26, 15 September 1942)

Baker	Hoist Operator
Instrumental Musician	Oven Fireman
Barber	Rock Crusher Operator
Tool Dresser	Motorcyclist
Cook	Fireman
Crane Operator	Ammunition Handler
Power Shovel Operator	Bath Attendant
Stationary Boiler Firemen	Basic
Horse Breaker	Wrecker Operator
Rigger	Pigeoneer
Railway Section Hand	Driver, Horse Artillery
Shoe Repairman	Pack Driver
Teamster	Laborer
Tractor Driver	Orderly
Truck Driver	Stable Orderly
Well Driller	Sterilizer Operator
Longshoreman	Animal Packer
Hospital Orderly	Pioneer
Concrete Mixer Operator	Rifleman
Highway Maintenance Man	Bugler
Chauffeur	Decontaminating Equipment
Surveying Axman	Operator
Gas and Oil Man	Pontonier
Highway Construction Machinery Operator	

APPENDIX 4

ILLITERACY DURING WORLD WAR II *

Period	Number inducted
Oct 1940-May 1941.....	66,400.
15 May 1941-1 Aug 1942.....	Deferred.
1 Aug 1942-31 May 1943.....	107,075.
1 June 1943-1 Oct 1945.....	217,053 (illiterates) 82,006 (grade V).

SPECIAL TRAINING UNIT ACTIVITY (After 1 June 1943)

Sent to training.....	302, 838
Completed training.....	254, 272
Discharged.....	44, 490
Transferred to non-duty.....	4, 062

*Adapted from File G-1 350.5 (15 Mar 56), "Statistical Information About Illiteracy,"
Dept of Army, 15 March 1954.

APPENDIX 5

AGCT SCORE, ARMY AND AIR FORCE GENERAL PRISONER COMMITMENTS COMPARED WITH AGCT SCORES OF ENLISTED MEN

(Percent distribution)

AGCT score	World War II and immediate postwar offenders ¹	Enlisted men as of 31 March 45—Army and AF ²
130 and above (I)	2.1	6.0
110-129 (II)	14.9	31.0
90-109 (III)	30.0	31.2
60-89 (IV)	44.4	27.1
59 and below (V)	8.6	4.7

¹Based on a machine tabulation of admission cards representing general prisoners in confinement at rehabilitation centers, disciplinary barracks and Federal institutions, 1 January 1945, and those received from 1 January 1945 through 30 June 1946, excluding prisoners overseas (The Adjutant General's Office).

² Based on personnel survey as of 31 March 1945 (The Adjutant General's Office).

APPENDIX 6

EDUCATIONAL LEVEL, ARMY AND AIR FORCE GENERAL PRISONER COMMITMENTS, COMPARED WITH EDUCATIONAL LEVEL OF ENLISTED MEN

(Percent distribution)

WW II and immediate postwar offenders ¹		Enlisted men, as of 30 June 1944, Army and Air Force ²
Less than 4th grade.....	5.5	1st to 8th grade..... 28.6
4th to 8th grade.....	53.1	9th to 12th grade..... 60.2
1st to 2d year high school.....	23.8	Some college..... 5.0
3d and 4th year high school.....	15.4	College graduate..... 0.4
Some college training.....	2.0	
College graduate.....	0.2	

¹ Based on machine tabulation admission cards representing general prisoners in confinement at rehabilitation centers, disciplinary barracks, and Federal institutions, 1 January 1945, and those received from 1 January 1945 through 30 June 1945, excluding prisoners in overseas installations (The Adjutant General's Office).

² Based upon 2 percent personnel survey as of 30 June 1944 (The Adjutant General's Office).

APPENDIX 7

PRISONERS IN U.S. DISCIPLINARY BARRACKS AND FEDERAL INSTITUTIONS (1953-1963) COMPARED WITH ENLISTED PERSONNEL IN THE ARMY

Percentage distributions of General Technical (GT) Aptitude Area Scores*

		CALENDAR YEAR							
GT score	1 Jan-30 Jun, 1 Jul-31 Dec	1953		1954		1955		1956	
		Prie	EM	Prie	EM	Prie	EM	Prie	EM
		1953		1954		1955		1956	
Below 90.....	1st half..	N/A	N/A	64.7	34.5	60.5	27.2	55.0	27.0
	2d half..	63.8	34.0	63.7	31.9	59.5	27.7	51.6	26.2
90 to 109.....	1st half..	N/A	N/A	26.9	31.6	29.5	34.0	30.0	32.1
	2d half..	28.6	31.7	27.2	32.2	30.2	32.8	28.3	34.1
110 to 129....	1st half..	N/A	N/A	7.5	28.9	9.1	32.3	14.0	33.9
	2d half..	6.8	29.4	8.4	30.6	9.6	34.3	19.4	33.9
130 and over..	1st half..	N/A	N/A	.9	5.0	.9	6.5	1.0	7.0
	2d half..	0.8	4.9	.7	5.3	.7	5.2	.7	5.8
		1957		1958		1959		1960	
Below 90.....	1st half..	50.1	26.0	49.0	24.1	45.0	15.0	42.0	15.0
	2d half..	51.0	25.1	49.0	18.0	45.0	18.0	38.0	16.0
90 to 109.....	1st half..	35.0	35.0	36.0	38.0	45.0	43.0	40.0	41.0
	2d half..	30.0	32.9	35.0	40.0	45.0	40.0	44.0	40.0
110 to 129....	1st half..	13.9	30.0	14.3	29.9	9.0	32.0	17.0	34.0
	2d half..	18.0	37.0	15.0	32.0	9.1	32.0	16.0	35.0
130 and over..	1st half..	1.0	9.0	.7	8.0	1.0	10.0	1.0	10.0
	2d half..	1.0	5.0	1.0	10.0	.9	10.0	2.0	9.0
		1961		1962		1963			
Below 90.....	1st half..	37.2	16.9	37.7	16.9	38.1	16.4	-----	-----
	2d half..	37.7	16.9	40.2	16.4	31.7	15.9	-----	-----
90 to 109.....	1st half..	43.8	41.1	42.7	41.1	45.3	40.1	-----	-----
	2d half..	42.7	41.1	43.5	40.1	47.5	41.0	-----	-----
110 to 129....	1st half..	16.5	34.0	16.5	34.0	14.8	34.4	-----	-----
	2d half..	16.5	34.0	14.8	34.4	18.5	34.5	-----	-----
130 and over..	1st half..	2.5	8.0	3.1	8.0	1.8	9.1	-----	-----
	2d half..	3.1	8.0	1.5	9.0	2.3	8.6	-----	-----

*Source: The Provost Marshal General's Office.

APPENDIX 8

PRISONERS IN U.S. DISCIPLINARY BARRACKS AND FEDERAL INSTITUTIONS (1953-1963) COMPARED WITH ENLISTED PERSONNEL IN THE ARMY

Percentage distributions of educational levels*

		CALENDAR YEAR							
Years of school	1 Jan-30 Jun, 1 Jul-31 Dec	1953		1954		1955		1956	
		Pris	EM	Pris	EM	Pris	EM	Pris	EM
Less than 8th grade.	1st half..	18.3	10.2	21.5	10.7	24.8	7.3	22.7	4.0
	2d half..	21.7	10.8	26.2	8.8	25.0	7.6	24.1	5.0
8th to 11th grade.	1st half..	70.1	41.7	67.2	39.1	67.5	38.4	66.3	38.2
	2d half..	67.8	41.1	64.6	38.5	67.3	27.6	67.2	41.5
High school graduate.	1st half..	8.8	34.2	9.4	34.9	7.0	35.7	9.2	35.8
	2d half..	8.6	34.7	7.5	37.0	6.8	34.6	7.6	37.8
1 year college or more.	1st half..	2.8	13.9	1.9	15.3	.7	18.6	1.8	22.0
	2d half..	1.9	13.4	1.7	15.7	.9	30.2	1.1	15.7
		1957		1958		1959		1960	
Less than 8th grade.	1st half..	22.0	5.0	18.8	4.0	18.4	10.0	8.5	2.0
	2d half..	20.2	5.0	19.0	11.0	9.7	10.0	13.8	2.0
8th to 11th grade.	1st half..	68.6	40.0	66.2	38.6	66.0	26.0	70.3	35.0
	2d half..	66.4	42.0	64.8	27.0	82.9	30.0	61.7	30.0
High school graduate.	1st half..	7.8	47.0	12.3	44.6	12.1	44.0	15.8	45.0
	2d half..	10.8	36.0	12.8	43.0	12.3	39.0	21.0	49.0
1 year college or more.	1st half..	1.6	6.0	2.7	12.8	3.5	20.0	5.4	18.0
	2d half..	2.6	17.0	3.4	19.0	5.1	21.0	3.5	19.0
		1961		1962		1963			
Less than 8th grade.	1st half..	11.7	7.8	13.1	1.7	13.7	1.9	-----	-----
	2d half..	13.1	1.7	11.3	4.6	8.4	1.6	-----	-----
8th to 11th grade.	1st half..	50.9	26.1	60.7	24.9	67.4	22.6	-----	-----
	2d half..	60.7	24.9	64.5	48.7	62.3	23.2	-----	-----
High school graduate.	1st half..	30.0	54.0	22.6	55.9	16.7	62.0	-----	-----
	2d half..	22.6	55.9	21.1	33.7	26.6	56.0	-----	-----
1 year college or more.	1st half..	7.4	18.1	3.6	17.5	2.2	13.5	-----	-----
	2d half..	3.6	17.5	3.1	13.0	2.7	19.2	-----	-----

*Source: The Provost Marshal General's Office.

APPENDIX 9

MINIMUM MENTAL STANDARDS FOR INDUCTION (1941-1964)

Date	Action and standard	Authority
15 May 41	Excluded men who did not have capacity for "reading and writing the English language as commonly prescribed for the fourth grade in grammar school."	Mobilisation Regulation 1-7, Change 9, 18 April 1941.
1 Aug 42	Induction permitted of men who could not meet the literacy standards provided they possessed "sufficient intelligence to absorb military training rapidly."	WD Circular 169, 1 Jun 1942.
31 Oct 42	R-1 test introduced for induction of limited service (physically restricted) personnel. Minimum acceptable standard score 90.	TWX OC-S-WDGAPO, 31 Oct 42.
1 Jun 43	Standard for induction: Mental capacity above the lower 3/5 of Grade V on AGCT.	WD Ltr File AG 201.6 (4-28-43) OC-O, 11 May 1943.
1 Nov 45	No Inductions. Procurement by enlistment only.	
1 Nov 48	Inductions began under Selective Service Act of 1948. Inductions continued for 3-month period (Nov 48-Jan 49) and were then terminated, until August 1950. Minimum acceptance standards on R-5 and R-6 tests the same as for enlistment: Standard Score 70 GCT equivalent included in PL 759 as the minimum acceptable score.	Selective Service Act of 24 Jun 1948, PL 759, 80th Congress.
Aug 50	Inductions began under 30 June 1948. Extension of Selective Service Act of 1948.	PL 599, 81st Congress, 30 June 1948.
2 Nov 50	"Converted Score" 13 minimum acceptable score on AFQT-1 and AFQT-2 (adjusted standard score 70) for induction. Administrative acceptee program begun.	SR 615-180-1, Change 3, 2 Nov 1950.
19 Jun 51	Minimum Standard: Percentile score of 10 (standard score 65) on AFQT.	PL 51, 82d Congress, amendment to UMT&S Act, 19 June 1951.

MINIMUM MENTAL STANDARDS FOR INDUCTION (1941-1964)—Continued

Date	Action and standard	Authority
30 Jun 51	Minimum Standard: "Converted Score" of 10 on AFQT-1, AFQT-2 (adjusted standard score 65).	Department of Defense Directive 100.03-1, 30 June 1951.
5 Nov 51	Continued converted score of 10 AFQT-1, AFQT-2 supplemented by additional screening with the AFQT Verbal-Arithmetic Subtest, Non-Language Qualification Test (NQT-1). Supplemental screening given AFQT failures to classify them for future induction.	SR 615-180-1, 5 Nov 1951.
23 Nov 51	Minimum Standard: Percentile Score of 10 AFQT-1 and AFQT-2 (standard score 65). "Converted Score" table for determining AFQT norms replaced by original percentile norm table.	DA Radio 46247 TAG, 23 Nov 1951, DOD Directive 1145.1, 23 June 1952, and 15 Nov 1955. AR 601-270, 14 Aug 1956.
4 Aug 58	Minimum Standard: Percentile Score 31 on AFQT-5, AFQT-6 (standard score of 90) without further testing. Registrants attaining AFQT scores 10-30 inclusive had to attain a score of 90 or more in two (2) or more aptitude areas of the Army Classification Battery (ACB).	DA Message 358841, 4 Aug 1958; PL 85-564, 85th Congress (HR 8850); Executive Order 10776 (1958); AR 601-270, Change 10, 26 Aug 1958.
1 May 63	Minimum Standard: Percentile Score 31 on AFQT-7, AFQT-8 (standard score 90) without further testing. Registrants attaining AFQT scores 10-30 inclusive had to attain a score of 80 or higher in the General Technical Aptitude Area and a score of 90 or above in two (2) or more additional Aptitude Areas on the Army Qualification Battery (AQB).	DA Message 336065, 26 Apr 1963.

APPENDIX 10

ENLISTED MOS STRUCTURE (1964)

1. Military occupational specialty (or MOS) is the term used to identify a grouping of duty positions possessing such close occupational or functional relationship that an optimal degree of interchangeability among persons so classified exists at any given level of skill.

2. Specific MOS are indicated by a set of five digits called the MOS code. Each succeeding digit provides more precise identification of the occupational characteristics of the man or job it codes.

a. The first digit of the MOS code represents one of the broad occupational areas into which all military jobs are classified for purposes of initial selection. There are 10 occupational areas, each a major subdivision of the Army MOS structure and each containing groups of 5-digit MOS.

b. The second digit of the MOS code, in combination with the first digit, normally identifies an entry group, which is a major division of an occupational area. Entry groups are designed to facilitate the substitution of personnel and to permit broad initial occupational training for a number of closely related MOS.

c. The third digit, in combination with the first two, represents the specific military occupational specialty, without regard to level of skill within that specialty.

d. The fourth digit of the MOS code, in combination with the preceding three digits, generally indicates the specialist or NCO skill level within the military occupational specialty.

e. The fifth digit shows special qualifications (such as Special Forces or parachutist training). These qualifications are not usually associated with a single 3-digit MOS but are common to a large number of diverse specialties.

3. The ten occupational areas of the Army MOS structure are listed below, together with the associated aptitude areas.

<i>Occupational areas</i>	<i>Aptitude areas</i>
1 COMBAT	AE (Armor, Artillery & Engineer-Combat) or IN (Infantry-Combat) or CO (Combat)
2 ELECTRONICS	EL (Electronic)
3 ELECTRICAL MAINTENANCE	EL (Electronic)
4 PRECISION MAINTENANCE	GM (General Maintenance)
5 MILITARY CRAFTS	GM (General Maintenance)
6 MOTOR MAINTENANCE	MM (Motor Maintenance)
7 CLERICAL	CL (Clerical)
8 GRAPHICS	GT (General Technical)
9 GENERAL TECHNICAL	GT (General Technical)
0 SPECIAL ASSIGNMENT	There is no one aptitude area for this occupational area. Special selection techniques are used.

4. 2-digit MOS groups. (1964)

- 10 Combat, General
- 11 Infantry
- 12 Combat Engineering
- 13 Armor
- 14 Field Artillery Weapons
- 15 Artillery Operations and Intelligence
- 16 Field Artillery Missile Operations
- 17 Air Defense Missile Operations
- 18 Air Defense Radar Operations
- 19 Air Defense Artillery Weapons and Fire Control Operations
- 20 Electronics, General
- 21 Field Artillery Electronics Maintenance
- 22 Air Defense Electronics Maintenance
- 23 Electronic Fire Control Equipment Repair
- 24 Surface-to-Surface Missile Electronic Guidance Systems Repair
- 25 Surface-to-Air Missile Electronic Guidance Systems Repair
- 27 Fixed Station Radio Repair
- 28 Radar and Television Repair
- 29 Radio and Carrier Repair
- 30 Electrical Maintenance General
- 31 Field Communications
- 32 Wire Maintenance
- 34 Teletypewriter Equipment Maintenance
- 35 Electrical Equipment Maintenance
- 36 Fire Distribution Systems Repair
- 37 Ballistic Missile Repair
- 40 Precision Maintenance, General
- 41 Ammunition
- 42 Armament Maintenance
- 43 Nuclear Weapons and Guided Missile Mechanical Assembly and Repair
- 44 Metalworking
- 45 Prosthetic Appliances
- 46 Quartermaster Equipment Maintenance
- 50 Military Crafts, General

- 51 Construction
- 52 Utilities
- 53 Chemical
- 54 Auxiliary Services
- 55 Supply Handling
- 56 Marine Operations and Maintenance
- 57 Fuel and Industrial Gas Production
- 62 Engineer Construction Equipment Operation and Maintenance
- 63 Automotive Maintenance
- 64 Motor Transport
- 65 Railway Maintenance
- 66 Railway Operations
- 67 Aircraft Maintenance
- 68 Aircraft Components Repair
- 70 Miscellaneous, Clerical
- 71 Administration
- 72 Communications Center Operations
- 73 Finance
- 74 Data Processing
- 76 General Supply
- 77 Parts Supply
- 81 Drafting and Cartography
- 82 Surveying
- 83 Printing
- 84 Pictorial
- 90 General Technical, General
- 91 Medical Care and Treatment
- 92 Physical Medicine
- 93 Medical Laboratory
- 94 Food Service
- 95 Military Police
- 96 Military Intelligence
- 97 General Intelligence
- 98 Communications Security
- 99 Technical Equipment Operations
- 00 Duty and Reporting Codes
- 02 Bandsman
- 03 Bandsman
- 05 Radio Code
- 07 Induction, Recruiting and Special Services
- 08 Animal Care

5. MOS specifications contained in Army regulations are designed to incorporate occupational information essential to all echelons of command.

a. The heading of an MOS specification is made up of the MOS title and the 3-digit MOS code.

b. The Duties section of an MOS specification briefly states the tasks appropriate to the specific MOS, without regard to level of skill.

c. The Skills and Knowledges section of an MOS specification shows all the specialist and NCO skill levels within the MOS. For each level, detailed skills and knowledges are given in order to pro-

vide a guide to training agencies and unit commanders engaged in the preparation and conduct of both formal and on-the-job training programs and in order to assist in the more precise classification of men and jobs.

d. The Physical Requirements section of an MOS specification consists of a description of the important physical activities and requirements involved in the performance of the MOS duties.

e. The Mental Requirements section of an MOS specification indicates the noteworthy mental abilities and aptitudes necessary for adequate job performance in the MOS. This section designates the aptitude area which is, based on Army classification tests, most appropriate for the MOS.

f. The Special Requirements section is not used in all MOS specifications. Where it is used, it contains selection criteria which are generally peculiar to the specific MOS. Examples of such criteria are age prerequisites, citizenship, security clearance, and certain personality traits. In all cases, the potential ability to meet the special requirements of an MOS must be regarded as mandatory for initial classification and assignment in that MOS.

g. The Related Civilian Occupations section of an MOS specification is divided into two parts. The first part, based on the civilian classification structure contained in the Dictionary of Occupational Titles, indicates some of the civilian jobs most closely related to the military occupational specialty. The second portion indicates some of the counterpart Federal Civil Service jobs.

h. The Standards of Grade Authorization section of an MOS specification is a chart containing the grade standards for the MOS. These standards show authorized grades for duty positions used in organizational tables and, where necessary, include a series of grade patterns for each activity covered by the MOS description. Standards of grade authorization provide the basis for establishing position grades after the number of positions required in a unit has been determined.

APPENDIX 11

TESTS IN THE ARMY CLASSIFICATION BATTERY (1965)

The 11 tests in the Army Classification Battery are described below. With the exception of the Radio Code Aptitude Test, all the tests in the battery are paper-and-pencil tests. Items are four-choice alternatives in VE, AR, SM, AI, ELI, and GIT. In other tests, number of choices vary.

1. Verbal Test, VE—50 items. Each item requires the examinee to select the correct synonym for the underlined word in a short sentence.
2. Arithmetic Reasoning, AR—40 items. Each item is a reasoning problem involving application of arithmetic processes.
3. Pattern Analysis, PA—50 items. For a set of items, a two-dimensional pattern with numbered lines is presented along with the corresponding three-dimensional figure made by folding the pattern along the indicated lines. The edges of the figure are lettered. The examinee is required to identify the lettered edge of the figure corresponding to a numbered line in the pattern. The numbers in the pattern are the item numbers and the letters of the figure are used to form five-alternative responses for each item.
4. Mechanical Aptitude, MA—45 items. Each item includes a figure illustrating some physical principle and a question with two-, three-, or four-alternative responses.
5. Army Clerical Speed, ACS—*In Part I, Number Reversal (60 items)*, each item consists of 2 numbers. The examinee indicates whether or not the second number is exactly the reverse of the first. *In Part II, Coding (50 items)*, there is a key and a set of 50 items. In the key each word is followed by a number that is associated with it. Each item presents a word followed by all fifteen numbers in the key. The examinee is to pick the number corresponding to the word in the key.
6. Army Radio Code, ARC. This is an auditory test recorded on tape which includes instructions to the examinees. The first part of the test is composed of 270 learning exercises designed to teach the examinee the code signals for the three letters I, N, and T. These items are presented at approximately 4 to 7 words per

minute. Immediately after the learning exercises, a test of 150 items is given to measure how accurately the three code signals can be recognized at varying speeds. The first 75 items are presented at approximately 15 words per minute, and the second 75 at approximately 21 words per minute. Responses are recorded on machine scorable answer sheets presenting the three alternatives for each item.

7. Shop Mechanics, SM—40 items. Each item presents a drawing illustrating some mechanical principle or tool usage and a question.
8. Automotive Information, AI—40 items. Each item is a question about the identification or operation of automobile parts. Many of the items are based on pictures or diagrams.
9. Electronics Information, ELI—40 items. This test contains an equal number of verbal items and picture items. The picture items require the examinee to associate pictured objects in terms of how they function electronically. The verbal items require demonstration of his knowledge of electronics principles.
10. Classification Inventory, CI—125 items. The test consists of self-description items in which the examinee indicates which choice most closely reflects his personal background, attitudes, self-evaluation, experiences, etc. Items are heterogeneous in content, empirically selected to predict combat effectiveness in the Korean war and rated ability to adapt to rigorous combat training and unit maneuvers in more recent combat-simulated situations.
11. General Information Test, GIT—50 items. Questions cover objective items of information about various avocational pursuits to determine the degree of similarity to the knowledge patterns of effective combat men, sampled in the same situations as used for the Classification Inventory.

APPENDIX 12

TESTS IN ARMY CLASSIFICATION BATTERY AND DERIVED APTITUDE AREAS (1964)

Army Classification Battery		Army Aptitude Areas		
Test	Symbol	Title	Symbol	Formula
Verbal.....	VE	Infantry—Combat.....	IN	$\frac{AR+2CI}{3}$
Arithmetic Reasoning....	AR	Armor, Artillery, Engineers—Combat.....	AE	$\frac{GIT+AI}{2}$
Pattern Analysis.....	PA	Electronics.....	EL	$\frac{MA+2ELI}{3}$
Classification Inventory..	CI	General Maintenance..	GM	$\frac{PA+2SM}{3}$
Mechanical Aptitude....	MA	Motor Maintenance.....	MM	$\frac{MA+2AI}{3}$
Army Clerical Speed.....	ACS	Clerical.....	CL	$\frac{VE+ACS}{2}$
Army Radio Code.....	ARC	General Technical.....	GT	$\frac{VE+AR}{2}$
General Information....	GIT	Radio Code.....	RC	$\frac{VE+ARC}{2}$
Shop Mechanics.....	SM			
Automotive Information..	AI			
Electronic Information..	EI			

APPENDIX 13
PHYSICAL PROFILE SERIAL AND CODES
(Chapter 9, AR 40-501)
(As of 1964)

A. Physical Profile Serial Factors

- P—Physical capacity or stamina.
- U—Upper extremities.
- L—Lower extremities.
- H—Hearing and ear.
- E—Eyes.
- S—Psychiatric.

B. Numerical Designators

Four numerical designations are assigned for evaluating the individual's functional capacity in each of the six factors.

1. Any individual, having a numerical designation of "1" under all factors, is considered to possess a high level of medical (physical and mental) fitness and, consequently, he is medically fit for any military assignment.
2. A physical profile "2" under any or all factors indicates that an individual meets procurement (entry) standards, but possesses some medical condition or physical defect which precludes initial assignment to Ranger training, Airborne, or Special Forces. His assignment is not otherwise limited.
3. A profile containing one or more numerical designation "3" signifies that the individual has medical condition(s) or physical defect(s) which requires certain restrictions in assignment within which he is physically capable of performing full military duty. Such individuals are not acceptable under procurement (entry) standards in time of peace, but may be acceptable in time of partial or total mobilization. They meet retention standards, while in service, but should receive assignments commensurate with their functional capability.

4. A profile serial containing one or more numerical designations "4," indicates that the individual has a medical condition or physical defect which is below the level of medical fitness for retention (continuance) in the military service during peacetime.

<i>C. Serial and Codes</i>	<i>Description/assignment limitation</i>
(1) Profile serial 111111.	
CODE A.....	No assignment limitation. Is considered medically fit for initial assignment under all PULHES factors for Ranger, Airborne, Special Forces training, and training in any MOS.
(2) Profile serial with a "2" as the lowest numerical designator.	
CODE B.....	No significant assignment limitation. Combat fit. May have minor impairment under one or more PULHES factors which disqualify for certain critical MOS training or assignment.
(3) Profile serial with a "3" as the lowest numerical designator in any factor.	
CODE C.....	No crawling, stooping, running, jumping prolonged standing, or marching.
CODE D.....	No strenuous physical activity.
CODE E.....	No assignment to units requiring continued consumption of combat rations.
CODE F.....	No assignment to isolated areas where definitive medical care is not available. (MAAG—Military Missions, etc.).
CODE G.....	No assignment requiring prolonged handling of heavy materials including weapons. No overhead work, no pull-ups or push-ups.
CODE H.....	No assignment where sudden loss of consciousness would be dangerous to self or others, such as work on scaffolding, handling dangerous explosives, driving of military vehicles, work near moving machinery.
CODE J.....	No assignment involving habitual or frequent exposure to loud noises or firing of weapons. (Not to include firing for POR qualification.)
CODE L.....	No assignment which requires prolonged or repeated exposure to extreme cold.
CODE M.....	No assignment requiring prolonged or repeated exposure to high environmental temperature.
CODE N.....	No continuous wearing of combat type boots.
CODE P.....	No continuous wearing of woolen clothes.
CODE U.....	Limitation not otherwise described; to be considered individually.

Serial and Codes

Description/assignment limitation

- (4) Profile serial with a "4" as the lowest numerical designator in any factor.

CODE V..... Department of Army Flag. This code identifies the case of a member with a disease, injury, or medical defect which is below the prescribed medical criteria for retention who is continued in the military service pursuant to paragraph 11b, AR 140-120, AR 616-41, or predecessor directives. The numerical designation "4" will be inserted under the appropriate factor in all such cases. Such individuals generally have rigid and strict limitations as to duty, geographic or climatic area utilization. In some instances the individual may have to be utilized only within close proximity to a medical facility capable of handling his case.

CODE W..... Waiver. This code identifies the case of an individual with disease, injury, or medical defect which is below the prescribed medical criteria for retention who is accepted under the special provisions of paragraph 8-4, or who is granted a waiver by direction of the Secretary of the Army. The numerical designation "4" will be inserted under the appropriate factor in all such cases. Such members generally have rigid and strict limitations as to duty, geographical or climatic area utilization. In some instances the member may have to be utilized only with close proximity to a medical facility capable of handling his case.

APPENDIX 14

RESEARCH PROPOSALS ON MARGINAL MANPOWER SUBMITTED IN RESPONSE TO THE ASSISTANT SEC- RETARY OF THE ARMY DIRECTIVE 28 MAY 1954

A-1. Identification of Jobs Deemed Suitable for Study as Potential Assignments for Mentally Marginal Personnel.

Firm identification of jobs in which mentally marginal personnel can be used will be a product of the whole research program. The objective is to identify in advance some relevant jobs upon which later research will be concentrated. Insofar as feasible, jobs will be evaluated in units of present MOS (military occupational specialty) size. However, when an identified duty position is thought to be relevant, although the MOS as a whole requires men of higher mental caliber, such duty position will be evaluated as a job. The assumption in such case is that the duty position will be identifiable in full mobilization. Additional job analysis schedules will be prepared to cover duty positions not previously analyzed. Job analysts and research psychologists will review job schedules in all Army MOS's to judge which jobs are likely prospects for use of mentally marginal personnel. The jobs will be categorized according to the estimated probability that they will prove to be suitable for mentally marginal personnel. This categorization will allow for sampling several groups to identify those groups which should be studied in their entirety. Personnel considered to be mentally marginal will be identified at field installations. Determination of jobs and duties performed by such personnel and evaluation of level of such performance will provide guides for the categorization.

A-2. Identification of Jobs Deemed Suitable as Potential Assignments for Physically Marginal Personnel.

The objective is to develop a list of duty positions, under specified conditions of unit mission, which can be performed by physically marginal personnel. Included in this research will be: (1) an examination of the experience and operating data of industrial, commercial, and military establishments in utilization of physically marginal personnel; (2) examination of current field job analyses of military duty positions to determine the physical requirements of Army jobs; (3) the conduct of such additional field job analysis found to be necessary;

(4) the analysis of current, and the conduct of additional, unit environment studies to determine any unusual physical demands arising out of the surroundings and operational situation of a unit as a whole; (5) the preparation of a tentative list of jobs (either by MOS or duty positions within MOS) which can be performed by persons falling below the current physical standards for induction; and (6) the preparation of a statement of the physical demands of these jobs in terms which can be efficiently related to the descriptions of physical capacities of inducted individuals.

A-3. Development of Standards of On-the-Job Utility for Marginal Personnel.

A yardstick of usability is probably the most important requisite for study of the marginal personnel problem. Without such an objective criterion of successful performance, selection and classification techniques operate in a vacuum. The objective is to develop suitable criteria for use in evaluating the various personnel techniques employed in A and B. Ideally it should embody the balance-sheet concept. Productive effort in a duty position is on the asset side. Offset are liabilities, such as lost time (AWOL, disciplinary confinement, sickness, extended training, etc.); burdensome overhead (increased training and supervisory cadre, increased demands on the time of individual supervisors, lost and spoiled equipment, etc.); long-term deferred payments (the life-time benefits accruing to veterans). The point of no return in the utilization of marginal personnel lies at the point where the assets match the liabilities, leaving a zero balance. The attack on the problem will be through the identification of the "cost" factors through field survey, and the establishment of the asset and liability balance by the consensus of responsible officer personnel. Some elements of the criterion measure will be general to all potential marginal jobs, but others will have to be constructed for each job. Applicability of each element to each specific marginal job must be established empirically. Since the techniques of measurement will be untried, extensive empirical testing of the criteria developed will have to be undertaken.

A first phase task. This is the keystone and must be substantially completed before actual empirical validity or usability studies can be undertaken.

A-4. Development and Selection of Tests for Use with Marginal Personnel.

The objective is to construct a battery of tests appropriate for predicting the ability of mentally marginal personnel to perform acceptably in jobs identified in A-1. The mentally marginal group includes those persons who score low on the AFQT. Hence, the effective selection and assignment of these individuals depends on measuring instruments which involve little or no literacy. The pro-

posed battery will place primary emphasis on picture-type tests, and measurements of neuro-muscular coordination or perceptual skills. However, there may be included some verbal material which is believed appropriate for the detection of malingering. The most promising tests will be administered in the first validation study in order to get maximum information from the specially recruited or inducted low level personnel.

A-5. Development of a Physical Capacities Classification System.

The objective is the development of a system of classification of the physical capacities of individuals which when related to known physical demands of jobs will permit the selection of physically marginal individuals for assignment to specific military duties. In the past, information on the physical demands of jobs has always been gathered and compiled using occupational language, and information on the physical capacities of individuals has always been gathered and compiled using technical medical language. Relating the individual's capacities to the demands of the job, in other than a general way, was difficult without a full understanding of both occupational and medical diagnostic language. A system of stating physical capacities of personnel needs to be developed which can be readily tied into the system of stating job demands by administrative and personnel officers.

A-6. Evaluation of Mentally Marginal Personnel Upon Completion of the Present Basic Training Program.

The objective is to determine which tests of A-4 predict success in basic training, and the score levels of these tests which differentiate marginal from generally usable personnel. Arrangements will be made to experimentally procure enlisted personnel below current mental standards. In addition, the lower levels of currently qualified personnel will be included in order to assure inclusion of the desired point of differentiation. The experimental tests selected in A-4 will be administered to the sample. Appropriate elements of the criterion established in A-3 will be applied throughout basic training for this sample. The resultant data will be analyzed to identify the most relevant tests and score levels which should indicate the minimum skills needed to succeed in regular basic training. A-7 will follow through to determine counterpart information with respect to success in Army jobs. B-1 and B-3 will investigate a specially designed basic training program and compare results with those obtained here to determine whether the special training program in fact is more appropriate for mentally marginal personnel.

A-7. On-the-Job Follow-Up of Mental Marginals After Regular Basic Training.

The objective is to determine which tests from A-4 predict success on the job, and the scores of these tests which differentiate various

levels of performance. This involves the assignment of experimental subjects to selected jobs identified in A-1 and systematic evaluation of their worth on those jobs in terms of the cost-standards developed in A-3. The results of this study are expected to indicate which of the measures selected in A-4, and what score levels on those measures, identify the minimum skills required for successful performance on each of the identified Army jobs or job clusters. Comparison data will also be provided against which to evaluate the effectiveness of work in B-2 and B-4.

A-8. Follow-Up Studies of Physical Marginals After Job Assignment.

The objective is to study the actual effectiveness of physically marginal personnel assigned to jobs as against predicted performance. This research will include inducting a group of personnel who are below the current physical standards for military service, assigning them to either regular or slightly modified basic and occupational training, and placing them on jobs for which they will have a predicted satisfactory performance. The measure of utility of physically marginal personnel so classified and assigned will involve the criteria developed in A-3. The results of these studies will indicate both the over-all effectiveness of the program for utilization of physical marginals, and specific modifications needed in the statements of physical demands of jobs.

A-9. Determination of Optimum Numbers of Mentally and Physically Marginal Personnel that can be Absorbed by the Army.

The objective is to determine the optimum numbers of mental or physical marginals that can be absorbed by the Army under any specified condition of mobilization. After the jobs which are deemed suitable for assignment of physically or mentally marginal personnel are selected, these MOS or duty positions within MOS can be applied against various troop bases to determine the gross number of jobs which can be filled by marginals. This gross number will have to be modified by staff decision, however, in light of various current policies and operating factors. Among such considerations are: (1) utilization of WAC or Civilian Personnel who may be competing for the same jobs selected for Marginals; (2) requirement for staffing supervisory and higher level technical positions from journeymen and apprentice groups in times of rapid mobilization; and (3) operational needs for flexibility of assignment at the unit level and for rotation of personnel between CONUS and oversea theaters. Analysis of these factors should lead to numerical correction rates by MOS or duty positions which will allow the selection of optimum numbers of a particular mental or physical marginal type which can be readily absorbed into the Army under specified operational conditions. The rates will be separately computed for various War Plans by mobilization phase.

A-10. Development of Personnel Management Procedures for the Utilization of Marginal Manpower.

The objective is to develop comprehensive operational procedures to govern the procurement, processing, utilization and disposition of marginal personnel. These procedures will include—

1. Selection and identification at the Armed Forces Examining Stations in controlled numbers by various categories.
2. Classification at reception stations.
3. Assignment to regular or special training activities.
4. Assignment from training to appropriate selected duty positions.
5. Restriction of classification and assignment as necessitated by individual attributes.
6. Survey of effectiveness of special management procedures.
7. Discharge of individuals determined to be untrainable for military service.

During the research phase, experience with special procedures for the management of the experimental population will be analyzed and evaluated as a basis for the development of these procedures.

B-1. Development of a Special Basic Training Program for Marginal Military Personnel.

The objective is to develop a special training program for marginals in lieu of the current regular basic military training. The special training would be oriented toward utilization of marginals in a broad variety of duty positions having a common core of low-level skills. A preliminary step is review by subject-matter experts of the present ATP for possible elimination of material not deemed absolutely necessary for the marginal jobs identified in A-1 and A-2. Next, the special training program would be constructed; it would stress basic-survival skills and minimize tactical-offensive information. The retained material will be justified empirically against the actual marginal jobs selected for study. Literacy subjects may be included, but only to the levels necessary for adequate group living. A separate program may be required for physically marginal personnel.

B-2. Development of Special Training Programs to Prepare Mentally Marginal Personnel for Specific Duty Positions.

The objective is to develop an alternate or supplementary special training program applicable to a basic core of skills occurring in a broad variety of military jobs suitable for mentally marginal personnel. This will become necessary if it is determined that there are relatively few jobs that mentally marginal personnel can fill, and that preparation for these jobs requires training techniques which differ from job to job. Since it would be impracticable to develop distinct training programs if a substantial number of jobs are identified, it

may be necessary to develop a skeleton curriculum for pre on-the-job training.

B-3. Evaluation of Mentally Marginal Personnel upon Completion of a Special Basic Training Program.

A representative group of mentally marginal personnel will be identified. The battery of tests obtained in A-4 will be administered to this group which will then follow the special basic training program developed in B-1. The objective is to evaluate the performance of mentally marginal personnel who have completed a special basic training program. Data concerning the performance of a counterpart group in regular basic training will be available from A-6. Analysis of the data obtained and on hand will lead to several objectives of the program. Appropriate tests and cutting scores will be identified for selecting personnel who can succeed in the special basic training program. Appropriateness of the special basic training program in successfully training significantly larger proportions of mentally marginal personnel than does regular basic training can be determined. Relevant information will be obtained for later evaluation of the relationship of performance in the special basic training program to later performance on the job. It is expected that relevant factors can be identified during this research which provide a sound basis for special evaluation and which will justify early discharge of those individuals who demonstrate inadequate trainability for Army jobs.

B-4. On-the-Job Follow-Up of Mental Marginals After Special Training.

The objective is to determine the on-the-job utility of mental marginals under the most favorable circumstances, i.e., when they have been specially trained in essentials and their limitations have been considered. A representative group of mentally marginal personnel will be given the training developed in B-2 and followed up on appropriate jobs. On-the-job utility will be evaluated systematically by application of the cost-criteria developed in A-3. Comparison of results with those from A-7 and B-3 will indicate whether these personnel need and benefit from this specialized training. The main end-product will consist of identification of relevant tests and establishment of minimum scores for each of the jobs and for the total marginal group.

APPENDIX 15
SELECTIVE SERVICE CLASSES
AS OF 1964

CLASS I

- Class I-A: Available for military service.
Class I-A-O: Conscientious objector available for noncombatant military service only.
Class I-C: Member of the Armed Forces of the United States, the Coast and Geodetic Survey, or the Public Health Service.
Class I-D: Member of reserve component or student taking military training.
Class I-O: Conscientious objector available for civilian work contributing to the maintenance of the national health, safety, or interest.
Class I-S: Student deferred by statute.
Class I-W: Conscientious objector performing civilian work contributing to the maintenance of the national health, safety, or interest.
Class I-Y: Registrant qualified for military service only in time of war or national emergency.

CLASS II

- Class II-A: Registrant deferred because of civilian occupation (except agriculture and activity in study).
Class II-C: Registrant deferred because of agricultural occupation.
Class II-S: Registrant deferred because of activity in study.

CLASS III

- Class III-A: Registrant with a child or children; and registrant deferred by reason of extreme hardship to dependents.

CLASS IV

- Class IV-A: Registrant who has completed service; sole surviving son.
Class IV-B: Officials deferred by law.

Class IV-C: Aliens.
Class IV-D: Minister of religion or divinity student.
Class IV-F: Registrant not qualified for any military service.

CLASS V

Class V-A: Registrant over the age of liability for military service.

Source: Par. 1622.6 Selective Service Regulations.

APPENDIX 16 **CLASS I-Y AND IV-F IN THE SELECTIVE SERVICE POOL** **AS OF 31 JULY 1964**

<i>Class</i>	<i>Standards</i>	<i>Number</i>
I-Y	Any registrant who is not eligible for a lower class and would be classified in Class I-A, Class I-A-O or Class I-O but for the fact that he is found under applicable physical, mental, and moral standards to be not currently qualified for such service except in time of war or national emergency declared by the Congress. (Selective Service Regulations) In Army standards: Those whose trainability is limited, AFQT 10-30 but less than score of 80 on GT and less than 90 in two other aptitude areas; and C Profiles.	1, 586, 387
IV-F	Any registrant who is found under applicable physical, mental and moral standards to be not qualified for any service in the Armed Forces, either currently or in time of war or national emergency declared by Congress. (Selective Service Regulations) In Army standards: Those scoring 0-9 AFQT; Physical Profile E.	2, 436, 196

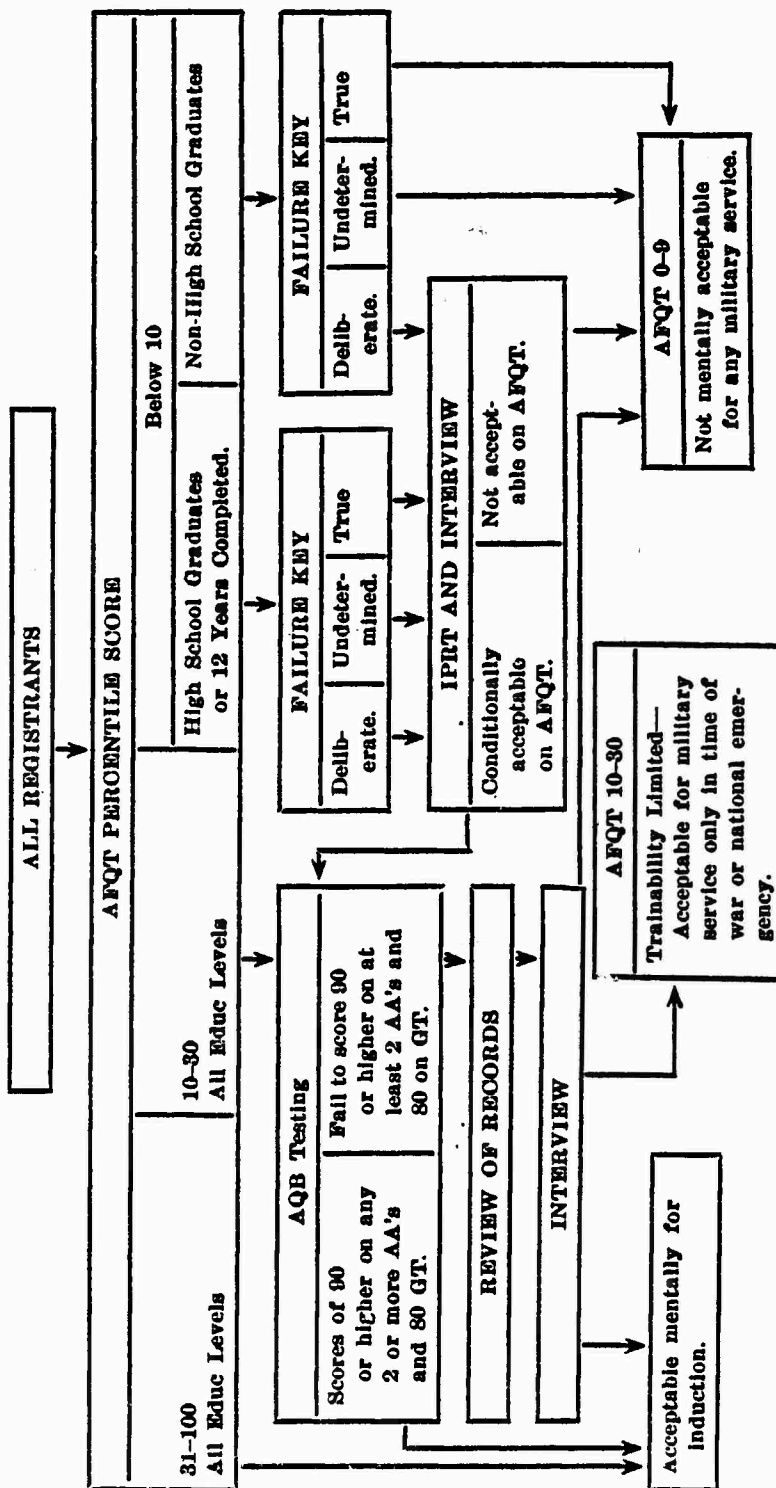
APPENDIX 17

ACB-0, ACB-1, ACB-2, COMPARISONS BY GRADE*

	<i>ACB-0</i>	<i>E-7</i>	<i>E-6</i>	<i>E-5</i>	<i>E-4</i>	<i>E-3</i>	<i>E-2 and 1</i>	<i>Total</i>
1958.....		326	1464	3410	1534	1449	860	9093
1959.....		248	1233	2839	879	630	1622	7451
	<i>ACB-1</i>							
1958.....		516	2155	3858	5894	10922	3950	27295
1959.....		447	1947	3664	3276	3779	3314	15927
	<i>ACB-2</i>							
1958.....		761	2988	4935	7552	14138	11028	41402
1959.....		720	1774	4077	6448	11420	10044	34483

*Distributions as of 30 June 1958 and 30 March 1959 expanded to DA strength from 2.6 percent and 2.9 percent samples, respectively. PMB Reports 41-58-A and PMB 55-59-A, dated 20 November 1958 and 2 July 1959, TAG, Department of the Army

APPENDIX 18 **FLOW CHART OF INDUCTION MENTAL SCREENING PROCEDURES AT AFES, 1964**



APPENDIX 19¹
ADMINISTRATIVE ACCEPTEE²
ACCESSIONS BY TOTAL NUMBERS BY FISCAL YEAR
AND PHYSICAL PROFILE

Fiscal Year	Total	Percent of Inductees	Profile		
			A	B	C
May 51-Jun 52.....	³ 39,501	11.0	N/A	N/A	N/A
53.....	46,466	8.2	38,345	5,733	2,388
54.....	12,481	4.7	10,538	1,298	645
55.....	5,392	2.5	4,444	525	423
56.....	3,029	2.2	2,396	387	246
57.....	1,835	1.0	1,451	227	157
58.....	587	.5	465	75	47
59.....	321	.3	268	31	22
60.....	340	.4	247	59	34
61.....	245	.4	183	39	23
62.....	741	.5	594	102	45
63.....	546	.8	474	73	(⁴)
Total.....	111,484				

¹ Source: Qualitative Distribution of Military Manpower Program, Annual Reports FY 52-63.

² A registrant who has been accepted for military service following an administrative determination that he possess the required capacity to achieve the minimum score on the prescribed mental test, notwithstanding his failure to achieve such score. For statistical purposes they are considered below Grade III.

³ Total accessions 48,126, of which 5,625 were Marine Corps administrative acceptees. Army Profile breakout unavailable.

⁴ No Profile C inducted into Army for FY 63.

APPENDIX 20

PERCENT DISTRIBUTION OF REGISTRANTS DISQUALIFIED DURING PREINDUCTION AND INDUCTION PROCESSING—BY DISQUALIFYING CAUSE (FY 60, 61, 62, and 63) FOR CONTINENTAL U.S.

FY	Mental only AFQT		Trainability limited (AQB)		Mental and medical		Medical only		Administrative	
	CAU	Non- CAU	CAU	Non- CAU	CAU	Non- CAU	CAU	Non- CAU	CAU	Non- CAU

A. PREINDUCTION

1960.....	20.6	50.7	9.3	22.4	5.8	8.8	60.8	13.3	3.5	2.8
1961.....	20.6	52.4	12.1	26.2	5.1	7.6	58.5	11.3	3.7	2.5
1962.....	21.0	50.1	10.5	25.9	5.3	8.3	59.9	13.7	3.3	2.0
1963.....	17.4	48.8	10.5	23.8	4.4	8.6	63.0	15.9	4.7	2.9

B. INDUCTION

1960.....	20.7	49.0	23.2	34.0	3.6	5.0	47.8	10.3	4.7	1.7
1961.....	18.8	43.4	21.5	36.6	3.2	4.7	49.0	11.0	7.5	4.3
1962.....	16.0	39.4	16.5	32.7	3.1	5.1	58.3	19.2	6.1	3.6
1963.....	15.7	37.1	15.2	29.4	2.9	5.4	58.2	22.5	8.0	5.6

Source: Adapted from Twelfth Annual Report, Qualitative Distribution of Military Manpower Program FY 63 (Based on RCS MED-66, Office of Surgeon General).

APPENDIX 21

ENLISTED PERSONNEL—G.T. SCORE BY CIVILIAN EDUCATIONAL LEVEL AS OF 31 AUGUST 1964

GT score	Total percent	Grades 1 thru 8	Elementary school graduate	9, 10, 11, 12th grades	High school graduate	Completed GED for high school graduate equivalency	Some college and graduates with degrees
130-Higher.....	8.4	1.9	0.5	1.1	6.9	3.3	32.4
110-129.....	34.6	7.0	5.7	16.8	40.1	38.5	49.3
100-109.....	23.3	13.0	19.4	23.9	25.1	29.6	11.3
90-99.....	18.1	28.2	31.3	27.5	15.7	20.5	4.5
80-89.....	10.7	27.9	26.3	21.9	8.5	6.1	1.9
65-79.....	4.2	18.4	14.4	7.9	3.3	1.9	.5
Below 65.....	.6	3.5	2.3	.8	.5	.1	.1

Source: AG-306 RCS, DA Sample Survey of Enlisted Men as of 31 August 1964.

APPENDIX 22

QUALITATIVE DISTRIBUTION OF MANPOWER

In 1948 the Secretary of Defense established a policy for qualitative distribution among the services of all accessions through induction. This policy aimed at an equal distribution by mental qualification groups in ratio to the proportional intake of the Services.¹ Since World War II, with limited exceptions, the Navy, Marine Corps and Air Force had been able to maintain their authorized strength by voluntary means. Since these services draw heavily from the manpower pool in the upper mental categories, the Army's ability to obtain through Selective Service an equitable share of those individuals decreased.

The principal interest from the point of view of the marginal man is that it led to a more uniform system of determining basic acceptability and provided the Army with a means of obtaining recognition of its Grade IV problem.

In April 1951 the Department of Defense established a quota control system by established percentages of all chargeable accessions to effect qualitative distribution among the services in four major mental groups; provided common physical standards for enlistment and induction in all services; established the Armed Forces Qualification Test (AFQT) as the basis for determining mental standards; and created the Armed Forces Examining Stations (AFES).² The minimum score for acceptance was AFQT converted score 13 (AGCT 70) later modified, as discussed in Part II, by the UMT&S Act of 1 July 1951 to converted score 10 (GCT 65 equivalent). Table 1 shows the

Table 1. Distributions Prior to Qualitative Distribution
(Army, February 1950 through April 1951)

Mental groups	Enlistments (percent)	Inductions as of Aug 1950 (percent)
I.....	4.0	6.7
II.....	11.8	17.6
III.....	31.9	24.5
IV.....	52.3	36.1
Administrative acceptees.....		15.1

¹ Memorandum to: The Secretary of the Army, the Secretary of the Navy, and Secretary of the Air Force and the Chairman of the Munitions Board, Subject: Forrestal Agreement, dated 9 February 1948.

² Memorandum for: The Secretary of the Army, Navy and Air Force and the Joint Chiefs of Staff, w/1 Incl; Subject: Qualitative Distribution of Military Manpower, dated 2 April 1951.

Table 2. Established Percentage Quotas and Actual Percentages Achieved Through Procurement

(30 June 1951 to 30 June 1963)

Mental group	Percent quota	May-Jun 1951 (percent)	Percent quota	Dec 1951- Jun 1952 (percent)	Percent quota	1 Jul 1952- 30 Jun 1953 (percent)
I.....	8.0	5.9	9.0	6.6	9.0	7.0
II.....	32.0	15.3	31.0	24.3	28.0	22.9
III.....	39.0	23.6	37.0	32.7	36.0	29.4
IV.....	21.0	*55.2	23.0	32.6	27.0	33.4
Administrative acceptees.....				3.8		7.3
	Percent quota	1 Jul 53- 30 Jun 54 (percent)	Percent quota	1 Jul 54- 30 Jun 55 (percent)	Percent quota	1 Jul 55- 30 Jun 56 (percent)
I.....	9.0	9.7	9.0	9.6	9.0	8.4
II.....	28.0	25.9	28.0	26.7	28.0	26.5
III.....	36.0	34.6	36.0	35.9	45.0	38.6
IV.....	27.0	26.3	27.0	26.1	18.0	25.3
Administrative acceptees.....		3.5		1.7		1.2
	Percent quota	1 Jul 56- 30 Jun 57 (percent)	Percent quota	1 Jul 57- 30 Jun 58 (percent)	Percent quota	1 Jul 58- 30 Jun 59 (percent)
I.....	9.0	8.2	9.0	8.5	11.0	8.8
II.....	28.0	24.1	28.0	23.2	34.0	24.2
III.....	45.0	37.2	51.0	41.7	43.0	46.1
IV.....	18.0	29.7	12.0	26.3	12.0	20.7
Administrative acceptees.....		.8		.3		.2
	Percent Quota	1 Jul 59- 30 Jun 60 (percent)	1 Jul 60- 30 Jun 61 (percent)	1 Jul 61- 30 Jun 62 (percent)	1 Jul 62- 30 Jun 63 (percent)	
I.....	11.0	8.2	6.1	5.8	5.1	
II.....	34.0	24.1	27.4	27.3	26.7	
III.....	43.0	50.7	53.3	44.5	46.7	
IV.....	12.0	16.8	13.0	22.1	21.2	
Administrative acceptees.....		.2	.2	.3	.3	

* Includes administrative acceptees.

Sources: AG 78 (Reports of Applicants Processed at Recruiting Main Stations February 1950 through April 1951. AG 187 (Qualitative Distribution of Enlistments, Inductions and Rejections, May and June 1951.) DD-MP-4 Annual Reports of Qualitative Distribution of Military Manpower (by fiscal year), The Adjutant General, Department of the Army.

distribution among mental groups of Army personnel prior to the full operation of the Qualitative Distribution System.

The high rate of administrative inductees created a series of actions described in chapter 6.

Table 2 covers a period 30 Jun 51 to 30 Jun 63 for the operation of the qualitative distribution program. It indicates the changes in the percentage quotas established through successive directives of the Department of Defense and the percent of accessions against the quotas for the Army.

Certain fluctuations in the Category IV may be attributable to a number of factors. A rise in this group during 1957 resulted from an increase in the number of inductions from 55 percent of the total Army intake in FY 1956 to 75 percent in FY 1957. The rather marked drop in Category IV after July 1958 resulted from additional aptitude area requirements for those scoring between the 10th and 30th percentile AFQT. Fluctuations in standards may be observed from appendix 9. The Army also raised the mental standard for enlistment for both 2- and 3-year enlistees to the 31st percentile (Mental Group III) in July 1957. The steady decline in the rate of the administrative acceptees resulted from the strengthening of the screening devices and policies for this group and the number of inductees required.

APPENDIX 23

THE ALIEN ENLISTMENT PROGRAM (LODGE ACT)

In June 1950 Congress authorized the enlistment of 2500 unmarried male aliens. While this group could not be considered marginal personnel, it did provide an English language training problem similar to the World War II group and the Puerto Rican. The enlistment program endeavored to obtain individuals of "officer caliber who understood foreign languages, customs, temperament and culture which might be of use to the United States Army." Those men who enlisted for the prescribed 5 year period could not be less than 18 years of age or more than 35. They were placed within established units "with citizen soldiers and not segregated into separate organizations as aliens."¹ Mental, moral, and physical standards were high. However, since many could not speak, read, or write English, special standards applied for identifying this group. At the inception of the program, individuals had to score 100 or higher on the Non-Language Test 2 abc or score 85 through 99 on the Non-Language Test 2 abc and have 30 or more correct answers on the EKE-1 (English Knowledge Evaluation Test). Fifty percent of those who achieved less than 30 correct answers on EKE-1 but who attained a score of 85-99 on the Non-Language 2 abc could be enlisted if they were otherwise qualified. The men had to be fluent in at least one prescribed foreign language.²

Standards were modified during the life of the program (1957),³ but all those who were considered to be in need of English language training initially received this instruction at the Language Qualification Unit at Ft. Devens, Massachusetts. Subsequently this same English language instruction was accomplished at Ft. Jackson, South Carolina.

¹ P.L. 597, 81st Congress, 30 June 1950; Amended P.L. 51, 82d Congress, 10 June 1951, P.L. 414, 84th Congress, 27 June 1952, 12 July 1952; P.L. 116, 85th Congress, 24 July 1957; SR 615-120-15, 19 December 1952; DA Letter (AGAO-S 342.18 (2 Mar 51), G1-M, 9 Mar 1951 and 28 Dec 1951; DA Letter AGPP-P 342.15 (11 May 51) (G1), 31 May 1951; DA Letter AGAO-S 342.18 (6 Feb 52) G-2M; DA Letter AGAO-S 342.18 (24 Jan 52) (G1), 28 July 1952.

² SR 615-120-15, 19 December 1952.

³ AR 601-249, 8 Nov 1957; AR 601-210; AR 355-3; AR 355-30; SR 355-30-1; with various changes.