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(6) DEVELOPMENT OF AN ENLISTED EFFICIENCY REPORT

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DEVELOPMENT OF AN ENLISTED EFFICIENCY REPORT

I. THE FIRST EXPERIMENTAL FORM

SUMMARY

In connection with the Career Guidance Program of the Army, an enlisted efficiency report (EER) was developed to cover those aspects of performance of enlisted men which were not to be measured by the proficiency tests. The EER put into official use in September 1948 was the outgrowth of two experimental forms, the first of which is described in the present report.

The first experimental form utilized three types of items: (1) 20 items describing personality characteristics, each permitting a rating of the enlisted man (EM) on a three-point scale as "lowest $\frac{1}{3}$," "middle $\frac{1}{3}$," or "highest $\frac{1}{3}$" of all men of equal grade and responsibility; (2) selection of five of these 20 items as "most descriptive" and five as "least descriptive" of the EM, a modification of the forced choice technique; and (3) estimated performance of the EM at each of the five upper enlisted pay grades as a technical specialist and, as a supervisor or an administrative worker, by means of five-point rating scales with scale points described. The primary purpose of this first form was to explore the possibilities of these several types of items.

The EER was administered along with two criterion instruments, evaluations on over-all job performance; one was a 20-point rating scale, and the other a nominating form on which the raters indicated the five most and five least effective men. The three forms were completed for 970 enlisted men representative of all military occupational specialties (MOS's) and of the upper five pay grades. In addition, raters and indorsers filled out a questionnaire about this EER to suggest further development and utilization of efficiency reports. The correlation between scores on the two criterion instruments was found to be .71 for a sample composed of cases with four or more raters. Various methods of scoring the experimental EER were tried. The indications were that the form could be scored to yield a validity of about .40 for the five grades combined.

Regardless of method of scoring, the report yielded the lowest validity for grade 4 men (at best around .25). This lower validity was a serious defect, since the step from grade 4 to the next higher grade represents one of the more critical selection points in the Career Guidance Program. (Supervisory or leadership ability measured by the EER, is required in the higher grades as well as technical competence or skill, measured by the proficiency tests.) Considered as single items, the modified forced choice technique yielded the lowest validity, (most r's below .20); the three-point rating scales were next, (most r's between .20 and .30); and the five-point over-all type rating scales highest, (most r's above .30).

The types of items used had two limitations. The first concerns the usual finding for responses to graphic items. People do not like to report unfavorable things when rating. On the average only 6% of the group was rated as being in the "lowest $\frac{1}{3}$" category of the three-point scales. The second limitation concerns the modified forced choice technique. The number of times an item was checked as most or least descriptive of ratees was found to be related to its position in the list. Items near the beginning were checked most frequently.

On the basis of these findings, it was recommended that different forced choice techniques be tried and that further experimentation be conducted with rating scales before items were selected for an official enlisted efficiency report.

PROBLEM

Paper and pencil type proficiency tests and Enlisted Efficiency Reports (EER) are developed by the Personnel Research Section, AGO, as part of the promotion procedures of the Career Guidance Plan for enlisted personnel.[1/]

1/ D/F from D/P and A to TAG, File 210.31 (8 Aug 46), Subject: "Career Guidance for Personnel Below Commissioned Grade," dated 26 June 1947. See also, PR-4110, Program Plan for Development and Validation of an Efficiency Report for Personnel Below Commissioned Grade, dated 13 July 1947.
Cir 1, Career Guidance Plan for Warrant Officers and Enlisted Personnel, Department of The Army, 1 January 1948.

The EER was designed to cover aspects of job performance such as supervisory and leadership ability not measured by the proficiency examinations. Several other reports of EER research are being prepared for publication.[2] The official EER (DA AGO Form 297)[3] was introduced with the Food Service Career Field in October 1948,[4] and was used with other career fields as they were instituted.

The requirements to which the EER had to conform, limited to some extent its form and content. The jobs held by enlisted men differ so widely that it was not feasible to use items which were too specific to any one job or type of job. The EER had to be easily understood and not too lengthy, and the score had to be one that could be expressed by a single number.

This study, the initial phase in the development of an enlisted efficiency report, was designed to investigate several types of rating devices. Included were three-point and five-point scales, and a modified forced choice technique.

METHOD

Population

The first experimental Enlisted Efficiency Report (Printing Job No. 47 14819) was completed for 970 men: 446 at Scott Field, and 524 at Fort Knox, in August 1947 (See Table 1, page 4). The men rated were representative of military occupational specialties (MOS's) at these installations and of the upper five enlisted pay grades.

2/ PRS Report 844, Development of the Enlisted Efficiency Report: II The Second Experimental Form and the Official Form.

PRS Report 847, Analysis of the Enlisted Efficiency Report in the Operating Program.

PRS Report 853, Development of a New System for Scoring the Enlisted Efficiency Report.

3/ AR 600-180, Personnel: Enlisted Efficiency Reports, Department of the Army, 17 September 1948.

4/ Cir 203, Introduction of Food Service Career Field, Department of the Army, 8 July 1948.

POPULATION FOR STUDY OF FIRST EXPERIMENTAL ENLISTED EFFICIENCY REPORT
BY GRADE AND INSTALLATION

Grade	Title	New Title*	New Grade**	Fort Knox	Scott Field	Total
1	Master sergeant First sergeant	Master sergeant	E-7	65	55	120
2	Technical sergeant	Sergeant, first class	E-6	70	35	105
3	Staff sergeant	Sergeant	E-5	111	108	219
4	Sergeant	Corporal	E-4	147	133	280
5	Corporal	Private, first class	E-3	131	115	246
			Total	524	446	970

* Effective 1 August 1948, Cir 202, Implementation of Career Guidance Plan for Warrant Officers and Enlisted Personnel, Department of the Army, 7 July 1948.

** Joint Army and Air Force Bulletin No. 30, 21 October 1949, Career Compensation Act.

Raters and ratees were preselected. The three rating forms and a questionnaire (See "Instruments" below) were distributed at the installations under cover of a form letter which briefly explained the purpose of the study and the routing of materials from rater to indorser to collection point.

INSTRUMENTS

1. The Enlisted Efficiency Report (Printing Job No. 47 14819, no PRT number). The first group of items contained twenty phrases describing personality characteristics on which the EM was to be rated. For each phrase the rater was first asked to indicate on a three-point scale whether the EM belonged to the lowest, middle, or highest third of all men of equal grade and responsibility. He was then asked to indicate which five of the twenty phrases were most descriptive of the man being rated, and which five were least descriptive, a modification of the forced choice technique. Finally, the rater was instructed to decide without regard to present grade, how well the ratee would perform at each of the five highest non-commissioned grades in his (the ratee's) area of technical specialization, and

in an administrative or supervisory capacity. Information identifying the ratee and authentication by rater and by indorser were included. Only one rating form was completed for each ratee, and the rater in each case was the immediate supervisor of the ratee.

2. Criterion instruments. Two associate rating forms were developed for obtaining criterion evaluations as a basis for validation of the first experimental EER. Rosters were mimeographed on both forms. Each rater was instructed to eliminate from consideration his own name and the name of any man whom he did not know.

a. The Enlisted Man Evaluation Form EME-1a, WD AGO FRT 767, provided for evaluation of over-all job performance on a rating scale with twenty divisions or boxes ranging from 1, "Poorest," to 20, "Best." The men on the roster were compared with a representative group of the same grade and general responsibilities. The criterion score on the EME-1a was the numerical value of the box on the rating scale in which the ratee's roster number was placed.

b. The Enlisted Man Evaluation Form EME-1b, WD AGO PRT 768, required an evaluation of over-all job performance without regard to grade by choosing the five "most effective men" and then five "least effective men" from those on the roster known to the rater. Criterion scores for the EME-1b were obtained as shown in Table 2, page 6.

3. Questionnaire on Enlisted Efficiency Report, WD AGO PRT 766 was given at the time of the administration of the first experimental form. Results of this study are analyzed in PRS Report 765.[5]

PROCEDURES AND RESULTS

Criterion Reliability

The correlations between scores on the two criterion instruments EME-1a and 1b were found to be .71 for the combined populations (.73 for a sample of 335 cases at Scott Field, and .70 for 427 cases at Fort Knox). The samples were composed of cases with four or more raters.

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[5] PRS Report 765, Analysis of Results of Questionnaire, PRT 766, on Enlisted Efficiency Report, 15 August 1948.

TABLE 2

WEIGHTS USED IN OBTAINING CRITERION SCORES
FOR ENLISTED MAN EVALUATION, EMR-1b

No. of Men Considered	Weight of Rating										
	Most Effective Men					Least Effective Men					
	Best 1	2	3	4	5	5	4	3	2	1	Poorest
14 or more	3	2	1	1	1	-1	-1	-1	-2	-3	
11-13	3	2	1	1			-1	-1	-2	-3	
8-10	3	2	1					-1	-2	-3	
5-7	2	1							-1	-2	
3-4	1									-1	

Directions for using Chart

Number of men considered is the number of names on the roster not crossed out. Use weights assigned for "Most Effective Men" and "Least Effective Men" regardless of position on rating scale in which a man may have been placed. For example, if only five men are rated and entries are made in positions 1 through 5 under "most effective," position 5 will be weighted -2 and position 4 weighted -1.

The Enlisted Efficiency Validity Report:

In Table 3 are given the validities by grade of the five-point rating scales on estimated performance in Technical Specialization and in Administration and Supervision at the upper five enlisted pay grades. The most clear-cut finding was the tendency for the ratings to be more valid for the higher current grades. One explanation may be that individual differences become more apparent under the greater job duty requirements of the higher grades. The validity for grade 4 men was particularly disappointing. Because the step from grade 4 to the next higher grade is an important one involving supervisory or leadership ability, an enlisted efficiency report must be able to differentiate among grade 4 men if it is to be of real usefulness.

There were no clear-cut tendencies (Table 3) for estimates of performance in Technical Specialization to differ in validity from those in Administration or Supervision or for ratings on present grade to differ from ratings in next higher grade or in the highest grade.

Table 4 contains the item validities of the 20 BER phrases for the three-point rating scales and for the modified forced choice technique. The validities for the three-point scales were in general higher (range .07 to .41, with most above .20) than for the modified forced choice technique (range .00 to .38, with most below .20), but those for the five-point scales (Table 3) were highest (range .02 to .52 with most above .30).

TABLE 3

VALIDITIES* OF FIVE-POINT SCALES, FIRST EXPERIMENTAL ENLISTED EFFICIENCY REPORT BY ENLISTED GRADE AGAINST CRITERION INSTRUMENTS EME-1a AND EME-1b

N = 870

				Technical Specialization			Administration or Supervision		
				Rating	Estimated Performance		Rating	Estimated Performance	
Criterion	Grade**	N		in Current Grade	Next Higher Grade	Grade 1	in Current Grade	Next Higher Grade	Grade 1
	1	120		.52		.52	.42		.42
	2	105		.46	.43	.48	.30	.32	.33
EME-1a	3	219		.40	.38	.43	.32	.35	.45
	4	180		.02	.10	.03	.05	.24	.19
	5	246		.26	.27	.29	.10	.25	.21
	Total N	870	Av .r	.34	.30	.36	.26	.33	.33
	1	120		.50			.46		
	2	105		.35	.39		.25	.31	
EME-1b	3	219		.47	.46		.36	.44	
	4	180		-.01	.08		.04	.12	
	5	246		.28	.30		.13	.26	
	Total N	870	Av .r	.33	.34		.25	.28	

*Biserial. Items were dichotomized to obtain as nearly a 50-50 split as possible.

**See Table 1.

It should be noted that dichotomizing the item between the "highest $\frac{1}{3}$" and "middle $\frac{1}{3}$" categories was about equivalent to dichotomizing at the middle of the distribution, for the usual disinclination of raters to use the low end of the scale (report unfavorably about the ratee) was observed. The distribution of responses, based on an average for all 20 phrases was: 55% "highest $\frac{1}{3}$," 39% "middle $\frac{1}{3}$," and 6% "lowest $\frac{1}{3}$."

A finding that obscured the interpretation of the validity coefficient for the modified forced choice technique was the strong tendency for raters to use the descriptions at the beginning of the list more frequently than those at the end (See Fig. 1).

In addition to obtaining the validities of the first 20 items (Table 4), the validities of total score on these items, using different scoring methods, were estimated with EMS-1a as a criterion. Instead of scoring the items on a three-point scale, the following three methods were used:

a. Counting the number of "highest $\frac{1}{3}$" responses

b. Counting the number of "lowest $\frac{1}{3}$" responses

c. Combining methods "a" and "b" with multiple regression weights

The results are given in Table 5. The lower means and standard deviations for the "lowest $\frac{1}{3}$" scoring reflect the tendency for raters to avoid the lowest scale units. In general the "highest $\frac{1}{3}$" method yielded validities superior to the "lowest $\frac{1}{3}$" method. Combining the two with multiple regression weights yielded the highest validities of all. These results have two implications: (1) the method of scoring favorable and unfavorable positions separately and then combining to obtain a total score, appears to have promise; and (2) an over-all validity of around .40 could be obtained in this way. It should be noted that validities were again lowest for grade 4 (.27, .23). However, with this method of scoring, the validity at grade 4 was somewhat better than for the 3-point scales, see Table 3 (.01 to .05 for rating in current grades), and the differences in validity for the various enlisted grades was not as pronounced.

TABLE 4

VALIDITIES OF FIRST TWENTY ITEMS OF FIRST EXPERIMENTAL ENLISTED EFFICIENCY REPORT IN THREE-POINT SCALES AND MODIFIED FORCED CHOICE TECHNIQUE AGAINST CRITERION INSTRUMENTS EME-1a AND 1b

N = 970

Description of Item	Three-Point Scales Highest, middle, and lowest thirds** EME-1a	EME-1b	Modified Forced Choice Technique Five most and five least descriptive*** EME-1a	EME-1b
1. Ambitious	.29	.25	.09	.15
2. Attends to duties	.31	.23	.11	-.06
3. Does more than is required	.36	.32	.21	.30
4. Easy to get along with	.20	.16	-.28	-.15
5. Emotionally stable	.18	.13	-.16	-.06
6. Has initiative	.29	.26	.26	.26
7. Inspires confidence	.32	.22	.21	.12
8. Interested in his job	.34	.17	-.06	-.09
9. Has a sense of humor	.13	.07	-.31	-.18
10. Likes responsibilities	.20	.15	.14	-.05
11. Neat in appearance	.13	.16	-.19	.01
12. Prompt and punctual	.32	.25	.06	-.04
13. Qualified for the job	.29	.25	.06	.00
14. Quiet and reserved	.19	.10	-.25	-.14
15. Reliable and dependable	.41	.33	.34	.38
16. Requires little supervision	.32	.29	.26	.13
17. Respects superiors	.21	.17	-.07	-.14
18. Straightforward	.28	.24	-.16	-.08
19. Willing to admit mistakes	.21	.12	-.12	-.21
20. Willing to obey orders	.27	.23	.00	-.08

*Biserial

**Item dichotimized between high and middle third

***For computational purposes the "Most" response was considered the positively scaled response

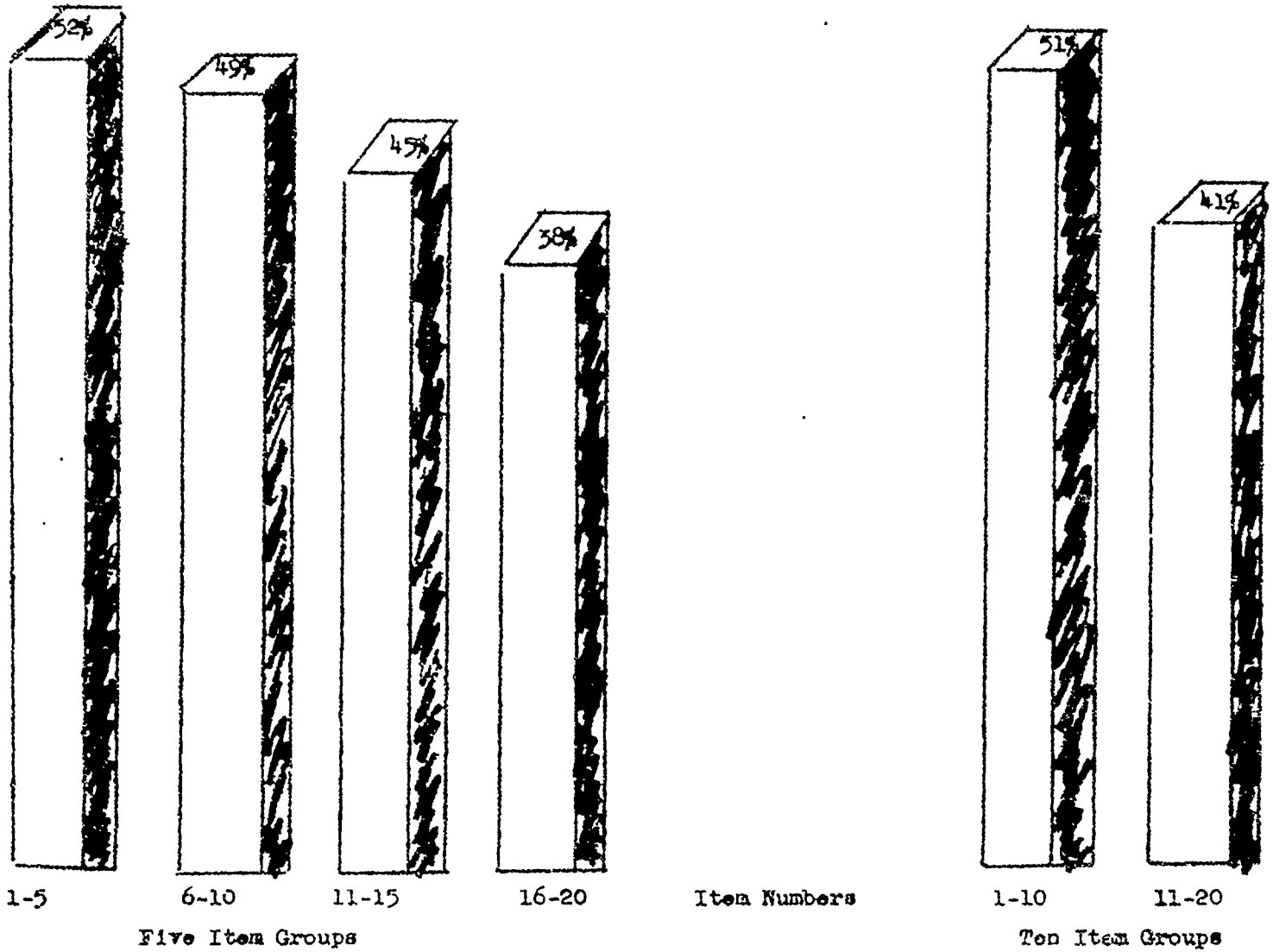

Figure 1. Comparison, by five and ten item groups of frequency with which the first 20 items of the First Experimental Enlisted Efficiency Report were selected, in modified forced choice technique, as Most and Least Descriptive.

TABLE 5

VALIDITY OF FIRST TWENTY ITEMS OF FIRST ENLISTED EFFICIENCY REPORT, USING ALTERNATE SCORING PROCEDURES, AGAINST ENLISTED MAN EVALUATION FORM EME-1a

Population and Enlisted Grade*	Criterion EME-1a			Method a (Scoring High $\frac{1}{3}$ Only)			Method b (Scoring Low $\frac{1}{3}$ Only)			Method c (Correlation Between Methods)	Method c (Combination of Method a and b Multiple R)	Method c Beta Weight I	Method c Beta Weight II	Method c B-Weigh I	Method c B-Weigh II
	N	M	σ	M	σ	r	M	σ	r						
Scott Field and Fort Knox	970	14.67	2.89	7.12	4.24	.37	1.28	2.14	-.31	-.60	.39	.29	-.14	.20	-.1
Scott Field	446	14.88	2.74	6.96	4.29	.35	1.24	2.18	-.32	-.58	.38	.24	-.18	.15	-.2
Fort Knox	524	14.50	3.01	7.26	4.19	.40	1.31	2.09	-.31	-.62	.41	.35	-.09	.23	-.1
Scott Field															
Grade 1	55	17.00	2.26	8.26	3.88	.30	.78	1.36	-.42	-.71	.42	.00	-.42	.00	-.7
Grade 2	35	16.69	2.12	7.80	4.53	.36	1.26	1.99	-.43	-.69	.44	.12	-.34	.06	-.3
Grade 3	108	15.48	2.34	6.57	4.19	.40	1.32	2.31	-.36	-.57	.43	.28	-.20	.16	-.2
Grade 4	133	14.59	2.41	7.05	4.30	.21	1.25	2.10	-.25	-.55	.27	.10	-.20	.06	-.2
Grade 5	115	13.09	2.57	6.36	4.27	.43	1.37	2.49	-.36	-.57	.45	.33	-.17	.20	-.1
Fort Knox															
Grade 1	65	16.48	2.13	8.55	3.89	.48	.75	1.23	-.41	-.53	.52	.37	-.21	.20	-.3
Grade 2	70	15.99	2.69	8.10	4.07	.43	1.13	1.62	-.25	-.68	.44	.49	-.09	.32	-.1
Grade 3	111	15.06	2.57	7.72	4.20	.48	1.17	1.75	-.38	-.60	.49	.40	-.14	.24	-.2
Grade 4	147	14.04	2.71	6.63	4.10	.23	1.42	2.37	-.10	-.56	.23	.26	-.05	.17	-.0
Grade 5	131	12.75	3.09	6.44	4.18	.36	1.66	2.48	-.40	-.73	.41	.13	-.31	.10	-.3

* See Table 1.

In Table 6 are presented the intercorrelations of the three-point scales. The intercorrelations ranged from .12 to .63. In general they were higher than the 5-point scale item validities (Table 3). They are higher than is desired from the standpoint of combining all items for effective prediction.

RECOMMENDATIONS

The tendency of the raters to check more frequently those items appearing at the beginning of the modified forced choice list should be studied to determine whether the list was too long to be kept in mind by the raters, or whether the length of the task lowered motivation.

On the basis of the findings with the form, the decision was made to develop a second experimental form embodying different types of items. The 20 graphic items from the first form were to be incorporated into forced choice pairs.

Further research is recommended on the problem of grade bias, since considerable differences according to grade were revealed in this study.

PERSONNEL

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TABLE 6

INTERCORRELATIONS OF FIRST TWENTY ITEMS IN THREE-POINT SCALES OF FIRST ENLISTED EFFICIENCY REPORT

(N = 970)

	Description of Items	Intercorrelations																		
1.	Ambitious	1																		
2.	Attends to duties	.44	2																	
3.	Does more than is required	.49	.49	3																
4.	Easy to get along with	.21	.32	.28	4															
5.	Emotionally stable	.17	.24	.25	.40	5														
6.	Has initiative	.59	.50	.51	.23	.28	6													
7.	Inspires confidence	.42	.39	.48	.33	.31	.49	7												
8.	Interested in his job	.54	.53	.46	.28	.21	.48	.44	8											
9.	Has a sense of humor	.17	.18	.18	.46	.34	.22	.31	.19	9										
10.	Likes responsibilities	.41	.38	.48	.24	.26	.51	.42	.49	.27	10									
11.	Neat appearance	.20	.30	.21	.29	.24	.25	.28	.22	.23	.22	11								
12.	Prompt and punctual	.34	.52	.40	.34	.35	.41	.44	.41	.20	.35	.37	12							
13.	Qualified for the job	.38	.51	.40	.23	.28	.48	.45	.52	.18	.41	.20	.41	13						
14.	Quiet and reserved	.26	.34	.26	.24	.21	.22	.33	.27	.12	.23	.30	.32	.29	14					
15.	Reliable and dependable	.42	.59	.48	.34	.33	.52	.48	.51	.20	.44	.32	.63	.51	.38	15				
16.	Requires little supervision	.40	.48	.46	.25	.33	.54	.44	.46	.20	.45	.23	.46	.56	.28	.57	16			
17.	Respects superiors	.29	.38	.31	.37	.27	.30	.32	.35	.22	.26	.32	.35	.29	.36	.39	.34	17		
18.	Straightforward	.29	.39	.33	.35	.38	.41	.39	.36	.36	.35	.34	.44	.37	.28	.46	.41	.41	18	
19.	Willing to Admit mistakes	.28	.37	.29	.46	.34	.32	.36	.30	.33	.27	.33	.37	.30	.34	.40	.34	.39	.54	19
20.	Willing to obey orders	.37	.48	.30	.44	.32	.37	.33	.41	.23	.29	.27	.46	.35	.31	.51	.37	.59	.41	.49

TABLE 1

INTERCORRELATIONS OF APB KEYS WITH EER AND ASSOCIATE RATINGS FOR SAMPLE A CONSISTING OF 171 COOKS (MOS 060)

MEAN	STANDARD DEVIATION	DESCRIPTION OF VARIABLES											
18.54	6.58	Key A. Military Science and Tactics	1	1									
19.09	7.12	Key B. Mechanical	2	.01	2								
20.44	4.32	Key C. Construction	3	.06	.29	3							
18.76	3.55	Key D. Crafts	4	-.06	.36	.42	4						
21.29	5.65	Key E. Electrical and Radio	5	-.16	-.01	.10	.01	5					
16.33	7.17	Key F. Scientific-Medical-Technical	6	-.21	-.46	-.42	-.30	-.20	6				
19.76	6.81	Key G. Clerical-Computational	7	-.20	-.52	-.48	-.45	-.14	.33	7			
19.63	3.33	Key H. Precision Tool	8	-.24	-.25	.14	.36	.20	.04	.04	8		
28.19	8.57	Key I. Food Service	9	-.20	-.30	-.48	-.29	-.33	.03	-.13	-.22	9	
38.46	16.71	EER Total Score	10	-.06	-.07	.02	.05	.01	.08	-.01	.01	.06	10
30.02	8.32	Graphic Rating Scales	11	.06	.04	-.02	-.08	.02	-.01	-.11	-.05	.06	.19

TABLE 2

INTERCORRELATIONS OF APB KEYS WITH [redacted] AND ASSOCIATION RATINGS FOR SAMPLE B
CONSISTING OF 171 OFFICERS ([redacted] 060)

MEAN	STANDARD DEVIATION	DESCRIPTION OF VARIABLES											
18.48	6.40	Key A. Military Science and Tactics	1	1									
18.07	7.32	Key B. Mechanical	2	-.18	2								
1..6	3.84	Key C. Construction	3	.25	.01	3							
18.74	3.79	Key D. Crafts	4	-.18	.45	.07	4						
19.77	6.22	Key E. Electrical and Radio	5	-.23	.22	.00	.30	5					
16.90	6.13	Key F. Scientific-Medical-Technical	6	-.07	-.41	-.28	-.33	-.17	6				
20.56	6.57	Key G. Clerical-Computational	7	-.16	-.41	-.25	-.41	-.30	.31	7			
20.09	3.42	Key H. Precision Tool	8	-.30	-.02	.00	.52	.23	-.13	-.04	8		
31.14	8.22	Key I. Food Service	9	-.14	-.23	-.33	-.33	-.36	.10	.08	-.25	9	
93.87	16.69	[redacted] Total Score	10	-.03	-.01	.02	.02	.04	-.04	.03	.03	.08	10
30.20	7.85	Graphic Rating Scales	11	-.06	-.13	-.04	-.02	-.02	-.01	.11	-.03	.07	.48

TABLE 3

INTERCORRELATIONS OF APB KEYS WITH MRR AND ASSOCIATE RATINGS FOR 136 MESS STEWARDS (MOS 824)

MEAN	STANDARD DEVIATION	DESCRIPTION OF VARIABLES											
18.17	5.89	Key A. Military Science and Tactics	1	/									
15.78	6.96	Key B. Mechanical	2	-.10	2								
19.37	3.79	Key C. Construction	3	-.07	.26	3							
17.04	3.42	Key D. Crafts	4	-.29	.32	.42	4						
18.87	6.01	Key E. Electrical and Radio	5	-.28	-.06	-.02	.10	5					
15.25	6.38	Key F. Scientific-Medical-Technical	6	-.21	-.37	-.37	-.24	-.03					
22.66	6.54	Key G. Clerical-Computational	7	-.03	.46	-.42	-.53	-.13	.24	7			
18.82	3.52	Key H. Precision Tool	8	-.45	-.15	.08	.53	.28	.10	-.16	x		
35.48	6.04	Key I. Food Service	9	.07	-.25	-.30	-.30	-.38	-.20	.23	-.24		
41.07	16.15	MRR Total Score	10	.07	-.18	-.01	.02	-.08	.09	.09	.00	.07	10
32.75	8.59	Graphic Rating Scales	11	.01	-.09	-.12	-.14	-.11	.21	.10	-.20	.15	.45

TABLE 4

INTERCORRELATIONS OF AFB KEYS WITH MER AND ASSOCIATE RATINGS FOR 478 COOKS AND MESS STEWARDS

MEAN	STANDARD DEVIATION	DESCRIPTION OF VARIABLES											
18.49	6.32	Key A. Military Science and Tactics	1	1									
17.78	7.27	Key B. Mechanical	2	-.08	2								
19.85	4.03	Key C. Construction	3	.09	.20	3							
18.27	3.69	Key D. Crafts	4	-.16	.41	.30	4						
20.06	6.04	Key E. Electrical and Radio	5	-.21	.09	.05	.17	5					
16.44	6.63	Key F. Scientific-Medical-Technical	6	-.16	-.38	-.35	-.28	-.13	6				
20.87	6.75	Key G. Clerical-Computational	7	-.14	-.48	-.39	-.48	-.22	.27	7			
19.56	3.45	Key H. Precision Tool	8	-.38	-.11	.08	.48	.24	.02	-.06	8		
31.32	8.32	Key I. Food Service	9	-.12	-.30	-.40	-.35	-.38	-.10	.18	-.25	9	
30.35	16.58	MER Total Score	10	-.01	-.09	.00	-.02	-.01	.03	.02	.00	.09	10
31.37	8.32	Graphic Rating Scales	11	.04	-.08	-.06	-.10	-.05	.04	.05	-.11	.13	.36	11

TABLE 5

SUMMARY OF MAJOR CORRELATIONS

	CRITERIA	
	E. E. R.	GRAPHIC RATING
AFH Key I (Food Service)		
Sample 1. Cooks	.06	.06
2. Cooks	.08	.07
3. Mess Stewards	.07	.15
Combined Group	.09	.13
Multiple R - All AFH Keys		
Sample 1. Cooks	.17	.21
2. Cooks	.14	.13
3. Mess Stewards	.26	.36
Combined Group	.15	.17