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THE VALIDITY OF OFFICER EFFICIENCY
REPORT, WD AGO FORM 67-1,
FOR GENERAL OFFICERS

PRS REPORT 792

FOREWORD: PRS reports are primarily technical. While conclusions affecting military policy or operations may appear in them, they are not intended as a basis for official action. Findings and conclusions contained in PRS reports are intended to guide the conduct of further research. When research findings suggest recommendations for administrative action, such recommendations are made separately to the appropriate military agency.

Personnel Research Section
Personnel Research and Procedures Branch, AGO

THE VALIDITY OF OFFICER EFFICIENCY REPORT,
WD AGO FORM 67-1, FOR GENERAL OFFICERS
(Based on PRS Report 792)

BRIEF

STATEMENT OF PROBLEM:

Past research has indicated sufficient validity for the Officer Efficiency Report, WD AGO Form 67-1, to justify its use in rating Army officers of grades from lieutenant through colonel. Can it be shown to be valid for use with general officers as well?

RESULTS:

1. The demonstrated validities for Form 67-1 in rating general officers are similar to validities of the instrument in rating officers of grade lower than general, when adjustments are made for difference in range of scores for the two groups. Against two different criterion measures, the 67-1 validities were .48 and .46 for brigadier generals, and .39 and .43 for major generals.

2. The validities for the separate parts of the form varied as much as ten points among themselves but approximated the validities of the same parts for officers of lower grades.

3. On the average the general officers scored substantially higher on the instrument than other officers.

CONCLUSIONS:

Form 67-1 is as valid in estimating the efficiency of general officers as in estimating the efficiency of lower grade officers.

2. The general scoring methods used for other grades of officers are usable for general officers as well.

WORK SUMMARY:

Each of 286 brigadier and major generals was confidentially rated on his value as an officer by twenty brigadier and major generals who had indicated knowledge of his abilities. The ratings they received by this procedure were correlated with ratings on Form 67-1 (a) for each part of the form separately and (b) for the form as a whole. Optimal scoring and weightings were determined.

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BACKGROUND

In 1946, The Adjutant General's Office was directed to study efficiency rating procedures for Army Air Force general officers.^{1/} The following two rating forms were compared: (1) the experimental Officer Efficiency Report, WD AGO Form 67-1, the research predecessor of the currently authorized WD AGO Form 67-1, and (2) Officer Evaluation Report, WD AGO Form 67, a letter form of rating in official use at that time. General officers of the Army were not included in the study. Analysis of the letter Form 67 indicated that it failed almost completely to differentiate general officers in the two important factors considered--manner of performance and professional knowledge. Even on the small sample available, Form 67-1 indicated adequate differentiation in both the forced-choice and over-all ratings and agreed with the criterion to a much more satisfactory degree than did the letter Form 67.^{2/} Conclusions were of necessity qualified because of the relatively small number of general officers for whom Forms 67-1 were available at that time.

When Form 67-1 was introduced in 1947 as the official officer rating procedure, it was thought desirable to determine the appropriateness of

1/ Authorizing directives: DF from AC/S, G-1, WDGS, to TAG, file number WDGAP 201.6 (24 Jul 45), Subject: Study of Officer Efficiency Rating Methods, dated 27 April 1946; Comment No. 3 to WD Disposition Form from D/P and A, WDGS, to TAG, file number WDGPA 200 (15 Aug 46), Subject: Priority of Personnel Research Projects, dated 2 November 1946.

2/ PRS Report 749, Report of The Validity of Two Efficiency Reporting Methods Applied to AAF Generals, The Adjutant General's Office, Personnel Research Section, 7 January 1948.

the form for use with general officers of the Army, none of whom had been included in the 67-1 validation and standardization populations.^{3/}

PROBLEM

The principal objectives of this study were: (1) to determine the validity of the Officer Efficiency Report, WD AGO Form 67-1, for use with general officers; (2) to study the comparative validity of the form for general officers and all other grades of officers; and (3) to determine whether the conversion tables used with officers of the grade of colonel and below may be utilized for officers of general grade.

POPULATION

The limits of the subject population were set by AR 600-185 (27 May 47) which required the accomplishment of WD AGO Form 67-1 only for general officers who held appointment as brigadier general or were in the temporary grade of major general. At the time the study was undertaken, there was a total of 328 active general officers below the rank of lieutenant general-- 143 major generals^{4/} and 185 brigadier generals. Although the strong possibility existed that completed Officer Efficiency Reports would not be available for a large number of the major generals (i.e., for those who achieved that permanent rank prior to 1 July 1947), it was decided to include all major generals in the initial phases of the study.

PREDICTOR VARIABLES

The Officer Efficiency Report, WD AGO Form 67-1, 1 July 47, is the basic instrument with which this study is concerned. This form consists of nine sections. Sections I and II comprise Part I and Sections III through IX comprise Part II. A brief description of the sections concerned with actual ratings (as against those calling for mere background data) is presented below.

^{3/} Disposition Form from D/P and A to TAG, File CSGPA 201.61, Subject: Validation of WD AGO Form 67-1, Officer Efficiency Report for General Officers, dated 2 Aug 1948.

^{4/} One major general was retired shortly after the beginning of the study, reducing the number of major generals to 142 and the total of major and brigadier generals to 327.

Section II. Data and Suggestions for Use in Assignment:

A. Duties Actually Performed on Present Job: Calls for a brief description by the rater of the subject's current job duties.

B. Description of Officer Rated and Comments: Provides space for comments by rating officer and indorsing officer regarding the "physical, mental, and moral qualities of the rated officer, specialties of value to the Army, and any special defects or weaknesses affecting his ability to do certain assignments."

C. Estimated Desirability in Various Capacities: A five-point rating scale which represents the rater's and indorser's evaluations of the probable suitability of the ratee in various hypothetical job capacities.

Section IV. Job Proficiency: Twelve forced-choice tetrads (48 items) describing desirable and undesirable behavior characteristics affecting efficiency of job performance. For each tetrad, the rater is asked to indicate which phrase is most descriptive of the individual rated and which phrase is least descriptive.

Section V. Job Proficiency: A ten-point rating scale for rating and indorsing officers in which the rater is asked to evaluate the subject's over-all job proficiency in one or two of seven briefly described areas of duty. The area which corresponds to the subject's principal job assignment is selected as his "primary" duty; if there is another area which also is descriptive of his work, it is termed his "secondary" duty.

Section VI. Personal Qualifications: Twelve forced-choice tetrads (48 items) calling for an evaluation in terms of the personal qualities in each set of tetrads which are most descriptive and least descriptive of the ratee.

Section VII. Personal Qualifications: A ten-point scale for rating and indorsing officers which requires an indication of the extent to which the ratee possesses six described traits.

Only Sections IV, V, VI, and VII of Form 67-1 were analyzed in the current investigation. These are the sections employed in deriving the final numerical score.

CRITERION VARIABLES

It was decided that ratings by peers would serve as the independent yardstick of efficiency against which the Form 67-1 could be validated for general officers. For this purpose the Officer Evaluation Form OE-G (WD AGO PRT-676) was used. This instrument was initially developed for the study of Army Air Force generals. It gives each rating officer the opportunity to express his opinion of the efficiency of those fellow officers of general grade with whose work he is most familiar.

The Officer Evaluation Form is divided into two parts. In Section I, the rating officer is asked to place each subject in an appropriate position on a 20-point scale, evaluating him in relation to all Army officers of his grade. In Section II, the rater is asked to indicate the seven most and seven least competent of all officers he is rating. In this manner, the study was designed to yield two criterion ratings on each rated officer.

PROCEDURE

Accomplishing Ratings on Form OE-G

Rosters of all general officers were obtained from the General Officers' Section of The Adjutant General's Office. Assignments of all major generals and brigadier generals were obtained from the General Officers' Section, Career Management Group, Division of Personnel and Administration from which separate mimeographed rosters of active major generals and brigadier generals were prepared.

A letter was sent to each major general and brigadier general explaining the purpose of the study and requesting his cooperation. A mimeographed roster of major generals or brigadier generals (depending upon grade of the addressee) was inclosed. The addressee was asked to check the names of the individuals with whom he was acquainted. Of these officers, he was asked to indicate at least 40 (if possible) whose work he knew well enough to rate.

From the completed rosters returned by 140 major generals (98.6% of the base population) and 178 brigadier generals (96.2% of the base population), the Officer Evaluation Form OE-G was prepared, first for major generals, later for brigadier generals. Each major general was asked to rate on Form OE-G a maximum of 20 officers randomly selected from the list of men with whose work he had indicated familiarity. An

attempt was made to include each major general's name on 20 lists in order to secure 20 ratings per man. Officers whose names were checked on less than six of the original rosters were excluded as subjects of the study. Moreover, officers who had indicated familiarity with the work of less than 12 other officers were excluded as raters.

Returns of Forms OE-G by major generals seemed to indicate some confusion in regard to Section I. The misinterpretation apparently arose from the use of 20 names on the list with 20 places on the scale. To preclude a similar misinterpretation by brigadier generals, more than 20 names were included in the Forms OE-G prepared for them. Otherwise the procedure for brigadier generals was exactly as described above.

Scoring Ratings from Form OE-G

a. In Section I, a subject's score for each OE-G was equivalent to his position on the 20-point scale (a score of 20 representing the maximum obtainable by the "best" officer), while his final score on Section I was the mean of all such scores from all ratings he received.

b. In Section II of Form OE-G, a weighting system for position as one of the seven judged most competent, seven least competent, or intermediate group was developed. The scale of weights provides an adjustment for the varying number of men evaluated by each rater. An officer's score on Section II became a function not only of the rank position of his judged competence, but of the total number of men evaluated by the rater. Weights were assigned through a rough application of the normal curve. The assumption that general officer ability is normally distributed required that a certain proportion of rated officers receive each of the possible scores. When only 13 officers were evaluated by a single rater, fewer of them received the maximum score of four than when 25 officers were rated. Proportions of the normal curve were not followed rigorously, however, since in a few instances it was deemed advisable to create more of a distinction between weights for different numbers of ratees than would be possible through a strict application of the normal curve. The subject's final rating in Section II, similarly to Section I, was the mean of all

ratings he received in Section II. The sliding scale of weights used in scoring Section II is shown in Table 1 below.

Table 1
SCORING WEIGHTS FOR POSITION ON NOMINATING SCALE, SECTION II,
OFFICER EVALUATION REPORT, OE-G

Scale Position	Number of Men Rated					
	24-25	20-23	17-19	14-16	13	12
H ₁ *	4	4	4	4	4	4
H ₂	4	4	4	4	3	3
H ₃	4	3	3	3	3	3
H ₄	3	3	3	3	3	3
H ₅	3	3	3	3	2	2
H ₆	3	3	3	2	2	2
H ₇	3	3	2	2	2	-
L ₇ **	1	1	2	2	2	-
L ₆	1	1	1	2	2	2
L ₅	1	1	1	1	2	2
L ₄	1	1	1	1	1	1
L ₃	0	1	1	1	1	1
L ₂	0	0	0	0	1	1
L ₁	0	0	0	0	0	0
Not Nominated	2	2	2	2	2	-

* H = High

** L = Low

Obtaining and Selecting Forms 67-1

Efficiency Reports, WD AGO Form 67-1, which had been completed on all general officers from the time the form was authorized for official use (1 July 47) to the time the statistical analyses were completed, were obtained from the Career Management Branch of the Division of Personnel and Administration and from the Personnel Information Branch of The Adjutant General's

Office, where Parts I and II, respectively, of Form 67-1 were filed. Usable Forms 67-1 were available for 116 major generals (81.7% of the base population) and 173 brigadier generals (93.5% of the base population).

One Form 67-1 was selected for each subject. Criteria for selection of these reports were: (1) a minimum of 90 days for period covered by report, and (2) where more than one Form 67-1 existed for a ratee, most intimate working contact between ratee and rater (as indicated by Section II E of the Form).

Processing Data

The following data were coded and punched:

General

Rank
Man number

Form OE-G

Rating (single and mean) on 20-point scale (Section I)
Rating (single and mean) via nominating technique (Section II)
Number of raters on 20-point scale
Number of raters via nominating technique

Form 67-1

Date of Report
Job Proficiency (JP) Raw Score^{5/}
Personal Qualifications (PQ) Raw Score^{5/}
Over-All (OA) Raw Score^{5/}
Section II Part C - Rater (Raw score for each scale)
Section II Part C - Indorser (Raw score for each scale)
Section IV Raw Score
Section V - Primary Duty - Rater
Section V - Secondary Duty - Rater
Section V - Primary Duty - Indorser^{6/}
Section V - Secondary Duty - Indorser^{6/}
Section VI - Raw Score
Section VII - Personal Qualifications - Rater
Section VII - Personal Qualifications - Indorser^{6/}

STATISTICAL ANALYSES

The following variables were intercorrelated for major and brigadier

5/ By scoring system in effect 1 July 1947 to April 1949. Since use of this score was discontinued prior to the completion of this study, it is not considered in the analysis.

6/ So few reports on the generals whose Forms 67-1 were studied in this project bore indorsements that no attempt was made to study these variables.

generals considered as a group and for major generals and brigadier generals considered separately:

A. Form OE-G

1. Mean ratings on 20-point scale
2. Mean ratings via nominating technique

B. WD AGO Form 67-1

3. Section IV Raw Scores
4. Section V - Primary Duty - Rating officer
5. Section VI Raw Scores
6. Section VII - Raw scores of each of the six scales - Rating officer

C. Means and standard deviations of these variables were also computed.

D. A frequency distribution of mean ratings on the criterion was made.

E. The reliability of the criterion was estimated.^{7/}

F. Sigma distances of mean over-all Form 67-1 standard scores^{8/} of general officers above the mean over-all standard scores^{8/} of all other grades of officers were computed. This was accomplished in order to provide information bearing on the applicability to general officers of the conversion table developed for use with lower-grade officers.

G. A coefficient of correlation was obtained between the number of times the rated officer's name was checked off on the original rosters and the rating he received. This was done to determine whether or not a relationship exists between willingness to rate an officer and the rating he receives.

^{7/} Using Horst's formula, $r_{11} = \sqrt{\frac{\sum \sigma_1^2}{N\sigma_M^2}}$. See Horst, Paul. A Generalized Expression for the Reliability of Measures Psychometrika, 1949, 14, 21-32.

^{8/} These scores were computed by use of the revised scoring weights developed under PJ 4104-08, 1949, Follow-up Validation of Form 67-1 (PRS Report No. 791). This scoring system replaced the scoring procedure in effect 1 July 47 to April 49. Under the revised plan, separate scores for job proficiency and personal qualifications have been abandoned for a single over-all score, which is not the same as the former over-all score.

H. To obtain a picture of the validity of the Form 67-1 for general officers considered as part of the total officer population, a formula for correction for restriction in range was applied.

I. Multiple correlations and beta weights were obtained for the prediction of each of the two criteria from the best weighted combination of Sections IV - VII of Form 67-1. The validity of the form when parts were combined by straight addition and when the scoring formula developed under PJ 4104-08 was applied was also determined.

RESULTS

On the basis of findings of past reliability studies, it was decided to exclude from the analysis of data any subject who had been evaluated by less than five fellow officers on Form OE-G. This eliminated only five general officers. Of the remaining number, Forms 67-1 were available for 116 major generals (82% of base population) and 170 brigadier generals (92% of base population), making a total of 286 usable cases for this investigation.

Table 2 shows the distribution of number of ratings for all general officers on whom criterion evaluations were received. The mean number of ratings is 14.5.

Table 2
DISTRIBUTION OF NUMBER OF RATINGS RECEIVED BY GENERAL OFFICERS
EVALUATED ON FORM OE-G

Number of Ratings	Number of Men Receiving Ratings
1 - 3	3
4 - 6	9
7 - 9	17
10 - 12	56
13 - 15	113
16 - 18	75
19 - 21	34
22 and up	15
Total	327

A sampling bias which might tend to reduce the size of the validity coefficient entered into the population of major generals, since Forms 67-1

are not accomplished for general officers in the permanent grade of major general. As a possible effect of this, the superior segment of major generals -- those promoted to permanent status -- may have been absent from the study, with a consequent narrowing of the range of population.

Predictor Variables

Because of the restricted nature of the sample (officers of very high rank), it was anticipated, and later substantiated by the data, that means would be high and standard deviations low. On all parts of the Form 67-1, the mean score for general officers was above the average scores of field and company grade officers, and the standard deviation considerably below.

The mean over-all standard score for brigadier generals was 131, for major generals 135.^{9/} Both are substantially higher than mean over-all standard scores of a combined population of RA and non-regular lower grade officers. The upward deviation of general officer scores is less pronounced when the general officers are compared with RA officers alone. Table 3 shows the mean over-all standard scores by grade for 10,000 regular Army officers below the grade of general and for 286 brigadier and major generals. The standard scores are based on Form 67-1 scores of the 10,000 lower grade officers.

Table 3
MEAN OVER-ALL STANDARD SCORES ON WD AGO FORM 67-1 FOR
10,000 RA OFFICERS OF GRADES LIEUTENANT
THROUGH COLONEL AND FOR 286 BRIGADIER
AND MAJOR GENERALS*

Grade	Standard Score
Major General	133
Brigadier General	131
Colonel	113
Lt. Colonel	112
Major	109
Captain	107
1st Lieutenant	105
2nd Lieutenant	81

* Standard Scores are obtained from the official Army conversion table of April 1949.

^{9/} By revised scoring system of PJ 4104-08.

For the 286 general officers in the final phase of the study, Tables 4, 5, and 6 show the means, standard deviations, and intercorrelations among the following Form 67-1 raw scores:

1. Section IV - Job Performance - Forced-choice tetrads
2. Section V - Job Performance Rating officer - Primary duty
3. Section VI - Personal Qualifications - Forced-choice tetrads
4. Section VII - Personal Qualifications - Rating officer
(six scales)

Table 4
INTERCORRELATION OF WD AGC FORM 67-1 RAW SCORES FOR
MAJOR AND BRIGADIER GENERALS
N=286

Mean	S.D.	Form 67-1 Variables										
48.6	3.28	Sec. IV - Job Proficiency Forced-Choice Tetrads	1	1								
9.2	.89	Sec. V - Job Proficiency Rating Scales	2	.46	2							
46.4	4.14	Sec. VI - Personal Qualifications Forced-Choice Tetrads	3	.65	.49	3						
9.2	.85	Sec. VII- Personal Qualifications Rating Scale (1)	4	.27	.68	.42	4					
9.4	.76	Sec. VII- Personal Qualifications Rating Scale (2)	5	.33	.61	.54	.66	5				
9.5	.79	Sec. VII- Personal Qualifications Rating Scale (3)	6	.60	.68	.51	.45	.45	6			
9.3	.82	Sec. VII- Personal Qualifications Rating Scale (4)	7	.34	.72	.36	.66	.59	.66	7		
9.2	.84	Sec. VII- Personal Qualifications Rating Scale (5)	8	.39	.61	.54	.58	.60	.52	.59	8	
9.6	.71	Sec. VII- Personal Qualifications Rating Scale (6)	9	.38	.68	.38	.54	.53	.73	.68	.54	9

Table 5
 INTERCORRELATION OF WD AGO FORM 67-1 RAW SCORES FOR
 MAJOR GENERALS
 N=116

Mean	S.D.	Form 67-1 Variables																		
49.0	2.80	Sec. IV - Job Proficiency Forced-Choice Tetrads	1	1																
9.4	.80	Sec. V - Job Proficiency Rating Scales	2	.29	2															
46.6	3.84	Sec. VI - Personal Qualifications Forced-Choice Tetrads	3	.50	.36	3														
9.2	.78	Sec. VII- Personal Qualifications Rating Scale (1)	4	.27	.65	.46	4													
9.5	.62	Sec. VII- Personal Qualifications Rating Scale (2)	5	.04	.55	.41	.55	5												
9.6	.70	Sec. VII- Personal Qualifications Rating Scale (3)	6	.39	.71	.29	.42	.27	6											
9.4	.75	Sec. VII- Personal Qualifications Rating Scale (4)	7	.27	.70	.28	.62	.40	.68	7										
9.3	.80	Sec. VII- Personal Qualifications Rating Scale (5)	8	.20	.64	.30	.59	.53	.52	.54	8									
9.6	.70	Sec. VII- Personal Qualifications Rating Scale (6)	9	.35	.61	.27	.49	.31	.72	.64	.44	9								

Table 6
 INTERCORRELATION OF WD AGO FORM 67-1 RAW SCORES FOR
 BRIGADIER GENERALS
 N=170

Mean	S.D.	Form 67-1 Variables																		
48.4	3.55	Sec. IV - Job Proficiency Forced-Choice Tetrads	1	1																
9.2	.93	Sec. V - Job Proficiency Rating Scales	2	.54	2															
46.2	4.32	Sec. VI - Personal Qualifications Forced-Choice Tetrads	3	.72	.56	3														
9.1	.89	Sec. VII- Personal Qualifications Rating Scale (1)	4	.26	.69	.40	4													
9.3	.83	Sec. VII- Personal Qualifications Rating Scale (2)	5	.44	.63	.59	.71	5												
9.4	.84	Sec. VII- Personal Qualifications Rating Scale (3)	6	.69	.65	.62	.46	.51	6											
9.2	.85	Sec. VII- Personal Qualifications Rating Scale (4)	7	.35	.73	.40	.68	.67	.64	7										
9.1	.85	Sec. VII- Personal Qualifications Rating Scale (5)	8	.48	.58	.67	.57	.63	.50	.61	8									
9.5	.72	Sec. VII- Personal Qualifications Rating Scale (6)	9	.39	.71	.43	.57	.64	.74	.71	.60	9								

Criterion Variables

Form OE-G proved highly successful in producing good differentiation among general officers. On the 20-point scale of Section I, the mean score for all general officers in the sample was 11.5. The mean of Section II, which has a maximum score of 4, was 1.5. Table 7 below presents, for major and brigadier generals separately and for the combined population, the distribution of mean scores on the criterion measures.

Table 7
DISTRIBUTION OF MEAN RATINGS FOR CRITERION DATA (FORM OE-G)

Section I Mean Rating	Frequency Major General	Frequency Brigadier General	Total Frequency	Cumulative Frequency
18	2	--	2	2
17	3	3	6	8
16	3	10	13	21
15	11	16	27	48
14	16	16	32	80
13	13	21	34	114
12	16	27	43	157
11	10	13	23	180
10	11	13	24	204
9	13	15	28	232
8	9	16	25	257
7	6	13	19	276
6	2	3	5	281
5	--	1	1	282
4	1	1	2	284
3	--	1	1	285
2	--	--	--	285
1	--	1	1	286
Mean of Mean Ratings	11.7	11.4	11.5	
S.D.	2.9	3.1	3.0	
<u>Section II</u>				
3	7	12	19	19
2	55	78	133	152
1	50	68	118	270
Mean of Mean Ratings	1.6	1.5	1.5	
S.D.	0.7	0.7	0.7	

Raters on Form OE-G tended to place the rated officer in the same relative position in both Sections I and II -- the correlation between the two sections was .88. Raters agreed with each other almost as well. The estimated reliability of the criterion measures for the combined population of brigadier and major generals with five or more criterion ratings (i.e., 322 officers) was .81 for Section I and .82 for Section II. For brigadier generals alone, reliabilities were .82 and .81, and for major generals .81 and .83.^{10/}

An interesting finding of the study concerns the existence of a low but significant and positive relationship between the number of times the rated officer's name was checked off on the original mimeographed rosters sent out to all active brigadier and major generals and the rating he received on Form OE-G. The coefficient of correlation between number of times mentioned and mean individual score on Section I of Form OE-G was .29, between times mentioned and Section II of the form, .35. This relationship of number of raters able and/or willing to rate to mean rating received has been found in a number of other studies. This finding has important implications for planning of research involving ratings.

Validity of the Form 67-1 For General Officers

Depending upon which system is used for weighting parts of the Form, over-all validities of the Form 67-1 for general officers range from .21 to .44. In Table 8 below, it can be seen that the maximum total validities obtainable by an optimal weighting of parts of the Form 67-1 are .40 (multiple R with OE-G Section I criterion) and .44 (multiple R with OE-G Section II criterion) for the population of brigadier generals. Comparable validities for major generals are .38 and .40, respectively. By straight summation of parts of the Form, validities are .37 and .31 for brigadier generals, .28 and .29 for major generals. By still a third scoring system, --weighting of parts in accordance with the scoring formula developed in PJ 4104-08 -- over-all validities of the form are .33 and .32 for brigadier generals, .21 and .24 for major generals.

10/ Reliability estimated by Horst formula: see note 7 on page 12.

Table 8
OVER-ALL VALIDITY OF THE FORM 67-1 FOR GENERAL OFFICERS

Type of Weighting for Total Score	Correlation with Form OE-G			
	Major Generals		Brigadier Generals	
	Sec. I	Sec. II	Sec. I	Sec. II
Optimal Weighting (Maximum Multiple R)	.38	.40	.40	.44
Straight Summation of Parts	.28	.29	.37	.31
Official Scoring Weights of PJ 4104-08	.21	.24	.33	.32

Individual section validities of Form 67-1 are satisfactory. An inspection of Table 9 below reveals coefficients of correlation with the two criterion scales of Form OE-G as high as .38.

Table 9
PART SCORE VALIDITY OF THE WD AGO FORM 67-1 FOR GENERAL OFFICERS

Form 67-1 Variables	Correlation with Form OE-G					
	Major General		Brigadier General		Major and Brigadier General	
	Sec. I	Sec. II	Sec. I	Sec. II	Sec. I	Sec. II
Sec. IV raw score	.31	.35	.21	.13	.25	.20
Sec. V Primary Duty, Rat. Off.	.29	.26	.29	.23	.29	.24
Sec. VI raw score	.13	.11	.27	.19	.22	.16
Sec. VII Rating Officer 1	.28	.27	.33	.29	.31	.28
Sec. VII Rating Officer 2	.10	.13	.29	.25	.23	.22
Sec. VII Rating Officer 3	.16	.16	.33	.26	.27	.23
Sec. VII Rating Officer 4	.20	.22	.38	.31	.32	.28
Sec. VII Rating Officer 5	.22	.22	.35	.29	.30	.26
Sec. VII Rating Officer 6	.15	.18	.29	.24	.24	.22

From Table 9 it can be seen that Section IV, Job Performance tetrads, shows the greatest validity for major generals, while the scales of Section VII, Personal Qualifications, show the greatest validity for brigadier generals. Sections VI and VII, Personal Qualifications tetrads and scales, are least valid

for major generals. In considering the size of the coefficients, it must be remembered that the population is itself a restricted one, representing top level officer personnel. Since the size of the coefficient of correlation is in part a function of the spread of scores, the restricted population plays an important role in limiting the size of the coefficients. An example of the piling up of scores at one end of the continuum is found in Section VII in which the mean score of each of the six scales is well over 9 where the maximum possible score is 10.

When the general officer population is considered as the upper end of the total Army officer population, a formula for correction of restricted range can be applied with substantial increase in validity. Table 10 shows the effect on validity of the application of such a formula.^{11/}

Table 10
EFFECT OF CORRECTION FOR RESTRICTION IN RANGE ON VALIDITY OF
FORM 67-1 FOR BRIGADIER AND MAJOR GENERALS

Form 67-1 Score	Section I - OE-G		Section II - OE-G	
	Uncorrected r	Corrected r	Uncorrected r	Corrected r
A. Major Generals:				
Over-all	.21	.39	.24	.43
Sec. IV	.31	.45	.35	.50
Sec. V - Prim. Duty Rat. Off.	.29	.45	.26	.40
Sec. VI	.13	.17	.11	.15
Sec. VII - Rat. Off.	.18	.29	.20	.31
B. Brigadier Generals:				
Over-all	.33	.48	.32	.46
Section IV	.21	.26	.13	.16
Sec. V - Prim. Duty Rat. Off.	.29	.40	.23	.32
Sec. VI	.27	.31	.19	.22
Sec. VII - Rat. Off.	.33	.44	.28	.38

^{11/} The following formula of Karl Pearson, which makes the assumption that all variables studied are normally distributed, was employed:

$$R_{12} = \frac{r_{12} \frac{S_1}{s_1}}{\sqrt{1 - r_{12}^2 + r_{12}^2 \frac{S_1^2}{s_1^2}}}$$

Where S_1 is the S.D. in the general population and s_1 is the S.D. in the restricted population.

Comparison of the Validity of the Form 67-1 for General Officers
with the Validity of the Form 67-1 for All Other Grades of Officers

Data bearing on the validity of the form for officers other than those of general grade were gathered in January 1949 under PR 4104, Study of Officer Efficiency Rating Methods.^{12/} It is not the present purpose to report in detail results of this investigation, but merely to make some indication of the relative efficiency of the functioning of Form 67-1 for officers of general and lower grades. Figures 1 through 5 (pages 22-26), show graphically the results of such a comparison for over-all scores and for four sections of Form 67-1: Section IV, V (primary duty, rating officer), VI, and VII (rating officer). The general officers are compared with Regular Army officers only.

^{12/} These data are presented in PRS Report 791a, 1949, Follow-up Validation of WD AGO Form 67-1, The Adjutant General's Office, Personnel Research Section.

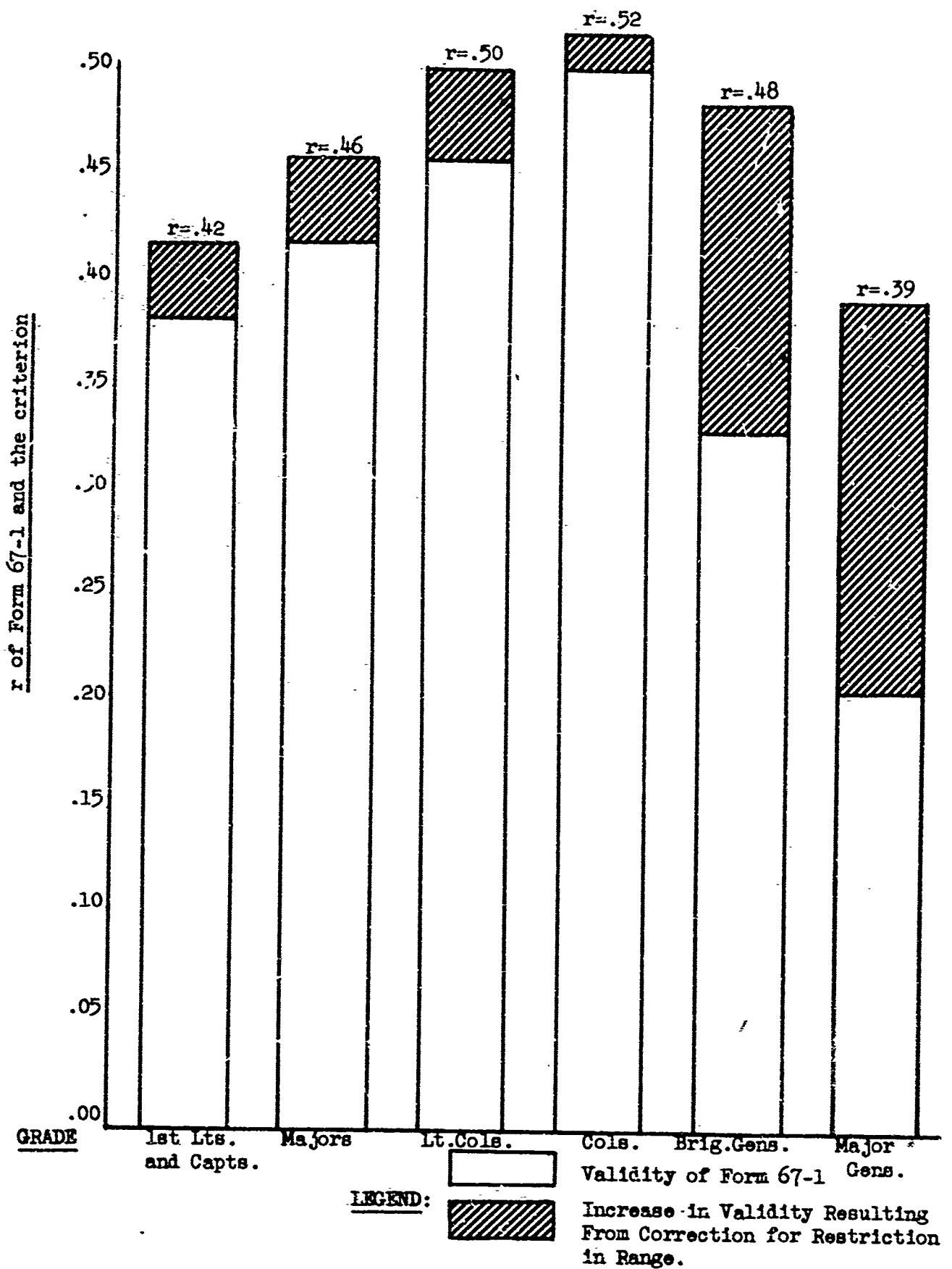


Fig. 1. Analysis by grade of the validity of WD AGO Form 67-1, Efficiency Report for Army Officers: Over-all Score derived from PJ 4104-08 official weights. (Criterion: For general officers - PRT-676 Section I. For all other grades: PRT-1629B.)

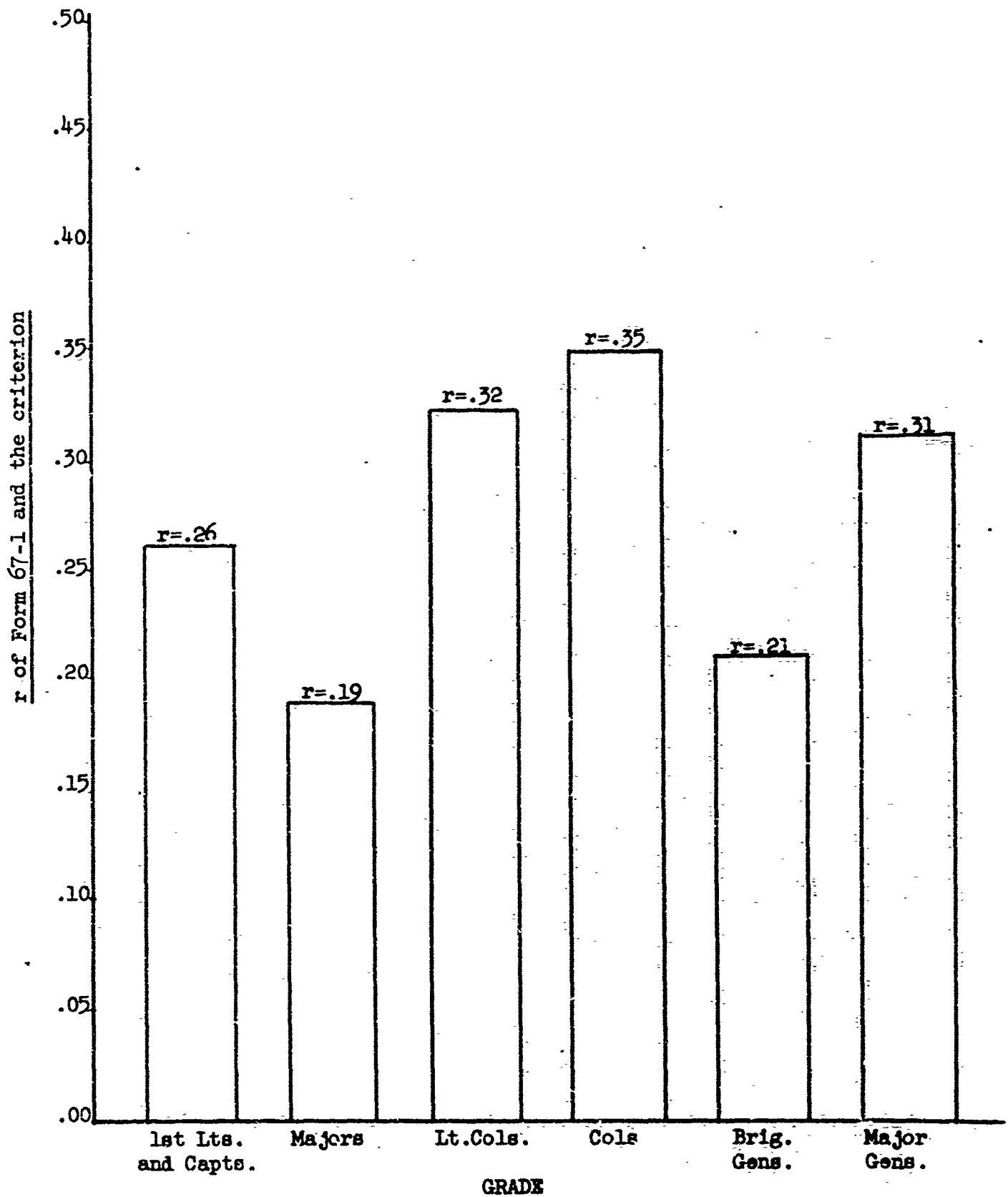


Fig. 2. Analysis by grade of the validity of WD AGO Form 67-1, Efficiency Report for Army Officers: Section IV - Job Performance, Forced-Choice Tetrads. (Criterion: For general officers - PRT-676, Section I. For all other grades: PRT-1629B.)

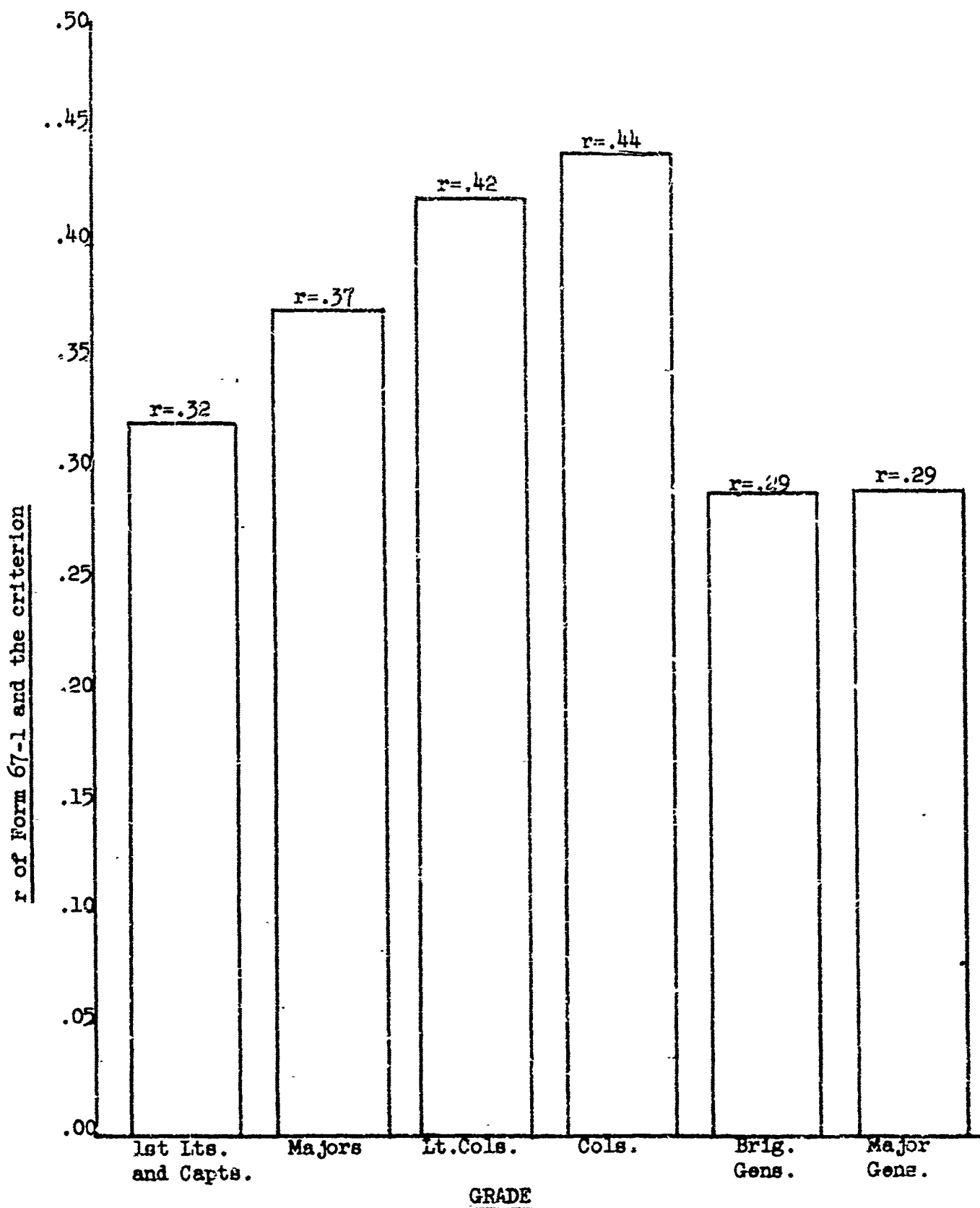


Fig. 3. Analysis by grade of the validity of WD AGO Form 67-1, Efficiency Report for Army Officers: Section V - Job Performance, Primary Duty Rater. (Criterion: For general officers - PRT-676, Section I. For all other grades: PRT-1629B.)

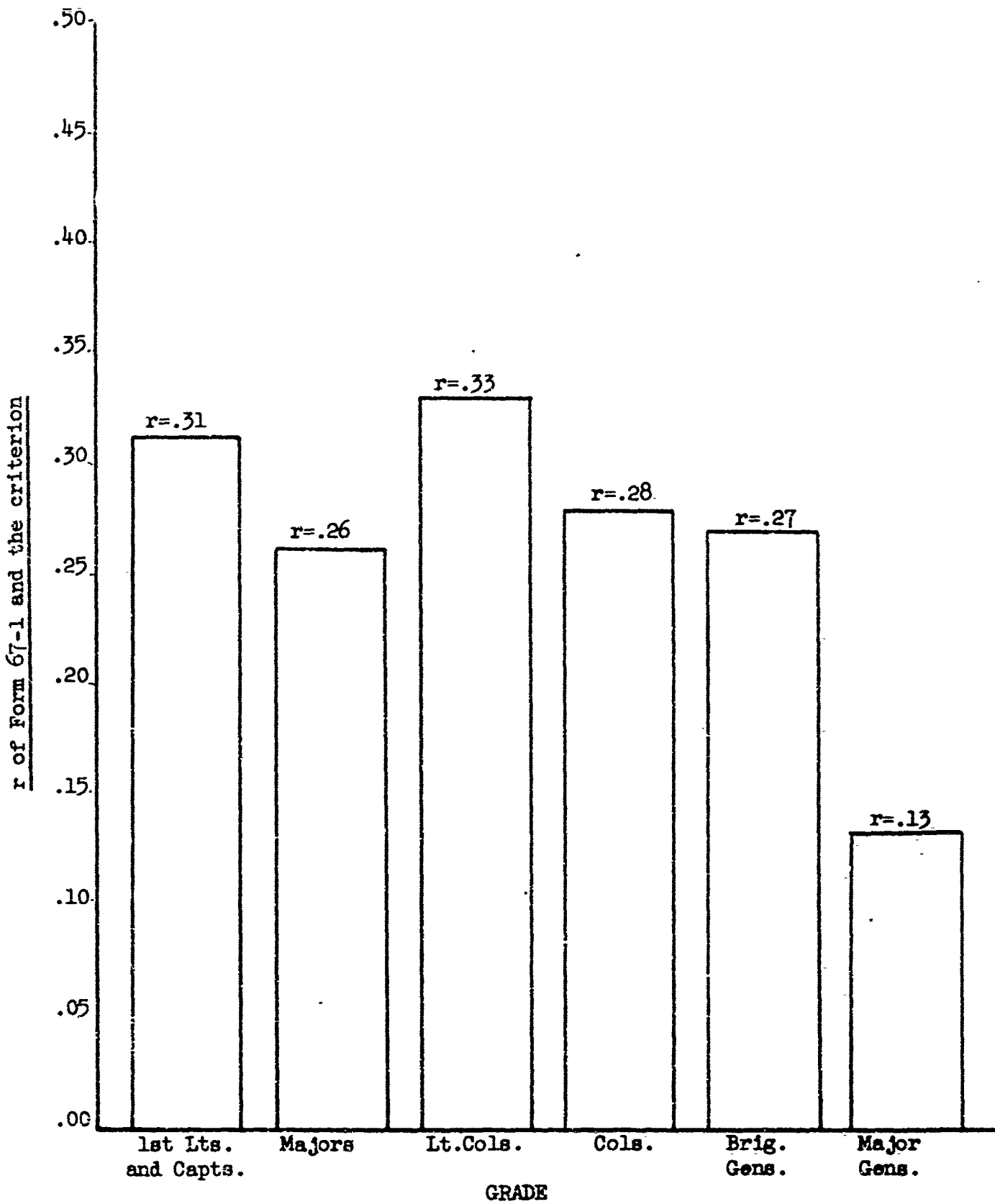


Fig. 4. Analysis by grade of the validity of WD AGO Form 67-1, Efficiency Report for Army Officers: Section VI - Personal Qualifications, Forced-Choice Tetrads. (Criterion: For general officers - PRT-676, Section I. For all other grades: PRT-1629R.)

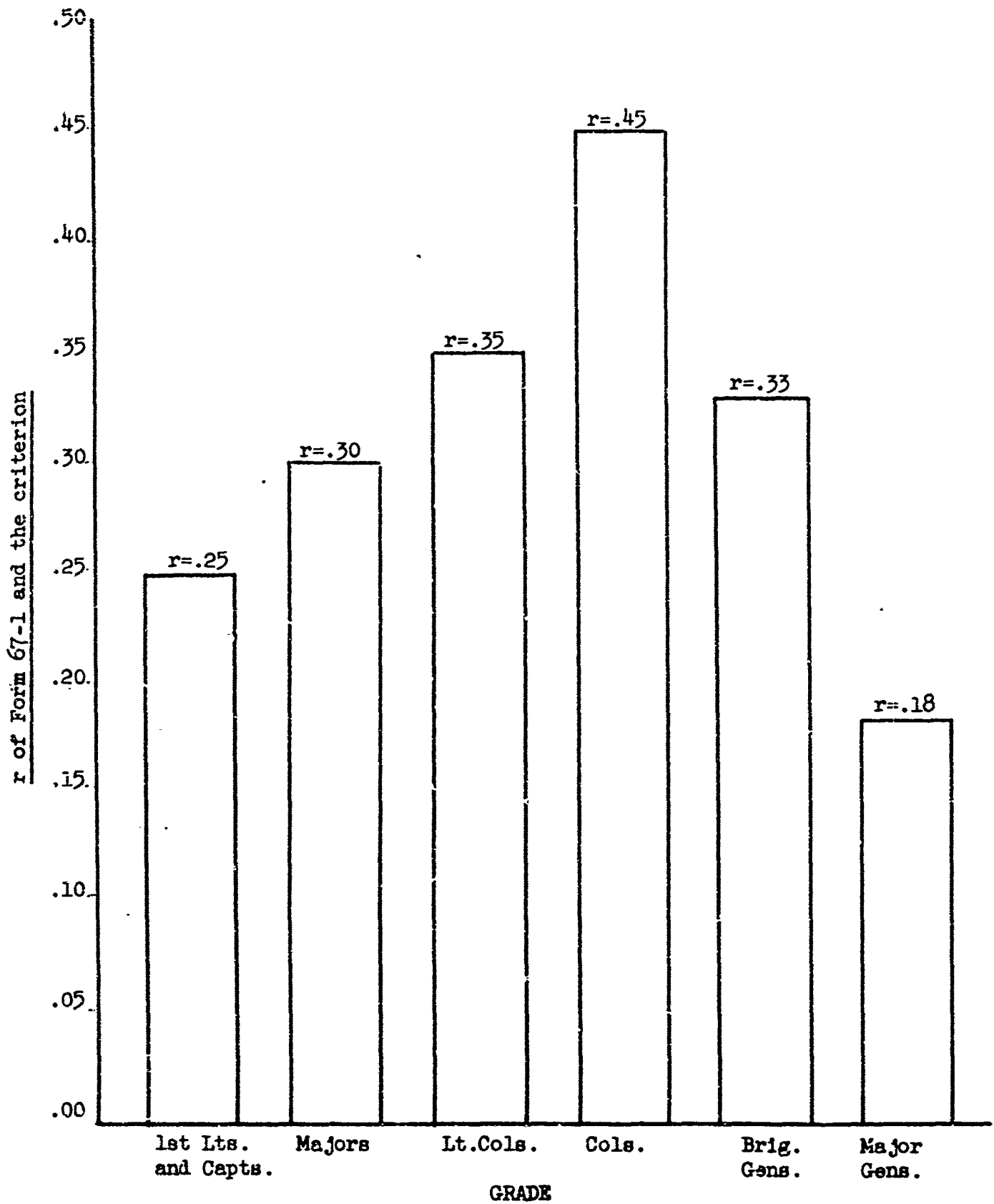


Fig. 5. Analysis by grade of the validity of WD AGO Form 67-1, Efficiency Report for Army Officers: Section VII - Personal Qualifications, Rating Officer. (Criterion: For general officers - PRT-676, Section I. For all other grades: PRT-1629B.)

From Figures 1 through 5 it can be seen that validity coefficients for general officers compare favorably with those for officers of other grades, particularly first lieutenant, captain, and major. In three of the four sections analyzed, general officer validity coefficients equalled or exceeded those for the three lowest grades of officers. Only in Section V (Job Proficiency) of Form 67-1 does the validity for general officers fall noticeably below that for other grades of officers. In every instance, validity coefficients for lieutenant colonels and colonels exceed to a small degree those of general officers.

That differences in validity of the Form 67-1 for general officers and lower grade officers are slight and may be due at least in part to greater range of scores in the lower grades is demonstrated by Figure 1 (Page 22) which shows the effect on validity of correction for restriction in range. From Figure 1, it is seen that when a correction for smaller variability of general officer scores is applied, the difference between general officer and lower grade validities becomes very slight indeed.

In interpreting the comparative figures, it must be remembered that a different criterion instrument was used in each of the two studies, and since the size of the validity coefficient is in part a function of the quality of the criterion, this limitation to a direct comparison of grades should be borne in mind.

CONCLUSIONS

A. The corrected multiple R's of .48 for brigadier generals and .39 for major generals obtained through use of the official scoring formula for lower grade officers indicate a level of validity that renders the use of WD AGO Form 67-1 desirable as an estimate of general officer efficiency.

B. While Section VI of the Form 67-1 shows relatively low validity for both brigadier and major generals and Section VII low validity for major generals, these sections are valuable because of the contribution they make to a well-rounded picture of the general officer's abilities.

C. The conversion table which is used in translating raw to standard scores for all other grades of Army officers is appropriate for general officers. Its continued use has the following advantages:

(1) The assumption that generals merely represent the upper end of a single continuum of Army officer ability is probably not an unwarranted one and seems to be substantiated by the data, particularly mean differences by grade of Form 67-1 scores. Steady increases in mean 67-1 scores by grade serve to support the statistical findings of good validity of the form and justify the use of a single conversion table for all grades.

(2) There is a wide enough range of ability within the population of general officers so that the advantage of being able to compare general officers with each other is still retained.

(3) Not only would it be possible to compare general officers with each other but in addition, direct comparison of other grades of officers with general officers could also be made.

PERSONNEL

Project Director: Mr. S. C. Markey

Research Associate: Mrs. G. H. Falk

Statistical Advisor: Mr. B. J. Winer

Preparation of Report: Mrs. G. H. Falk