TM 12-260

WAR DEPARTMENT

TECHNICAL MANUAL

PERSONNEL CLASSIFICATION TESTS

December 31, 1942



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WAR DEPARTMENT,
WASHINGTON, December 31, 1942.

PERSONNEL CLASSIFICATION TESTS

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CHAPTER 1

PRINCIPLES OF TESTING

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SECTION I

PURPOSE OF TESTING

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General 1
Test scores and the interview 2

1. General.—The main purpose of the Army classification system is to assign each man to the position for which he can be most easily trained and in which he will be most useful to the Army. Classification and assignment officers face the problem of matching varied kinds and degrees of education, experience, skills, abilities, and interests to the Army's need for numerous and diversified types of specialists. (See AR 615–25 and 615–28.)

2. Test scores and the interview.—*a.* To classify a man adequately, information must be immediately available concerning his personal history, schooling, work experience, leadership qualities, interests, abilities, etc. During the reception center interview, which is the central phase of classification, these data are recorded on the basic classification form W. D., A. G. O. Form No. 20 (Soldier's Qualification Card).

b. The personal data thus obtained become more meaningful when they are supplemented by test scores. Not only can tests give the interviewer a better estimate of a man's abilities and aptitudes than can be obtained in the interview, but they are also of use to the interviewer in checking information received in the interview. Tests constitute a short, objective method of observing a man in a variety of situations, while an interviewer can observe a man only once and in only one situation. Also, since tests judge every man by the same standard, possible personal biases are eliminated.

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SECTION II

PRINCIPLES OF SELECTION

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3. General.—The primary factor in the selection of men for training or for particular jobs is the needs of the service. In no case should test scores be the sole basis for classification and assignment. Education, past experience, personality, and interests are all important factors which must also be considered, together with the other information obtained in the interview. The particular selection problem determines which factors are the most important. When other considerations are equal, the man who is interested in his job is likely to do better work than the one who is not. In all assignments, therefore, the soldier's interests should be considered as much as possible.

4. Selection for a job.—When an Army job which corresponds closely to a civilian position is to be filled by men who will not receive further training, civilian experience is weighted heavily. Tests are often useful for checking whether a man really knows the particular job in which he claims experience. Those in Oral Trade Questions, Volume 1 and Supplement A, are good measures of trade information. At some camps and for some jobs trade tests which demand that the man perform a sample of the work are also available; the typing and dictation tests, useful in selecting typists and stenographers, are examples.

5. Selection for training.—Besides the general classification test, all enlisted men except those in the lowest grade on the classification test are given the mechanical aptitude test. Both these tests aid the classification section in determining assignments for training. When men are selected for specialists' schools, other tests may also be given. In the case of these special Army training courses, the number of available men must be considered. If a large number of qualified men are available, selection can be made in terms of previous related experience, supplemented by tests of present skills and information about the job. When few qualified men are available, aptitude tests can identify the men with no related civilian experience who will profit most from training. The ratio of the number of men to be trained to the number available for training will determine what score on an aptitude or selection test will be considered "passing."

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The expectancy tables in appendix IV indicate the percent of men with a given test score who will probably pass a particular course.

6. Selection of candidates for officer training schools.—In selecting officer candidates, personality traits and capacity for leadership are the important factors. All the evidence about a man's leadership qualifications should be studied carefully. The data on W.D., A.G.O. Form No. 20 and all information available from other sources should be considered. Rating scales and interview forms help in judging leadership qualifications. High intelligence is also necessary. The higher examination and the officer candidate test are available for the measurement of the kinds of mental ability needed in officers.

7. Selection of men for special training units.—The Army must make use of all its manpower. Men who prove to be illiterate or slow in learning are sent to special training units to learn the basic skills of reading, writing, and arithmetic, and to prepare for regular Army training. These men are identified by their poor performance on the general classification test and the nonlanguage test. An individual examination is used to check these results. The tests are only one of the factors used in determining which men will be assigned to these units; past work experience and the ability to adjust to Army situations are very carefully weighed before a final decision is made.

SECTION III

TYPES OF TESTS

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8. General.—Each test is developed for a particular purpose and use; therefore, it is important to choose the right test for each classification or selection problem. A test that is good for one purpose may give useless or misleading information when used for a different one. A test may be valuable for more than one purpose; a classification test can be used to select men for training as well as to determine the distribution of ability in the Army. Decisions as to which tests to use should take into consideration both the problem and the characteristics of the available tests.

a. Almost all the tests devised for Army use are group tests of the

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objective type; that is, the examinee does not write a long answer to a general question but rather chooses from among several short answers to a specific question the one which he considers best. The use of objective questions rather than essay questions, on which a man writes freely, has several advantages. The examination can cover the subject matter more thoroughly and more fairly by asking many short questions instead of a few long ones. Each paper can be scored uniformly without the prejudices of the scorer or other irrelevant factors influencing the grade. Examinations can be set up for machine scoring as well as for hand scoring. Objective scoring, therefore, not only permits large-scale testing but also increases the reliability of the tests and the uniformity of their interpretation.

b. The major types of tests developed for Army use are as follows:

(1) Classification tests.
(2) Aptitude tests.
(3) Educational achievement tests.
(4) Trade knowledge tests.
(5) Special tests.

The paragraphs below describe types of tests; for descriptions of specific tests see chapter II.

9. Classification tests.—*a. Purpose.*—These tests are designed to classify all soldiers in terms of their ability to learn their duties in the Army. On the whole, they measure the general level of a man's abilities rather than his abilities in a specific field. In many cases, the tests are also useful in screening out particular men. Those who are slow learners, for example, may be poor risks for specialized training regardless of their special aptitudes. See appendix I for distribution of general classification test scores.

b. Content.—The various classification tests differ in specific content. While the questions or items, as they may be called, may vary from test to test, their purpose is similar; the items are expected to measure general learning ability, since they deal with questions about which the average person should be informed. The differences among the various classification tests may be summarized under two points.

(1) *Use of language.*—Most classification tests assume ability to read English. Since illiterates and foreign-speaking men do not get a fair chance to show their ability on such tests, the nonlanguage and visual classification tests, which involve a minimum of language in their directions and contents, have been devised. The individual examination requires the understanding of spoken language only.

(2) *Group and individual tests.*—Almost all Army tests are group tests, for it is not feasible to test large numbers of men individually.

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However, men who do very poorly on group classification tests are given an individual mental examination to make sure that their failure is due to lack of ability rather than to inability to work in a group situation.

10. Aptitude tests.—*a. Purpose.*—These tests are designed to classify soldiers in terms of their ability to learn certain Army jobs. The most widely used are the general aptitude tests, that is, tests which measure ability for a general field, such as mechanical or clerical work. Specific aptitude tests, not so widely used, are intended to measure aptitude for a particular task; probably the best known of these is the radiotelegraph operator aptitude test.

b. Content.—Each aptitude test contains items related to the field under consideration, so designed that either all or none of the men have had an opportunity to meet them in the course of general experience. For example, in a mechanical comprehension test, pictures of common objects are given and questions are asked about the way in which these objects work or can be used. Everyone has had a chance to pick up the necessary information; the man who has done so presumably has greater mechanical aptitude than the man who has not done so. In this way, it is possible to measure performance before specialized training in order to predict performance after such training.

11. Educational achievement tests.—*a. Purpose.*—Sometimes it is important to know the educational status of a man. Standards and curricula may differ widely from school to school; besides, some men learn more and remember more than others. Completion of a certain course does not guarantee any definite amount of knowledge. Educational achievement tests are given, therefore, when a background in a particular academic subject, such as algebra, is important in a job or for training.

b. Content.—Each test consists of objective questions, covering a wide range of information in the particular field. These tests are based on standard texts, so that they will be as fair as possible to everyone.

12. Trade knowledge tests.—*a. Purpose.*—Trade knowledge tests measure information about a particular job just as educational achievement tests measure knowledge of an academic subject. They may be used to check experience as far as indicated by information about the job. Obviously, a man who claims several years experience but can answer no questions about that experience is not a good job or training risk. Or the tests may be used to find those who have picked up information about a job without having actually worked at it. When men are to be trained, it is better to select those who

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have picked up information, even if they have never done the work, because it can be presumed that they have some interest in the work and that their background provides a basis for training. While trade knowledge tests are useful in selecting qualified men to fill positions and for choosing those men who can benefit most from training, they cannot be used as the sole basis of selection, as having information does not necessarily mean that the man can perform the day-to-day work of the job. For example, no matter how much a man may know about mechanical work, if he is clumsy in using his hands, he will not be a good mechanic.

b. Content.—Each test consists of objective questions covering a wide range of information in the particular field.

13. Special tests.—From time to time, special testing programs are set up for particular jobs. There are also a number of tests which do not fall into any of the preceding classes. No general description of these can be attempted; for specific examples, see section VI.

SECTION IV

TESTING PROCEDURE

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Scoring of tests	16
Recording test scores	17
Interpretation of test scores	18

14. General.—All tests are provided with directions for administration and scoring which should be carefully studied and followed. The following tests are accompanied by complete manuals with directions for administering, scoring, recording, and interpreting:

a. General Classification Test, 1a and 1b.
b. General Classification Test, 1c and 1d.
c. Induction station tests (psychological examining).
d. Wechsler Mental Ability Scale Form B.
e. Mechanical Aptitude Test, MA–1.
f. Mechanical Aptitude Test, MA–2 and 3.
g. Clerical Aptitude Test, CA–1.
h. Radiotelegraph Operator Aptitude Test, ROA–1, X–1.
i. Typing and dictation tests.
j. Driver examination (TM 21–300).

Manuals for other tests will be issued from time to time.

15. Administration of tests.—A poorly administered test is worse than no test.

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a. Testing conditions.—The testing room should be well lighted and ventilated, as quiet as possible, and large enough to seat the men comfortably and to allow the assistants enough space to move about the room quietly. Each man must be able to hear the examiner clearly, have a good light on his work, and adequate working space. He must be seated so that there is no temptation for him to watch anyone else. These are optimum conditions which may not be completely satisfied in any one place, but which every classification section should try to approximate.

b. Responsibilities of examiner.—An examiner should be in charge of the testing for each group of men.

(1) The examiner is responsible for putting the men at their ease. He should speak slowly and distinctly so that all can hear him easily, and he should avoid appearing severe since this might make the men tense. Everything possible should be done to encourage the men to cooperate in the test situation and to do their best on the test.

(2) The examiner should see that the men fill in all the identification material called for on the left-hand margins of their answer sheets. The directions for administering each test indicate what should be entered on the answer sheets. This information should be obtained before the directions for the test are given and before the test itself is administered. Any corrections to be made in the test, such as correcting the spelling of a word or an error in lettering, should be done at the same time.

(3) The examiner is responsible for the group's understanding the test directions. If a man gets a low score on a test because he did not know what to do, his score is not a true indication of his ability. In the directions for administration which accompany each test, the examiner is generally asked to read the directions with the men. This reading should be clear, unhurried, and never routine. The men should have ample time for working the practice problems. Before administering a test, the examiner should review the directions for administering and the directions page of the test to make sure that everything is clear to him and that he knows where to pause and what questions to expect. Under no circumstances should the examiner depart from the indicated best procedure; uniformity of administration from camp to camp is necessary if the test results are to be comparable.

(4) Most Army tests are timed; therefore, it is the examiner's responsibility to time them accurately, with a good stop watch if possible. If none is available, the examiner can time the test accurately by recording the exact time at which he starts the men and the

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exact time at which they will finish; thus he will have before him a record of when to stop the men. It is always wise for the examiner to have at least one of the assistants check his timing of the test.

(5) Supervising the assistants is also the task of the examiner. He is responsible for their training and for keeping them informed so that they may perform their duties adequately. If difficulties arise in the administration of any test, these should be explained to the assistants so that they can make sure that the men understand what they are to do.

c. Responsibilities of assistants.—There should be one assistant for every 20 to 25 men tested. The smoothness of the testing procedure depends on the efficiency of the assistants. Each camp should work out a convenient, consistent procedure for the assistants to follow in distributing and collecting test material, in seating and dismissing the men, and generally in assisting them. It may be wise to assign each assistant responsibility for one section of the room.

(1) Before a test is given, the assistants should make sure that there are on hand enough test booklets, answer sheets, pencils, scratchpaper, and anything else necessary. The test booklets should have been checked for marks. The material may be distributed to each place either before the men enter the room or after they are seated, or it may be handed to each man as he enters the room.

(2) The assistants should direct the men to their seats, and the seats should be arranged in whatever way is most convenient for administering the test.

(3) While the examiner directs the men in filling out the required identification material in the left-hand margin of the answer sheet, the assistants are to see that the information is filled in correctly. They should give the men any additional facts necessary. An assistant may discover that a man cannot write well enough to take a test involving written language. Each camp should have established a procedure for dealing with such cases which does not embarrass the man or inconvenience the examiner. It may be best quietly to dismiss the man from the test. When the nonlanguage test or the visual classification test is given, the assistants should identify the papers of men who cannot write their own names.

(4) When the directions are explained, it is the duty of the assistants to insure, first, that each man understands how to use the special answer sheet and, second, that he gets the point of the practice questions. They should avoid arguing with a man about the correct answer. If several men appear to be having the same difficulty or if anything unusual occurs, the assistants should inform the examiner.

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(5) While the test is in progress, the assistants should always keep the men supplied with pencils and other necessary materials. They should see that each man is working by himself. Men who are not working should be encouraged either to check their answers, if they have finished, or to continue. The assistants are not to answer any questions about the contents or any part of the test while it is in progress. If anything unusual occurs at any time, the examiner should be notified.

(6) When the examiner tells the men to stop, the assistants should see that the men do so. They should collect a test booklet, an answer sheet, and a pencil from every man, before the men are dismissed. It may be convenient to collect the material from each man as he leaves the room.

(7) The assistants should inspect the test booklets at the end of each test and destroy any one on which the answers are marked. Booklets with a few, meaningless marks on them may be used again after the marks have been erased. They should then prepare to test the next group of men.

16. Scoring of tests.—Directions for scoring and scoring keys accompany each test. These should be used carefully. It is always important to know the formula for getting the raw score for a test. The scoring formula must always be used exactly as given. Since the formula most frequently used is the number right minus one-third of the number wrong, a table for getting one-third of the wrong answers has been set up. See appendix II for table for changing wrong answers to one-third wrong answers. When the answers are marked on separate answer sheets rather than directly on the test booklets, the booklets can be used over and over again, and the tests can be scored by machine as well as by hand.

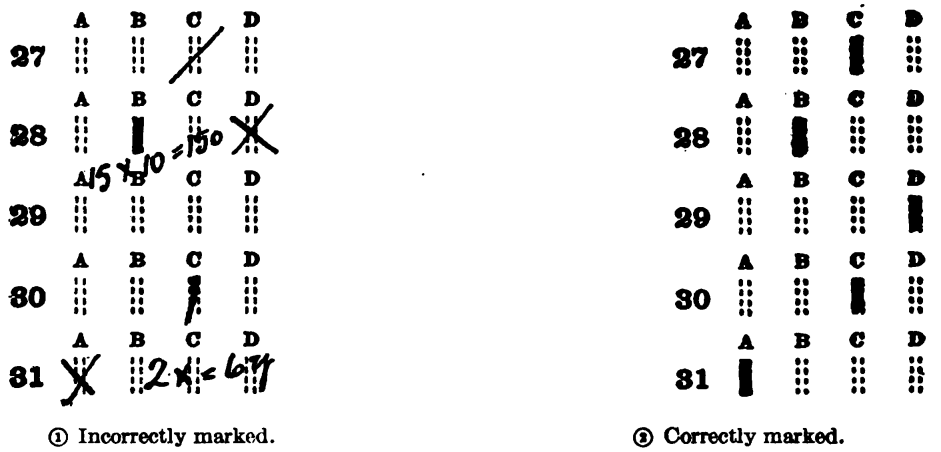
a. When the tests are scored by hand, the scoring stencil should be lined up with each test blank before the blank is scored. When a transparent stencil is used, the right answer will appear through the holes in the stencil and the wrong answers will be the pencil marks appearing through the transparent stencil. If the stencil is not transparent, the number of wrong answers can be obtained by adding the number of omissions to the number of right answers and subtracting this sum from the total number of questions on the test. Omissions are neither wrong nor right answers and should never be scored.

b. Tests answered with special pencils on the separate answer sheets can be scored on electrical test-scoring machines by making use of the fact that a solid black pencil mark will carry a current of electricity in the same way that a copper wire does. Since light pencil

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marks made with a hard pencil will not conduct electricity, the machine will give a correct score only if the special pencils are used and the answers indicated by solid black marks. The men should be told to make several strokes up and down. When a man changes his answers, he must be cautioned to erase his first marks completely. Crossing out an answer does not prevent the machine from scoring it. The machine cannot distinguish partially erased answers or stray pencil marks from the intended answer. If more than one answer is marked for a question, all answers except the right one will be scored as wrong answers. (See fig. 1.)

c. For many tests, the raw scores are converted into standard scores and Army grades; for the meaning of these terms, see paragraph 21.



① Incorrectly marked. ② Correctly marked.

FIGURE 1.—How to mark an answer sheet for machine scoring.

Tables for converting raw scores into standard scores will be provided with the tests for which they are available. See appendix III for copies of these conversion tables.

17. Recording test scores.—Scores on all classification and selection tests are recorded on W. D., A. G. O. Form No. 20. Directions for entering the scores on the cards will be found in the test manuals and in the classification memoranda. Classification memoranda are good sources for information about changes in testing procedure. If no directions are available for recording a test score on W. D., A. G. O. Form No. 20, record an appropriate abbreviation of the name of the test and its designation together with the raw score. For example, an educational achievement test in arithmetic would be recorded as "Arith. EA–3, X–1."

18. Interpretation of test scores.—Test scores mean nothing unless they are judged in relation to a point of reference and to other information. Standard scores and Army grades are useful interpretive devices; see paragraph 21. Expectancy tables (app. IV) and crit-

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ical scores (par. 22) are also useful in judging the meaning of a score. Test scores should be evaluated in accord with the principles of selection given in section II.

SECTION V

ELEMENTARY STATISTICS

Paragraph
General 19
Scores 20
Descriptive statistics 21
Interpretive statistics 22

19. General.—A knowledge of some simple statistics is necessary to interpret test scores.

20. Scores.—*a. Raw score.*—This is the test score. It may be simply the number of questions answered correctly; generally, however, it is expressed in terms of the number of questions answered correctly minus a certain fraction of the number of questions answered incorrectly. This method provides a correction for the number of questions which may have been answered correctly by chance or by guessing. The exact scoring formula to be used for obtaining the raw score is found on the scoring key for the test and must always be used.

b. Standard score.—By itself, the raw score on a test gives no indication of a man's ability. The standard score compares a particular soldier with all the others who have taken the same test. On every test, a standard score of 100 is always equal to average Army performance. Standard scores below 100 are below average; those above 100 represent better-than-average performance. The standard scores have been determined so that two-thirds of the men will have standard scores between 80 and 120. The size of the standard score shows how far above or how far below average a man scores. For example, a classification officer refers to a soldier's W. D., A. G. O. Form No. 20 and notices that the man made a raw score of 47 on a mechanical information test. Unless the officer happens to have complete information about the test and the average performance on it, he cannot tell whether the score represents good or poor performance. If, however, a standard score of 125 has been recorded, the classification officer knows immediately that the man is an exceptionally good bet for training as a mechanic. Furthermore, since standard scores have the same meaning on all tests, he can compare the man's performance on various tests. Information can thus be obtained about the man's outstanding abilities, his weak points, and his general level of per-

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formance. Tables for converting raw scores into standard scores are provided for all the more important tests. (See app. III.)

c. Army grades.—Sometimes it is not necessary to know the exact position of a soldier's score but merely to group men into broad classes in respect to their ability on a particular test. The following five classes are called Army grades:

Army grade I Very rapid learners, includes standard scores of 130 and above, about 7 percent of all the men in the Army.

Army grade II Rapid learners, includes standard scores between 110 and 129, about 24 percent of the men.

Army grade III Average learners, includes standard scores between 90 and 109, about 38 percent of the men.

Army grade IV Slow learners, includes standard scores between 70 and 89, about 24 percent of the men.

Army grade V Very slow learners, includes standard scores below 69, about 7 percent of the men.

The Army grades on the general classification test are slightly different from those on other tests. On General Classification Tests 1b, 1c, and 1d, Army grade IV includes standard scores between 60 and 89 and Army grade V includes standard scores below 59.

21. Descriptive statistics.—*a. Average.*—The average, or the arithmetic mean, is the score most representative of the whole group. It may be defined simply as the sum of the separate scores divided by the number of scores. For example, if five soldiers get scores of 45, 57, 39, 34, and 40 on a trade knowledge test, the average score for the group is 41, obtained by adding all the scores and then dividing by five. The average can be used in two ways:

(1) To compare a single soldier's score with the average for his group, indicating whether he is better or worse than that average.

(2) To compare the averages of several groups on the same test, indicating whether a particular group is good or poor.

b. Standard deviation.—A score can be compared with the average to find whether it is above or below average. This comparison does not tell how far above or below the average the score is. To find this, a measure of variability is necessary.

(1) Variability is the degree to which scores spread or scatter. For example, in figure 2, group 1 has an average test score of 25.5 points, with the best man scoring 32 points and the poorest one 20

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points. Group 2 also averages 25.5 points, but here the best man makes 40 points and the poorest 14. In the first group, a score of 32 is the highest while in the second group it is merely somewhat above average. In the first group, the scores do not scatter or spread as

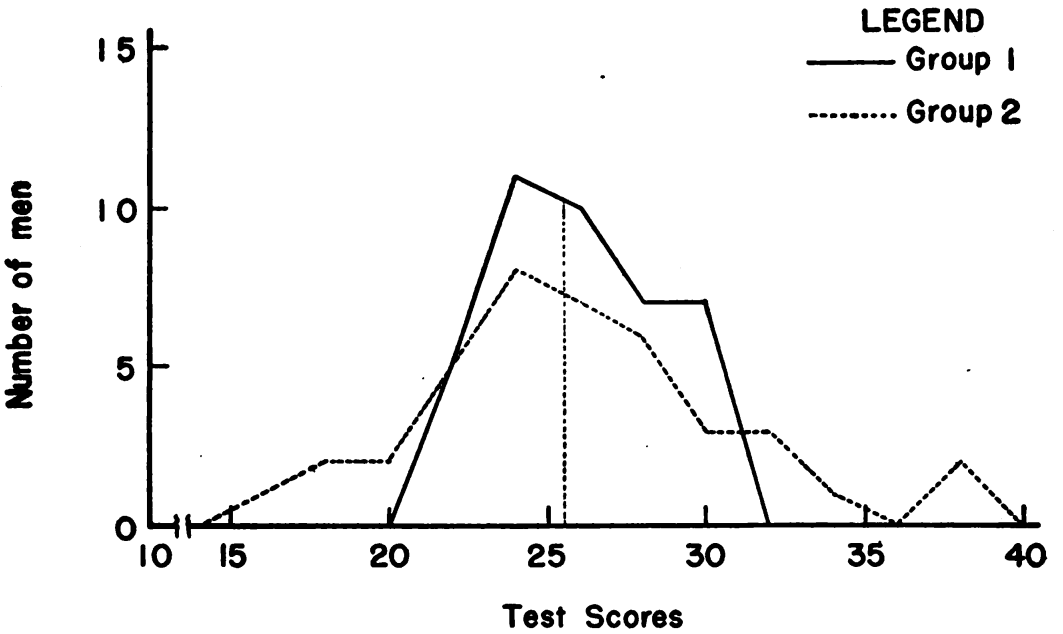


FIGURE 2.—Difference in variability between two groups having the same average.

far as in the second; that is, the first group is less variable than the second.

(2) The best measure of variability for most purposes is the standard deviation (referred to as S. D., sigma, σ). In computing it, the

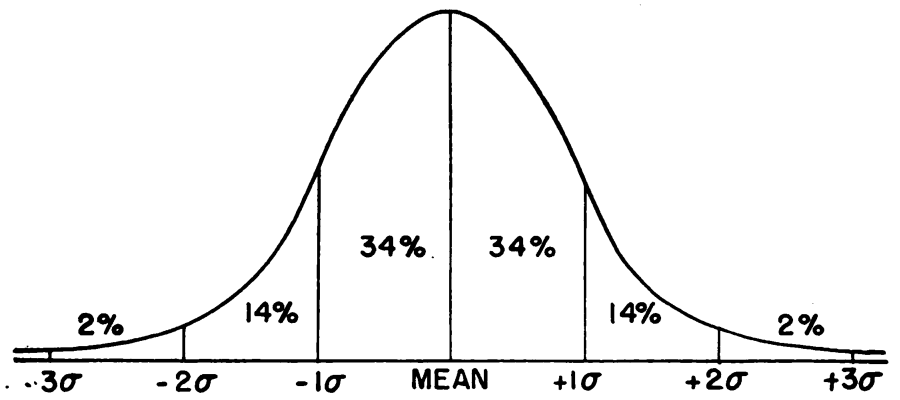


FIGURE 3.—Normal distribution.

deviation (or difference) of each score from the average is obtained, then squared. The sum of these squared deviations is divided by the number of scores in the group, giving the average of the squared deviations. The square root of this average is the standard deviation.

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(3) The usefulness of the average and the standard deviation depends on how the scores group about the average. Usually, most scores are close to the average; only a few are very far away. The type of distribution of scores shown in figure 3 is called a normal distribution. Many distributions of test scores resemble this one. Figure 3 may be compared with the distribution of general classification test scores given in appendix I; this comparison will show how an actual distribution may differ from the theoretical one.

Figure 3 shows that about two-thirds (68 percent) of the scores on any test will probably lie within one standard deviation above and below the average, 95 percent of the scores will lie within two standard deviations above and below the average, while three standard deviations above and below the average include almost all of the scores. For example, if a classification officer knows that for a particular test the M (average) = 16 and the S. D. (standard deviation) = 4, then he knows that 68 percent of the men have scores between 12 and 20, that 95 percent of them have scores between 8 and 24, and that practically 100 percent of them have scores between 4 and 28.

(4) The use of the standard deviation is simple. For example, if a man has a score of 65 when the average test score is 50 and the standard deviation 12, it is apparent that his score is 15 points above the average (65 minus 50). If he had been 12 points (the standard deviation) above the average, he would have been 1 standard deviation above it. Dividing 15 by 12 shows that he is 1.25 standard deviations above the average. From figure 3 it can be seen that a score 1 standard deviation above the average is better than the scores of 84 percent of the group, so that a score 1.25 standard deviations above the average is better than those of more than 84 percent of the group.

(5) The standard scores used with the Army tests (referred to in paragraph 20*b*) are based on this method of defining a score in relation to the average and the standard deviation of the group. Figure 4 shows the relation of standard scores and Army grades to the theoretical normal distribution. The important thing to remember about the standard deviation is that it shows how variable a group is and how far any particular score is from the average.

22. Interpretive statistics.—*a. Test reliability.*—(1) Since the classification section does not have time to give a man a test more than once, his score on that one test must be an accurate representation of his ability. For a test to be reliable or consistent, it must be one on which a man will get about the same score (excluding practice effect) every time he takes it.

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(2) A good index of the reliability of a test is the standard error of measurement. While it is not important for a classification officer to know how to compute this error of measurement, it is important that he know how to interpret it. Just as the standard deviation measures the variability of a group of scores, so the standard error of measurement measures the variability of a single score. A test score is naturally subject to a certain amount of error—chance factors will cause a man's score to vary slightly from time to time. The more reliable the test, the less is that variation and the closer the true measure of the man's ability lies to the test score actually received. The standard error of measurement is a measure of the limits within which a person's true score on a test probably falls. For example, if a man has a score of 85 on a test which has a standard error of measurement equal to 5 his true score, in the majority of cases, 68 out of 100, will lie between

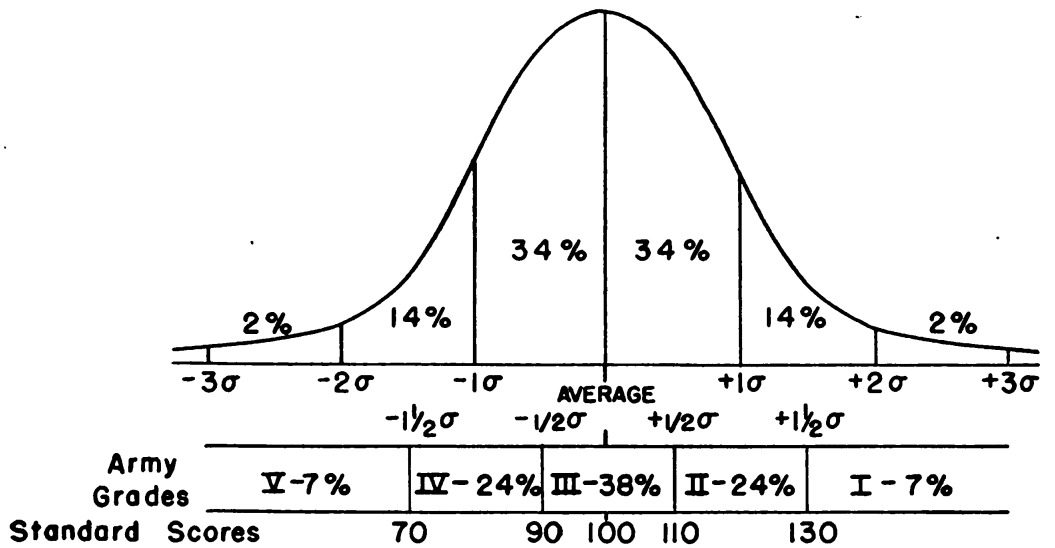


FIGURE 4.—Standard score and Army grades in relation to the normal distribution.

80 and 90. It is practically certain that his true score is between 70 and 100, that is, between plus or minus 3 standard errors of measurement. The test score should be regarded not as a point but as a range, within which the score, plus or minus the standard error of measurement, will usually fall.

(3) On a reliable test, the standard error of measurement is less than one-third as large as the standard deviation. It is obvious that if the standard error of measurement were as large as the standard deviation, the placement of an individual score would be completely unreliable. For example, if a man made an average score and the standard error of measurement equaled the standard deviation, his true score could fall almost anywhere within the total distribution of

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test scores. This quantitative comparison of the standard error of measurement with the standard deviation can be used to sort out the tests which may be regarded as unreliable. Predictions based on such unreliable tests are likely to be disappointing and should never be regarded as more than tentative.

(4) When, for research purposes, a test is given to the same men more than once, the scores on the second test are likely to be somewhat higher than those on the first one. This improvement is the effect of practice, that is, familiarity with methods of taking the test and with its content. It is generally unnecessary and unwise to correct individual scores, since the practice effect is slight on the average and varies from person to person.

b. Interpreting test scores.—After soldiers' scores on a reliable test have been precisely described in terms of the average and the standard deviation of the group, how can this information be used in selecting men for training? Some standard must be set up. It is natural to select the best men in a group for training, but where should the dividing line be placed? This may be decided arbitrarily or, better, it may be decided on the basis of the relation between the test scores and the final course grades of men who have already taken the test.

(1) *Critical score.*—A simple way of selecting men for a course is to set a critical test score. All men who do as well as or better than this score are admitted to the course; all men who score below it are rejected. A critical score should not be arbitrary but should be set in terms of the number of men available for training and of that level of test performance which has been shown to be necessary for passing the course.

(2) *Expectancy tables.*—See appendix IV. An expectancy table shows what chances in 100 a man making a given score on a particular test has of making an average-or-better grade in a certain course. The figures in this type of table are probabilities rather than certainties; and the test data should be used in connection with whatever other data are available. In many respects the expectancy table is simply a series of critical scores. For example, there may be an expectancy table which shows that a man with a score of 60 has 55 chances in 100 of doing average-or-better work in the course and that one with a score of 70 has 80 chances in 100 of doing above-average work in the same course. This means that, if a critical score of 60 is set, 55 percent of the men who are accepted for training will do well, while if the critical score is put at 70, 80 percent of the men who are accepted will do well. The expectancy table allows the classification officer to adjust the critical score required on a test to the number of

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men available for training. If only a few men out of a large group are to be trained, the standard can then be raised and most men taking the course should do well. If, however, a large number of the men are to be trained, the standard must be lowered, but with the realization that more failures are likely to occur. As expectancy tables are available for more tests and more courses, they will be issued to the field.

c. Research.—(1) To obtain the information about a test on which to base these descriptive and interpretive statistics, it is necessary, from time to time, to carry out research programs of testing. (See AR 615–25.)

(2) Field reports on these examining programs and on the examining programs in the various schools will be issued as they become available. Recent reports will be published in The Adjutant General's School Bulletin, and those who wish copies of particular reports may communicate with the Personnel Research Section, Classification and Enlisted Replacement Branch, The Adjutant General's Office.

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CHAPTER 2

CATALOG OF TESTS

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SECTION I

GENERAL

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Distribution of tests	24

23. Test information.—For each test, the catalog will include a description of its purpose, content, and scoring, and a statement of the available data. In addition, there will sometimes be a discussion of particular points of interest about the test. Each description of test content will include a table giving the form, the number of practice items, the number of test items, the time for directions and practice, the time for test items, and the total time allowed. The statement of data will consist of a table listing averages, standard deviations, and standard errors of measurement (reliability) for representative groups of soldiers.

24. Distribution of tests.—The commanding officers of the service commands are responsible for the distribution of classification supplies, including tests, to units of the field forces. See paragraph 5*d*, Classification Memorandum No. 8.

SECTION II

CLASSIFICATION TESTS

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General	25
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25. General.—Under classification tests will be considered all tests used either to select men for the Army or to classify men already in the Army on the basis of their ability to learn the duties of a soldier.

26. General classification test.—*a. Purpose.*—By means of the general classification test (GCT) new arrivals at reception centers who are able to read and write the English language can be quickly sorted into five broad groups with respect to their ability to learn the duties of a soldier: I, very rapid learners; II, rapid learners; III, average learners; IV, slow learners; and V, very slow learners. See appendix I for a distribution of scores and appendix IV for an expectancy table.

b. Content.—The four forms of the test (1a, 1b, 1c, 1d) contain the same types of questions: vocabulary, arithmetic, and box counting. The questions gradually increase in difficulty from very easy to fairly hard so that everyone reaches the ceiling of his ability in the time allowed. The vocabulary and the arithmetic questions contain military phraseology but do not require any military information.

Form	Number of practice items	Number of test items	Time for directions and practice items	Time for test items	Total time allowed
			Minutes	*Minutes*	*Hours*
1a	30	150	15	40	1
1b	30	150	15	40	1
1c	10	140	10	40	1
1d	10	140	10	40	1

c. Scoring.—The questions are answered on a special answer sheet which can be scored either by machine or by hand. The scoring formula is the number of questions right minus one-third the number of questions wrong. This gives the raw score, which is converted into a standard score and an Army grade. (See app. III.)

d. Discussion.—(1) The men who make high scores on the general classification test are usually those who do best in various Army training courses and who excel in the daily work of the service. Conversely, those who make low scores are likely to be the less alert soldiers.

(2) In general, men who are tested more than once, either with the same form or with different forms of the general classification test, tend to make the same grade each time. The test, therefore, is a consistent measure, and judgments of ability based on its scores are probably reliable. One form may be used in the place of another whenever it is desirable to reexamine a man about whose test performance

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there is some doubt and whenever there is any likelihood that the men who are to take the test have already heard about one of the forms.

(3) To a certain extent, the more schooling a man has had, the higher will be his score. It is possible that some men with less education will prove to be more capable than their scores suggest, particularly in pursuits not involving knowledge acquired through formal schooling. These men can be discovered by giving the nonlanguage test to all men scoring in Army grade V on the general classification test.

e. Data.

Form	Subjects	Average standard score	Standard deviation	Standard error
1a	500 men at Camp Croft and Fort Knox	103. 0	20. 3	4. 7
1b	3,856 selectees from all service commands	102. 0	24. 2	5. 6
1c	95,211 selectees 12/31/41 to 2/25/42	97. 5	23. 0	5. 1
1d	72,283 selectees 12/31/41 to 2/25/42	97. 1	21. 8	5. 1

27. Nonlanguage test.—*a. Purpose.*—The Non-Language Test 2abc is designed to grade Army personnel on the basis of their ability to learn the performance of their duties in the Service. As the name implies, this test minimizes the use of language. It is used to find those men who, although they have never learned to read and write English, can readily learn to perform the duties of a soldier. It is also used as a check on all men who score in Army grade V on the general classification test, since some of these men have more ability than this grade indicates.

b. Content.—(1) The nonlanguage test is composed of three subtests:

(*a*) 2a—Box-counting items to measure ability to visualize, to count, and to grasp spatial relationships.

(*b*) 2b—Symbol-association and substitution items to measure ability to complete a task and to associate ideas.

(*c*) 2c—Pairs of designs to be compared—to measure acuteness of observation.

(2) Each subtest has separate directions, practice items, and time limits. It will be noted that no reading matter is included in any part of 2abc; the problems all use figures and diagrams, which are to be handled in various ways. In order that no misunderstanding may

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arise from poor comprehension of spoken English, all the directions are given in pantomime. A large amount of the time allowed for the test is devoted to giving the directions, to make sure that poor performance on the test is due to inability to handle the material and not to a misunderstanding of the tasks.

Form	Number of practice items	Number of test items	Time for directions and practice items	Time for test items	Total time allowed
2abc					1 hour
			Minutes	*Minutes*	*Minutes*
2a	24	50	9–11	10	25
2b	3	237	5–7	5	15
2c	10	80	5–7	5	15

c. Scoring.—The men mark their answers directly on the test blank, which must be hand scored. For subtests 2a and 2b, the score is the number right; for 2c, it is the number right minus the number wrong. The total raw score is obtained by adding the scores on the subtests. These are then converted into standard scores and Army grades. See appendix III.

d. Data.

Form	Subjects	Average standard score	Standard deviation	Standard error
2abc	233 men at Fort Sheridan and Fort Benning	90. 1	30. 9	8. 9

28. Induction station tests.—*a. Purpose.*—To help the induction stations screen out those men who are so slow in learning that they will be unable to carry out Army duties, a program consisting of an initial screening interview in which a minimum literacy test may be given, the visual classification test, and a battery of individual tests has been devised. The effect of the previous literacy standards has been to reject some men who were mentally competent together with those whom the Army could not use. Some men who cannot read and write will make good soldiers if they are given proper training; their present lack of skill may be due to lack of opportunity rather than to inability to learn. The induction station program selects those men with a satisfactory level of ability for Army pur-

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poses. Registrants are classified into three groups in terms of their eligibility for induction: acceptable, unacceptable, and acceptable under the 10-percent quota—on any one day at an induction station the number of men unable to read and write English below the minimum level set by the Army will not exceed 10 percent of the total number of men inducted that day.

b. Content.—(1) *Initial screening interview—Army Information Sheet.*—In most cases, educational and occupational qualifications can furnish sufficient evidence as to the eligibility of a registrant. If there is any doubt about the mental ability of a man, he should be given the Army Information Sheet (minimum literacy test). Each form of the minimum literacy test consists of simple questions, the last five of which are based on a paragraph to be read. Those who fail to pass this test are reserved for further examination.

(2) *Visual classification test.*—The visual classification test is a nonlanguage test of mental ability to be given to those men who fail the minimum literacy test. It is composed of pictorial items, whose solution is entirely independent of language skills. The items cover a wide range of difficulty but emphasize the lower end of that range. The directions involve a minimum of language so that inability to read or speak English will not handicap a man who is otherwise capable of performing many Army jobs.

(3) *Battery of individual mental tests.*—At induction stations where relatively few illiterates are to be tested the battery of individual tests may be used instead of the visual classification test. They may also be used if the examiner feels that a man's failure to pass the visual classification test does not do him justice. The battery includes the Wells' Concrete Directions Test and the Block Counting Test, DST–10. The former makes use of a number of commonly used tools, which the examiner orally directs the registrant to place in various relations to each other. In the block counting test, the man counts the number of blocks in a pictured pile of them.

Form	Number of practice items	Number of test items	Time for directions and practice items	Time for test items	Total time allowed
			Minutes	*Minutes*	*Minutes*
Army Inf. Sheet (min. lit. test) 1, 2, 3	0	12	0	5	5
VC–1a	7	50	15	15	45
Wells' Concrete Directions Test	0	12	5	5	10
Block Counting Test, DST–10	4	16	5	2½	10

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c. Scoring.—(1) *Army Information Sheet (minimum literacy test).*—A man must answer acceptably at least nine of the twelve questions in order to be rated literate. Scoring on answers to the first seven questions is obvious; for the five questions based on the paragraph, the examiner must determine which answers make good sense and are satisfactory.

(2) *Visual classification test.*—The man marks his answers directly on the test booklet, which must be hand scored. The raw score is the number of questions right. This raw score is converted into a standard score and Army grade.

(3) *Individual mental tests.*—The examiner scores the Wells' Concrete Directions Test as the test proceeds. Responses are assigned point scores and the raw score is the total number of points received. On the block counting test, the score is the number of items correctly answered.

29. Individual mental examination.—*a. Purpose.*—The individual mental examination has been developed to test men who have scored in the lowest grade on both the general classification test and the nonlanguage test. Some men cannot be satisfactorily measured by group-test methods, yet they may be able to perform military duties adequately, to respond to oral directions, to remember, and to reason. The purpose of this examination is to help determine whether or not they can do these things.

b. Content.—Among other tests the Wechsler Mental Abilities Scale, consisting of sixteen tests, is available for use in the individual examination, and the examiner selects those tests which he feels will help him most in deciding upon the competency of a particular man for military service. There are seven verbal tests and nine performance tests. At least five or six tests must be given, and seven or eight should usually be given to each man. The tests and their uses are described in the manual for the scale. The total testing time is about 15 minutes.

c. Scoring.—The directions for scoring each test are in the manual. The examiner scores them as he proceeds with the examination and then arrives at an over-all judgment.

d. Discussion.—In the final decision as to whether or not a man is to be retained in the Army, the rating on the individual mental examination will be only one of the factors considered. For example, his complete Army test record and his past vocational history are other elements which will influence the prediction of his ability to cope with the requirements of the service.

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30. Higher examination.—*a. Purpose.*—For each 100 men in the Army there are about 40 who rate Army grade I (very rapid learners) or Army grade II (rapid learners) on the general classification test. Only a small number of these may be needed for training as officers or as highly skilled specialists of various kinds. The higher examination is designed to discriminate more exactly among the men who score in the upper grades on the general classification test by including more difficult questions.

b. Content.—There are two equivalent forms of the higher examination, H–1 and H–2. Each form consists of three subtests—vocabulary, number series, and arithmetic; each subtest has a separate time limit.

Form	Number of practice items	Number of test items	Time for directions and practice items	Time for test items	Total time allowed
			Minutes	*Minutes*	*Minutes*
H–1 or H–2	10	140	15	35	50
Vocabulary	3	50		5	10
Number series	5	45		10	15
Arithmetic	2	45		20	25

c. Scoring.—The answers are marked on a special answer sheet, which may be machine scored or hand scored. The raw score is the number of questions right minus one-third the number of questions wrong. This is converted into a standard score and Army grade. (See app. III.)

d. Discussion.—The test is a consistent measure; when it is repeated, men get approximately the same scores as they did on the first trial.

e. Data.

Form	Subjects	Average raw score	Standard deviation	Standard error
H–1	499 men at Jefferson Barracks	43. 3	19. 3	5. 2
H–2	334 men at Jefferson Barracks	49. 0	23. 1	5. 3

31. Officer candidate test.—*a. Purpose.*—The officer candidate test is an examination involving the ability to reason and to use judgment in the interpretation of data. It is designed to aid in the selection of candidates for officer training. This test is not yet available since it is in an experimental stage and has not been approved for general use.

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b. Content.—The test consists of three types of items: arithmetic reasoning, interpretation of graphs and tables, and reading comprehension.

Form	Number of practice items	Number of test items	Time for directions and practice items	Time for test items	Total time allowed
			Minutes	*Minutes*	*Hours*
OCT–1, X–1	3	67	10	45	1¼

NOTE.—Additional forms of the test will be available in the future.

c. Scoring.—The answers are marked on a special answer sheet which may be either machine scored or hand scored. The score is the number of questions right minus one-third the number of questions wrong.

d. Data.

Form	Subjects	Average raw score	Standard deviation	Standard error
OCT–1, X–1	116 officers, special service school for recreational leaders.	41. 3	11. 5	3. 8
	125 officers, Adjutant General School for personnel consultants and technicians.	40. 9	9. 9	3. 9
	249 beginning officer candidates, Quartermaster School.	32. 8	10. 4	2. 7
	478 men at Fort Monmouth, N. J.	15. 1	11. 1	3. 2

32. Women's classification test.—*a. Purpose.*—The women's classification test (otherwise known as the mental alertness test) is designed to measure the ability of women to learn their duties in the Women's Army Auxiliary Corps. It is used to select the officers and the auxiliaries for the Corps and to classify the women into five broad groups with respect to their ability to learn the duties of an auxiliary: I, very rapid learners; II, rapid learners; III, average learners; IV, slow learners; V, very slow learners.

b. Content.—The test contains six types of questions: information, vocabulary, arithmetic, judgment, interpretation of proverbs, and comprehension of paragraphs or tables. The questions gradually increase in difficulty from very easy to fairly hard, so that everyone reaches the ceiling of her ability in the time allowed.

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Form	Number of practice items	Number of test items	Time for directions and practice items	Time for test items	Total time allowed
WCT–1, X–2 (Mental Alertness–1, X–2)	10	140	*Minutes* 20	*Minutes* 60	*Hours* 1¼

c. Scoring.—The questions are answered on a special answer sheet which can be scored either by machine or by hand. The scoring formula is the number of questions right minus one-third the number of questions wrong. This gives the raw score which is converted into a standard score and an Army grade. (See app. III.)

Section III

APTITUDE TESTS

Paragraph
General 33
Mechanical aptitude test 34
Clerical aptitude test 35
Radiotelegraph operator aptitude test 36
Code learning test 37
Tests for combat intelligence 38

33. General.—In this section aptitude tests will be considered; that is, tests which are used to predict potential success in a given type of training or job. These are of two types: tests of general aptitude for broad fields of work and tests of specific aptitude for a particular type of job.

34. Mechanical aptitude test.—*a. Purpose.*—The mechanical aptitude test is designed to estimate a man's chances of success in learning mechanical duties. See expectancy table I in appendix IV.

b. Content.—The mechanical aptitude test has four forms—MA–1, MA–2, MA–3, and MA–4—each of which consists of three parts:

(1) *MA–1.*

Part I—*Mechanical movements.*—Diagrams of gears and pulleys to measure the understanding of the operation of such mechanical devices.

Part II—*Surface development.*—Patterns and forms to measure understanding of spaces and surfaces.

Part III—*Shop mathematics.*—To measure understanding of arithmetic problems which arise in typical shop situations.

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(2) *MA–2 and MA–3.*

Part I—*Mechanical information.*—To measure knowledge of mechanical terms and the uses of mechanical materials and equipment.

Part II—*Surface development.*—Patterns and forms to measure understanding of spaces and surfaces.

Part III—*Mechanical comprehension.*—To measure understanding of the simpler laws of mechanics.

(3) *MA–4.*

Part I—*Tool recognition.*—To measure knowledge of the names and uses of tools.

Part II—*Mechanical comprehension.*—To measure understanding of the simpler laws of mechanics.

Part III—*Surface development.*—Patterns and forms to measure understanding of spaces and surfaces.

Form	Number of practice items	Number of test items	Time for directions and practice items	Time for test items	Total time allowed
			Minutes	*Minutes*	*Hours*
MA–1 total	15	135	15	45	1¼
Part I	8	45		15	
Part II	5	45		15	
Part III	2	45		15	
MA–2 and MA–3 total	10	140	15	45	1¼
Part I	2	50		15	
Part II	5	45		15	
Part III	3	45		15	
MA–4 total	10	135	15	40	1
Part I	2	45		10	
Part II	3	45		15	
Part III	5	45		15	

c. Scoring.—The answers to the mechanical aptitude tests are marked on a special answer sheet which can be scored by machine or by hand. The raw score for each part is the number right; the total raw score is the total number of questions right. The first three mechanical aptitude tests are scored not only for total score but also for scores on the various parts, and very often part scores prove useful in the selection of men for various specialist courses. However, no single part score should be considered more reliable than the standard score on the total test. The raw scores on the parts can be converted into Army grades; the total raw score can be converted into a standard score and an Army grade. (See app. III.)

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d. Discussion.—MA–4 has been specially designed for use with the Women's Army Auxiliary Corps. On it only a total score is obtained and no conversion table from raw scores to standard scores is yet available.

e. Data.

Form	Subjects	Average standard score	Standard deviation	Standard error
MA–1	500 men at Camp Croft and Fort Knox	100. 1	19. 0	4. 6
MA–2	500 men at Camp Croft and Fort Knox	100. 4	18. 4	4. 6
MA–3	500 men at Camp Croft and Fort Knox	101. 8	18. 3	4. 6

35. Clerical aptitude test.—*a. Purpose.*—The clerical aptitude test is designed to measure typical abilities required for clerical tasks. It does not measure all aspects of clerical ability. Certain duties which are commonly required of clerks have been selected and arranged to test the speed and accuracy of the soldier taking the test. See expectancy table in appendix IV.

b. Content.—CA–1 contains six types of items—name checking, number checking, reasoning, coding, vocabulary, and checking catalog numbers. CA–2 also contains six types of items—cataloging, name checking, number checking, coding, alphabetizing, and spelling.

Form	Number of practice items	Number of test items	Time for directions and practice items	Time for test items	Total time allowed
			Minutes	*Minutes*	*Minutes*
CA–1	18	280	15	20	45
CA–2	10	290	15	30	60

c. Scoring.—The answers are marked on a special answer sheet which can be either hand scored or machine scored. The raw score is the number of questions right. For CA–1 this raw score is converted into a standard score and an Army grade; a conversion table is not yet available for CA–2. (See app. III.)

d. Discussion.—A high score on the test should not be interpreted as a guarantee that the soldier will become a good clerk. However, a much larger percentage of the men who are capable of absorbing clerical training will be found in the group with high scores on the test than among the men with low scores. Usually, the higher the score,

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the better are a man's chances of becoming a good clerk. The best use of this test will be found in combination with other evidences of abilities, such as the General Classification Test score, the soldier's educational background, and job experience.

e. Data.

Form	Subjects	Average standard score	Standard deviation	Standard error
CA–1	1,934 men at Fort Belvoir	102	20. 6	7. 6

36. Radiotelegraph operator aptitude test (formerly the Signal Corps code aptitude test).—*a. Purpose.*—The radiotelegraph operator aptitude test is a specific aptitude test designed to select radio operators by grading men on their ability to learn the International Morse Code. A man who is able to differentiate code patterns which he hears will, in general, learn code more quickly than will a man who does not notice such differences and will therefore be a better risk for training as a radio operator. See expectancy tables in appendix IV.

b. Content.—Two forms of the test have been constructed, one of 78 items (ROA–1, X–1) and the other of 150 items (ROA–1, X–2). Each item consists of two code patterns sounded in succession, and the man tested is required to decide whether the two patterns are the same (mark *yes*) or different (mark *no*). The test includes some easy and some difficult items, and each man tries all of them. The ROA–1, X–1 is available on phonograph records, record set MC–209, and is always to be administered by playing the set through twice in succession with only a few minutes' pause between. By playing the records on a phonograph or a public-address pick-up system, the test may be given to groups of 100 to 150 men.

Form	Number of practice items	Number of test items	Time for directions and practice items	Time for test items	Total time allowed
			Minutes	*Minutes*	*Minutes*
ROA–1, X–1	4	78 x 2	10	21	40
ROA–1, X–2	4	150	5	22	35

c. Scoring.—A special answer sheet is provided which may be either machine scored or hand scored. The raw score is the number

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right. For ROA-1, X-1, the raw score is the sum of the scores obtained on the two successive playings. This raw score is converted into a standard score and an Army grade. (See app. III.)

d. Discussion.—Men who have had previous experience with code or who play a musical instrument tend to make higher scores than do inexperienced men.

37. Code learning test.—*a. Purpose.*—The code learning test, like the radiotelegraph operator aptitude test (par. 36), is a specific aptitude test developed to measure a man's ability to learn the International Morse Code. In this test, a man is required to demonstrate how well he can learn the code for a given set of characters with a specified amount of practice. This test is designed for the same purpose as the radiotelegraph operator aptitude test—to help select men for training as radio operators.

b. Content.—Several forms of the test have been set up, but full information on how well these tests predict success in learning code is not yet available. In each form, a set of characters given in code is presented to the men, then practice on the code is provided, after which the test is administered. All of the forms have been designed to be put on phonograph records, although the practice materials and test items may be presented by means of the regular code tape machines or by a manually operated key, providing the instructor announces certain materials aloud. Records have been cut for CLT-2, X-3, only. Directions for making the records are available for all forms of the test.

(1) The characters for the test CLT-1 are period, double dash, end of transmission, finish, hyphen, and interrogation. The characters for the CLT-2 tests are period, parenthesis, fraction bar, comma, colon, and hyphen. A set of five arbitrary code patterns is used for the CLT-3 test: $\overline{\text{AF}}$, $\overline{\text{PN}}$, $\overline{\text{DR}}$, $\overline{\text{DG}}$, and $\overline{\text{RW}}$.

(2) During the practice period, the men try to write down the characters as they hear the code patterns and are then given a chance to check whether they have made the correct responses.

(3) After the practice period, the men are tested to see how many of the characters they have learned. Each man is tested on all items.

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Test	Number of characters to be learned	Length of practice period	Number of test items	Time for test items	Total time required
		Minutes		*Minutes*	*Minutes*
CLT-1	6	60	100	10	90
CLT-2, X-1	6	45	100	10	65
CLT-2, X-3	6	30	100	10	50
CLT-3, X-3	5	17	105	11	40

c. Scoring.—Special answer sheets are provided. The CLT-3 test can be either machine scored or hand scored. The other code learning tests must be hand scored since the men are to write down the characters they have learned. The raw score is the number right.

d. Discussion.—Men who are tested more than once on the code learning test tend to make about the same score each time, and the men who learn the greatest number of characters in a short practice period are, in general, those who learn the greatest number of characters in a longer practice period. The test is, therefore, a consistent measure, and an assignment made on the basis of test scores should be reliable.

e. Data.

Form	Subjects*	Average raw score	Standard deviation	Standard error
CLT-1	30 beginning students, Infantry School, Fort Benning.	56. 8	24. 8	4. 2
CLT-2, X-1	23 beginning students, Infantry School, Fort Benning.	32. 8	14. 8	4. 4
CLT-2, X-3	249 beginning students, Armored Force School, Fort Knox.	43. 2	20. 5	4. 1
CLT-3, X-3	473 beginning students, Air Corps Training School, Scott Field.	37. 0	21. 1	4. 2

*The Fort Benning data are based on nonexperienced men only. The Scott Field and the Fort Knox data include a small number of men reporting previous experience with Morse code.

38. Tests for combat intelligence.—*a. Purpose.*—A series of specific aptitude examinations designed to aid in the selection of men for military intelligence training and work is being developed.

b. Content.—The present battery consists of seven tests:

(1) Identification of aerial photographs—ability to locate aerial photographs on a topographic map.

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(2) Map identification—ability to identify parts of a map.

(3) Route tracing—ability to trace routes on a map.

(4) Battle maps—ability to interpret operations and situations from a map.

(5) Perception of detail—ability to observe and remember details.

(6) Map reading—general information about maps and ability to determine from a map whether certain points are visible from other points.

(7) Map orientation—ability to read and understand maps.

Form	Number of practice items	Number of test items	Time for directions and practice items	Time for test items	Total time allowed
			Minutes	*Minutes*	*Hour*
Identification of Aerial Photographs–1, X–1	1	13	10	30	1
Map Identification–1, X–1	1	19	10	30	1
Route Tracing–1, X–1	1	11	10	30	1
Battle Maps–1, X–1	1	6	10	30	1
Perception of Detail–1, X–1	2	30	10	30	1
Map Reading–1, X–1	2	41	10	30	1
Map Orientation–1, X–1	2	32	10	30	1

c. Scoring.—The answers are marked directly on the tests. The tests, therefore, are hand scored. The raw score on each test is the number right.

Section IV

EDUCATIONAL ACHIEVEMENT TESTS

Paragraph
General 39
Educational achievement tests 40

39. General.—This section includes tests of achievement in school subjects.

40. Educational achievement tests.—*a. Purpose.*—Achievement examinations in twelve school subjects—algebra, arithmetic, English grammar and composition, French, general history, geometry, German, inorganic chemistry, physics, Spanish, trigonometry, and United States history—have been developed for use in certain of the service schools in which educational background is stressed.

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b. Content.

Form	Number of practice items	Number of test items	Time for directions and practice items	Time for test items	Total time allowed
			Minutes	*Hours*	*Hours*
Algebra:					
EA–1, X–1	3	200	10	2	2½
EA–1, X–2	3	97	10	1	1½
EA–1, X–3	3	147	10	2	2½
EA–2, X–1	3	72	10	1	1½
EA–2, X–2	3	37	10	½	1
EA–3, X–1	3	72	10	1	1½
Arithmetic:					
EA–1, X–1	3	100	10	2	2½
EA–1, X–3	3	100	10	2	2½
EA–1, X–4	3	30	10	¼	¾
EA–2, X–1	3	60	10	½	1
EA–3, X–1	3	59	10	1	1½
EA–3, X–2	3	75	10	½	1
English Grammar and Composition:					
EA–1, X–1	4	296	10	2	2½
EA–1, X–2	4	146	10	1	1½
EA–1, X–3	4	146	10	2	2½
EA–1, X–4	4	146	10	1	1½
EA–2, X–1	3	139	10	1	1½
EA–2, X–2	3	92	10	½	1
EA–2, X–3	3	131	10	1	1½
				Minutes	
EA–2, X–4	3	98	10	20	¾
				Hours	
French:					
EA–1, X–1	3	77	10	2	2½
EA–1, X–3	3	70	10	2	2½
EA–2, X–1	3	77	10	½	1
General History:					
EA–1, X–1	3	297	10	2	2½
EA–1, X–3	3	147	10	2	2½
EA–2, X–1	3	125	10	1	1½
EA–2, X–2	3	82	10	½	1
German:					
EA–1, X–1	3	77	10	2	2½
EA–1, X–3	3	70	10	2	2½
EA–2, X–1	3	77	10	½	1
Inorganic Chemistry:					
EA–1, X–1	6	144	15	2	2½
EA–1, X–3	6	125	15	2	2½
				Minutes	
EA–1, X–4	5	49	15	25	1
				Hours	
EA–2, X–1	6	132	15	1	1½
EA–3, X–2	6	88	15	½	1
Physics:					
EA–1, X–1	3	140	10	2	2½
EA–1, X–3	3	112	10	2	2½
EA–2, X–1	3	57	10	½	1

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Form	Number of practice items	Number of test items	Time for directions and practice items	Time for test items	Total time allowed
Plane and Solid Geometry:			*Minutes*	*Hours*	*Hours*
EA–1, X–1	3	200	10	2	2½
EA–1, X–2	3	47	10	1	1½
EA–1, X–3	3	97	10	2	2½
EA–2, X–1 (plane only).	3	98	10	1	1½
EA–2, X–2 (plane only).	3	49	10	½	1
Spanish:					
EA–1, X–1	3	77	10	2	2½
EA–1, X–3	3	70	10	2	2½
EA–2, X–1	3	77	10	½	1
Trigonometry:					
EA–1, X–1	3	117	10	2	2½
EA–1, X–2	3	50	10	1	1½
EA–1, X–3	3	100	10	2	2½
EA–2, X–1	3	50	10	1	1½
EA–2, X–2	3	27	10	½	1
United States History:					
EA–1, X–1	3	297	10	2	2½
EA–1, X–2	3	147	10	1	1½
EA–1, X–3	3	147	10	2	2½
EA–2, X–1	3	147	10	1	1½
EA–2, X–2	3	97	10	½	1
Combined Algebra, Trigonometry, and Geometry:					
EA–1, X–4	3	57	10	½	1

c. Scoring.—(1) The answers on all the tests are entered on special answer sheets which may be machine or hand scored. The raw score on every test is the number of questions right minus one-third the number of questions wrong.

(2) The only exception to the above is Arithmetic, EA–3, X–1, the answers to which are marked directly on the test, which is then hand scored. The raw score on this test is the number of questions right.

d. Discussion.—Tests in chemistry, arithmetic, algebra, geometry, and trigonometry are now being used at the Engineers' School at Fort Belvoir. Selection of men for training as clerks at Camp Grant is based partly on an English test. Until very recently the Army Air Forces used examinations in all twelve of the subjects for selection of pilots, bombardiers, and navigators. Certain of the other tests are used in selection of men for the Coast Artillery School.

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SECTION V

TRADE KNOWLEDGE TESTS

	Paragraph
General	41
General automotive information test	42
General electrical and radio information test	43
General electrical information test	44
General radio information test	45

41. General.—The examinations considered in this section are tests of the amount of information which a man has acquired about a field of work.

42. General automotive information test.—*a. Purpose.*—This test is designed to select likely candidates for training as automobile mechanics. The tests may also be used as aids in assigning men to automotive work, although it should be remembered that tests of general automotive information do not indicate an individual's efficiency in the actual servicing and repair of automotive vehicles.

b. Content.—Each test covers the subjects of engines, axles, differentials, final-drive units, wheels, tires, braking system, steering mechanics, engine lubrication, power transmission, and ignition systems. TK–2, X–1 also covers driver information.

Form	Number of practice items	Number of test items	Time for directions and practice items	Time for test items	Total time allowed
			Minutes	*Minutes*	*Hours*
TK–1, X–1 (formerly GAI–1, Exp. 1)	2	98	10	90	2
TK–1, X–2	3	67	10	30	1
TK–1, X–3	3	137	10	90	2
TK–2, X–1	3	67	10	30	1

c. Scoring.—The answers are marked on a special answer sheet which can be either machine scored or hand scored. For TK–1, X–1 and TK–1, X–3, the raw score is the number of questions right. For TK–1, X–2 and TK–2, X–1, the raw score is the number of questions right minus one-third the number wrong.

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d. Data.

Form	Subjects	Average raw score	Standard deviation	Standard error
TK–1, X–1	147 beginning students in auto mechanics course, Infantry School, Fort Benning.	75. 0	11. 3	4. 0

43. General electrical and radio information test.—*a. Purpose.*—This is an examination of general electrical and radio information, designed to select likely candidates for electrical and radio training. It may also be used as an aid in assigning men to electrical repair work and as radio mechanics, although it should be remembered that the tests indicate general information in the two fields and not necessarily proficiency in actual servicing and repair work.

b. Content.—The test covers electrical and radio theory, practice, equipment, and symbols. It does not require any knowledge of special Army procedures.

Form	Number of practice items	Number of test items	Time for directions and practice items	Time for test items	Total time allowed
			Minutes	*Minutes*	*Hours*
TK–1, X–1 (formerly ERI–1, Exp. 1)	3	140	10	90	2
TK–1, X–2	3	70	10	30	1

c. Scoring.—The answers are marked on a special answer sheet which can be either machine scored or hand scored. For TK–1, X–1, the raw score is the number of questions right. For TK–1, X–2, the raw score is the number of questions right minus one-third the number of questions wrong.

44. General electrical information test.—*a. Purpose.*—This is an examination of general electrical information, designed to select men for electrical training. It may also be used as aid in assigning men to electrical repair work. It is a test of general information rather than of proficiency in electrical repair work.

b. Content.—The test covers basic electrical theory, equipment, symbols, and accepted practice. It does not require any knowledge of special Army procedures.

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Form	Number of practice items	Number of test items	Time for directions and practice items	Time for test items	Total time allowed
			Minutes	*Minutes*	*Hour*
TK–1, X–3	3	67	10	30	1
TK–2, X–1	3	30	10	15	¾

c. Scoring.—The answers are marked on a special answer sheet which can be scored either by machine or by hand. The raw score is the number of questions right minus one-third the number of questions wrong.

45. General radio information test.—*a. Purpose.*—This examination of general radio information is designed to select candidates for radio and communication training, but it may also be used as an aid in assigning men to radio repair and service work, although the test indicates radio information rather than proficiency in radio work.

b. Content.—The test covers basic radio theory, equipment, symbols, and accepted practice. It does not require any knowledge of special Army procedures.

Form	Number of practice items	Number of test items	Time for directions and practice items	Time for test items	Total time allowed
			Minutes	*Minutes*	*Hour*
TK–1, X–3	3	70	10	30	1
TK–2, X–1	3	71	10	30	1

c. Scoring.—The answers are marked on a special answer sheet which can be either machine scored or hand scored. The raw score is the number of questions right minus one-third the number of questions wrong.

SECTION VI

SPECIAL TESTS

Paragraph
General 46
Typing and dictation tests 47
Driver selection and qualification tests 48
Warrant officer examinations 49

46. General.—Included in this section are a variety of tests devised for special purposes.

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47. Typing and dictation tests.—*a. Purpose.*—The typing and dictation tests are designed to measure proficiency in typing and taking dictation.

b. Content.—Nine alternate forms have been constructed for the typing test, each consisting of two paragraphs of material to be copied. The dictation test, which has four forms, contains material to be read at a speed of 80 words per minute, with a preliminary practice exercise to be read at the same speed. Twenty minutes is allowed for transcription.

Test	Number of forms	Time for practice test	Time for test	Total time allowed
		Minutes	*Minutes*	*Minutes*
Typing	9	3	10	25
Dictation	4	3	23	45

c. Scoring.—The score for the typing test is a weighted combination of speed and accuracy—the speed score (1/10 of total strokes) minus the error score (1/2 of total errors). For the dictation test, the score is the total number of errors, including omissions or wrong words, insertions, misspellings, and transposition. The score on the dictation test can be converted into an Army grade. The typing and dictation tests are recorded on W. D., A. G. O. Form No. 20 as trade tests.

48. Driver selection and qualification tests.—*a. General purpose.*—These tests are designed for two purposes: for making the initial selection of drivers for training and for determining which drivers are qualified to receive operators' permits. For instructions in the use of these tests see TM 21–300.

b. Driver selection tests.—(1) *Driver Information Test No. 9.*—(*a*) *Purpose.*—This test measures knowledge of safe driving practices and of traffic regulations in common use.

(*b*) *Content.*

Form	Number of practice items	Number of test items	Time for directions	Time for test items	Total time necessary
			Minutes		
9	0	50	5	Unlimited	About 1 hour.

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(*c*) *Scoring.*—A separate answer sheet may be used, and the score is the number right.

(*d*) *Data.*

Form	Subjects	Average raw score	Standard deviation
9	681 white soldiers at Camp Lee	37. 4	6. 1
	586 colored soldiers at Camp Lee	26. 4	7. 6

(2) *Driver experience inventory.*—(*a*) *Purpose.*—This test makes it possible to evaluate the pertinent driving experience of a large number of men by group testing procedure.

(*b*) *Content.*—The questions used cover items of driving experience which have been found to differentiate between good and poor Army truck drivers.

Form	Number of practice items	Number of test items	Time for directions	Time for test items	Total time necessary
			Minutes		*Minutes*
2	0	50	5	Unlimited	50

(*c*) *Scoring.*—By means of a scoring key, a definite value is given each response. The score is the sum of the values of the responses checked.

(*d*) *Data.*

Form	Subjects	Average raw score	Standard deviation
2	222 Army truck drivers	27. 1	11. 2

(3) *Driver visual acuity test.*—(*a*) *Purpose.*—This test attempts to screen out drivers with poor vision.

(*b*) *Content and apparatus.*—The apparatus for this test is not available; it can be obtained from the personnel research section. It is a short test consisting of three charts, each with 14 Snellen letters, measuring visual acuity ranging from 20 percent to 150 percent.

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Form	Number of practice items	Number of test items	Time for directions	Time for test items	Total time allowed
			Seconds	*Minutes*	*Minutes*
Visual acuity	0	42	10	2	3

(*c*) *Scoring.*—The test is given individually, and the score in percent is the total number of correct responses times ten.

(*d*) *Data.*

Form	Subjects	Average raw score	Standard deviation	Standard error
		Percent	*Percent*	*Percent*
Visual acuity	210 men at Camp Lee	137	22	8.8

(4) *Driver reaction time test.*—(*a*) *Purpose.*—This test is designed to eliminate men with unusually long reaction times.

(*b*) *Content and apparatus.*—The apparatus for this test can be built according to the directions in TM 21–300. The test requires the man tested to move his right foot from the accelerator pedal to the brake pedal when a red light appears.

Form	Number of practice measurements	Number of test measurements	Time for directions and practice	Time for test	Total time allowed
			Minute	*Minutes*	*Minutes*
Reaction time	3	16	½	2	5

(*c*) *Scoring.*—A white light flashes for each reaction that requires over 0.4 second, and the score is the number of flashes in sixteen trials—the fewer the flashes, the better the score.

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(*d*) *Data.*

Form	Subjects	Average raw score	Standard deviation	Standard error
Reaction time	40 men at Bolling Field	6.2	4.8	2.15

(*5*) *Driver field of vision test.*—(*a*) *Purpose.*—The driver field of vision test is designed to eliminate men who have a definitely restricted field of vision.

(*b*) *Content and apparatus.*—The apparatus for this test can be built according to the directions contained in TM 21-300. This test measures the angle at which drivers can see to the side while looking straight ahead.

Form	Number of practice trials	Number of test trials	Time for directions and practice	Time for test	Total time allowed
			Minute	*Minutes*	*Minutes*
Field of vision	2	4	½	1½	5

(*c*) *Scoring.*—The score is the average field of vision to the right plus the average field to the left, measured in degrees.

(6) *Hopkins' night vision test.*—(*a*) *Purpose.*—This test measures the ability of the driver to see while driving under blackout conditions and is designed to eliminate those men who are likely to have difficulty in driving under such conditions.

(*b*) *Content and apparatus.*—The apparatus for this test is not available; plans for constructing it may be requisitioned from the personnel research section. The test consists of a series of black stripes on a white background with illumination which is gradually increased until the direction of the bars can be distinguished. The test is administered after the subject has been in a dark room for 30 minutes.

Form	Number of practice trials	Number of test trials	Time for directions and practice	Time for test	Total time allowed
			Minute	*Minutes*	*Minutes*
Night vision	2	6	1	4	10

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(*c*) *Scoring.*—The score is the reading on a rheostat dial, which indicates the amount of light required for the performance. The better scores are low. Six trials are generally used.

c. Driver qualification tests.—(1) *Driver Information Test No. 10.*—(*a*) *Purpose.*—This driver information test is designed for use in the issuance of permits to motor vehicle operators. Knowledge of Army driving practices and Army regulations is tested.

Form	Number of practice items	Number of test items	Time for directions	Time for test items	Total time necessary
			Minutes		
10	0	50	5	Unlimited_____	About 1 hour.

(*b*) *Scoring.*—A separate answer sheet may be used, and the score is the number correct.

(2) *Road test for drivers.*—(*a*) *Purpose.*—This test measures the ability of a driver to handle an Army truck under various driving conditions.

(*b*) *Content.*—This is a practical test of drivers' performances, which involves the following of directions. Performance is checked against a 45-item check list. Two minutes is allowed for instructions, and the test takes from 15 to 25 minutes.

(*c*) *Scoring.*—A rating from I to V is given for the total performance, I being high and V being low.

(3) *Vehicle inspection test.*—(*a*) *Purpose.*—The test is designed to measure the ability of a driver to make a thorough inspection of his vehicle.

(*b*) *Content.*—This is a practical test in which the driver inspects an actual vehicle for defects. After the inspection he checks a list of 40 items as (1) missing, (2) defective, (3) apparently O. K., or (4) not inspected.

(*c*) *Scoring.*—The score is the number of items whose condition has been correctly checked.

49. Warrant officer examinations.—*a. Purpose.*—Applicants for appointment as warrant officers in the various branches of the service are required to pass written examinations as well as service requirements and physical examinations.

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b. Content.—The written examination consists of two parts as follows:

(1) A general educational examination tests the applicant's judgment and reasoning, powers of comprehension, and knowledge of English, United States history, and contemporary affairs. This examination requires 3½ hours, and contains 278 questions.

(2) The technical examinations test the applicant's knowledge and technical qualifications for the particular position for which he is applying. Separate examinations are given for each of the various classifications of warrant officers. The scopes of the various warrant officer examinations are given in AR 610–10. Each of these technical examinations requires 1 hour and 45 minutes. They contain different numbers of questions ranging from 16 to 150.

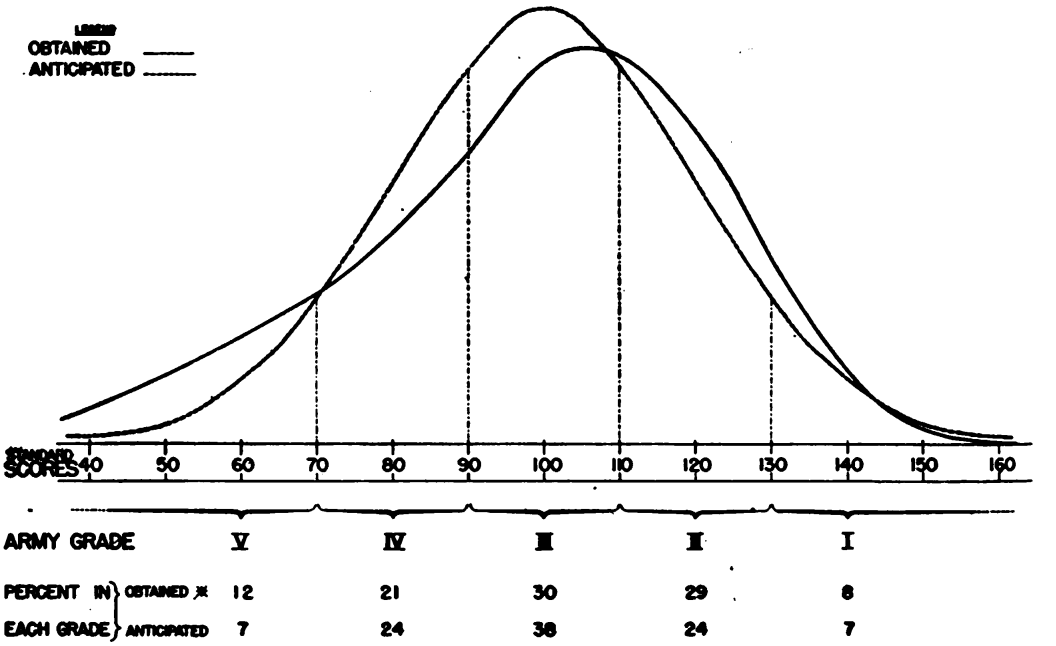
c. Scoring.—All of the examinations, except those for weather, topography, and auditing and accounting, may be scored by machine. The score is always the number right.

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Appendix I

FREQUENCY OF OCCURRENCE OF GCT SCORES IN THE ARMY

(Obtained distribution compared with anticipated distribution)



* 713,000 SELECTEES FOR THE YEAR ENDING FEBRUARY 28, 1942

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APPENDIX II

TABLE FOR CHANGING WRONG ANSWERS TO ONE-THIRD WRONG ANSWERS

(P. R. Form 102, November 1, 1940)

(Personnel Research Section form, Adjutant General's Office)

No. of wrong answers		0	1	2	3	4	5	6	7	8	9	10	11	12	13
⅓ of wrong answers		0			1			2			3			4	
No. of wrong answers	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
⅓ of wrong answers		5			6			7			8			9	
No. of wrong answers	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
⅓ of wrong answers		10			11			12			13			14	
No. of wrong answers	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58
⅓ of wrong answers		15			16			17			18			19	
No. of wrong answers	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73
⅓ of wrong answers		20			21			22			23			24	
No. of wrong answers	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88
⅓ of wrong answers		25			26			27			28			29	
No. of wrong answers	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103
⅓ of wrong answers		30			31			32			33			34	
No. of wrong answers	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118
⅓ of wrong answers		35			36			37			38			39	
No. of wrong answers	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133
⅓ of wrong answers		40			41			42			43			44	
No. of wrong answers	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148
⅓ of wrong answers		45			46			47			48			49	

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APPENDIX III

CONVERSION TABLES

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PERSONNEL CLASSIFICATION TESTS

GENERAL CLASSIFICATION TEST 1a

CONVERSION TABLE.—*Raw score into Army grade and standard score*

(P. P. S. Form 1.04, October 16, 1940)

Raw score	Army grade	Standard score	Raw score	Army grade	Standard score	Raw score	Army grade	Standard score
150	I	161	99	II	119	49	IV	79
149	I	160	98	II	119	48	IV	78
148	I	159	97	II	118	47	IV	77
147	I	159	96	II	117	46	IV	76
146	I	158	95	II	116	45	IV	75
145	I	157	94	II	115	44	IV	75
144	I	156	93	II	115	43	IV	74
143	I	155	92	II	114	42	IV	73
142	I	154	91	II	113	41	IV	72
141	I	154	90	II	112	40	IV	71
140	I	153	89	II	111	39	IV	71
139	I	152	88	II	110	38	IV	70
138	I	151	87	II	110			
137	I	150				37	V	69
136	I	150	86	III	109	36	V	68
135	I	149	85	III	108	35	V	67
134	I	148	84	III	107	34	V	66
133	I	147	83	III	106	33	V	66
132	I	146	82	III	106	32	V	65
131	I	146	81	III	105	31	V	64
130	I	145	80	III	104	30	V	63
129	I	144	79	III	103	29	V	62
128	I	143	78	III	102	28	V	62
127	I	142	77	III	102	27	V	61
126	I	141	76	III	101	26	V	60
125	I	141	75	III	100	25	V	59
124	I	140	74	III	99	24	V	58
123	I	139	73	III	98	23	V	57
122	I	138	72	III	97	22	V	57
121	I	137	71	III	97	21	V	56
120	I	137	70	III	96	20	V	55
119	I	136	69	III	95	19	V	54
118	I	135	68	III	94	18	V	53
117	I	134	67	III	93	17	V	53
116	I	133	66	III	93	16	V	52
115	I	132	65	III	92	15	V	51
114	I	132	64	III	91	14	V	50
113	I	131	63	III	90	13	V	49
112	I	130				12	V	49
			62	IV	89	11	V	48
111	II	129	61	IV	88	10	V	47
110	II	128	60	IV	88	9	V	46
109	II	128	59	IV	87	8	V	45
108	II	127	58	IV	86	7	V	44
107	II	126	57	IV	85	6	V	44
106	II	125	56	IV	84	5	V	43
105	II	124	55	IV	84	4	V	42
104	II	124	54	IV	83	3	V	41
103	II	123	53	IV	82	2	V	40
102	II	122	52	IV	81	1	V	40
101	II	121	51	IV	80	0	V	39
100	II	120	50	IV	80			

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Record the form of the test ("a"), the *date*, and the *Army grade* and *standard score* on line 1 of space (17) on W. D., A. G. O. Form No. 20.

(17)		
TYPE	DATE	SCORE
1a 2	8/2/41	IV-86

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PERSONNEL CLASSIFICATION TESTS

GENERAL CLASSIFICATION TEST 1b

REVISED CONVERSION TABLE.—*Raw score into Army grade and standard score*
(UP Form 1.14a, July 15, 1942)

Raw score	Army grade	Standard score	Raw score	Army grade	Standard score	Raw score	Army grade	Standard score
150	I	157	99	II	118	50	IV	81
149	I	156				49	IV	80
148	I	156	98	II	117	48	IV	79
147	I	155	97	II	117	47	IV	79
146	I	154	96	II	116	46	IV	78
			95	II	115			
145	I	153	94	II	115	45	IV	77
144	I	153				44	IV	76
143	I	152	93	II	114	43	IV	76
142	I	151	92	II	113	42	IV	75
141	I	150	91	II	112	41	IV	74
140	I	149	90	II	112	40	IV	73
139	I	149	89	II	111	39	IV	73
138	I	148				38	IV	72
137	I	147	88	II	110	37	IV	71
136	I	146				36	IV	71
			87	III	109			
135	I	145	86	III	108	35	IV	70
134	I	145	85	III	108	34	IV	69
133	I	144	84	III	107	33	IV	68
132	I	143	83	III	106	32	IV	68
131	I	142				31	IV	67
			82	III	105			
130	I	142	81	III	104	30	IV	66
129	I	141	80	III	104	29	IV	65
128	I	140	79	III	103	28	IV	64
127	I	139	78	III	102	27	IV	64
126	I	139				26	IV	63
			77	III	101			
125	I	138	76	III	101	25	IV	62
124	I	137	75	III	100	24	IV	61
123	I	137	74	III	99	23	IV	60
122	I	136	73	III	98	22	IV	60
121	I	135						
			72	III	98			
120	I	134	71	III	97	21	V	59
119	I	134	70	III	96	20	V	58
118	I	133	69	III	95	19	V	57
117	I	132	68	III	95	18	V	57
116	I	131				17	V	56
			67	III	94			
115	I	131	66	III	93	16	V	55
114	I	130	65	III	93	15	V	54
			64	III	92	14	V	54
113	II	129	63	III	91	13	V	53
112	II	128				12	V	52
111	II	127	62	III	90			
110	II	127	61	III	90	11	V	51
109	II	126				10	V	51
			60	IV	89	9	V	50
108	II	125	59	IV	88	8	V	49
107	II	124	58	IV	87	7	V	49
106	II	123	57	IV	86	6	V	48
105	II	123	56	IV	86	5	V	47
104	II	122				4	V	46
			55	IV	85	3	V	45
103	II	121	54	IV	84	2	V	45
102	II	120	53	IV	83			
101	II	120	52	IV	82	1	V	44
100	II	119	51	IV	82	0	V	43

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PERSONNEL CLASSIFICATION TESTS

Record the form of the test ("b"), the *date*, and the *Army grade* and *standard score* on line 1 of space (17) on W. D., A. G. O. Form No. 20.

(17)		
TYPE	DATE	SCORE
1b	8/2/41	III–108
2		

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PERSONNEL CLASSIFICATION TESTS

GENERAL CLASSIFICATION TESTS 1c AND 1d

REVISED CONVERSION TABLE.—*Raw score into Army grade and standard score*

(UP Form 1.34a, July 15, 1942)

Raw score	Army grade	Standard score	Raw score	Army grade	Standard score	Raw score	Army grade	Standard score
140	I	163	90	II	129	44	III	93
139	I	162	89	II	129	43	III	92
138	I	162	88	II	128	42	III	91
137	I	161	87	II	128	41	III	90
136	I	161	86	II	127			
135	I	160	85	II	127	40	IV	89
134	I	160	84	II	126	39	IV	89
133	I	159	83	II	125	38	IV	88
132	I	159	82	II	124	37	IV	87
131	I	158	81	II	124	36	IV	86
130	I	158	80	II	123	35	IV	85
129	I	157	79	II	122	34	IV	83
128	I	157	78	II	121	33	IV	82
127	I	156	77	II	120	32	IV	81
126	I	156	76	II	120	31	IV	80
125	I	155	75	II	119	30	IV	79
124	I	155	74	II	119	29	IV	78
123	I	154	73	II	118	28	IV	77
122	I	154	72	II	117	27	IV	76
121	I	153	71	II	116	26	IV	75
120	I	153	70	II	115	25	IV	74
119	I	152	69	II	114	24	IV	73
118	I	152	68	II	114	23	IV	72
117	I	151	67	II	113	22	IV	71
116	I	151	66	II	112	21	IV	70
115	I	150	65	II	111	20	IV	69
114	I	150	64	II	110	19	IV	68
113	I	149				18	IV	67
112	I	149	63	III	109	17	IV	66
111	I	148	62	III	109	16	IV	65
110	I	147	61	III	108	15	IV	64
109	I	146	60	III	108	14	IV	63
108	I	145	59	III	107	13	IV	62
107	I	144	58	III	106	12	IV	61
106	I	143	57	III	105	11	IV	60
105	I	142	56	III	104			
104	I	141	55	III	103	10	V	59
103	I	140	54	III	102	9	V	58
102	I	140	53	III	101	8	V	57
101	I	139	52	III	100	7	V	56
100	I	139	51	III	99	6	V	54
99	I	138	50	III	99	5	V	52
98	I	137	49	III	98	4	V	50
97	I	136	48	III	97	3	V	48
96	I	135	47	III	96	2	V	46
95	I	134	46	III	95	1	V	44
94	I	133	45	III	94	0	V	42
93	I	132						
92	I	131						
91	I	130						

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PERSONNEL CLASSIFICATION TESTS

Record the form of the test ("c" or "d"), the *date*, and the *Army grade* and *standard score* on line 1 of space (17) on W. D. A. G. O. Form No. 20.

(17)		
TYPE	DATE	SCORE
1c	10/10/41	II-126
2		

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PERSONNEL CLASSIFICATION TESTS

NON-LANGUAGE TEST 2abc

CONVERSION TABLE.—*Total raw score into Army grade and standard score*

(P.R. Form 2.04)

Grade I	
Raw score	**Standard score**
367–365	161
364–359	160
358–354	159
353–349	158
348–343	157
342–338	156
337–332	155
331–327	154
326–322	153
321–316	152
315–311	151
310–306	150
305–300	149
299–295	148
294–289	147
288–284	146
283–279	145
278–273	144
272–268	143
267–262	142
261–257	141
256–252	140
251–246	139
245–241	138
240–236	137
235–230	136
229–225	135
224–219	134
218–214	133
213–209	132
208–203	131
202–200	130

Grade II	
199	129
198	128
196–195	127
194–193	126
192–191	125
190	124
189	123
187–186	122
185–184	121
183	120
182	119

Grade II	
180–179	118
178–177	117
176–175	116
174	115
173–172	114
171–170	113
169–168	112
167–166	111
165	110

Grade III	
164	109
163–162	108
161	107
160–159	106
158	105
157–156	104
155	103
154–153	102
152	101
151–150	100
149–148	99
147	98
146–145	97
144	96
143–142	95
141–140	94
139	93
138	92
137–136	91
135	90

Grade IV	
134	89
133	88
132–131	87
130	86
129	85
128	84
127–126	83
125	82
124	81
123	80

Grade IV	
Raw score	**Standard score**
122–121	79
120	78
119	77
118–117	76
116	75
115	74
114	73
113–112	72
111	71
110	70

Grade V	
109–108	69
107–104	68
103–100	67
99–97	66
96–93	65
92–90	64
89–86	63
85–82	62
81–79	61
78–75	60
74–71	59
70–68	58
67–64	57
63–60	56
59–57	55
56–53	54
52–50	53
49–46	52
45–42	51
41–39	50
38–35	49
34–31	48
30–28	47
27–24	46
23–20	45
19–16	44
15–13	43
12–10	42
9–6	41
5–2	40
1–0	39

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On line 2 of space (17) of W. D., A. G. O. Form No. 20, record *Army grade* and *standard score* as:

(17)		
TYPE	DATE	SCORE
1 b	4/2/41	V–60
2 abc	4/3/41	IV–83

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PERSONNEL CLASSIFICATION TESTS

HIGHER EXAMINATION H–1

CONVERSION TABLE.—*Raw score into Army grade and standard score*

(UP Form H .14)

Raw score	Army grade	Standard score	Raw score	Army grade	Standard score	Raw score	Army grade	Standard score
140	I	165	94	I	146	49	II	122
139	I	165	93	I	145	48	II	122
138	I	165	92	I	145	47	II	121
137	I	164	91	I	144	46	II	121
136	I	164	90	I	144	45	II	120
135	I	164	89	I	143	44	II	119
134	I	163	88	I	142	43	II	119
133	I	163	87	I	142	42	II	118
132	I	163	86	I	141	41	II	118
131	I	162	85	I	141	40	II	117
130	I	162	84	I	140	39	II	117
129	I	162	83	I	140	38	II	116
128	I	161	82	I	139	37	II	115
127	I	161	81	I	139	36	II	115
126	I	161	80	I	138	35	II	114
125	I	160	79	I	138	34	II	113
124	I	160	78	I	137	33	II	113
123	I	160	77	I	137	32	II	112
122	I	159	76	I	137	31	II	112
121	I	159	75	I	136	30	II	111
120	I	159	74	I	136	29	II	110
119	I	158	73	I	135	28	II	110
118	I	158	72	I	135			
117	I	158	71	I	134	27	III	109
116	I	157	70	I	134	26	III	108
115	I	157	69	I	133	25	III	107
114	I	156	68	I	133	24	III	106
113	I	156	67	I	133	23	III	106
112	I	155	66	I	132	22	III	105
111	I	155	65	I	132	21	III	104
110	I	154	64	I	131	20	III	103
109	I	154	63	I	131	19	III	103
108	I	153	62	I	131	18	III	102
107	I	153	61	I	130	17	III	101
106	I	152				16	III	100
105	I	152	60	II	129	15	III	99
104	I	151	59	II	128	14	III	98
103	I	151	58	II	128	13	III	97
102	I	150	57	II	127	12	III	96
101	I	150	56	II	127	11	III	95
100	I	149	55	II	126	10	III	94
99	I	149	54	II	125	9	III	92
98	I	148	53	II	125	8	III	91
97	I	148	52	II	124	7	III	90
96	I	147	51	II	123			
95	I	146	50	II	123			

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PERSONNEL CLASSIFICATION TESTS

HIGHER EXAMINATION H–2

CONVERSION TABLE.—*Raw score into Army grade and standard score*

(UP Form H .24)

Raw score	Army grade	Standard score	Raw score	Army grade	Standard score	Raw score	Army grade	Standard score
140	I	165	93	I	144	47	II	118
139	I	165	92	I	143	46	II	118
138	I	165	91	I	143	45	II	117
137	I	164	90	I	142	44	II	117
136	I	164	89	I	141	43	II	116
135	I	164	88	I	141	42	II	116
134	I	163	87	I	140	41	II	115
133	I	163	86	I	140	40	II	114
132	I	163	85	I	139	39	II	114
131	I	162	84	I	139	38	II	113
130	I	162	83	I	138	37	II	113
129	I	162	82	I	138	36	II	112
128	I	161	81	I	137	35	II	111
127	I	161	80	I	137	34	II	111
126	I	160	79	I	136	33	II	110
125	I	160	78	I	136	32	II	110
124	I	159	77	I	135			
123	I	159	76	I	135	31	III	109
122	I	158	75	I	134	30	III	109
121	I	158	74	I	134	29	III	108
120	I	157	73	I	133	28	III	107
119	I	157	72	I	133	27	III	107
118	I	156	71	I	132	26	III	106
117	I	156	70	I	132	25	III	106
116	I	155	69	I	131	24	III	105
115	I	155	68	I	131	23	III	105
114	I	154	67	I	130	22	III	104
113	I	154	66	I	130	21	III	104
112	I	153				20	III	103
111	I	153	65	II	129	19	III	102
110	I	152	64	II	129	18	III	102
109	I	152	63	II	128	17	III	101
108	I	151	62	II	127	16	III	101
107	I	151	61	II	127	15	III	100
106	I	150	60	II	126	14	III	99
105	I	150	59	II	126	13	III	98
104	I	149	58	II	125	12	III	98
103	I	149	57	II	125	11	III	97
102	I	148	56	II	124	10	III	96
101	I	148	55	II	123	9	III	95
100	I	147	54	II	123	8	III	94
99	I	147	53	II	122	7	III	93
98	I	146	52	II	121	6	III	92
97	I	146	51	II	121	5	III	91
96	I	145	50	II	120	4	III	90
95	I	145	49	II	120			
94	I	144	48	II	119			

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PERSONNEL CLASSIFICATION TESTS

WOMEN'S CLASSIFICATION TEST, WCT–1, X–2 (MENTAL ALERTNESS TEST–1, X2)

CONVERSION TABLE.—*Raw score into Army grade and standard score*

(UP Form WMA .14, May 26, 1942)

Raw score	Army grade	Standard score	Raw score	Army grade	Standard score	Raw score	Army grade	Standard score
140	I	161	92	II	120	45	IV	71
139	I	160	91	II	119	44	IV	70
138	I	158	90	II	119			
137	I	157	89	II	118			
136	I	155	88	II	117	43	V	69
135	I	154	87	II	116	42	V	68
134	I	152	86	II	116	41	V	67
133	I	151	85	II	115	40	V	66
132	I	149	84	II	114	39	V	65
131	I	148	83	II	114	38	V	64
130	I	148	82	II	113	37	V	63
129	I	147	81	II	113	36	V	62
128	I	146	80	II	112	35	V	61
127	I	146	79	II	111	34	V	60
126	I	145	78	II	110	33	V	59
125	I	144				32	V	58
124	I	144	77	III	109	31	V	57
123	I	143	76	III	108	30	V	56
122	I	142	75	III	107	29	V	55
121	I	141	74	III	106	28	V	54
120	I	140	73	III	105	27	V	53
119	I	139	72	III	103	26	V	52
118	I	138	71	III	102	25	V	51
117	I	137	70	III	101	24	V	51
116	I	136	69	III	99	23	V	50
115	I	135	68	III	98	22	V	50
114	I	134	67	III	97	21	V	49
113	I	133	66	III	95	20	V	49
112	I	133	65	III	94	19	V	48
111	I	132	64	III	93	18	V	48
110	I	131	63	III	92	17	V	47
109	I	130	62	III	91	16	V	47
108	I	130	61	III	90	15	V	46
						14	V	46
						13	V	45
107	II	129	60	IV	89	12	V	45
106	II	129	59	IV	88	11	V	44
105	II	129	58	IV	87	10	V	44
104	II	128	57	IV	86	9	V	43
103	II	128	56	IV	85	8	V	43
102	II	127	55	IV	84	7	V	42
101	II	126	54	IV	83	6	V	42
100	II	126	53	IV	82	5	V	41
99	II	125	52	IV	81	4	V	41
98	II	124	51	IV	80	3	V	40
97	II	123	50	IV	78	2	V	40
96	II	123	49	IV	77	1	V	39
95	II	122	48	IV	76	0	V	39
94	II	121	47	IV	74			
93	II	121	46	IV	73			

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PERSONNEL CLASSIFICATION TESTS

MECHANICAL APTITUDE TEST MA–1

(P.R. Form MA .14, April 15, 1941)

CONVERSION TABLE.—*Subtest scores into subtest Army grades*

SUBTEST 1		SUBTEST 2		SUBTEST 3	
Scores	*Grade*	*Scores*	*Grade*	*Scores*	*Grade*
37–45	I	44–45	I	30–45	I
30–36	II	32–43	II	22–29	II
21–29	III	19–31	III	14–21	III
13–20	IV	7–18	IV	7–13	IV
0–12	V	0– 6	V	0– 6	V

CONVERSION TABLE.—*Total raw score into Army grade and standard score*

Raw score	Army grade	Standard score	Raw score	Army grade	Standard score	Raw score	Army grade	Standard score
135	I	155	89	II	117	44	IV	81
134	I	154	88	II	117	43	IV	80
133	I	153	87	II	116	42	IV	79
132	I	152	86	II	115	41	IV	78
131	I	152	85	II	114	40	IV	77
130	I	151	84	II	113	39	IV	76
129	I	150	83	II	112	38	IV	76
128	I	149	82	II	112	37	IV	75
127	I	148	81	II	111	36	IV	74
126	I	148	80	II	110	35	IV	73
125	I	147				34	IV	72
124	I	146	79	III	109	33	IV	72
123	I	145	78	III	108	32	IV	71
122	I	144	77	III	108	31	IV	70
121	I	143	76	III	107			
120	I	143	75	III	106	30	V	69
119	I	142	74	III	105	29	V	68
118	I	141	73	III	104	28	V	68
117	I	140	72	III	103	27	V	67
116	I	139	71	III	103	26	V	66
115	I	139	70	III	102	25	V	65
114	I	138	69	III	101	24	V	64
113	I	137	68	III	100	23	V	63
112	I	136	67	III	99	22	V	63
111	I	135	66	III	99	21	V	62
110	I	134	65	III	98	20	V	61
109	I	134	64	III	97	19	V	60
108	I	133	63	III	96	18	V	59
107	I	132	62	III	95	17	V	59
106	I	131	61	III	94	16	V	58
105	I	130	60	III	94	15	V	57
104	I	130	59	III	93	14	V	56
			58	III	92	13	V	55
103	II	129	57	III	91	12	V	54
102	II	128	56	III	90	11	V	54
101	II	127	55	III	90	10	V	53
100	II	126				9	V	52
99	II	125	54	IV	89	8	V	51
98	II	125	53	IV	88	7	V	50
97	II	124	52	IV	87	6	V	50
96	II	123	51	IV	86	5	V	49
95	II	122	50	IV	85	4	V	48
94	II	121	49	IV	85	3	V	47
93	II	121	48	IV	84	2	V	46
92	II	120	47	IV	83	1	V	45
91	II	119	46	IV	82	0	V	45
90	II	118	45	IV	81			

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PERSONNEL CLASSIFICATION TESTS

On W. D., A. G. O. Form No. 20 use space (18), line 2. Under TEST put MA–1 and Army grades on subtests (in order 1, 2, 3). Under SCORE put Army grade and standard score on *total test.*

(18) APTITUDE TESTS			
TEST	SCORE	TEST	SCORE
1		3	
2 MA 1 II III II	II–115	4	

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PERSONNEL CLASSIFICATION TESTS

MECHANICAL APTITUDE TEST MA–2, 3

(S.T. Form MA .34, January 1, 1942)

CONVERSION TABLE.—*Part scores into part Army grades*

PART I		PART II		PART III	
Scores	*Grade*	*Scores*	*Grade*	*Scores*	*Grade*
38–50	I	38–45	I	39–45	I
27–37	II	27–37	II	31–38	II
18–26	III	17–26	III	22–30	III
10–17	IV	9–16	IV	14–21	IV
0– 9	V	0– 8	V	0–13	V

CONVERSION TABLE.—*Total raw score into Army grade and standard score*

Raw score	Army grade	Standard score	Raw score	Army grade	Standard score	Raw score	Army grade	Standard score
140	I	155	92	II	117	45	IV	78
139	I	154	91	II	117	44	IV	77
138	I	153	90	II	116	43	IV	76
137	I	152	89	II	115	42	IV	75
136	I	151	88	II	114	41	IV	74
135	I	151	87	II	113	40	IV	73
134	I	150	86	II	112	39	IV	72
133	I	150	85	II	111	38	IV	71
132	I	149	84	II	110	37	IV	70
131	I	148						
130	I	147	83	III	109	36	V	69
129	I	146	82	III	108	35	V	69
128	I	145	81	III	107	34	V	68
127	I	144	80	III	106	33	V	67
126	I	142	79	III	106	32	V	67
125	I	141	78	III	105	31	V	66
124	I	140	77	III	105	30	V	65
123	I	139	76	III	104	29	V	64
122	I	138	75	III	104	28	V	63
121	I	138	74	III	103	27	V	63
120	I	137	73	III	102	26	V	62
119	I	137	72	III	101	25	V	61
118	I	136	71	III	100	24	V	61
117	I	135	70	III	99	23	V	60
116	I	135	69	III	99	22	V	59
115	I	134	68	III	98	21	V	58
114	I	133	67	III	97	20	V	57
113	I	132	66	III	96	19	V	57
112	I	132	65	III	95	18	V	56
111	I	131	64	III	95	17	V	56
110	I	131	63	III	94	16	V	55
109	I	130	62	III	93	15	V	55
			61	III	92	14	V	54
108	II	129	60	III	91	13	V	54
107	II	129	59	III	90	12	V	53
106	II	128				11	V	53
105	II	128	58	IV	89	10	V	53
104	II	127	57	IV	88	9	V	52
103	II	126	56	IV	87	8	V	52
102	II	125	55	IV	86	7	V	51
101	II	125	54	IV	86	6	V	51
100	II	124	53	IV	85	5	V	50
99	II	123	52	IV	84	4	V	49
98	II	122	51	IV	83	3	V	48
97	II	122	50	IV	82	2	V	47
96	II	121	49	IV	81	1	V	46
95	II	120	48	IV	80	0	V	45
94	II	119	47	IV	80			
93	II	118	46	IV	79			

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PERSONNEL CLASSIFICATION TESTS

On W. D., A. G. O. Form No. 20 use space (18), line 2. Under TEST put form and Army grades on parts (in order 1, 2, 3). Under SCORE put Army grade and standard score on *total test.*

(18)	APTITUDE TESTS		
TEST	SCORE	TEST	SCORE
1		3	
2 MA 2 I II I	I–131	4	

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PERSONNEL CLASSIFICATION TESTS

TENTATIVE CONVERSION TABLE CLERICAL APTITUDE TEST CA–1
[P.R. FORM CA .14]

(Personnel Research Section, Adjutant General's Office)

Grade I	
Raw score	Standard score
194 and above	165
193–192	164
191	163
190–189	162
188	161
187–186	160
185–184	159
183	158
182–181	157
180	156
179–178	155
177–176	154
175	153
174–173	152
172–171	151
170	150
169–168	149
167	148
166–165	147
164–163	146
162	145
161–160	144
159–158	143
157	142
156–155	141
154	140
153–152	139
151–150	138
149	137
148–147	136
146–145	135
144	134
143–142	133
141	132
140–139	131
138–137	130

GRADE II	
136	129
135–134	128

Grade II	
Raw score	Standard score
133	127
132–131	126
130–129	125
128	124
127–126	123
125–124	122
123	121
122–121	120
120	119
119–118	118
117–116	117
115	116
114–113	115
112–111	114
110	113
109–108	112
107	111
106–105	110

Grade III	
104–103	109
102	108
101–100	107
99–98	106
97	105
96–95	104
94	103
93–92	102
91–90	101
89	100
88–87	99
86	98
85–84	97
83–82	96
81	95
80–79	94
78–77	93
76	92
75–74	91
73	90

Grade IV	
Raw score	Standard score
72–71	89
70–69	88
68	87
67–66	86
65–64	85
63	84
62–61	83
60	82
59–58	81
57–56	80
55	79
54–53	78
52–51	77
50	76
49–48	75
47	74
46–45	73
44–43	72
42	71
41–40	70

Grade V	
39	69
38–37	68
36–35	67
34	66
33–32	65
31–30	64
29	63
28–27	62
26	61
25–24	60
23–22	59
21	58
20–19	57
18–17	56
16	55
15–14	54
13	53
12–11	52
10–9	51
8 and below	50

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PERSONNEL CLASSIFICATION TESTS

RADIOTELEGRAPH OPERATOR APTITUDE TEST, ROA–1, X–1

CONVERSION TABLE.—*Raw scores into Army grade and standard score*

(UP Form ROA .14, June 1, 1942)

Total raw score	Army grade	Standard score	Total raw score	Army grade	Standard score	Total raw score	Army grade	Standard score
156	I	156	114	II	114	74	IV	74
154	I	154	112	II	112	72	IV	72
152	I	152	110	II	110	70	IV	70
150	I	150						
148	I	148	108	III	108	68	V	68
146	I	146	106	III	106	66	V	66
144	I	144	104	III	104	64	V	64
142	I	142	102	III	102	62	V	62
140	I	140	100	III	100	60	V	60
138	I	138	98	III	98	58	V	58
136	I	136	96	III	96	56	V	56
134	I	134	94	III	94	54	V	54
132	I	132	92	III	92	52	V	52
130	I	130	90	III	90	50	V	50
						48	V	48
128	II	128	88	IV	88	46	V	46
126	II	126	86	IV	86	44	V	44
124	II	124	84	IV	84	42	V	42
122	II	122	82	IV	82	40	V	40
120	II	120	80	IV	80	Below 40	V	38
118	II	118	78	IV	78			
116	II	116	76	IV	76			

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APPENDIX IV

EXPECTANCY TABLES

1. The chances for success in certain Army schools can be obtained from a man's grade on any one of a number of tests. Table I has been set up to show predictions of the probability of success in various courses based on the following tests:

a. General classification test.
b. Higher Examination, H–1 and H–2.
c. Mechanical Aptitude Test, MA–1.
d. Clerical Aptitude Test, CA–1.
e. Radiotelegraph Operator Aptitude Test, ROA–1, X–1.

2. Table I has been set up to predict whether a man will get an average-or-better grade in the various courses. It would be more desirable to predict whether a man will pass or fail the courses. This information is being collected but it is not yet available except for the radiotelegraph operator aptitude test, for which it is given in table II.

3. Table I shows the chances in 100 that a man making a given Army grade on the tests listed will get an average-or-better grade on the courses. Table II deals only with the ROA test and predicts the chances of passing or failing a radio course for a given score. All the data on the ROA test is for ROA–1, X–1, and is expressed in terms of standard scores.

4. The data in table I have been grouped according to tests. In both tables, there are four columns of information. The left-hand column lists the courses and the second column the schools in which the data were obtained. Since courses of instruction and personnel may differ from school to school, it is helpful to know the school under consideration. The third column gives the number of men in the group on which the prediction is based. In the fourth column, headed "Army grades," are given figures showing the chances in 100 of success in the course for different Army grades on the test.

5. The tables may be read as in the following illustration for the first item of table I. This deals with scores on the General Classification Test used in predicting success in airplane-mechanic training at Chanute Field. A man who gets an Army grade of V on the general classification test has only 6 chances in 100 of getting an average-or-better rating as an airplane mechanic; even if he gets an Army grade of IV, he has only 21 chances in 100. He must fall in Grade III to have 44 chances in 100 of succeeding. If he should have

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an Army grade as high as I, however, he would have 90 chances in 100 of getting an average-or-better rating.

6. *Wherever possible, it is advisable to use an aptitude test rather than the General Classification Test in selecting men for training in specific jobs.* The mechanical aptitude test should be used for mechanical jobs and the clerical aptitude test for clerical. High-standing men on the general classification test are needed for many other jobs; and as the relation between the mechanical and clerical aptitude tests and most mechanical and clerical jobs is as satisfactory as that between the General Classification Test and these jobs, the use of an aptitude test alone is justified.

7. In reading these tables, remember that the expectancy figures are probabilities rather than certainties. In every case, use these test data in combination with other evidences of fitness or unfitness for a given type of work.

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TABLE I.—Showing the chances in 100 that a man making a given Army grade will obtain an average-or-better grade in the course or combination of courses.

Course	School	No.	Army grades				
			V	IV	III	II	I
General Classification Test			*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Airplane mechanics—average grade in seven courses.	Chanute Field—airplane mechanics' study.	99	6	21	44	69	90
Auto mechanics—single course	Fort Knox—wheeled vehicle department.	148	17	28	37	48	62
ACTS clerical course—weighted grades	Lowry Field—Air Corps clerical study	123	1	2	10	37	82
Clerical course—final grades	Fort Knox	94	1	3	15	41	79
Electrical communication—final grades	Fort Sill—communication	167	2	25	65	93	98
Combined electrical communication—practical grades.	Fort Sill—communication	167	25	41	55	69	83
Electricity and magnetism	Fort Monmouth—Signal Corps School—communication.	79	2	10	24	44	71
Gun mechanics—average grades	Fort Knox	66	1	3	17	50	88
Motor mechanics—final grades	Camp Lee	318	6	35	71	94	99
Radio—average grade in five courses	Scott Field—radio operators and mechanics.	86	1	2	10	42	88
Radio school—6 weeks code speed	Camp Croft	188	1	7	20	43	74
Tank mechanics—final grades	Fort Knox	237	3	13	42	54	81
Wire communication—combined grades	Fort Sill—communication	444	15	38	61	81	95
Higher Examination H–1, H–2							
Officers	Fort Belvoir—officer candidates	67	------	------	10	33	83
Mechanical Aptitude Test MA–1							
Advanced mechanics—combined	Holabird Quartermaster Motor Transport School.	111	30	40	50	59	70
Auto mechanics	Fort Knox—wheeled vehicle department.	148	5	16	32	52	74
Clerical course—final grades	Fort Knox	94	5	17	35	59	82

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Electricity, principles of—a-c and d-c combined.	Fort Monmouth—Signal Corps School	95	1	2	13	44	84
Engineer—combined	Fort Belvoir—engineer school	110	12	24	38	54	72
Gun mechanics—average grades	Fort Knox	66	3	15	34	62	86
Motor mechanics—final grades	Camp Lee	245	9	33	62	87	98
Motor mechanics—single course	Fort Benning—Infantry School—enlisted motor mechanics course.	323	25	34	42	52	63
Tank mechanics—final grades	Fort Knox	237	1	7	27	66	**93**
Clerical Aptitude Test CA–1							
Clerical—average of two courses	Raritan ordnance school	84	7	20	43	68	87
Clerical school—weighted grades	Fort Logan, Lowry Field—clerical course.	123	14	23	36	50	65
Clerical	Fort Knox—clerical course	81	2	11	33	64	88
Clerical course—final grade	Fort Knox	94	18	26	35	45	56
Radiotelegraph Operator Aptitude Test, ROA–1, X–1							
Radio operator's course—final code speed	Fort Benning	112	2	8	26	55	81
Radio school—6 weeks code speed	Camp Croft	188	4	14	36	63	85
Radio school—final grades	Fort Knox	721	11	25	46	68	85
Radio operator's course—hours to reach 10 wpm.	Fort Monmouth	199	27	35	45	55	64
Radio operator's course—hours to reach 5 wpm.	Fort Monmouth	88	6	16	34	56	76
Radio students—6 weeks code speed	Scott Field	375	2	10	28	54	79
Radio students—12 weeks code speed	Scott Field	366	3	10	28	54	79
Radio students—16 weeks code speed	Scott Field	352	5	14	31	54	75

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TABLE II.—Showing the chances in 100 that a man making a score in a stated score interval on the Radiotelegraph Operator Aptitude Test will pass the course.

Course	School	No.	Total passing	Below 80	80–99	100–119	120–139	140–156
			Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Radio operators (1)	Air Corps	324	41	23	31	42	35	70
Radio operators (2)	Air Corps	365	41	18	27	33	59	81
Radio operators (3)	Air Corps	961	71	46	55	72	84	96
Radio operators Class No. 1	Fort Benning	99	57	------	27	47	68	99
Radio operators Class No. 2	Fort Benning	100	71	------	47	60	86	94
Radio operators Class No. 3	Fort Benning	101	81	------	25	74	89	99
Radio operators Class No. 4	Fort Benning	98	64	------	30	54	74	99
Radio operators Class No. 5	Fort Benning	104	69	------	29	58	95	99
Radio operators Class No. 9	Fort Benning	112	87	------	70	84	93	99
Radio operators—combined classes 1–5, 9	Fort Benning	614	72	------	39	65	84	98
Radio operators	Fort Knox	97	88	75	79	95	94	99
Radio school	Fort Knox	721	79	52	67	86	94	99
Radio operators—combined groups	Fort Knox	818	80	57	69	87	95	99

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APPENDIX V

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[A. G. 062.11 (9-19-42).]

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