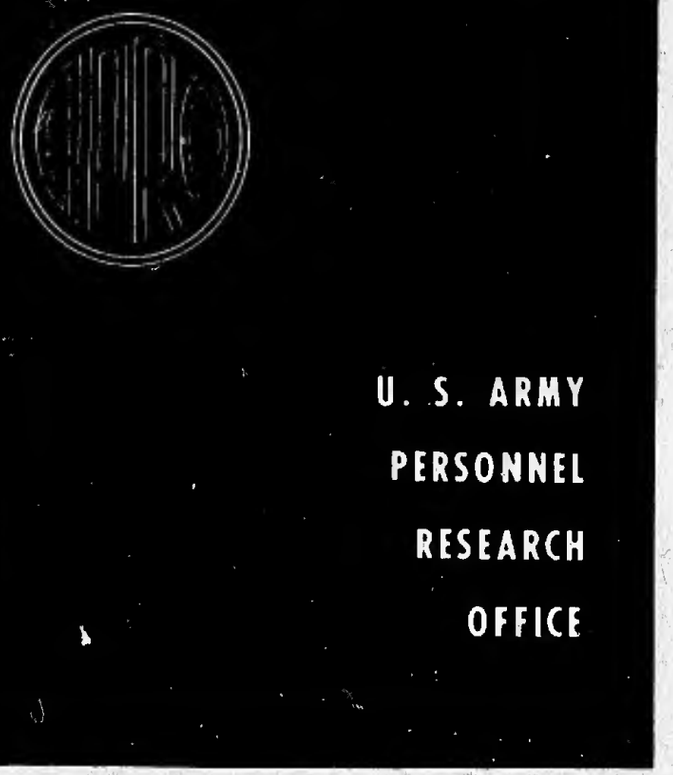
Technical Research Note 131

DEVELOPMENT OF LITERACY SCREENING SCALES FOR AFQT 7 AND 8 FAILURES



U. S. ARMY
PERSONNEL
RESEARCH
OFFICE

U. S. ARMY PERSONNEL RESEARCH OFFICE

An activity of the Chief, Research and Development

Charles S. Gersoni
Colonel, GS
Commanding

J. E. Uhlaner
Director, Research Laboratories

Hubert E. Brogden
Chief Scientist

Initial distribution of this report has been made by the U. S. Army Personnel Research Office. Additional copies may be obtained as follows. Department of Defense agencies and their contractors should address requests for additional copies to: Commander, Armed Services Technical Information Agency, ATTN: TIPDR, Arlington Hall Station, Arlington 12, Virginia. Other agencies and persons may obtain information on cost of microfilm or photostatic copies from: Office of Technical Services, Department of Commerce, Washington 25, D. C., ATTN: Technical Reports Section. Copies may also be obtained on loan from local depository libraries. A list of these libraries may be obtained from: Documents Expediting Project, Library of Congress, Washington 25, D. C. The mailing address of USAPRO is: U. S. Army Personnel Research Office, Washington 25, D. C.

AD 23/1, 28/4

U.S. Army Personnel Research Office, OCRD, DA
DEVELOPMENT OF LITERACY SCREENING SCALES FOR AFQT 7 and 8 FAILURES
by A. G. Bayroff and Alan A. Anderson. January 1963. Rept. on Induction a-32 Proj.--19 p. incl. 4 tables, 16 Ref. (USAPRO Technical Research Note No. 131)
(DA Project 0J95-60-001)

Unclassified Report

UNCLASSIFIED
Human Resources Research
--Personnel Measurement

Literacy screening devices (VA keys) have been used with operational forms of the Armed Forces Qualification Test (AFQT) to identify AFQT failures of various degrees of literacy. In the event of lowered standards of acceptance during mobilization, these scales would be available for categorizing those men who were sufficiently literate in English to go into basic training or who could become marginally literate with special literacy training. The present study describes the research by which literacy screening scales were developed for use with AFQT 7 and 8. Keys based on the easiest 24 items (half verbal and half arithmetic reasoning) of AFQT were selected and cutting scores set so as to classify as marginally literate the same proportion of input groups as did the prior VA keys for AFQT 5 and 6.

AD 23/1, 28/4

U.S. Army Personnel Research Office, OCRD, DA
DEVELOPMENT OF LITERACY SCREENING SCALES FOR AFQT 7 and 8 FAILURES
by A. G. Bayroff and Alan A. Anderson. January 1963. Rept. on Induction a-32 Proj.--19 p. incl. 4 tables, 16 Ref. (USAPRO Technical Research Note No. 131)
(DA Project 0J95-60-001)

Unclassified Report

UNCLASSIFIED
Human Resources Research
--Personnel Measurement

Literacy screening devices (VA keys) have been used with operational forms of the Armed Forces Qualification Test (AFQT) to identify AFQT failures of various degrees of literacy. In the event of lowered standards of acceptance during mobilization, these scales would be available for categorizing those men who were sufficiently literate in English to go into basic training or who could become marginally literate with special literacy training. The present study describes the research by which literacy screening scales were developed for use with AFQT 7 and 8. Keys based on the easiest 24 items (half verbal and half arithmetic reasoning) of AFQT were selected and cutting scores set so as to classify as marginally literate the same proportion of input groups as did the prior VA keys for AFQT 5 and 6.

AD 23/1, 28/4

U.S. Army Personnel Research Office, OCRD, DA
DEVELOPMENT OF LITERACY SCREENING SCALES FOR AFQT 7 and 8 FAILURES
by A. G. Bayroff and Alan A. Anderson. January 1963. Rept. on Induction a-32 Proj.--19 p. incl. 4 tables, 16 Ref. (USAPRO Technical Research Note No. 131)
(DA Project 0J95-60-001)

Unclassified Report

UNCLASSIFIED
Human Resources Research
--Personnel Measurement

Literacy screening devices (VA keys) have been used with operational forms of the Armed Forces Qualification Test (AFQT) to identify AFQT failures of various degrees of literacy. In the event of lowered standards of acceptance during mobilization, these scales would be available for categorizing those men who were sufficiently literate in English to go into basic training or who could become marginally literate with special literacy training. The present study describes the research by which literacy screening scales were developed for use with AFQT 7 and 8. Keys based on the easiest 24 items (half verbal and half arithmetic reasoning) of AFQT were selected and cutting scores set so as to classify as marginally literate the same proportion of input groups as did the prior VA keys for AFQT 5 and 6.

AD 23/1, 28/4

U.S. Army Personnel Research Office, OCRD, DA
DEVELOPMENT OF LITERACY SCREENING SCALES FOR AFQT 7 and 8 FAILURES
by A. G. Bayroff and Alan A. Anderson. January 1963. Rept. on Induction a-32 Proj.--19 p. incl. 4 tables, 16 Ref. (USAPRO Technical Research Note No. 131)
(DA Project 0J95-60-001)

Unclassified Report

UNCLASSIFIED
Human Resources Research
--Personnel Measurement

Literacy screening devices (VA keys) have been used with operational forms of the Armed Forces Qualification Test (AFQT) to identify AFQT failures of various degrees of literacy. In the event of lowered standards of acceptance during mobilization, these scales would be available for categorizing those men who were sufficiently literate in English to go into basic training or who could become marginally literate with special literacy training. The present study describes the research by which literacy screening scales were developed for use with AFQT 7 and 8. Keys based on the easiest 24 items (half verbal and half arithmetic reasoning) of AFQT were selected and cutting scores set so as to classify as marginally literate the same proportion of input groups as did the prior VA keys for AFQT 5 and 6.

Technical Research Note 131

DEVELOPMENT OF LITERACY SCREENING SCALES FOR AFQT 7 AND 8 FAILURES

A. G. Bayroff and Alan A. Anderson

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

Approved by

J. E. Uhlaner
Director, Research Laboratories

Hubert E. Brogden
Chief Scientist

Charles S. Gersoni
Colonel, GS
Commanding

Army Project Number
OJ95-60-001

Induction a-32

January 1963

USAPRO Technical Research Reports and Technical Research Notes are intended for sponsors of R&D tasks and other research and military agencies. Any findings ready for implementation at the time of publication are presented in the latter part of the Brief. Upon completion of a major phase of the task, formal recommendations for official action normally are conveyed to appropriate military agencies by Briefing or Disposition Form.

PREFACE

The present publication reports on a portion of the INPUT QUALITY Task, which is responsive to special requirements of the Department of Defense AFES Policy Board, the Assistant Secretary of Defense (Manpower), and the Deputy Chief of Staff for Personnel.

Congressional legislation has laid down the basis for procedures to screen service input so that those who lack military trainability may be rejected. Successive forms of the Armed Forces Qualification Test (AFQT) meet the requirements for an overall screening measure. The Army Qualification Battery (AQB) is a group of short tests to permit identification of specific abilities of men marginally acceptable on AFQT or of men who seek enlistment for specific training programs.

Current research embraces the following activities: (1) devising methods to increase the effectiveness of overall screening through new tests and test content; (2) improving the effectiveness of short tests for the differential measurement of aptitude areas for the middle ability level; (3) exploring the feasibility of very short, limited-range tests; and (4) devising new approaches to the detection of deliberate failures.

DEVELOPMENT OF LITERACY SCREENING SCALES FOR AFQT 7 AND 8 FAILURES

BRIEF

Requirement:

To develop literacy screening scales which would serve to identify, among AFQT 7 and 8 failures, those who are sufficiently literate in English to go directly into basic training in the event of lowering of standards during mobilization.

Procedure:

Special scoring devices were constructed based on the easiest verbal and arithmetic reasoning items of AFQT 7 and 8. The scales were tried out on appropriate input groups.

Findings:

The literacy scales for both forms of AFQT were as effective as previous scales in categorizing AFQT failures with respect to literacy sufficient to get along in basic training.

Utilization of Findings:

Army procedures for screening AFQT failures for literacy were suspended in mid-1962 because of the additional screening which had been instituted for men in the AFQT 10 - 30 percentile range. The scales are available for use if required in event of mobilization.

DEVELOPMENT OF LITERACY SCREENING SCALES FOR AFQT 7 AND 8 FAILURES

CONTENTS

TABLES

DEVELOPMENT OF LITERACY SCREENING SCALES FOR AFQT 7 AND 8 FAILURES

BACKGROUND

Since 1951, the minimum qualifying score for induction has been a percentile score of 10 on the Armed Forces Qualification Test (AFQT), as established by Congressional legislation. By and large, examinees who fail to achieve a percentile score of 10 perform so poorly in basic combat training and subsequently that they are properly rejected. However, some of these examinees fail because of an inability to read the verbal ability and arithmetic reasoning items which make up half the test. Such failures are likely to be marginal in overall ability--success on the other half of AFQT, which does not contain reading matter, enables them to pass the test.

In the event of mobilization, it is possible that some AFQT failures would be called up for service. It would then be desirable to distinguish those failures who are sufficiently literate in English from those who would need special training to become marginally literate, and also from those who could not become marginally literate even with special training.[1/] To accomplish this purpose, literacy screening scales have been developed for the various forms of AFQT. Each scale is a group of verbal and arithmetic items within the AFQT for which a separate English literacy score is obtained. Those Selective Service registrants who, although failing AFQT, obtained a passing score on the literacy scale, were considered sufficiently literate to require little or no literacy training prior to basic training in the event of mobilization. A cutting score has been established so that approximately one-fourth of the AFQT failures were placed in the marginally literate (V-1) standby category. Those who failed were screened further by means of the Nonlanguage Qualification Test.

The literacy screening scales carry no implications as to the reasons for illiteracy--the illiterates may be of foreign cultures who have not had opportunity to learn to read English adequately; they may be natives who have lived in unusual circumstances which did not permit learning to read English adequately; or they may have lacked ability to learn to read English adequately.

1/ The Army has for a number of years been screening AFQT failures for literacy. However, the practice has been suspended (DA Circular 611-5, 5 June 1962) because of the additional screening of men who score in the 10 - 30 percentile range. Rejects from the additional screening constitute the preferred group to be considered for induction if mobilization needs should dictate a lowering of the standards.

The purpose of the present report is to describe the research by which literacy screening scales were developed for use with AFQT 7 and 8.

RATIONALE AND OBJECTIVE

The literacy screening scales for AFQT 7 and 8, as the comparable scales for prior forms of the AFQT, were composed of the easiest verbal and arithmetic reasoning items--hence their designation as VA keys. Failure to respond correctly to these easy items has been interpreted as the result of failure to read the simple English of the items. Obviously, inclusion of more difficult items would result in failures because of lack of ability as well as because of lack of literacy in English. On the basis of this rationale, VA keys have been assumed to be valid measures of low level English literacy. No direct validation studies have been possible since AFQT failures are rejected and hence not available for further study.

A specific objective of the present research was to develop VA keys for AFQT 7 and 8 and to establish cutting scores which would classify the same proportion as marginally literate as did the VA keys for AFQT 5 and 6. If possible, one score for both forms of the new AFQT would be established.

A secondary objective was to determine if keys composed of fewer items would classify the same proportion in Category V-1 as did keys for AFQT 5 and 6. VA keys have been composed of 30 items (the 15 easiest verbal and the 15 easiest arithmetic reasoning items) on the assumption that the ability level reached was not excessive for low level examinees and at the same time would provide enough ceiling to insure stability of the lower scores. To investigate the possibility that fewer items would provide the same proportions as did the 30-item keys, three experimental scales were constructed for each AFQT form, composed of the easiest 16, 24, and 32 items (half verbal, half arithmetic reasoning). Since AFQT items are arranged in cycles of four items of each type, the multiples of four made possible the inclusion of complete cycles.

METHOD

Sampling

For the development and selection of the scales, cases of true failures on both AFQT 5-6 and AFQT 7-8 were available for analysis. These cases had been identified as true failures by operational terminal screening procedures and consisted of a portion of the cases collected earlier for the development of scoring devices to detect deliberate failures on AFQT 7 and 8. The cases used had been tested with the operational AFQT 5-6 and with the new AFQT 7-8; scores were also available on the VA keys for AFQT 5-6. No cases from the standardization or equivalence studies of AFQT 7 and 8 were used. The answer sheets of 263 failures on AFQT 7 and of 243 failures on AFQT 8 were rescored (R - W/3) with the experimental keys.

As a check on their effectiveness, the experimental keys were applied to answer sheets from other input samples. All cases had previously been tested with the operational AFQT 5-6 and came in the main from standardization and equivalence studies of AFQT 7 and 8. Cases from additional studies of AFQT 7 and 8 were included--cases not used in the selection of the VA keys. All cases had been identified as true failures by operational terminal screening procedures. Scores on the operational VA keys were not available for these cases.

Statistical Analysis

Selection of keys. The data involved in the selection of keys were subjected to two types of analysis. The first was the preparation of distributions and the computation of the cumulative percentage at each raw score for comparison with the cumulative percentage of passers at the cutting score established for the operational VA keys for AFQT 5 and 6. The second was the computation of the product moment coefficients of correlation between scores on each of the experimental keys and total score on the corresponding form of AFQT. Although these were part-whole correlation coefficients and therefore spuriously high, they would serve, nevertheless, as estimates of independence of the several keys for comparison with corresponding estimates for the AFQT 5 and 6 keys. In addition, correlation coefficients between the experimental keys and the AFQT 5 and 6 VA keys were computed. These were expected to be low, since the keys represent short tests which extend beyond the ability level of AFQT failures.

Tryout of keys. The same analysis--with one exception--was made of the data from the additional input samples as of data from the key selection samples, namely, cumulative percentages of passers on the experimental keys and correlation between experimental keys and AFQT. Since AFQT 5 and 6 VA scores were not available in the additional samples, no analysis involving them could be made.

RESULTS

Distribution of Scores

Cumulative percentages computed in the distributions of the two sets of keys are shown in Table 1. Since the selection of keys for operational use was to be based on their performance near the operational cutting score of the AFQT 5 and 6 keys (raw score 6), only the cumulative percentages for the raw scores adjacent to a raw score of 6 are presented. Table 1 also presents the distribution of the AFQT 5 and 6 VA keys in the same samples.

In these samples (which consisted of examinees who had failed both AFQT 5-6 and AFQT 7-8), both the 24-item and the 32-item experimental keys yielded cumulative percentages reasonably close to those obtained in the same samples with the AFQT 5 and 6 VA keys (19% and 30% vs 21% and 26%). Percentages resulting from the experimental keys were also

Table 1

DISTRIBUTION OF SCORES (CUMULATIVE PERCENTAGES) ON EXPERIMENTAL LITERACY SCALES

No. of Items	AFQT Sample	N	Raw Scores (R minus $\frac{W}{3}$) 3	4	5	6[a]	7	8	9
Experimental VA Keys, AFQT 7 and 8									
16	7	263	52	36	23	16	15	9	5
24	7	263	51	40	27	<u>19</u>	17	10	6
32	7	263	49	40	29	20	18	12	8
16	8	243	61	49	36	26	22	13	5
24	8	243	62	49	39	<u>30</u>	26	17	12
32	8	243	55	50	38	28	26	17	13
Operational VA Keys, AFQT 5 and 6									
30	7	263	37	31	27	21	17	11	10
30	8	243	48	38	33	26	21	15	12
Operational VA Keys, AFQT 5 and 6									
30	5	157	(From Mundy, et al, 1957)			28			
30	6	153				27			

[a]Underlined entries indicate cumulative percentages for raw score 6 on 24-item keys for AFQT 7 and 8 selected for operational use.

reasonably close to those in the samples in which the operational VA keys for AFQT 5 and 6 were developed (27% and 28%; Mundy, et al, 1957). Since little was to be gained from the longer keys, the 24-item keys were selected for operational use. If cutting scores could be based on relationship to outside variables rather than absolute proportions, the shorter 16-item keys might be in practice as effective as the 24-item keys.

Other cutting scores on the experimental keys departed further from the operational keys or showed greater discrepancies between Form 7 and Form 8 than did the selected keys and scores. Also, since those who passed would be classified as marginally literate without further testing or special training, it was considered unwise to accept too many.

Correlation of Experimental Keys With Other Variables

Product moment correlation coefficients between the experimental VA keys and total AFQT 7 and 8 scores are shown in Table 2. The coefficients (.38 - .43) were of the same magnitude as those for the operational AFQT 5 and 6 VA keys vs total AFQT 5 and 6 (.42 and .37; Mundy, et al, 1957). As mentioned earlier, these coefficients are spuriously high since they represent part-whole correlations; hence, it was concluded that what the keys measure is different from what is measured by the AFQT 7 and 8 as a whole. This conclusion is supported by the practically zero correlation of the keys with AFQT 5 and 6 total score ($r = .04 - .13$) which are not part-whole correlation coefficients. The keys, accordingly, may be said to measure ability to read relatively simple English, since the tool functions and spatial relations items of AFQT, although they may require ability to use verbal concepts, do not require reading of English. Note that the correlation is constant regardless of length of key. The more difficult items in the longer keys were in all probability responded to by chance and did not contribute to the correlation.

Table 2 also shows the correlation between the experimental keys and the AFQT 5 and 6 VA keys. The coefficients were positive and, as expected, relatively low (.29 - .47). Coefficients for the AFQT 7 keys were somewhat lower than those for the AFQT 8 keys. The difference may be a reflection of the slightly lower means and more restricted distribution on the AFQT 7 than on the AFQT 8 keys (Table 3). Whether this difference is attributable to sampling differences, at least as far as the slight differences in the means and standard deviations of the variables correlated with the experimental keys indicate, is uncertain. Means and standard deviations of the various experimental keys were generally alike, indicating that the longer keys produced distributions that were not markedly different from those produced by the shorter keys.

Table 2

PRODUCT MOMENT CORRELATION OF LITERACY SCALES WITH OTHER VARIABLES

Variable	N	Correlation with AFQT 5 and 6 VA Keys	Correlation with Total Score AFQT 7-8	Total Score AFQT 5-6
Experimental VA Keys				
AFQT 7 - 16 items	263	.29	.38	.12
- 24 items[a]	263	.30	.42	.07
- 32 Items	263	.32	.39	.04
AFQT 8 - 16 items	243	.41	.42	.10
- 24 items[a]	243	.45	.41	.13
- 32 items	243	.47	.43	.11
Operational VA Keys				
AFQT 5 - 30 items	157			.42
AFQT 6 - 30 items	163			.37

[a]Keys selected for operational use.

Table 3

MEANS AND STANDARD DEVIATIONS OF VA KEYS AND TOTAL AFQT IN VARIOUS SAMPLES

Variables	N	Raw Scores M	S.D.
Experimental VA Keys			
AFQT 7 - 16 items	263	2.9	2.9
- 24 items[a]	263	3.1	3.3
- 32 items	263	3.2	3.5
AFQT 8 - 16 items	243	3.6	3.1
- 24 items[a]	243	3.9	3.4
- 32 items	243	3.8	3.7
Operational VA Keys			
AFQT 5 - 30 items	263[b]	3.0	4.0
AFQT 6 - 30 items	243	3.4	3.8
Total Score		Percentile Scores	
AFQT 7-8	263[b]	5.7	2.5
AFQT 7-8	243[c]	6.0	2.4
Total Score			
AFQT 5-6	263[b]	4.8	2.5
AFQT 5-6	243[c]	4.7	3.1

[a]Keys selected for operational use.

[b]Sample in which AFQT 7 VA keys were selected.

[c]Sample in which AFQT 8 VA keys were selected.

Estimated Effectiveness of the Keys

Results of the analysis of the data obtained in the independent samples are shown in Table 4. The percentages of examinees with raw scores of 6 and higher were similar to those obtained in the previous samples (19% and 25% for the 24-item keys for AFQT 7 and 8 respectively as against 19% and 30%). The correlation of the keys with total AFQT 7 and 8 score was somewhat higher (r = .40 - .54) than in the previous samples (r = .38 - .43), although still low enough, since these are part-whole correlations, to indicate that what the keys measure is relatively independent of what the total AFQT measures. The correlation of the keys for AFQT 8 with operational AFQT 5-6 total score (r = .14 - .22) was similar to the correlation obtained earlier (r = .10 - .13). The correlation of the AFQT 7 keys with AFQT 5-6 was higher (r = .35 - .39) than the earlier correlation (r = .04 - .12).

Table 4

CUMULATIVE PERCENTAGE DISTRIBUTIONS OF EXPERIMENTAL LITERACY SCALE SCORES AND CORRELATION WITH AFQT

AFQT 7 (N = 180)

No. of Items	Raw Scores ($R - \frac{W}{3}$) 3	4	5	6	7	8	9	Correlation with Total Score: AFQT 7 or 8	AFQT 5-6
16	52	38	18	15	14	6	3	.45	.38
24	52	38	27	19[a]	16	11	7	.46[b]	.39[b]
32	53	40	29	21	19	12	8	.54	.35

AFQT 8 (N = 189)

16	55	41	33	24	23	14	8	.43	.14
24	52	44	37	25[a]	25	16	10	.46[b]	.22[b]
32	51	39	32	25	23	15	12	.40	.14

[a] Cumulative percentages for raw score of 6 on 24-item keys selected for operational use.

[b] Correlation coefficient of key selected for operational use vs total AFQT.

CORRELATION OF LITERACY SCALES WITH EDUCATION LEVEL

It was possible that literacy scores such as provided by the VA keys would be related to level of education. Accordingly, correlation coefficients between the keys and the number of years of schooling reported were computed. Correlation was not expected to be high because of the restricted range of scores provided by the keys and restriction of the samples to AFQT failures. In data collected for another study, correlation coefficients between the full 25-item verbal and arithmetic reasoning subtests and educational level were .64 and .65, respectively, corrected to the full mobilization population (Bayroff, Seeley, Anderson, 1960.)

Correlation coefficients obtained in the present study between the VA keys and educational level were considerably lower ($r = .16 - .34$), indicating the effects both of the restrictions noted above and differences in factorial content between the subtest keys and the full subtests. At any rate, number of years of schooling reported cannot reasonably be substituted for the VA keys as a low level literacy measure for AFQT failures.

SUMMARY AND CONCLUSIONS

Literacy screening devices (VA keys) have been used with operational forms of AFQT to distinguish AFQT failures of various degrees of literacy so that, in the event of lowered standards of acceptance during mobilization, those men who were sufficiently literate in English to go into basic training, or who could become marginally literate with special literacy training, could be identified. In the present study, literacy screening measures based on selected AFQT items were developed for use with AFQT 7 and 8.

Several experimental keys differing in length by inclusion of more difficult items were studied. Keys based on the easiest 24 items (half verbal and half arithmetic reasoning) were selected and cutting scores set so as to classify the same proportions as marginally literate as did the prior VA keys for AFQT 5 and 6. Relationship of VA scores to educational level indicated that years of education completed could not be substituted effectively as a literacy screening measure for the VA screening devices developed for the AFQT.

REFERENCES

Mundy, J. P., Meyer, L. A., Leedy, H. B., Sternberg, J. J., Goldstein, L. G. and Bayroff, A. G. Development of instruments for screening AFQT 5 and 6 failures. Personnel Research Branch Technical Research Report 1104. May 1957.

Bayroff, A. G., Seeley, L. C., and Anderson, A. A. Evaluation of experimental AQB tests for screening category IV personnel. Personnel Research Branch Research Memorandum 60-18. November 1960.

Selected Publications of the U. S. Army Personnel Research Office Dealing with INDUCTION Research

Bayroff, A. G., Fuchs, E. F., and Seeley, L. C. New instruments for screening Army input. American Psychological Association meeting, 7 September 1960. (Abstr.) The American Psychologist, vol. 15, pp. 496-97.

Bayroff, A. G., Seeley, L. C., and Anderson A. A. Development of the Army Qualification Battery, AQB-1. Technical Research Report 1117. October 1959.

Bayroff, A. G., Seeley, L. C., and Anderson, A. A. Relationship of AFQT to rated basic training performance. Technical Research Note 106. February 1960.

Bayroff, A. G., Thomas, J. A., and Kehr, Carol J. Evaluation of EST for predicting AFQT performance. Technical Research Report 1114. February 1959.

Bolanovich, D. J., Harper, Bertha, Birnbaum, A. H., Lovelace, N. R., and Uhlaner, J. E. Development and standardization of short forms of the Armed Forces Qualification Test. Technical Research Report 934. April 1952.

Bolanovich, D. J., Jones, W., Frankfeldt, E., Lovelace, N. R., and Uhlaner, J. E. Development of instruments for selecting men for military service under reduced mental and literacy standards for induction. Technical Research Report 927. February 1952.

Bolanovich, D. J., Jones, W., Lovelace, N. R., and Fuchs, E. F. Development of a scoring key for identifying failures due to negative motivation on the Armed Forces Qualification Test. Technical Research Report 960. June 1952.

Bolanovich, D. J., Jones W., Lovelace, N. R., and Uhlaner, J. E. Follow-up of the standardization of the Armed Forces Qualification Test. Technical Research Report 956. June 1952.

Bolanovich, D. J., Mundy, J. P., Jones, W., Klieger, W. A., Houston, T. J., and Marks, M. R. Test performance of administrative inductees. Technical Research Report 1080. October 1953.

Morton, Mary A., Houston, T. J., Mundy, J. P., and Bayroff, A. G. Mental screening tests for women in the armed forces. Technical Research Report 1103. May 1957.

Mundy, J. P., Goldstein, L. G., and Bayroff, A. G. Development of the Armed Forces Qualification Test Forms 5 and 6. Technical Research Report 1101. April 1957.

Schenkel, K. F., Burke, Laverne K., and Marks, M. R. Construction of the Examen Calificacion de Fuerzas Armadas. Technical Research Report 1090. December 1954.

Schenkel, K. F., and Fuchs, E. F. Development of an aptitude test for a foreign population. American Psychological Association meeting. 4 September 1956. (Abstr.) The American Psychologist, vol 11, p. 427. 1956.

Schenkel, K. F., Meyer, L. A., Rosenberg, N., and Bayroff, A. G. Evaluation of the Puerto Rican screening test (ECFA) against success on the job. Technical Research Report 1106. June 1957.

Uhlaner, J. E., and Bolanovich, D. J. Development of the Armed Forces Qualification Test and predecessor Army screening tests, 1946-1950. Technical Research Report 976. November 1952.

AD 23/1, 28/4

U.S. Army Personnel Research Office, OCRD, DA
DEVELOPMENT OF LITERACY SCREENING SCALES FOR AFQT 7 and 8 FAILURES by A. G. Bayroff and Alan A. Anderson. January 1963. Rept. on Induction a-32 Proj.--19 p. incl. 4 tables, 16 Ref. (USAPRO Technical Research Note No. 131)
(DA Project 0J95-60-001)

Unclassified Report

UNCLASSIFIED
Human Resources Research
--Personnel Measurement

Literacy screening devices (VA keys) have been used with operational forms of the Armed Forces Qualification Test (AFQT) to identify AFQT failures of various degrees of literacy. In the event of lowered standards of acceptance during mobilization, these scales would be available for categorizing those men who were sufficiently literate in English to go into basic training or who could become marginally literate with special literacy training. The present study describes the research by which literacy screening scales were developed for use with AFQT 7 and 8. Keys based on the easiest 24 items (half verbal and half arithmetic reasoning) of AFQT were selected and cutting scores set so as to classify as marginally literate the same proportion of input groups as did the prior VA keys for AFQT 5 and 6.

AD 23/1, 28/4

U.S. Army Personnel Research Office, OCRD, DA
DEVELOPMENT OF LITERACY SCREENING SCALES FOR AFQT 7 and 8 FAILURES by A. G. Bayroff and Alan A. Anderson. January 1963. Rept. on Induction a-32 Proj.--19 p. incl. 4 tables, 16 Ref. (USAPRO Technical Research Note No. 131)
(DA Project 0J95-60-001)

Unclassified Report

UNCLASSIFIED
Human Resources Research
--Personnel Measurement

Literacy screening devices (VA keys) have been used with operational forms of the Armed Forces Qualification Test (AFQT) to identify AFQT failures of various degrees of literacy. In the event of lowered standards of acceptance during mobilization, these scales would be available for categorizing those men who were sufficiently literate in English to go into basic training or who could become marginally literate with special literacy training. The present study describes the research by which literacy screening scales were developed for use with AFQT 7 and 8. Keys based on the easiest 24 items (half verbal and half arithmetic reasoning) of AFQT were selected and cutting scores set so as to classify as marginally literate the same proportion of input groups as did the prior VA keys for AFQT 5 and 6.

AD 23/1, 28/4

U.S. Army Personnel Research Office, OCRD, DA
DEVELOPMENT OF LITERACY SCREENING SCALES FOR AFQT 7 and 8 FAILURES by A. G. Bayroff and Alan A. Anderson. January 1963. Rept. on Induction a-32 Proj.--19 p. incl. 4 tables, 16 Ref. (USAPRO Technical Research Note No. 131)
(DA Project 0J95-60-001)

Unclassified Report

UNCLASSIFIED
Human Resources Research
--Personnel Measurement

Literacy screening devices (VA keys) have been used with operational forms of the Armed Forces Qualification Test (AFQT) to identify AFQT failures of various degrees of literacy. In the event of lowered standards of acceptance during mobilization, these scales would be available for categorizing those men who were sufficiently literate in English to go into basic training or who could become marginally literate with special literacy training. The present study describes the research by which literacy screening scales were developed for use with AFQT 7 and 8. Keys based on the easiest 24 items (half verbal and half arithmetic reasoning) of AFQT were selected and cutting scores set so as to classify as marginally literate the same proportion of input groups as did the prior VA keys for AFQT 5 and 6.

AD 23/1, 28/4

U.S. Army Personnel Research Office, OCRD, DA
DEVELOPMENT OF LITERACY SCREENING SCALES FOR AFQT 7 and 8 FAILURES by A. G. Bayroff and Alan A. Anderson. January 1963. Rept. on Induction a-32 Proj.--19 p. incl. 4 tables, 16 Ref. (USAPRO Technical Research Note No. 131)
(DA Project 0J95-60-001)

Unclassified Report

UNCLASSIFIED
Human Resources Research
--Personnel Measurement

Literacy screening devices (VA keys) have been used with operational forms of the Armed Forces Qualification Test (AFQT) to identify AFQT failures of various degrees of literacy. In the event of lowered standards of acceptance during mobilization, these scales would be available for categorizing those men who were sufficiently literate in English to go into basic training or who could become marginally literate with special literacy training. The present study describes the research by which literacy screening scales were developed for use with AFQT 7 and 8. Keys based on the easiest 24 items (half verbal and half arithmetic reasoning) of AFQT were selected and cutting scores set so as to classify as marginally literate the same proportion of input groups as did the prior VA keys for AFQT 5 and 6.

UNCLASSIFIED