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BASIC RIFLE MARKSMANSHIP TEST: TRAINEE PRETEST AND POSTTEST ATTITUDES

T. J. Tierney, Jr., J. A. Cartner,
and
T. J. Thompson

ARI FIELD UNIT AT FORT BENNING, GEORGIA

U. S. Army
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Commander

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The Basic Rifle Marksmanship (BRM) Test was conducted to evaluate the cost and training effectiveness of four programs of instruction (POI) for BRM. Measurement of trainee attitudes toward each of the four programs was one part of the evaluation. Pretest and posttest questionnaires were given to approximately 3,400 male and 1,000 female basic trainees. Questionnaires were also given to trainees who participated in the skill retention phase of the BRM Test. Items elicit background information and responses about topics such as program effectiveness, confidence in performance, and enjoyment of training.

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20. (Continued)

Trainees generally liked marksmanship training and considered it to be effective, regardless of the POI completed. They rated quality of instruction as high, and generally judged instructional hours and rounds to be sufficient. Exceptions to this overall favorable trend were relatively negative views toward the effects of instructor pressure and the belief that instruction in night fire and automatic fire was somewhat inadequate. Trainees evaluated the concept of practice record fire very favorably.

Males typically liked marksmanship training more than females did and were more confident in their marksmanship skills. These attitudinal differences, however, had no discernible effects on performance; they appeared to be largely due to greater prior rifle experience among males.

The report is written primarily for research scientists, although the conclusions are of interest to military trainers.

Technical Paper 354

BASIC RIFLE MARKSMANSHIP TEST: TRAINEE PRETEST AND POSTTEST ATTITUDES

T. J. Tierney, Jr., J. A. Cartner,

and

T. J. Thompson

Submitted by:
H. C. Strasel, Chief
ARI FIELD UNIT AT FORT BENNING, GEORGIA

Approved By:

E. Ralph Dusek, Director
PERSONNEL AND TRAINING
RESEARCH LABORATORY

Joseph Zeidner
TECHNICAL DIRECTOR
U.S. Army Research Institute for
the Behavioral and Social Sciences

U.S. ARMY RESEARCH INSTITUTE FOR THE BEHAVIORAL AND SOCIAL SCIENCES
5001 Eisenhower Avenue, Alexandria, Virginia 22333

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M16A1 Training
Effectiveness Analysis

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FOREWORD

The research reported here was performed by the Army Research Institute-Fort Benning Field Unit as a part of an ongoing program of research directed toward development of cost effective methods for individual and collective training. This program includes research on multiple aspects of the design, development, evaluation, and integration of cost and training effective training systems for the U.S. Army.

This report represents results of questionnaires administered to trainees during the Basic Rifle Marksmanship (BRM) Test conducted at Fort Jackson, S.C., during the spring of 1976. The questionnaires were designed and administered in response to a request by the U.S. Army Infantry School (USAIS) for support of the Training and Doctrine Command (TRADOC) sponsored field test. ARI provided test support that included involvement in all phases from design through analysis and reporting of results.

The BRM Test was a comparative evaluation of the cost and training effectiveness of four programs of instruction. Data collected included cost, performance, and demographic information, in addition to the attitudinal data. ARI and TRADOC Combined Arms Test Activity (TCATA) jointly reported the analyses of the demographic data in the Proceedings of the Fifteenth Annual Army Operations Research Symposium. The analysis of cadre attitudes measured during the BRM Test has been reported in an ARI Research Problem Review 78-7. A forthcoming ARI report will present an analysis of the training effectiveness of each block of instruction in the four BRM programs. The successful conduct of the BRM Test required close coordination between ARI, USAIS, and other TRADOC elements, particularly TCATA. The orchestration of the diverse participants by the Test Director, COL George Ball, and the Test Officer, MAJ Jack Ball, insured the success of the test. Also, SP5 Keith Evans and SP4 Frederick Heller assisted in instrument construction, data reduction, and data analysis. The data processing and quality control staffs at TCATA provided data processing support. Special thanks are extended to CPT Michael Clayton, Mr. Jack Morris, Mr. James Kirksey, and Mr. Don Walker of TCATA.

The project was conducted as part of Army Project 2Q763731A773, FY 76 Work Program, and Army Project 2Q763743A773, FY 77. It was directly responsible to the requirements of the USA13 and TRADOC.

JOSEPH ZEIDNER
Technical Director

BASIC RIFLE MARKSMANSHIP TEST:
TRAINEE PRETEST AND POSTTEST ATTITUDES

BRIEF

Requirement:

To determine attitudes of trainees toward each of four programs of instruction (POI) used in the Basic Rifle Marksmanship (BRM) Test.

Procedure:

Pretraining and posttraining questionnaires were given to approximately 3,400 male trainees and 1,000 female trainees who participated in the Basic Rifle Marksmanship Test at Fort Jackson, S.C. Questionnaires were also given to trainees who participated in the skill retention phase of the BRM Test. Items were designed to elicit background information and responses about topics such as cost effectivness, program effectiveness, confidence in performance, and enjoyment of training.

Findings:

Trainees generally liked marksmanship training and considered it effective, regardless of the POI completed. Quality of instruction was rated highly, and instructional hours and rounds were generally judged to be sufficient. The exceptions to this overall favorable trend were (a) relatively negative views toward the effects of instructor pressure and (b) the belief that instruction in night fire and in automatic fire were somewhat inadequate. The concept of practice record fire was evaluated very favorably.

Males typically liked marksmanship training more than females and were more confident in their marksmanship skills. These attitudinal differences, however, had no discernible effects on performance. Apparently they occurred because males had had more prior rifle experience than females had.

Utilization of Findings:

These results should be used in the redesign of rifle marksmanship training. Attention should be focused on trainees' evaluations of current night-fire and automatic fire training, as well as on the possible benefits of practicing for the qualification task.

BASIC RIFLE MARKSMANSHIP TEST:
TRAINEE PRETEST AND POSTTEST ATTITUDES

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BASIC RIFLE MARKSMANSHIP TEST: TRAINEE PRETEST AND POSTTEST ATTITUDES

PURPOSE

Basic Rifle Marksmanship (BRM) is a required course of instruction for all Basic Combat Training (male) and Basic Training (female) trainees. A field test comparing four programs of instruction (POI) for BRM training was conducted in the spring of 1976 at the Army Training Center, Fort Jackson, S.C.

The primary purpose of the BRM Test was to determine the training effectiveness of each of the four programs (compared in Table 1) and to perform a cost and training effectiveness analysis on them. Selection of one of the four programs for Army-wide use, with indicated modifications, will be based on the results of this test. A secondary purpose of the test was to construct a data base for use in the long-term development of a "threat-oriented" marksmanship program, a program designed to meet the demands of possible warfare in the future.

This report presents the results of questionnaires administered to trainees and their instructors (cadre) (Tierney & Cartner, 1978). A final report, to be produced by the TRADOC Systems Analysis Activity (TRANSANA), will integrate results of analyses performed on firing, cost, demographic, and attitudinal data.

Table 1

Total Hours of Instruction and Rounds of Ammunition for BRM Test POIs

POI	Hours	Rounds
1 (ASUBJSCD)	77[a]	720
2	62	513
3	49	262
4	35	334

[a]The figure "72 hours" was erroneously used in the questionnaires. See Appendix A for explanation.

The primary criterion for evaluating the effectiveness of each of the four candidate BRM training programs was terminal marksmanship performance measured by hit probability (pH). In addition, the attitudes and opinions of both trainees and trainers (cadre) as measured by questionnaires provided data for evaluating each program. These questionnaires were also designed to determine weak portions of the programs and to preview likely implementation problems. Specifically, the questionnaires were administered to determine user reactions to each program and to measure the perceived effectiveness of each program.

Items in the trainee questionnaires were designed to (a) reveal trainee attitudes toward rifle marksmanship and BRM training prior to and at the end of BRM, (b) determine trainee attitudes toward rifle marksmanship and BRM training after the marksmanship retention tests, and (b) provide background information on trainees (U.S. Army Infantry School, 1976).

Background data were collected for two purposes: (a) to identify correlates of M16A1 marksmanship for input to the ongoing analyses of overall training effectiveness of the M16A1 system, and (b) to insure that test results (firing performances) were not biased by treatment group differences. To meet the first purpose, the background data are being used to construct a model of marksmanship performance that identifies the contribution of both background and training variables to trainee proficiency (Tierney, Cartner & Clayton, 1977a). The second purpose, the analysis of relationships among treatment group variables and demographic or "subject" variables, has been previously reported (Tierney, Cartner & Clayton, 1977b).

Trainees received questionnaires prior to BRM training and at the conclusion of BRM training. Fourteen questionnaire items were repeated to detect attitude changes as a function of training. Seven of these items were administered again to those trainees who fired a retention Post Test. Independent groups fired these Post Tests at approximately 4, 6, and 8 weeks after completion of BRM. These retention questionnaires were given to determine to what extent immediate posttraining attitudes were maintained.

METHOD

Research Design and Questionnaires

The test included five male basic training companies and one female basic training company per POI (U.S. Army Infantry School, 1976a). For each POI there was a "limited training" control group and a "regular training" experimental group. The limited training control group represented a good approximation to a "no-training" group in a test that involved trainees in live firing. The limited training groups received record-fire Post Tests immediately after fundamentals training and then continued through the rest of the BRM program. This Post Test, used at

various points in the BRM test, was a specially constructed record-fire table that provided a common effectiveness measure for each POI (USAIS, BRM Test Form 77910). All trainees received record-fire Post Test after completion of the daytime record-fire tables and again at the completion of BRM training.

Thus, the design of the BRM Test was factorial with four independent variables: POI, limited training versus regular training, sex of trainee, and pretraining/posttraining measures.

The trainee questionnaires focused primarily on characteristics of the four POIs, but data were in some cases analyzed using a factorial analysis of variance (ANOVA) or of covariance (ANCOVA) model. The proportional n method described by Winer (1971) was used in these analyses.

Questionnaire items were designed to request background information from respondents (e.g., prior weapons experience, athletic participation) and to elicit responses about such topics as program effectiveness, trainee confidence in marksmanship performance, enjoyment of training, and career importance of rifle marksmanship. The Trainee Pretraining Questionnaire contained 21 items, all typically 5- or 7-point rating scales. The Trainee Posttraining Questionnaire had 66 items, with 14 items repeated from the pretraining questionnaire. The posttraining questionnaire included two rank-order questions. A slightly longer Trainee Posttraining Questionnaire (five additional items) was administered to the limited training control groups. These additional questions related to the perceived benefits of practicing record fire early in training. Finally, Trainee Retention Questionnaires repeated seven items relating to confidence in using the weapon. All items on all the trainee questionnaires were in an objective format. See Appendix A for further description of the questionnaires and Appendixes C, D, and E for copies of the questionnaires.

Population

Group characteristics are based on data collected at the Fort Jackson reception station during trainee in-processing. These data were collected in personal interviews using a demographic data collection form (USAIS, BRM Test Form 77908).

The population was composed of approximately 3,400 male and 1,000 female trainees. Table 2 summarizes some demographic characteristics of the test population.

The General Technical (GT) and General Maintenance (GM) scores are from the Armed Services Vocational Aptitude Battery (ASVAB). General Maintenance score, rifle experience, race, and sex were the first four predictors of BRM qualification scores ($R = .34$, $p < .001$, $R^2 = .12$). Other demographic variables added little in predictive power to the multiple correlation coefficient (Tierney, Cartner & Clayton, 1977a).

Table 2

Selected Characteristics of Test Population

Variable	Sex	
	Male	Female
	Mean years	
Age	19.6	20.4
Education	11.0	12.4
	Mean	
GT score	100.7	115.7
GM score	99.7	100.7
	Percent	
Prior rifle experience	73	36
Race: Black	41	29
White	51	66
Other	8	5
Component: RA	70	44
NG	24	40
ER	6	16

Data Collection

Pretraining questionnaires were administered in well-lighted classrooms by trained administrators. Procedural questions were answered and clarifications were provided when requested, but discussion among trainees was prohibited. The Trainee Pretraining Questionnaires were given prior to BRM period 1; Trainee Posttraining Questionnaires were given after trainees fired Post Test II (i.e., after all BRM training and firing were completed). Posttraining questionnaires were typically given in classrooms; the training schedule necessitated that some be given during bivouac. In these latter cases, trainees completed the questionnaires while they stood at tables. Trainee Retention Questionnaires were given in bleachers at the range immediately after trainees completed firing the retention Post Test, except that two retention groups of 12 received the questionnaires in a classroom.

All trainees participating in the test (approximately 850 males and 250 females per POI) received the pretraining and posttraining questionnaires (absentees excepted). Trainees participating in the retention phase of the BRM Test constituted nonrandom samples of trainees completing each POI. The criterion used to select trainees for this phase of the study was assignment to the Fort Jackson Training Center for Advanced Individual Training. The exception was a group of female trainees who were returned to Fort Jackson from Forts Gordon and McClellan to fire the retention Post Test. Mean n's for retention samples were 66 males and 29 females per POI, with substantial variability in sample sizes (range 28 to 111 for males; 12 to 49 for females) dictated by the numbers available per POI for testing at each retention interval. All trainees available for retention testing (i.e., those still at Fort Jackson) participated in a retention test.

All questionnaires were administered by members of a team of trained administrators. A standardized set of instructions and quality control procedures was used in all administrations (Appendix B).

RESULTS

Results are reported by (a) responses to the pretraining questionnaires, (b) responses to the posttraining questionnaires, including repeated measures, and (c) responses to the retention questionnaires. Each of these sections is further subdivided according to specific topics, as appropriate. Partial results of analyses described below have been presented in other publications (Cartner, Mays, & Tierney, 1977; Tierney & Cartner, 1977b; and USAIS, 1976a).

Statistically significant results are reported as $p < .001$, except where noted. Where mean response values are reported, they were calculated by assigning the numeral 1 to A responses, 2 to B responses, and so on. See Appendixes C through E for examples of items and for identification of scale direction for individual items.[1]

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[1]Most of the data were analyzed using various statistical routines from the BMDP computer package (Dixon, 1975). Some analyses were performed with a Texas Instruments SR-52 programmable calculator. These analyses used programs in the SR-52 Statistics Library (Texas Instruments, 1975); summary descriptive statistics (e.g., cell frequencies) provided by TCATA were the input for these analyses. TCATA support included receiving the data for key punching, building and editing the data base, and providing descriptive statistics on all questionnaire items. All analyses done using BMDP were also run by TCATA. Commercial designations are used for precision in reporting and do not constitute endorsement by either ARI or the Department of the Army.

Pretraining Responses

Attitudes Toward Training. Prior to BRM training, trainees were asked questions such as how much they thought they would enjoy rifle marksmanship, how easy they thought marksmanship training would be, and about their confidence in their own marksmanship skills. Table 3 provides a brief description of 16 questions with the response means and associated n for males and females. The column labeled "t-values" reveals a definite pattern; males held significantly more positive attitudes toward nearly all aspects of rifle marksmanship training.

Table 3

Pretraining Attitudes of Males and Females:
Mean Responses with Associated n and t

Question number		Males		Females		
		$\bar{X}$	n	$\bar{X}$	n	t
1.	Like firing	2.11	3,365	2.51	960	4.24
2.	Like basic training	3.18	3,363	2.98	959	NS
3.	Job importance of rifle marksmanship	3.03	3,180	4.16	960	4.15
4.	Confidence in success in rifle training	2.29	3,362	2.65	960	3.87
5.	Effects of instructor pressure	2.48	3,345	2.64	959	NS
6.	Ease of rifle training	3.47	3,360	3.95	960	3.45
7.	Like rifle training	2.36	3,363	2.60	959	NS
8.	Prior rifle experience	3.21	3,359	1.98	960	18.33
9.	Hunting experience	2.93	3,364	1.58	960	20.76
10.	Nervousness about firing	1.77	3,359	2.14	960	4.83
11.	Confidence in explaining inner workings of rifle	4.08	3,361	4.69	959	3.79
12.	Confidence in hitting target < 200 m in daylight	2.78	3,359	3.51	960	6.31
13.	Confidence in hitting target 200-400 m in daylight	3.28	3,361	3.99	960	5.38
14.	Confidence in hitting target < 50 m at night	3.03	3,357	3.73	960	5.69
15.	Confidence in zeroing rifle	2.99	3,350	3.54	960	4.58
16.	Confidence that will fire rifle in combat	1.88	3,350	2.61	959	7.85

Note: Question numbers in this and subsequent tables refer to item numbers in the questionnaire (see Appendix C).

NS = not significant.

Males expected to gain more enjoyment from firing the rifle and anticipated that training would be easier than did females. Men also had higher expectations for their own success in rifle marksmanship training than did women. Males reported significantly more experience in firing rifles and in hunting with rifles or shotguns; correspondingly, they reported less nervousness about firing the M16A1 rifle. Moreover, men held rifle marksmanship skills to be more important to the jobs they wanted in the Army than did women. On five questions that directly addressed confidence in specific rifle marksmanship skills, males were consistently more confident than females; the greatest difference was observed in their reported certainty of using their weapons in combat.

Performance Correlates. Table 4 presents correlation coefficients that relate background data taken from the Trainee Pretraining Questionnaire to Post Test I record-fire performance. Prior experience data (rifles and hunting) were positively correlated for men with record-fire performance. For women, self-reported nervousness about firing was negatively related to firing performance; prior rifle experience was positively related to firing performance. No other correlations were statistically significant.

Table 4

Correlation of Background Data with Rifle Performance

Question number		Males	Females
8.	Prior rifle experience	.24*	.19*
9.	Hunting experience	.21*	.13
10.	Nervousness about firing	-.12	-.19*
17.	Batting hand	-.03	-.02
18.	Need glasses	.04	-.01
19.	Language spoken at home	-.05	-.07
20.	Difficulty understanding English	-.08	-.13
21.	Number team sports	.05	.02

*$p < .05$.

Posttraining Responses and Repeated Measures

Enjoyment of Training. Three questions were asked both before and after BRM about the enjoyment of training. Both male and female trainees thought they would "like" basic training; there was no before-after change in this opinion. Male trainees, however, anticipated greater

liking for firing the M16A1 than did females. Men anticipated liking firing "very much," and the mean response for women was between "like very much" and "like" [F(1,1815) = 45.97]. Posttraining responses were similar to pretraining responses. Finally, trainees were asked how much they thought they would like BRM training. There was a small though statistically significant difference between the responses given by men and women; men anticipated somewhat greater enjoyment of BRM [F(1,1811) = 29.65]. Posttraining estimates of enjoyment of BRM declined somewhat for both sexes [F(1,1811) = 25]. Table 5 depicts these results, using posttraining data. There were no significant differences in trainee responses across the four POI for any of the three items.

Table 5

Mean Posttraining Estimates of Enjoyment of Training for Males and Females

Question number	Males ($\bar{X}$)	Females ($\bar{X}$)
1. Like basic training	3.07	2.98
2. Like firing rifle	2.00	2.40
3. Like rifle training	2.42	2.89

Importance of Rifle Marksmanship to Career. Male trainees considered rifle marksmanship more important to the jobs they wanted in the Army than did female trainees [F(1,1809) = 140.06]. Men considered rifle marksmanship "fairly important"; women considered it of "borderline" importance (Table 6). Both sexes, however, viewed marksmanship as less important after training than before training [F(1,1809) = 96.21].

Table 6

Mean Estimates of Importance of Marksmanship Skills

Sex	Pretraining	Posttraining
Male	3.03	3.22
Female	4.16	4.58

Confidence in Marksmanship Skills. Nine questions pertained to various aspects of self-confidence in marksmanship; eight were asked both before and after training.

To the question, "Did you do better or worse than you expected in training on the M16 Rifle?," both males and females replied that they had done a little better than expected ($\bar{X}$ = 3.24). The remaining questions produced different responses between women and men. These questions were the repeated items, and all but one showed a significant change from pretest to posttest. Table 7 gives these mean pretraining and posttraining responses and inferential statistics.

Table 7

Mean Estimates of Confidence in Marksmanship Skills

Question	Pretraining		Posttraining		Sex	Pretraining and posttraining (repeated) measure
	Male $\bar{X}$	Female $\bar{X}$	Male $\bar{X}$	Female $\bar{X}$	F	F
How easy BRM	3.47	3.95	2.53	2.97	27.40	373.55
Nervousness about firing	1.77	2.14	1.42	1.63	27.78	145.32
Knowledge of rifle	4.08	4.69	3.20	3.68	106.22	486.47
Ability to zero	2.99	3.54	2.53	2.89	46.49	118.25
Hit targets < 200 m	2.78	3.51	1.96	2.43	133.43	545.81
Hit targets 200-400 m	3.28	3.99	2.97	3.55	137.66	87.40
Hit targets at night < 50 m	3.03	3.73	2.36	2.75	103.17	433.35
Fire rifle in combat	1.88	2.61	1.85	2.44	109.00	NS

Table 7 reveals that males expressed more confidence than females on all items, the greatest differences occurring in responses concerning ability to hit targets between 200 and 400 m and targets closer than 200 m. Confidence increased as a function of training in seven of eight questions for males. Only confidence that the weapon would be fired in combat failed to show a statistically significant change. The mean male pretest response for this latter item, however, was between "extremely sure" and "very sure" to fire. Confidence as measured by these eight questions increased in all cases for women, although the increase shown in the combat question was small [$F(1,1805) = 13.56$, (repeated measures x sex of trainee interaction)].

Mean response values shown in Table 7 indicate that greatest confidence was expressed concerning lack of nervousness about firing the M16 rifle and certainty of firing the M16 in combat. Least confidence was expressed concerning the ability to explain the workings of the M16 rifle.

Trainees were more confident that they could hit close targets than more distant targets. Confidence in hitting all targets increased with training. Women showed a greater increase in confidence than men for explaining the workings of the rifle [$F(1,1790) = 15.75$, (RS)]. They also showed a slightly greater decrease in nervousness about rifle firing [$F(1,1808) = 11.84$, (RS)] and a somewhat greater increase in confidence in night firing ability [$F(1,1811) = 14.04$, (RS)]. The differential increase in night-fire confidence for females versus males occurred primarily in two POIs (35- and 62-hour), as evidenced by sex x POI, repeated measures x POI, sex x repeated measures, and sex x repeated measures x POI interactions [$F(3,1811) = 11.52$, $F(3,1811) = 12.45$, $F(1,1811) = 14.04$, $F(3,811) = 12.10$].

Instructional Effectiveness. Trainees rated their BRM training between "very effective" and "fairly effective" ($\bar{X} = 2.46$). Male trainees believed that the Army made better use of their time than did female trainees [$F(1,472) = 65.04$], with males responding that time was "used well" ($\bar{X} = 2.60$) and females saying "so-so" ($\bar{X} = 3.67$).

Trainees were asked to evaluate the phases of BRM training in terms of difficulty (on a 7-point scale where 1 = easiest and 7 = hardest) and of helpfulness to shooting qualification scores (where 1 = most helpful and 7 = least helpful). Table 8 presents the results as mean ratings. Mechanical training was perceived to be the easiest phase of training and automatic fire the most difficult. Instruction in marksmanship fundamentals was considered most helpful in preparing the trainee for qualification.

Table 8

Difficulty and Helpfulness of Each Phase of BRM Training Expressed as Mean Ranks

Phases of training	Difficulty	Helpfulness
Mechanical training	2.17	3.12
Marksmanship fundamentals	3.11	2.64
Battle sight zero	4.12	3.18
Field fire	4.00	3.73
Record fire	4.47	4.20
Night fire	4.54	4.94
Automatic fire	4.93	a

Note: Phases were ranked from easiest (rank 1) to most difficult (rank 7) and from most helpful (rank 1) to least helpful (rank 7).

[a]Missing data.

Trainees were asked at both pretest and posttest whether or not instructor pressure would help or hurt their marksmanship performance. Men more frequently responded that instructor pressure would aid their performance than did women [$F(1,1812) = 14.59$]. After training, however, both men and women were less likely to respond that pressure helped their performances [$F(1,1812) = 213.95$]. Men believed it "helpful somewhat"; women thought it had "no effect." A number of questions focused on additional aspects of instructional delivery. Table 9 gives mean responses to each question for males and for females. Analyses of variance for these items revealed no significant program differences and only one sex difference.

According to the data in Table 9, trainees perceived their instructors as caring "quite a bit" about whether the trainees were learning marksmanship and as having "a great deal" of knowledge and skill. Instruction was "easy" to understand, mistakes were corrected "most of the time," and coaching "helped somewhat."

Hours of Instruction. Trainees were asked their opinions of the amount of instructional time received in the various skills needed to fire the M16A1 rifle. Table 10 gives the hours of instruction scheduled by POI for each phase of training.

Table 9

Mean Responses for Six Questions About Effectiveness of Instruction

Question number	Mean responses	
	Male	Female
4. Effect of instructor pressure	2.48/3.05[a]	2.64/3.70[a]
25. How much instructors care	1.75	1.82
26. Instructor's knowledge and skill	1.42	1.43
24. Comprehension of instruction	2.53	2.68
28. Frequency of instructors explaining how to correct mistakes	2.00	2.08
22. Effect of instructor coaching	2.53	2.55

[a]Pretest/posttest response means.

Table 10

Comparison of Hours of Instruction Scheduled for Each Phase of Each POI

Subject	POI			
	77-hr	62-hr	49-hr	35-hr
Mechanical training	4	4	4	4
Marksmanship fundamentals and battle sight zero	22	16	20	8
Field fire	30	24	8	12
Record fire	10	10	12	5
Automatic fire	3	3	3	3
Night fire	8	5	2	3
Total hours	77	62	49	35

There were three sets of questions: the first set directed single questions to adequacy of instructional time in each of four phases of instruction, and the second and third sets focused on instructional time for specific marksmanship tasks taught during the battle sight zero and field-fire phases of instruction. Table 11 summarizes the data, giving mean responses for all trainees. The data for males and females were combined, since no significant differences in responses of men and women occurred for any of the 15 items. The response scale for each item was a 7-point symmetrical scale from "need very much more" to "need very much less" instruction.

Table 11

Mean Ratings of Adequacy of Instructional Time

Question number		Mean rating
Individual phases of instruction		
41.	Mechanical training	3.62
42.	Marksmanship fundamentals	3.61
43.	Night fire	3.37
44.	Automatic fire (in daylight)	3.29
Marksmanship tasks for zeroing the rifle		
45.	Sight adjustment	3.46
46.	Shot group analysis	3.58
47.	Sight alinement	3.66
48.	Sight picture	3.73
49.	"8" steady hold factors	3.76
Marksmanship tasks taught during field fire		
50.	Firing positions	3.79
51.	Target detection	3.54
52.	Range estimation	3.45
53.	"8" steady hold factors	3.81
54.	Sight picture	3.84
55.	Fire and reload	4.04

In general, trainees responded that the amount of training received (instructional time) was "about right." Automatic fire and night fire were perceived as needing "slightly more" instructional time; instruction in fire and reload techniques received the highest rating and was judged to need no additional instructional time. Analyses of variance for differences across the POI yielded one significant difference; there was a differential rating of adequacy of instructional time for night fire [$F(3,472) = 8.33$]. Table 12 gives the mean response for each POI to the night-fire question.

Table 12

Mean Rating of Adequacy of Instructional Time for Night Fire

POI	Hours night-fire instruction	Mean rating
77-hr	8	3.57
62-hr	5	3.60
49-hr	2	2.93
35-hr	3	3.39

Mean ratings assigned to each POI roughly corresponded to the relative amount of night-fire instruction offered in each program. The 49-hr POI received the lowest rating; it was judged to require "slightly more" instructional time.

Rounds Fired. The live-fire phases of BRM require varying numbers of rounds (by POI) to be fired by trainees. Table 13 shows the number of rounds programed for each phase of each POI.

Trainees were asked whether or not they fired enough rounds to learn to "zero" (i.e., obtain battle sight zero) the M16A1 rifle. The "rounds-fired" question was repeated four times, once for each live-fire phase of training. Table 14 presents the percentage of trainees who responded affirmatively to each question.

Table 13

Comparison of Rounds of Ammunition Programed for Each Phase of Each POI

Subject	POI			
	77-hr	62-hr	49-hr	35-hr
Marksmanship fundamentals and battle sight zero	93	45	48	42
Field fire	293	214	48	118
Record fire	80	80	100	40
Automatic fire	90	42	36	45
Night fire	164	132	30	89
Total rounds	720	513	262	334

Table 14

Percentage of Trainees Satisfied They Had Fired Enough Rounds to Learn Specific Marksmanship Tasks

Question number	Yes responses
	Percent
Fired enough to learn	
31. to zero M16A1?	86
33. field-fire techniques?	81
35. automatic fire techniques (daylight)?	64
37. night-fire techniques?	76
39. Needed to fire more rounds to improve record-fire score?	46

Thus, 46% of the trainees believed they could improve their record-fire score if they had an opportunity to fire more rounds for record. Thirty-six percent believed they needed to fire more rounds to learn techniques of automatic rifle fire, and 24% believed more rounds were required for night fire. There were no statistically significant differences in frequency of "yes" responses across POI for the questions concerning rounds for zeroing and record fire. A small but statistically significant difference did exist across POI for field-fire rounds [$F(3,2828) = 8.01$]. The "yes" responses ranged from 87% for the 77-hr POI to 78% for the 35-hr POI. The questions concerning automatic fire rounds and night-fire rounds produced larger differences by POI, as well as large differences by sex of trainee. Table 15 provides the frequency of "yes" responses by sex and by POI for both questions.

Table 15

Percentage of Trainees Satisfied They Had Fired Enough Rounds to Learn Techniques of Automatic Fire and Night Fire

Question number	POI	Yes responses	
		Male	Female
	Hr	Percent	
Fired enough to learn:			
35. Techniques of automatic fire (daylight)?	77	79	65
	62	57	37
	49	70	57
	35	69	53
37. Techniques of night fire?	77	85	67
	62	83	80
	49	66	56
	35	79	74

Reading across by POI shows that many trainees in the 62-hr POI did not believe they fired sufficient rounds for automatic fire training [$F(3,2836) = 30.38$]. Moreover, for all POI, women were more likely than men to respond that they needed to fire more rounds to learn automatic fire [$F(1,2836) = 50.77$]. Night-fire rounds for the 49-hr POI were least frequently judged to be adequate, with night-fire rounds for the three remaining POI judged adequate more frequently [$F(3,2852) = 29.76$]. As in automatic fire, women more frequently said they needed to fire more rounds for night fire than did men [$F(1,2852) = 24.08$].

Practice Record Fire. All trainees were asked if having an opportunity to fire a practice record fire "...is a good or bad idea?" They responded that it was a "very good" idea ($\bar{X}$ = 2.20). Trainees who fired the practice record fire immediately after fundamentals training (limited training control groups) were asked five additional questions concerning the effect of this practice on subsequent BRM performance. Table 16 summarizes their responses.

Table 16

Effects of Firing a Practice Record Fire
Early in Training

Question number		Mean response
Did practice record fire:		
		5-pt. scale
67.	Help identify task requirements?	2.0
		7-pt. scale
68.	Help or hurt confidence?	2.6
69.	Help or hurt final score?	2.2
70.	Increase interest in firing M16?	2.3
71.	Make subsequent M16 training easier?	2.2

These data indicate a strong pattern of positive attitudes toward receiving early exposure to the record-fire range and practice in the record-fire tasks. Responses were similar across POI and sex of trainee.

Training Devices. Trainees were asked whether or not they had used each of six training devices and were then asked to choose the one device they found most beneficial in learning marksmanship fundamentals. Table 17 presents these data.

Only two devices (dime/washer exercise and target box exercise) were checked as being used by the majority of trainees. For the other four devices, 30%-40% of trainees were not certain whether or not they had used the device. Nearly half the trainees selected the dime/washer exercise as the most helpful training aid for instruction in marksmanship fundamentals.

Table 17

Relative Frequency of Trainees Who Used Each Training Device and Who Selected Each Device as "Most Helpful"

Question number	Percent: Used device: Yes	No	Not sure	Selected device as most helpful
59. Paige sighting device	29	33	38	7
60. M15 sighting device	25	42	34	5
61. M16 sighting device (the "cheater")	36	33	30	15
62. Dime/washer exercise	77	13	10	47
63. Target box exercise	67	16	18	21
64. Transportation exercises	30	28	41	6

Nervousness About Qualification. Trainees were asked if thinking about having to qualify with the M16 made them nervous and if they got "choked up" during record fire and did not do as well as they could have done. Mean responses indicated that most trainees "perhaps agreed" with both statements ($\bar{X}$ = 3.3 and $\bar{X}$ = 3.2), but there was considerable variance in response (SD = 1.88) for each question.

Missed Training. Approximately 20% of trainees reported missing training that they did not subsequently make up, and 10% reported missing as many as three or more firing exercises which they did not make up.

Sighting. For 82% of trainees, the right eye was their preferred sighting eye for firing the rifle; 15% sighted with the left eye, and 3% reported indifference as to sighting eye. Similarly, 80% reported firing from the right side and 16% from the left, and 4% reported they could fire from either side. The vast majority (91%) of trainees reported sighting with only one eye open.

Retention Questionnaire Responses

All seven items in the retention questionnaires, which were administered 4, 6, and 8 weeks after completion of the training tests, dealt with confidence in knowledge and use of the M16A1 rifle. One-way, analyses of covariance were computed for each item, using the trainees' responses to the same items on the posttraining questionnaire as the covariate. Sex of trainee was the main treatment variable. Table 18 gives

the main response for males and females to each item, with the associated F values.

Table 18

Mean Response for Males and Females with F Values and Degrees of Freedom for Retention Questionnaire Items

Question number	Sex of trainee		F	df
	Male	Female		
1. Nervousness about firing	1.31	1.55	13.02	1,597
2. Knowledge of rifle	2.96	3.66	26.37	1,597
3. Hit targets < 200 m	2.06	2.56	10.91	1,597
4. Hit targets 200-400 m	2.98	3.75	25.96	1,597
5. Hit targets at night < 50 m	2.03	2.49	NS	
6. Ability to zero	2.35	3.93	16.91	1,297
7. Fire rifle in combat	1.85	2.33	NS	

NS = not significant.

At the retention of skills phase of the BRM Test, males remained more confident than females on five of the seven confidence questions. The smallest differences between group means (for items which yielded statistically significant differences) was in nervousness about firing the M16A1 rifle. The greatest differences were in self-reported ability to explain the workings of the rifle and to hit targets in the 200-400 m range band. Questions concerning night-firing ability and confidence in use of the weapon in combat failed to yield statistically significant differences.

DISCUSSION

General Reactions to Training

In overview, trainees expressed a lukewarm reaction to Basic Training, saying they "liked" it. In comparison, they regarded rifle marksmanship training and rifle firing more positively (i.e., "like very much"). These attitudes remained stable from pretest to posttest, indicating that marksmanship training was generally well received. Opinions were not influenced by POI, in spite of a frequently held opinion among cadre that trainees became bored with the lengthy 77-hr POI

(Tierney & Cartner, 1978). In fact, the opinion was common among cadre that female trainees became bored with any POI longer than about 50 hr.

The male trainees liked rifle marksmanship somewhat more than did female trainees, the difference being attributable at least in part to the effects of prior rifle-firing experience. Males had greater prior experience with rifles than did females. Furthermore, rifle experience was positively correlated with both rifle marksmanship performance ($r = .21$, $p < .05$) and with attitudes toward rifle marksmanship (Tierney & Cartner, 1977b). For example, prior rifle experience was positively correlated with liking rifle marksmanship for both males ($r = .27$, $p < .01$) and females ($r = .35$, $p < .001$). There was a significant difference between the magnitudes of the latter two correlations ($Z = 2.46$, $p < .025$), indicating that prior rifle experience is an even more important determinant of certain attitudes toward marksmanship for women than for men. Thus, the differences in attitudes of male and female trainees toward liking rifle marksmanship training can be ascribed in part to differences in prior experience.

The more relevant question for the course designer and program evaluator is whether or not these attitudes affect performance outcomes. We found no meaningful correlation between attitudes expressed at pretraining and subsequent marksmanship performance. The attitudinal differences between males and females on issues such as liking rifle marksmanship and importance of rifle marksmanship to career did not contribute substantively to the mean performance difference between males and females observed in the BRM Test.

Trainee Confidence

The data pertaining to confidence in marksmanship skills indicate that males are generally more confident than females. Once again, however, this difference rests in part on the differential experience of the men and women with small arms (Tierney & Cartner, 1977). That is, women who have prior rifle experience tended to express greater confidence in their marksmanship skills than those who did not have such prior experience.

Lenney (1977) has suggested that women tend to be less confident than men under specific conditions: when performing traditionally male-oriented tasks, when there is emphasis on social comparison (e.g., competition), and when they lack task background information. All these conditions apply to women participating in rifle marksmanship training. Lenney's hypotheses suggest that increases in task information resulting from training would lead women to estimate more correctly their abilities. In fact, in the current study, the confidence of both men and women increased with training, these increases being larger for women than for men in four cases, and smaller in no case. In most cases, however, women remained less confident than men at the end of training.

These results are consistent with two other observations. First, women showed greater performance improvements than men from early to late in training. Second, end-of-course performances for females remained somewhat below that of males (USAIS, 1976a).

Confidence, therefore, generally increased with training. Correlation between confidence measures that were specific to the performance test (e.g., hitting targets at various ranges) and actual performance scores also increased as a function of completing training. For example, the question concerning hitting targets closer than 200 m showed a pretraining to posttraining increase from $r = -.13$ to $r = -.30$ (males) and $r = -.08$ to $r = -.42$ (females). (The negative signs reflect scale arrangement. Low numerals represented higher levels of confidence expressed by the respondent.) When this correlation increased as a result of training, the increase was greater for females. Both the increase in confidence expressed at posttest and the increase in correlation between confidence measures and performance measures were typically sustained at retention testing. The general trend for confidence measures to exhibit no decrement at retention testing was consistent with the failure to observe a decrement in marksmanship proficiency at retention testing (USAIS, 1976a).

In summary, although men were more confident than women prior to training, confidence in skills did not significantly contribute to subsequent performance. Training generally led to concomitant increase in both skill level and confidence level, the increase in both frequently being greater for females than males. Women, however, typically failed to completely overtake men in either performance or confidence. Finally, female trainees were no more likely than male trainees to underestimate their skills, once they had gained appropriate information about the task. In fact, the higher end-of-course correlations for females than males on the task-specific questions suggest that women were less given to misjudging their skill level at the end of training than were men.

Trainee estimates of their own skill levels were generally unrelated to POI. The cadre, on the other hand, had much less confidence in the skills of trainees who participated in the two shorter POI (Tierney & Cartner, 1978). There was only one occasion in which trainee confidence was influenced by POI (females completing the 35- and 62-hr POIs were somewhat more confident in their night-fire skills than females completing the 49- and 77-hr POIs). In this case, one of the two shorter POIs was judged superior by trainees as reflected in confidence estimates.

Instructional Effectiveness

Trainees gave mixed opinions of the overall effectiveness of BRM training. They characterized the training received as between "fairly effective" and "very effective," but women trainees had a decidedly ambivalent view of how well their time was used during training. This result contrasts to the cadre view that time was well-used in all four

POIs (Tierney & Cartner, 1978). The negative ends of the scale in these questionnaires were relatively little used, e.g., the mean response fell more than 1/2 point above the midpoint in only two cases. In our opinion, therefore, the "so-so" response given by the women takes on a more negative valence.

Trainees ranked the earlier portions of training (e.g., mechanical training and marksmanship fundamentals) as relatively easy. Nonetheless, these segments of training were ranked as the most helpful. Battle sight zero was ranked as moderately difficult, but relatively high in helpfulness. These reactions are in substantive agreement with the cadre's estimates of the importance of the early phases of training (Tierney & Cartner, 1978). The importance of battle sight zero is substantiated by performance data that show achievement of battle sight zero to be the second most important contributor to the prediction of rifle marksmanship proficiency (Tierney, Cartner, & Clayton, 1977).

The six questions exploring various dimensions of the quality of instructional delivery yielded generally positive responses. Trainees expressed high regard for the skills possessed by their instructors and for their care and diligence in providing corrective feedback. These estimates were congruent with the cadre's own estimates of how well their instruction could be understood and how frequently they could correct trainee mistakes (Tierney & Cartner, 1978).

The trainees were less positive, however, concerning the effects of having pressure brought to bear on them during training. Female trainees in particular did not believe that such pressure was beneficial to their performance. In the report of cadre attitudes (Tierney & Cartner, 1978), it was argued that such pressure could frequently be expected to have detrimental rather than beneficial effects. This effect is most likely when pressure is expressed in an explicitly negative rather than constructive form.

The present data clearly indicate that trainees did not hold pressure placed upon them in the same high regard as they held the other aspects of instructional delivery. When feedback was described in the questionnaires as "correcting mistakes" and "coaching," trainee evaluations were considerably more positive than when the question addressed "instructor pressure." Moreover, both sexes felt significantly less favorable toward the effects of such pressure after training than before training.

The effects described in this section appeared to apply equally to all four POIs.

POI Effectiveness

The four POIs evaluated during the BRM Test varied primarily in scheduled hours of instruction and programed rounds of ammunition. Responses to questions on both topics reflected a general satisfaction with the amount of training received. There were, however, some notable exceptions.

Both instructional time and instructional rounds were viewed as less adequate for automatic fire and night fire than were time and rounds for the other phases of training. Regarding specific POIs, the 49-hr POI provided the least time and fewest rounds for night-fire instruction. The trainees' ratings reflected this, the 49-hr POI receiving discernibly lower ratings than the other three POIs for adequacy of both hours and rounds. Women in general, and for the 49-hr POI specifically, more frequently expressed the opinion that they needed to fire more rounds to learn techniques of night fire.

Over one-third of the trainees believed they needed to fire more rounds to learn automatic fire. This result corresponded to that for the automatic fire phase of instruction, which has the lowest mean rating for adequacy of instructional time. Automatic fire was also ranked the most difficult phase of training. As with night fire, more women than men believed they needed to fire more rounds to learn automatic rifle marksmanship. Moreover, trainees who completed the 62-hr POI were more likely to conclude that more rounds were required for automatic fire than were trainees from the other three POIs. Since this POI allocated about the same number of rounds for automatic fire as did two of the remaining three POIs, it is concluded that this attitudinal difference is due to the use in the 62-hr POI of targets at a range of 75 m. The three other POIs used targets at 25-m and/or 50-m ranges, but the 62-hr POI required firing 30 of the 42 automatic fire rounds at 75-m pop-up targets. Firing automatic fire at 75-m distance targets is considerably more difficult than firing at 25-m and 50-m targets (Klein, 1969). Hence, the relatively difficult nature of the task accounts for the judgment that more rounds were needed for automatic fire in the 62-hr POI.

There is considerable contrast between the responses of trainees concerning the adequacy of instructional hours and rounds and the responses of their cadre to comparable questions. The cadre perceived the two shorter POIs (35- and 49-hr) to be deficient with respect to both hours and rounds, particularly in the earlier phases of training such as marksmanship fundamentals (Tierney & Cartner, 1978). Regardless of POI, the trainees generally evaluated the amount of training received to be sufficient. Also contrary to cadre opinion, the earlier portions of training were generally judged more adequate than the night-fire and automatic fire phases. Only in the latter areas of training were differential responses elicited.

According to Tierney & Cartner (1978), the negative opinions held by the cadre against the shorter POIs were due in large part to preconceived biases. This opinion was based upon multiple lines of evidence, particularly the inconsistencies between the attitudes expressed by the cadre and the marksmanship performance generated within each POI. The trainees' perceptions of the general adequacy of BRM instruction is consistent with the interpretation that cadre opinion reflected biases.

During the BRM Test, each trainee was exposed to only one of the four POIs. Accordingly, where trainee responses differentiated among the POIs, e.g., automatic fire and night fire, such results indicate a strong treatment effect. Moreover, in those areas that showed response differences related to POI, the attitudinal data were consistent with specific variations in POI design. It is concluded, therefore, that these opinions of the trainees should receive strong consideration in future redesigns of rifle marksmanship training.

A final point pertains to POI effectiveness and course design. Considerable unanimity existed among both cadre and trainees about the merits of a record-fire practice. This concept is congruent with a major tenet of performance-oriented training: a training program should "train to the test." Although the current record-fire exercise is not a valid representation of the task requirements in combat marksmanship (Klein & Tierney, 1978; Rosen & Behringer, 1977), the present data clearly attest to the value of explicit practice in the terminal marksmanship tasks. This judgment should be extrapolated to future revisions of rifle marksmanship qualification scenarios.

CONCLUSIONS AND RECOMMENDATIONS

The primary conclusion is that trainees expressed generally positive attitudes toward BRM training. However, female trainees were more critical than their male counterparts. For example, questions concerning how well time was used and the effects of instructor pressure on performance revealed a greater skepticism among females. Their replies to these items suggest the women were more aware of the inefficient and unproductive aspects of training. This tendency to be more questioning is consistent with the facts that the average woman in this sample was older, better educated, and of higher general aptitude than the average man in the sample.

Trainees agreed with their cadre concerning the importance of the early phases of marksmanship training and found the training they received during these phases helpful and generally adequate in length and rounds fired. The automatic fire and night-fire portions of training, however, were considered difficult and in need of augmentation in both training time and rounds. The 49-hr POI was found to be the most deficient in night fire; rounds for automatic fire were found lacking in the 62-hr POI. The latter effect was likely due to the relative difficulty of firing in the automatic mode at targets 75 m distant. Across

all POIs, automatic rifle firing was found to be the most difficult phase of training and the most in need of additional training time and rounds.

The data also indicate that providing specific practice in terminal marksmanship qualification tasks can be expected to have positive motivational benefits. Such benefits would presumably accrue in addition to the educational value associated with the precepts of "training to the test."

Finally, although pretraining attitudes showed no systematic relationship to subsequent marksmanship performance, the typical female trainee is nonetheless at a potential motivational disadvantage because of her relative inexperience with firearms. This disadvantage could be partially alleviated by the introduction of compensatory information as early as possible in the training cycle. Appropriate topics would include generic background on small arms and specific information on the characteristics of the M16A1 rifle. A mechanism such as the Training Extension Course (TEC) lessons could supplement the information already provided by the cadre and help assure a comparable information base for all trainees entering BRM. Using TEC, however, would require extending the current M16A1 TEC series (four lessons on mechanical aspects of the M16A1 rifle) to both general background on firearms and techniques of M16A1 rifle marksmanship.

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APPENDIX A

QUESTIONNAIRE CONSTRUCTION

The construction of the BRM Trainee questionnaires is described herein. Copies of these questionnaires can be found in Appendixes C, D, and E.

The trainee questionnaires were constructed with primary focus on the major test issues. These issues were the training effectiveness of the alternative POI and the effects of reducing hours of instruction and rounds fired. Questions addressed both overall instructional and POI effectiveness, as well as the individual parts of current BRM training. Additional questions concerned confidence in performance, enjoyment of training, and other training issues. Background information on respondents was also requested.

An initial item pool was prepared by civilian psychologists and military research specialists. Item topics were based on information gained from source documentation [e.g., Army Subject Schedule 23-71 (Department of the Army, 1974a), Field Manual 23-9 (Department of the Army, 1974b)], discussions with the proponent for the M16A1 rifle (U.S. Army Infantry School), and the senior author's involvement in the preparation of the test plan for the BRM Test.

A primary technical source used was a draft copy of the Questionnaire Construction Manual (Dyer, et al., 1977). Particular attention was given to using a basic English vocabulary, balanced rating scales, and descriptors for those scales having demonstrated discriminability.

Pretesting for the trainee questionnaires involved a progressive administration and revision process. Items were first screened for appropriateness and ease of comprehension. The questionnaires were then administered to two officers and five NCOs and enlisted personnel attached to the ARI-Fort Benning Field Unit and one officer in the BRM Test Directorate. The next revision was administered to 20 enlisted personnel at the U.S. Army Infantry Center. Eight males and two females completed the pretraining questionnaire and a separate group of eight males and two females completed the posttraining questionnaire. The subsequent revisions were pretested at Fort Jackson. The pretraining questionnaires were given to 15 men and 16 women who had not yet begun BRM training. The posttraining questionnaires were completed by 15 men and 15 women who had recently completed BRM. The questionnaires then received ARI review.

At the time of printing, it was planned that the Army Subject Schedule POI would be conducted using 72 instructional hours. Subsequently it was determined that this POI would be run using 77 hours of instruction. Thus the description of this POI in the questionnaire as 72 hours in length was in error in light of the later decision.

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Correction

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APPENDIX B

TEST ADMINISTRATOR INSTRUCTIONS

During the next several weeks, a TRADOC sponsored test will compare four Basic Rifle Marksmanship (BRM) training programs. These are the Fort Benning 35 Hour, Fort Dix 49 Hour, Fort Jackson 62 Hour, and Army Subject Schedule 72 Hour programs. The overall purpose of this test is to select the most cost/training effective BRM training program for the Army.

An assessment of trainee and committee group cadre attitudes and opinions toward each program is an important part of this test. Several questionnaires have been designed by the Army Research Institute to measure attitudes and opinions toward each of these programs. A questionnaire will be completed by each group of trainees before training, after training, and at later times to determine retention of attitudes. Cadre will receive questionnaires both at the start and near the end of the BRM test.

All testing and questionnaire administration will occur at selected times during April through August 1976 at Fort Jackson, South Carolina. Approximately 6,000 basic trainees and 75 committee group cadre will be involved with this test. You have been selected to administer questionnaires to certain groups of these trainees and cadre personnel.

Completion of these questionnaires is significant to the overall test effort and your job as a test administrator is a responsible one and very important to the test. While you are administering these questionnaires it is very important for you to keep "quality control" in mind. That is, you must try to let nothing enter into the administration procedure which might invalidate the results of the test. Additionally, you must insure that each test subject receives the appropriate materials, adequate instructions, answers to his/her questions and time to complete the questionnaire.

Your specific duties and responsibilities include the following:

1. Become familiar with the answer sheets and the questionnaire(s) you are scheduled to administer. Be thoroughly familiar with the "Instructions For Trainees."
2. Get the correct time and place that has been scheduled for your questionnaire administration. Arrive at least 10 minutes before the scheduled start time. Do not be late. This will give you time to think through your job and write necessary information on the blackboard.
3. Insure that you have the right number of the correct questionnaire booklets and answer sheets and a few extras to cover unexpected problems.
4. Insure that you have a sufficient supply of pencils and any other materials required for test administration. For example, document clips or manila folders might be useful.
5. Brief your assistants on their duties and responsibilities prior to the test period. Have them read this document.
6. Check each questionnaire booklet to ensure that it is complete and contains no extra markings. Have your trainees do this also before starting the test or filling out the answer sheets.
7. Provide each test subject with the appropriate questionnaire booklet, answer sheet and a pencil.
8. Read the "Instructions For Trainees" to the trainees.
9. Answer <u>all</u> questions concerning the questionnaire instructions or completing the answer sheet. Your answers should clarify confusions and misunderstandings, but should <u>not</u> give hints to the trainees about what you believe to be the best answer.
10. Insure that unnecessary outside noise and talking during the test period are minimized. Keep your conversations with your assistants to a minimum.
11. Answer questions that arise during the test period promptly by going to the tested person's desk. Do it quietly.
12. Terminate the test after one hour has passed from beginning the <u>test</u>, not the pre-test administration procedure outlined above. Terminate earlier than one hour <u>only</u> if <u>all</u> personnel have completed their questionnaires.

13. Collect answer sheets, test booklets and pencils after each person has completed the test.

14. Before releasing the troops, check each answer sheet to ensure that each test subject has placed his/her name, SSAN, etc. in the appropriate blocks on the first and name on subsequent pages.

15. Check each test booklet to ensure that no pages are missing and that no marks have been made in the test booklets. If a test booklet has marks that cannot be erased or if pages are missing from a booklet, separate it from the others. Try to find missing pages. This is an important "test security" measure.

16. Turn in all answer sheets, test booklets and other materials to CPT Callaway or his delegate.

17. Report all test administration problems such as marked or damaged test booklets to CPT Callaway or his delegate.

18. Perform other duties and assignments as prescribed by CPT Callaway or his delegate.

19. Fill in your log book with the following information;

    a. Your name
    b. Your assistant's name
    c. Questionnaire Form (upper right corner front page)
    d. Answer Sheet Form (upper right corner front page)
    e. Unit(s) Tested
    f. Place Tested (Bldg. number if appropriate)
    g. Number of testees present
    h. BRM program number
    i. Start time (24 hour clock - when you tell your test subjects to open the booklet and start)
    j. Stop Time (24 hour clock - time last test subject finished)
    k. Number of Answer Sheets collected (count after all test subjects have left)

l. Number of Questionnaires Collected (count after test subjects have left)

m. Problems/Comments (any information that you believe we should know about for either interpreting the data or for preventing problems from recurring)

QUESTIONNAIRE ADMINISTRATION PROCEDURES

1. Pick up Questionnaire Booklets, Answer Sheets, Pencils, and Log Book at the Test Directorate.

2. Be certain that you know the correct time, place, unit(s), and the questionnaire forms to bring for administration. This information will be on a typed sheet waiting for you at the Test Directorate. Take this sheet with you.

3. Arrive at the test location at least 10 minutes before the scheduled arrival time of the trainees.

4. Print on the blackboard or other large writing surface the following information (letters and numbers must be large enough to be easily seen from the rear of the room).

TODAY'S DATE	_ _ _ _ _ _	(6 numbers)
UNIT ID	_ _ _ _	(4 numbers)
PLATOON	_	(1 number)
	(Note: there will probably be more than one platoon present, so you will write each number and make clear during instruction that each trainee is to record his/her own platoon number)	
PROGRAM	_ _	(2 numbers)

5. At this time, fill out any appropriate information in your log book. Other information will be entered in the log book at later points during the test. Under no conditions should you file information in the log book before you come to the test. The log book serves as a quality control check procedure for you and as a means of communicating test administration problems to the rest of the Test Directorate. This is very important as the log sheets you complete will serve as a primary quality control for identifying key punching and computer errors.

INSTRUCTIONS FOR TRAINEES

1. Greet the trainees. Then say: (Read to trainees only those portions that are in BOLD print).

YOU HAVE BEEN CHOSEN TO PARTICIPATE IN A SCIENTIFIC STUDY OF BASIC RIFLE MARKSMANSHIP TRAINING. THE DEPARTMENT OF THE ARMY IS TRYING TO IMPROVE BASIC RIFLE MARKSMANSHIP TRAINING BY STUDYING FOUR DIFFERENT TRAINING PROGRAMS. YOU ARE ABOUT TO RECEIVE A QUESTIONNAIRE WHICH WAS DESIGNED TO OBTAIN YOUR ATTITUDES AND OPINIONS ABOUT BASIC RIFLE MARKSMANSHIP TRAINING. YOUR ATTITUDES AND OPINIONS ARE A VERY IMPORTANT PART OF THIS STUDY.

THERE ARE NO RIGHT OR WRONG ANSWERS TO ANY OF THE QUESTIONS ON THE QUESTIONNAIRE YOU ARE ABOUT TO RECEIVE. YOUR ANSWERS WILL BE USED ONLY FOR A SCIENTIFIC STUDY OF THE TRAINING PROGRAMS. YOUR ANSWERS WILL NOT AFFECT YOUR GRADE IN MARKSMANSHIP TRAINING NOR WILL THEY BECOME A PART OF ANY OF YOUR MILITARY SERVICE RECORDS. THE PURPOSE OF THIS QUESTIONNAIRE IS TO HELP THE ARMY IMPROVE BASIC RIFLE MARKSMANSHIP TRAINING.

WHEN I PASS OUT THE QUESTIONNAIRE AND ANSWER SHEET, PLEASE PLACE THEM FACE DOWN ON YOUR DESK. DO NOT OPEN THE BLUE QUESTIONNAIRE BOOKLET UNTIL I TELL YOU TO DO SO. THERE WILL BE NO TALKING WHEN THE QUESTIONNAIRES ARE PASSED OUT. WAIT FOR INSTRUCTIONS BEFORE FILLING OUT THE ANSWER SHEET.

2. Distribute pencils, the appropriate answer sheet, and the appropriate questionnaire booklet. Then say:

YOU SHOULD NOW HAVE THE FOLLOWING MATERIALS: A BLUE QUESTIONNAIRE BOOKLET ENTITLED "TRAINEE PRETRAINING QUESTIONNAIRE," AN ANSWER SHEET WITH "FORM A" WRITTEN IN THE UPPER RIGHT HAND CORNER, AND A PENCIL. IF YOU ARE MISSING ANY OF THESE MATERIALS, RAISE YOUR HAND. DO NOT MARK ON YOUR ANSWER SHEET UNTIL YOU ARE TOLD TO DO SO. DO NOT MARK ON THE QUESTIONNAIRE.

3. When you are sure that each trainee has an answer sheet, questionnaire booklet and pencil, continue.

LOOK AT THE FIRST PAGE OF YOUR QUESTIONNAIRE BOOKLET. READ THE PRIVACY ACT STATEMENT ON THE BACK OF THE FIRST PAGE. THEN READ THE SECOND PAGE DOWN TO THE BLOCK WHICH READS: "PLEASE DO NOT CONTINUE WITH THESE INSTRUCTIONS UNTIL YOU ARE TOLD TO DO SO BY YOUR TEST ADMINISTRATOR."

4. After everyone has finished reading, continue.

WE WILL NOW COMPLETE THE TOP PORTION OF THE ANSWER SHEET. LOOK AT THE UPPER RIGHT HAND CORNER OF YOUR ANSWER SHEET. IN THE BLOCK MARKED TODAY'S DATE, WRITE IN THE 6 NUMBERS _ _ _ _ _ _ (REPEAT THE NUMBERS SLOWLY). YOU SHOULD HAVE

SIX NUMBERS WRITTEN ON THE LINE INSIDE THE BOX MARKED TODAY'S DATE.

IN THE SPACE MARKED UNIT ID. FILL IN THE 4 NUMBERS _ _ _ _.
YOU SHOULD HAVE FOUR NUMBERS WRITTEN ON THE LINE INSIDE THE SPACE MARKED UNIT ID.

IN THE SPACE MARKED PLATOON. PUT IN THE 1 NUMBER _.
YOU SHOULD HAVE ONLY THE ONE NUMBER WRITTEN ON THE LINE INSIDE THE SPACE MARKED PLATOON.

IN THE SPACE MARKED SEX, CIRCLE M IF YOU ARE MALE, OR F IF YOU ARE FEMALE.

IN THE SPACE MARKED PROGRAM, PUT IN THE 2 NUMBERS _ _.
YOU SHOULD HAVE TWO NUMBERS WRITTEN ON THE LINE INSIDE THE SPACE MARKED PROGRAM.

IN THE SPACE MARKED SSAN, FILL IN THE 9 NUMBERS OF YOUR SOCIAL SECURITY ACCOUNT NUMBER.
YOU SHOULD HAVE NINE NUMBERS WRITTEN ON THE LINE INSIDE THE SPACE MARKED SSAN.

IN THE SPACE FOR YOUR NAME, PRINT YOUR LAST NAME FOLLOWED BY A COMMA, THEN YOUR FIRST NAME, AND THEN YOUR MIDDLE INITIAL.

ARE THERE ANY QUESTIONS ON FILLING OUT THIS PORTION OF YOUR ANSWER SHEET?

5. After each trainee has completed this portion of the answer sheet, continue.

YOU WILL HAVE APPROXIMATELY ONE HOUR TO ANSWER THE 35 QUESTIONS ON THIS QUESTIONNAIRE. YOU SHOULD EASILY FINISH BEFORE THAT TIME.

DO NOT MAKE ANY MARKS IN YOUR QUESTIONNAIRE BOOKLET. MANY OTHERS WILL BE USING THE SAME BOOKLET THAT YOU ARE USING TODAY.

WHEN YOU ARE TOLD TO BEGIN, START WITH QUESTION NUMBER 1 IN YOUR QUESTIONNAIRE BOOKLET AND NUMBER 1 ON YOUR ANSWER SHEET. FOR EACH QUESTION CHOOSE THE WORD OR STATEMENT THAT BEST DESCRIBES YOUR ANSWER TO THE QUESTION. CIRCLE YOUR ANSWER ONLY ON THE ANSWER SHEET, NOT IN THE QUESTIONNAIRE, RAISE YOUR HAND FOR ASSISTANCE.

WHEN YOU HAVE FINISHED THE QUESTIONNAIRE, CHECK YOUR ANSWER SHEET TO MAKE SURE THAT YOU HAVE CIRCLED ONE AND ONLY ONE ANSWER FOR EACH QUESTION. THEN RAISE YOUR HAND AND SOMEONE WILL COLLECT YOUR MATERIALS.

BE AS QUIET AS POSSIBLE UNTIL EVERYONE COMPLETES THE QUESTIONNAIRE. ARE THERE ANY QUESTIONS?

6. Answer any questions. Then say:

TURN TO PAGE ONE OF YOUR QUESTIONNAIRE BOOKLET AND BEGIN WORK.

7. Answer questions that arise while the questionnaires are being completed. When someone completes his/her questionnaire, check the answer sheet to make sure that the person's Name, SSAN, Unit ID, etc. are completed properly. After all necessary corrections have been made, collect the individual's answer sheet, booklet, and pencil.

8. Fill in your log book at the appropriate times.

9. Turn in all answer sheets, questionnaire booklets and other testing materials to Captain Callaway. Also turn in the appropriate page from your log book.

April 1976

QUESTIONNAIRE ADMINISTRATOR CHECKLIST

A partially filled in copy of this form will be given to you at the Test Directorate. You will get all necessary materials required at the Test Directorate. Check-off each of the items as you understand or perform it.

I. Information for you (filled in by the Test Directorate) when you arrive at the Test Directorate.

☐ DATE OF TEST __/__/76

☐ TIME OF TEST _____ HOURS

☐ UNIT(S) TESTED BDE _____ BN _____ CO _____ PLT _____

BDE _____ BN _____ CO _____ PLT _____

BDE _____ BN _____ CO _____ PLT _____

BDE _____ BN _____ CO _____ PLT _____

☐ QUESTIONNAIRE FORM _____

☐ QUESTIONNAIRE COVER SHEET COLOR _____

☐ ANSWER SHEET FORM _____

☐ PLACE OF TEST _____ (A map is available at the Test Directorate)

II. What to bring to the Test Directorate.

☐ WRISTWATCH WITH CORRECT TIME (Dial Ext 7555)

III. What administrative materials to get at the Test Directorate.

☐ CLIP BOARD WITH THIS SHEET ON IT, WITH THE ABOVE INFORMATION TYPED IN

☐ "INSTRUCTIONS FOR TRAINEES"

☐ INSTRUCTIONS AS TO HOW TO OBTAIN KEYS, IF NECESSARY, FOR THE TEST SITE.

☐ 1 PIECE WHITE CHALK

☐ 1 BLACK GREASE PENCIL

☐ 1 BLACKBOARD ERASER OR OTHER SUITABLE MATERIAL FOR THE PURPOSE

☐ LOG SHEET

IV. What test materials to get at the Test Directorate (filled in by the Test Directorate).

☐ _____ (COUNT) QUESTIONNAIRES FORM(S) _____

☐ _____ (COUNT) ANSWER SHEETS FORM(S) _____

☐ _____ (COUNT) PENCILS. It is your responsibility to insure that you have ample supply of questionnaires, answer sheets, and sharpened pencils to cover all your testees and a sufficient number to cover damage and/or breakage. Discard any pencils less than four inches long or those with unusable erasers. Pencil sharpeners are available at the Test Directorate. Use only #2 soft lead pencils. DO NOT USE #3 OR GREATER NUMBER PENCILS.

☐ OBTAIN A CHECK-OUT PERSON'S SIGNATURE AND YOUR SIGNATURE ON THE APPROPRIATE PORTION OF THE LOG SHEET VERIFYING THAT YOU HAVE CHECKED OUT, BY NUMBER, THE MATERIALS ABOVE. WHEN THIS IS SIGNED, THE MATERIALS ARE YOUR RESPONSIBILITY. YOU MUST ACCOUNT FOR THESE MATERIALS WHEN YOU RETURN TO THE TEST DIRECTORATE AFTER THE TEST.

☐ OBTAIN ANSWERS TO ALL YOUR QUESTIONS ABOUT TIME, PLACE, MATERIALS, ETC.

☐ CHECK QUESTIONNAIRE BOOKLETS FOR MARKS AND EXCHANGE MARKED ONES FOR GOOD ONES.

V. Before arriving at the test site.

☐ REVIEW AND BECOME FAMILIAR WITH THE QEUSTIONNAIRES YOU ARE GOING TO ADMINISTER.

☐ REVIEW AND BECOME FAMILIAR WITH THE ANSWER SHEET YOU ARE ABOUT TO ADMINISTER.

☐ REVIEW AND BECOME THOROUGHLY FAMILIAR WITH "INSTRUCTIONS TO TRAINEES." READING THEM ALOUD FOR PRACTICE WILL HELP.

☐ CHECK THE ITEMS LISTED ABOVE JUST BEFORE YOU GO TO SEE IF YOU HAVE FORGOT ANYTHING THAT YOU ARE SUPPOSED TO TAKE WITH YOU.

VI. Arriving at the test site.

☐ ARRIVE AT LEAST 15 MINUTES EARLY.

☐ OPEN BUILDING/CLASSROOM.

☐ TURN ON LIGHTS.

☐ WRITE UNIT ID ON THE BLACKBOARD OR OTHER LARGE WRITING SURFACE (4 LETTERS).

☐ WRITE PLATOON NUMBER(S) ON BLACKBOARD OR OTHER LARGE WRITING SURFACE (SINGLE NUMBER(S)).

☐ WRITE MODIFIED JULIAN DATE ON BLACKBOARD OR OTHER LARGE WRITING SURFACE (6 NUMBERS).

☐ BRIEF YOUR ASSISTANTS ABOUT THEIR DUTIES. HAVE THEM READ "INSTRUCTIONS FOR TEST ADMINISTRATORS."

☐ HAVE YOUR "INSTRUCTIONS FOR TRAINEES" READY TO READ, FILLED IN WITH ALL THE INFORMATION NECESSARY FOR THE TESTEES (SEE BELOW).

The following information is necessary for you to read to the trainees during their instructions. This will be filled in by the Test Directorate. This order is in the same as the order in the "Instructions For Trainees." Fill each blank with a light pencil in the "Instructions For Trainees."

* ☐ _____ - Colored questionnaire booklet.

* ☐ "Trainee _____ Questionnaire".

* ☐ "Form _____" (Answer Sheet).

(Answer Sheet Instructions)

* ☐ 076 (MODIFIED TEST JULIAN DATE) (076+3 numbers)

* ☐ _____ (UNIT ID) (4 letters).

* ☐ ___ ___ ___ ___ (PLATOON(S)).

* ☐ _____ (PROGRAM) (2 numbers).

(Continuing Instructions)

* ☐ _____ (NUMBER OF QUESTIONS IN QUESTIONNAIRE).

* ☐ _____ (PAGES IN QUESTIONNAIRE).

* ☐ _____ (PAGES IN ANSWER SHEET).

VII. The Test.

☐ ASSISTANTS INSTRUCTED TO PASS OUT QUESTIONNAIRES, ANSWER SHEETS, AND PENCILS WHILE YOU ARE READING "INSTRUCTIONS TO TRAINEES."

☐ START TIME LOGGED (When order to BEGIN WORK is given).

- ☐ COUNT/RECOUNT AND LOG TESTEES PRESENT.
- ☐ ANSWER ALL QUESTIONS DURING TEST.
- ☐ ANSWER SHEETS CHECKED AS PICKED UP.
- ☐ STOP TIME LOGGED (WHEN LAST PERSON FINISHES).
- ☐ COMPLETE LOG TO END-OF-TEST CERTIFICATION.
- ☐ ALL QUESTIONNAIRES ACCOUNTED FOR.
- ☐ ALL ANSWER SHEETS ACCOUNTED FOR.
- ☐ PENCILS COLLECTED.
- ☐ MARKED QUESTIONNAIRES SEPARATED.
- ☐ BAD PENCILS DISCARDED.

VIII. Leaving the test site.

- ☐ ALL MATERIALS TAKEN FROM TEST SITE.
- ☐ BUILDING/CLASSROOM POLICED.
- ☐ LIGHTS OFF.
- ☐ BUILDING/CLASSROOM SECURE.

IX. At the Test Directorate.

- ☐ ALL GOOD QUESTIONNAIRES RETURNED.
- ☐ ALL BAD QUESTIONNAIRES RETURNED.
- ☐ PENCILS RETURNED.
- ☐ ADMINISTRATIVE MATERIALS RETURNED.
- ☐ CHECK-IN PERSON'S SIGNATURE ON LOG SHEET.

X. Quality Control Check

- ☐ TOP OF EACH ANSWER SHEET COMPLETE.
- ☐ CIRCLES DARK ON EACH ANSWER SHEET.
- ☐ PRINTING LEGIBLE ON EACH ANSWER SHEET.

☐ ERASURES OF STRAY MARKS AND MISTAKES COMPLETE ON EACH ANSWER SHEET.

☐ ALL ANSWER SHEETS RETURNED TO C-DCAC OR DELEGATE.

☐ VERIFICATION SIGNATURES - YOURS AND CHIEF-DATA COLLECTION AND CONTROL ON LOG SHEET.

☐ LOG FILLED OUT.

☐ LOG CERTIFIED BY YOU AND C-DCAC.

April 1976

LOG SHEET

FILL IN THIS FORM AS YOU DO THINGS ON THE "TEST ADMINISTRATOR CHECKLIST."

DO NOT FILL OUT AHEAD OF TIME.

TEST ADMINISTRATOR _____ (Print)

ASSISTANTS _____ (Print)

_____

_____

_____

_____

DATE OF TEST: ____/____/76____

UNIT(S) TESTED: BDE _____ BN _____ CO _____ PLT _____

BDE _____ BN _____ CO _____ PLT _____

BDE _____ BN _____ CO _____ PLT _____

BDE _____ BN _____ CO _____ PLT _____

PLACE OF TEST: _____ (Building/Classroom Number)

QUESTIONNAIRE FORM: (UPPER RIGHT): _____

ANSWER SHEET FORM: (UPPER RIGHT): _____

ADMINISTRATIVE SUPPLIES, QUESTIONNAIRES, ANSWER SHEETS CHECKED OUT AS PER THE TEST ADMINISTRATOR CHECKLIST.

SIGNATURES

CHECK-OUT PERSON: _____

TEST ADMINISTRATOR: _____

* UNIT ID _____ (4 letters)

* PLATOON(S) ____ ____ ____ ____

* MODIFIED JULIAN DATE _____ (6 numbers)

* PROGRAM _____ (2 numbers)

NUMBER TESTEES PRESENT _____

START TIME _____ HOURS

STOP TIME _____ HOURS

QUESTIONNAIRES COLLECTED _____ (NUMBER)

QUESTIONNAIRES SEPARATED AS UNUSABLE _____(NUMBER)

ANSWER SHEETS COLLECTED _____ (NUMBER)

COMMENTS:

CERTIFIED CORRECT TO END-OF-TEST: _____.

SIGNATURE OF TEST ADMINISTRATOR

ADMINISTRATIVE SUPPLIES AND QUESTIONNAIRES CHECKED IN AS PER THE TEST ADMINISTRATOR CHECKLIST.

SIGNATURES:

CHECK-IN PERSON: _____

TEST ADMINISTRATOR: _____

QUALITY CONTROL CHECK.

_____ ANSWER SHEETS TURNED IN.

CHECKS MADE: _____

SIGNATURE OF TEST ADMINISTRATOR

VERIFIED: _____

SIGNATURE OF C-DCAC/or delegate

APPENDIX C

TRAINEE PRETRAINING QUESTIONNAIRE

In this questionnaire, there will be a number of questions that mention the M-16 Rifle. The M-16 is the basic service rifle that you will learn to fire during Basic Rifle Marksmanship training. A round is a single shot of ammunition.

For each question, choose the one answer that is most correct for you. All answers are to be placed on the Answer Sheet.

01. How much do you think you will like or dislike firing the M-16 Rifle? (Choose One)

A	B	C	D	E	F	G
Like Extremely	Like Very Much	Like	Neutral	Dislike	Dislike Very Much	Dislike Extremely

02. How much do you think you will like or dislike Basic Training? (Choose One)

A	B	C	D	E	F	G
Like Extremely	Like Very Much	Like	Neutral	Dislike	Dislike Very Much	Dislike Extremely

03. How important do you think your Rifle Marksmanship skills will be to the job you want in the Army? (Choose One)

A	B	C	D	E	F	G
Extremely Important	Very Important	Fairly Important	Borderline	Fairly Unimportant	Very Unimportant	Extremely Unimportant

04. How well or poorly do you expect to do in training on the M-16 Rifle? (Choose One)

A	B	C	D	E	F	G
Extremely Well	Very Well	Well	So-So	Poorly	Very Poorly	Extremely Poorly

05. Do you believe that pressure to meet Army standards (qualify) placed upon you by your instructors will help or hurt your final score with the M-16 Rifle? (Choose One)

Help A Great Deal	Help Quite A Bit	Help Somewhat	No Effect	Hurt Somewhat	Hurt Quite A Bit	Hurt A Great Deal
A	B	C	D	E	F	G

06. How easy or hard do you think training on the M-16 Rifle will be? (Choose One)

Extremely Easy	Very Easy	Easy	So-So	Hard	Very Hard	Extremely Hard
A	B	C	D	E	F	G

07. How much do you think you will like or dislike training on the M-16 Rifle? (Choose One)

Like Extremely	Like Very Much	Like	Neutral	Dislike	Dislike Very Much	Dislike Extremely
A	B	C	D	E	F	G

08. Have you ever fired a rifle? (Choose One)

A. No
B. Once or twice
C. A few times
D. Often
E. Very often

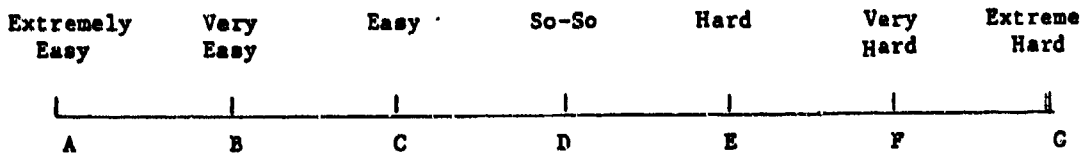
09. Have you ever gone hunting with a rifle or shotgun? (Choose One)

A. No
B. Once or twice
C. A few times
D. Often
E. Very often

10. How nervous do you think you will feel about firing the M-16 Rifle? (Choose One)

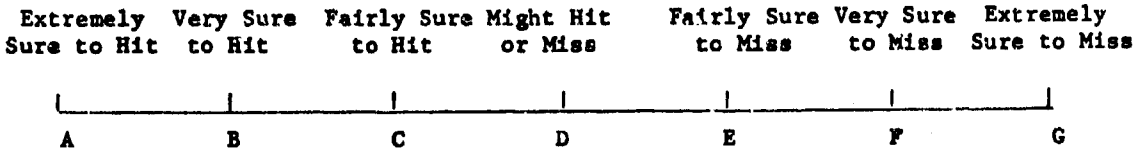
Hardly Nervous At All	A Little Nervous	Fairly Nervous	Very Nervous	Extremely Nervous
A	B	C	D	E

11. If you had to explain the inner-workings of rifles based on your experience, how easy or hard would you find it? (Choose One)

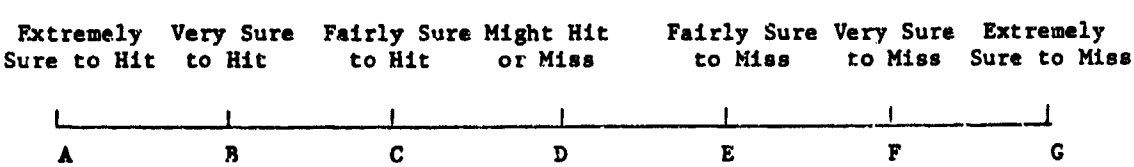


Questions 12-14 deal with hitting a man-sized target. A meter is a little longer than a yard; a football field is about 100 meters.

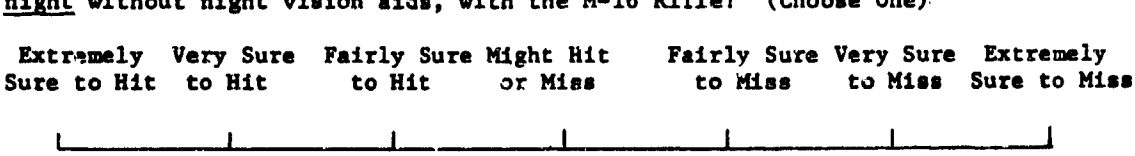
12. How sure do you feel that you can hit a target closer than 200 meters, in daylight, with the M-16 Rifle? (Choose One)



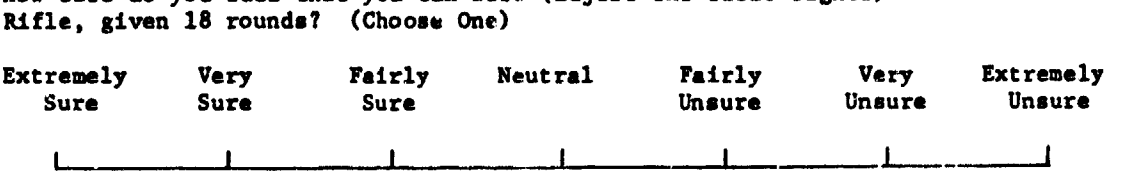
13. How sure do you feel that you can hit a target between 200 and 400 meters away, in daylight, with the M-16 Rifle? (Choose One)



14. How sure do you feel that you can hit a target closer than 50 meters, at night without night vision aids, with the M-16 Rifle? (Choose One)



15. How sure do you feel that you can Zero (adjust the rifle sights) the M-16 Rifle, given 18 rounds? (Choose One)



16. If you are in combat, how sure do you feel that you will fire the M-16 Rifle at the enemy? (Choose One)

Extremely Sure	Very Sure	Fairly Sure	Neutral	Fairly Unsure	Very Unsure	Extremely Unsure
A	B	C	D	E	F	G

17. How do you bat when playing baseball? (Choose One)

A. Right handed
B. Left handed
C. Switch hitter

18. Do you need glasses? (Choose One)

A. Yes
B. No

19. What language is spoken most at home? (Choose One)

A. English
B. Spanish
C. French
D. Other

20. How easy or hard is it for you to understand English? (Choose One)

Extremely Easy	Very Easy	Easy	So-So	Hard	Very Hard	Extremely Hard
A	B	C	D	E	F	G

21. How many team sports, (like football, volleyball, and so on) did you play in high school, either varsity, intramural or after school? (Choose One)

A. None
B. One
C. Two
D. Three
E. Four or more

APPENDIX D

TRAINEE POST-TRAINING QUESTIONNAIRE

For each question, choose the one answer that is most correct for you.
All answers are to be placed on the Answer Sheet.

01. How much do you like or dislike Basic Training? (Choose One)

Like Extremely	Like Very Much	Like	Neutral	Dislike	Dislike Very Much	Dislike Extremely
A	B	C	D	E	F	G

02. How much do you like or dislike firing the M-16 Rifle? (Choose One)

Like Extremely	Like Very Much	Like	Neutral	Dislike	Dislike Very Much	Dislike Extremely
A	B	C	D	E	F	G

03. How much did you like or dislike training on the M-16 Rifle? (Choose One)

Like Extremely	Like Very Much	Like	Neutral	Dislike	Dislike Very Much	Dislike Extremely
A	B	C	D	E	F	G

04. Do you think that pressure to qualify placed upon you by your instructors helped or hurt your Record Fire Score? (Choose One)

Helped A Great Deal	Helped Quite A Bit	Helped Somewhat	No Effect	Hurt Somewhat	Hurt Quite A Bit	Hurt A Great Deal
A	B	C	D	E	F	G

05. Overall, how effective (good) was Basic Rifle Marksmanship Training? (Choose One)

Extremely Effective	Very Effective	Fairly Effective	Neutral	Fairly Ineffective	Very Ineffective	Extremely Ineffective
A	B	C	D	E	F	G

06. Which eye do you sight with when firing a rifle? (Choose One)

A. Right Eye
B. Left Eye
C. Does Not Matter

07. On which side do you fire the M-16 Rifle? (Choose One)

A. Right Side
B. Left Side
C. Both Sides

08. When you fire a rifle, do you sight with only one eye open? (Choose One)

A. Yes
B. No

09. If you need glasses, when did you receive them? (Choose One)

A. I had glasses before Marksmanship Training.
B. I received glasses during Marksmanship Training.
C. I did not receive glasses until after Marksmanship Training.
D. Does Not Apply (Leave blank on the answer sheet if the question does not apply)

10. During the time you had your glasses, how often did you wear them? (Choose One)

A. Almost Always
B. Most Of The Time
C. Sometimes But Not Much
D. Hardly Ever
E. Almost Never
F. Does Not Apply (Leave blank on the answer sheet if the question does not apply)

11. If you had to explain the inner-workings of rifles, based on your experience, how easy or hard would you find it? (Choose One)

Extremely Easy	Very Easy	Easy	So-So	Hard	Very Hard	Extremely Hard
A	B	C	D	E	F	G

12. How important do you think your Rifle Marksmanship skills will be to the job you want in the Army? (Choose One)

Extremely Important	Very Important	Fairly Important	Borderline	Fairly Unimportant	Very Unimportant	Extremely Unimportant
A	B	C	D	E	F	G

13. If you are in combat, how sure do you feel that you will fire the M-16 Rifle at the enemy? (Choose One)

Extremely Sure	Very Sure	Fairly Sure	Neutral	Fairly Unsure	Very Unsure	Extremely Unsure
A	B	C	D	E	F	G

14. How sure do you feel that you can hit a target closer than 200 meters, in daylight, with the M-16 Rifle? (Choose One)

Extremely Sure To Hit	Very Sure To Hit	Fairly Sure To Hit	Might Hit Or Miss	Fairly Sure To Miss	Very Sure To Miss	Extremely Sure To Miss
A	B	C	D	E	F	G

15. How sure do you feel that you can hit a target between 200 and 400 meters away, in daylight, with the M-16 Rifle? (Choose One)

Extremely Sure To Hit	Very Sure To Hit	Fairly Sure To Hit	Might Hit Or Miss	Fairly Sure To Miss	Very Sure To Miss	Extremely Sure To Miss
A	B	C	D	E	F	G

16. How sure do you feel that you can hit a target closer than 50 meters, at night without night vision aids, with the M-16 Rifle? (Choose One)

Extremely Sure To Hit	Very Sure To Hit	Fairly Sure To Hit	Might Hit Or Miss	Fairly Sure To Miss	Very Sure To Miss	Extremely Sure To Miss
A	B	C	D	E	F	G

17. How sure do you feel that you can Zero the M-16 Rifle, given 18 rounds? (Choose One)

Extremely Sure	Very Sure	Fairly Sure	Neutral	Fairly Unsure	Very Unsure	Extremely Unsure
A	B	C	D	E	F	G

18. What was your Record Fire Qualification? (Choose One)

A. Did Not Finish Marksmanship Training
B. Did Not Qualify
C. Marksman
D. Sharpshooter
E. Expert

19. In general, how well or poorly did the Army use your time during Marksmanship Training on the M-16 Rifle? (Choose One)

Used Extremely Well	Used Very Well	Used Well	So-So	Used Poorly	Used Very Poorly	Used Extremely Poorly
A	B	C	D	E	F	G

20. When I took the Record Fire test, I got choked up and did not do as well as I could. (Choose One)

Strongly Agree	Moderately Agree	Perhaps Agree	Neutral	Perhaps Disagree	Moderately Disagree	Strongly Disagree
A	B	C	D	E	F	G

21. Thinking about qualifying with the M-16 Rifle made me nervous. (Choose One)

Strongly Agree	Moderately Agree	Perhaps Agree	Neutral	Perhaps Disagree	Moderately Disagree	Strongly Disagree
A	B	C	D	E	F	G

22. During practice firing, did instructor coaching help or hurt your score? (Choose One)

Helped A Great Deal	Helped Quite A Bit	Helped Somewhat	No Effect	Hurt Somewhat	Hurt Quite A Bit	Hurt A Great Deal
A	B	C	D	E	F	G

23. How easy or hard was your training on the M-16 Rifle? (Choose One)

Extremely Easy	Very Easy	Easy	So-So	Hard	Very Hard	Extremely Hard
A	B	C	D	E	F	G

24. How easy or hard was it to understand your instructors when they were teaching you? (Choose One)

Extremely Easy	Very Easy	Easy	So-So	Hard	Very Hard	Extremely Hard
A	B	C	D	E	F	G

25. Did your instructors care if you really learned during training on the M-16 Rifle? (Choose One)

A Great Deal	Quite A Bit	Some But Not Much	Very Little	Hardly Any
A	B	C	D	E

26. How much knowledge and skill did your instructor seem to have during your training on the M-16 Rifle? (Choose One)

A Great Deal	Quite A Bit	Some But Not Much	Very Little	Hardly Any
A	B	C	D	E

27. At times, some trainees get a chance to practice their Record Fire early in training. Do you think this is a good or bad idea? (Choose One)

Extremely Good	Very Good	Good	So-So	Bad	Very Bad	Extremely Bad
A	B	C	D	E	F	G

28. How often did your instructors explain how to correct your mistakes when firing the M-16 Rifle? (Choose One)

Almost Always	Most Of The Time	Sometimes But Not Much	Hardly Ever	Almost Never
A	B	C	D	E

29. How nervous do you now feel about firing the M-16 Rifle? (Choose One)

Hardly Nervous At All	A Little Nervous	Fairly Nervous	Very Nervous	Extremely Nervous
A	B	C	D	E

30. Did you do better or worse than you expected in training on the M-16 Rifle? (Choose One)

Extremely Better	Somewhat Better	Fairly Better	So-So	Fairly Worse	Somewhat Worse	Extremely Worse
A	B	C	D	E	F	G

Questions 31-40 ask your opinion of the <u>number of rounds</u> you fired in different parts of Marksmanship training.

31. Do you think you fired enough to learn to <u>Zero</u> the M-16?

A. Yes
B. No

32. If NO, how many more rounds did you need to fire? (Choose One)

A. Very Many More
B. A Good Deal More
C. Slightly More
D. A Couple More
E. Does Not Apply (Answered Yes in #31)

33. Do you think you fired enough to learn Field Firing techniques?

A. Yes
B. No

34. If NO, how many more rounds did you need to fire? (Choose One)

A. Very Many More
B. A Good Deal More
C. Slightly More
D. A Couple More
E. Does Not Apply (Answered Yes in #33)

35. Do you think you fired enough to learn Automatic Firing techniques?

A. Yes
B. No

36. If NO, how many more rounds did you need to fire? (Choose One)

A. Very Many More
B. A Good Deal More
C. Slightly More
D. A Couple More
E. Does Not Apply (Answered Yes in #35)

37. Do you think you fired enough to learn Night Firing techniques?

A. Yes
B. No

38. If NO, how many more rounds did you need to fire? (Choose One)

A. Very Many More
B. A Good Deal More
C. Slightly More
D. A Couple More
E. Does Not Apply (Answered Yes in #37)

39. To improve your score, did you need to fire more during Record Fire?

A. Yes
B. No

40. If YES, how many more rounds did you need to fire? (Choose One)

A. Very Many More
B. A Good Deal More
C. Slightly More
D. A Couple More
E. Does Not Apply (Answered No in #39)

Questions 41-55 ask your opinion of the amount of instructional time you received in the various skills you need to fire the M-16 Rifle.

Did you need more or less instructional time in:

41. Mechanical Training? (Such as Assembly and Disassembly and Care and Cleaning of the M-16 Rifle).

Very Much More	A Good Deal More	Slightly More	About Right	Slightly Less	A Good Deal Less	Very Much Less
A	B	C	D	E	F	G

42. Marksmanship Fundamentals? (Such as Steady Hold Factors and Aiming Techniques).

Very Much More	A Good Deal More	Slightly More	About Right	Slightly Less	A Good Deal Less	Very Much Less
A	B	C	D	E	F	G

43. Night Firing Techniques?

Very Much More	A Good Deal More	Slightly More	About Right	Slightly Less	A Good Deal Less	Very Much Less
A	B	C	D	E	F	G

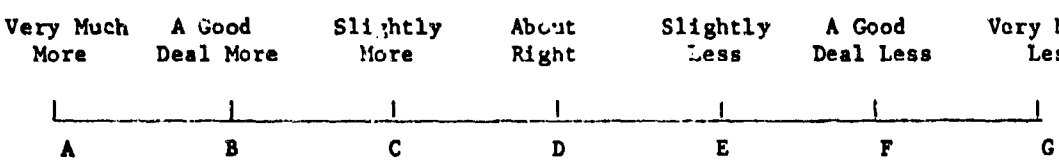
44. Automatic Firing Techniques During Daylight?

Very Much More	A Good Deal More	Slightly More	About Right	Slightly Less	A Good Deal Less	Very Much Less
A	B	C	D	E	F	G

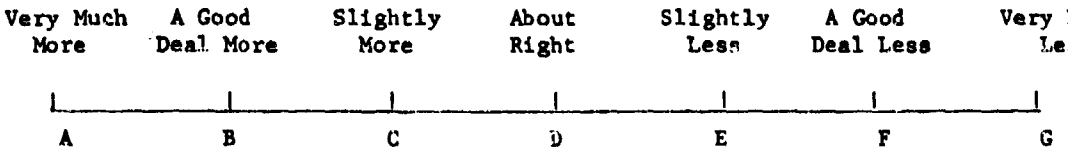
(Questions 45-49 deal with Zeroing the M-16 Rifle.)

Did you need more or less instructional time in:

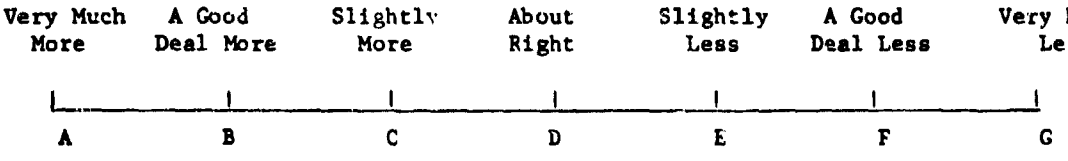
45. Sight adjustment Techniques?



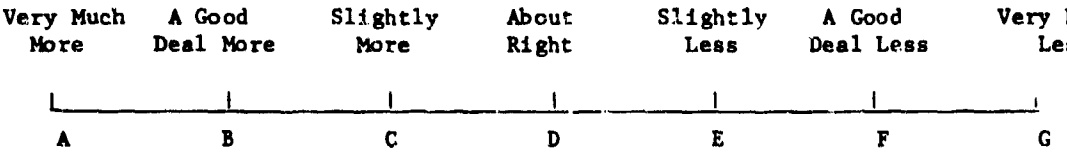
46. Shot Group Analysis?



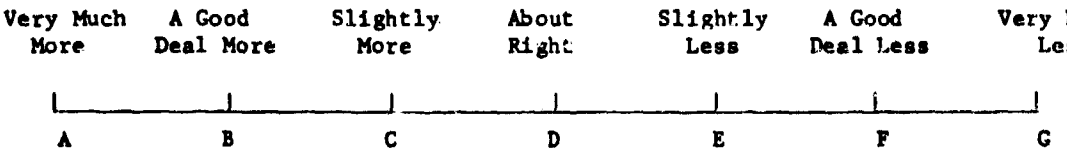
47. Sight Alignment Techniques?



48. Sight Picture Techniques?



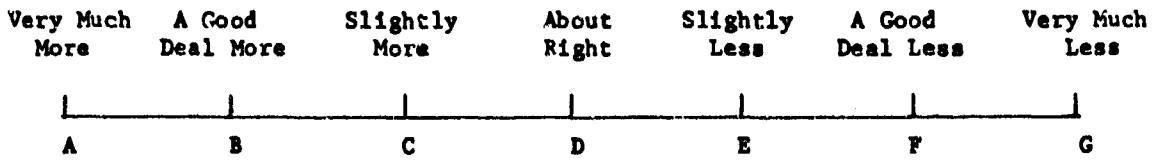
49. "8" Steady Hold Factors?



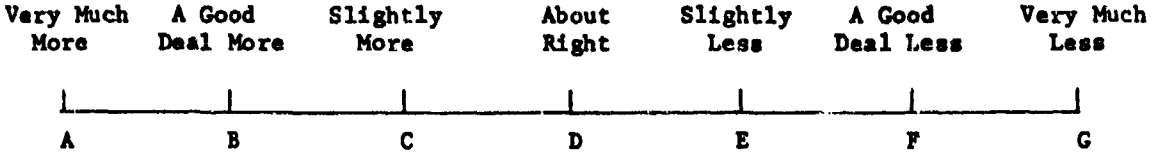
(Questions 50-55 deal with Field Firing.)

Did you need more or less instructional time in:

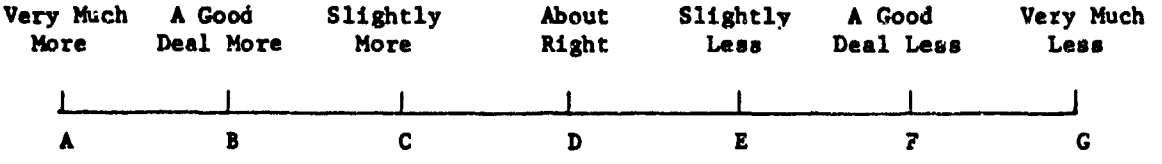
50. Field Firing Positions?



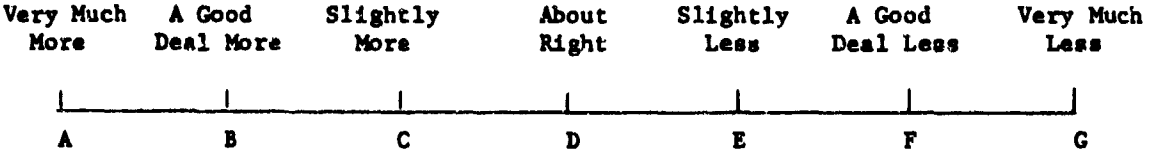
51. Target Detection?



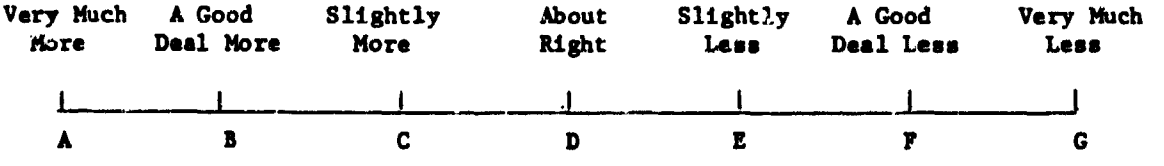
52. Range Estimation?



53. "8" Steady Hold Factors?



54. Sight Picture Techniques?



55. Fire and Reload?

Very Much More	A Good Deal More	Slightly More	About Right	Slightly Less	A Good Deal Less	Very Much Less
A	B	C	D	E	F	G

Using each number 1 through 7 rank the following parts of Basic Rifle Marksmanship training. Assign a "1" to the easiest, a "2" to the second easiest, and so on, with "7" as the most difficult. Assign a number to each of the seven (7) parts of Basic Rifle Marksmanship training.

56a* ___ Mechanical Training, such as Assembly and Disassembly and Care and Cleaning of the M-16 Rifle

56b* ___ Marksmanship Fundamentals such as Steady Hold Factors and Aiming Techniques

56c* ___ Zeroing the weapon

56d* ___ Field Fire Exercises

56e* ___ Record Fire Exercises

56f* ___ Night Fire Exercises

56g* ___ Automatic Fire Exercises

57. Did you miss any firing exercises during training on the M-16 Rifle that you did not make up at a later time?

A. Yes
B. No

58. If Yes, how many firing exercises did you miss and not make up?

A. Four or more
B. Three
C. Two
D. One
E. Does not apply (Answered No in #51)

The following is a list of training aids used to teach marksmanship skills for the M-16 Rifle. For each aid, indicate whether you personally used the device.

		Yes	No	Not Sure
59.	Paige Sighting Device	A	B	C
60.	M-15 Sighting Device	A	B	C
61.	M-16 Sighting Device (the "Cheater")	A	B	C
62.	Dime/Washer Exercise	A	B	C
63.	Target Box Exercise	A	B	C
64.	Transposition Exercise ("New Rifle Rest Exercise")	A	B	C

65. The following is a list of training aids used to teach marksmanship skills for the M-16 Rifle. Choose the one device from this list that you found most helpful in learning marksmanship fundamentals. (Choose One)

A. Paige Sighting Device
B. M-15 Sighting Device
C. M-16 Sighting Device (the "Cheater")
D. Dime/Washer Exercise
E. Target Box Exercise
F. Transposition Exercise ("New Rifle Rest Exercise")

Using each number 1 through 7 rank the following parts of Basic Rifle Marksmanship training in terms of how helpful they were in shooting your qualification. Assign a "1" to the most helpful, "2" to the second most helpful, and so on; with "7" as the least helpful. Assign a number to each of the seven (7) parts of Basic Rifle Marksmanship training.

66a* ___ Mechanical Training, such as Assembly and Disassembly and Care and Cleaning of the M-16 Rifle

66b* ___ Marksmanship Fundamentals such as Steady Hold Factors and Aiming Techniques

66c* ___ Zeroing the weapon

66d* ___ Field Fire Exercises

66e* ___ Record Fire Exercises

66f* ___ Night Fire Exercises

66g* ___ Automatic Fire Exercises

67. The purpose of receiving a practice Record Fire, early in training, is to show you what you will need to learn in your training on the M-16 Rifle. How much did your practice Record Fire show you what you were going to have to learn? (Choose One)

A Great Deal	Quite A Bit	Some But Not Much	Very Little	Hardly Any
A	B	C	D	E

68. You received a practice Record Fire Card in training. What was the effect of this training on your confidence to fire the M-16 Rifle? (Choose One)

Helped A Great Deal	Helped Quite A Bit	Helped Somewhat	No Effect	Hurt Somewhat	Hurt Quite A Bit	Hurt A Great Deal
A	B	C	D	E	F	G

69. Do you feel that the practice Record Fire you received early in t ining helped or hurt your final Record Fire score? (Choose One)

Helped A Great Deal	Helped Quite A Bit	Helped Somewhat	No Effect	Hurt Somewhat	Hurt Quite A Bit	Hurt A Great Deal
A	B	C	D	E	F	G

70. After receiving a practice Record Fire, early in training, I was more interested in training on the M-16 Rifle. (Choose One)

Strongly Agree	Moderately Agree	Perhaps Agree	Neutral	Perhaps Disagree	Moderately Disagree	Strongly Disagree
A	B	C	D	E	F	G

71. Some believe that training on the M-16 Rifle is easier if you receive a practice Record Fire early in training. Do you agree or disagree with this? (Choose One)

Strongly Agree	Moderately Agree	Perhaps Agree	Neutral	Perhaps Disagree	Moderately Disagree	Strongly Disagree
A	B	C	D	E	F	G

TRAINEE RETENTION QUESTIONNAIRE

For each question, choose the one answer that is most correct for you.

01. How nervous do you now feel about firing the M-16 Rifle? (Choose One)

Hardly Nervous At All	A Little Nervous	Fairly Nervous	Very Nervous	Extremely Nervous
A	B	C	D	E

02. If you had to explain the inner-workings of rifles, based on your experience, how easy or hard would you find it? (Choose One)

Extremely Easy	Very Easy	Easy	So-So	Hard	Very Hard	Extremely Hard
A	B	C	D	E	F	G

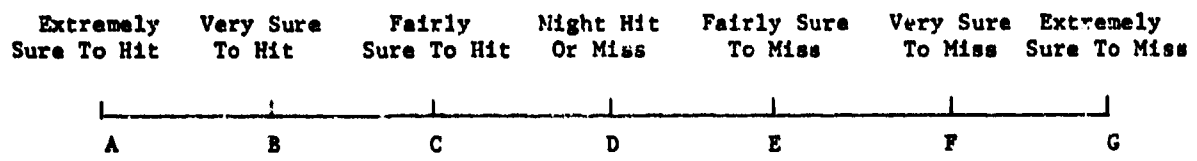
03. How sure do you feel that you can hit a target <u>closer than 200</u> meters, in <u>daylight</u>, with the M-16 Rifle? (Choose One)

Extremely Sure To Hit	Very Sure To Hit	Fairly Sure To Hit	Might Hit or Miss	Fairly Sure To Miss	Very Sure To Miss	Extremely Sure To Miss
A	B	C	D	E	F	G

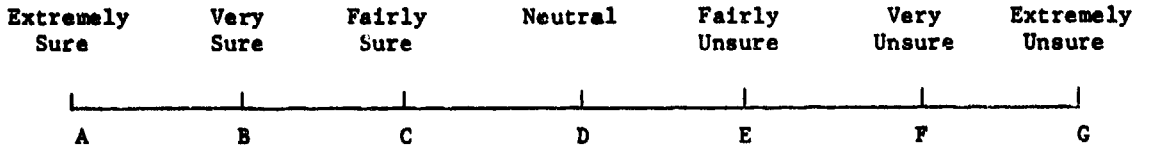
04. How sure do you feel that you can hit a target <u>between 200 and 400</u> meters away, in <u>daylight</u>, with the M-16 Rifle? (Choose One)

Extremely Sure To Hit	Very Sure To Hit	Fairly Sure To Hit	Might Hit or Miss	Fairly Sure To Miss	Very Sure To Miss	Extremely Sure To Miss
A	B	C	D	E	F	G

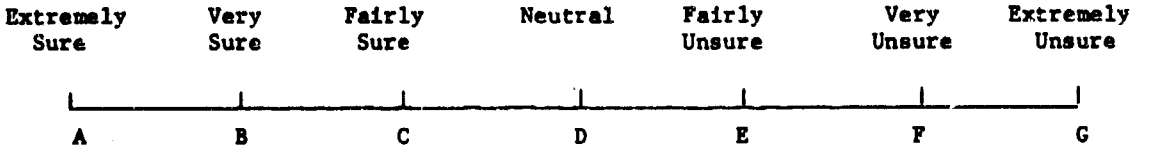
05. How sure do you feel that you can hit a target <u>closer than 50</u> meters, at <u>night</u> without night vision aids, with the M-16 Rifle? (Choose One)



06. How sure do you feel that you can Zero the M-16 Rifle, given 18 rounds? (Choose One)



07. If you are in combat, how sure do you feel that you will fire the M-16 Rifle at the enemy? (Choose One)



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APPENDIX E

TRAINEE RETENTION QUESTIONNAIRE

For each question, choose the one answer that is most correct for you.

01. How nervous do you now feel about firing the M-16 Rifle? (Choose One)

Hardly Nervous At All	A Little Nervous	Fairly Nervous	Very Nervous	Extremely Nervous
A	B	C	D	E

02. If you had to explain the inner-workings of rifles, based on your experience, how easy or hard would you find it? (Choose One)

Extremely Easy	Very Easy	Easy	So-So	Hard	Very Hard	Extremely Hard
A	B	C	D	E	F	G

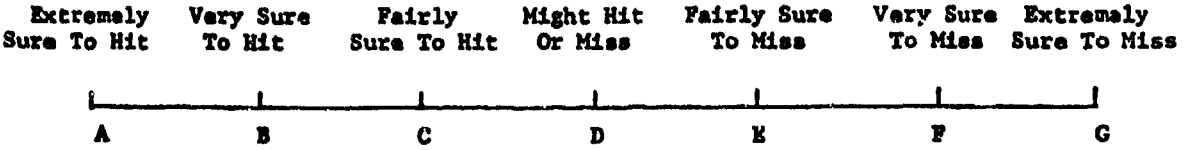
03. How sure do you feel that you can hit a target <u>closer than 200</u> meters, in <u>daylight</u>, with the M-16 Rifle? (Choose One)

Extremely Sure To Hit	Very Sure To Hit	Fairly Sure To Hit	Might Hit or Miss	Fairly Sure To Miss	Very Sure To Miss	Extremely Sure To Miss
A	B	C	D	E	F	G

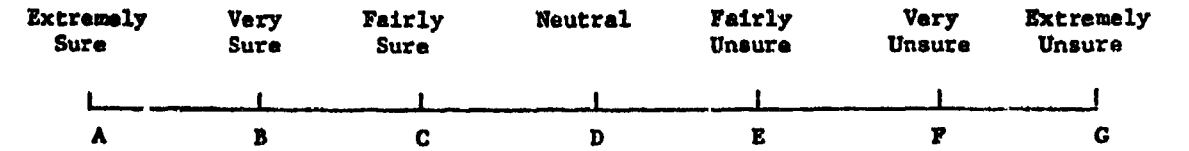
04. How sure do you feel that you can hit a target <u>between 200 and 400</u> meters away, in <u>daylight</u>, with the M-16 Rifle? (Choose One)

Extremely Sure To Hit	Very Sure To Hit	Fairly Sure To Hit	Might Hit or Miss	Fairly Sure To Miss	Very Sure To Miss	Extremely Sure To Miss
A	B	C	D	E	F	G

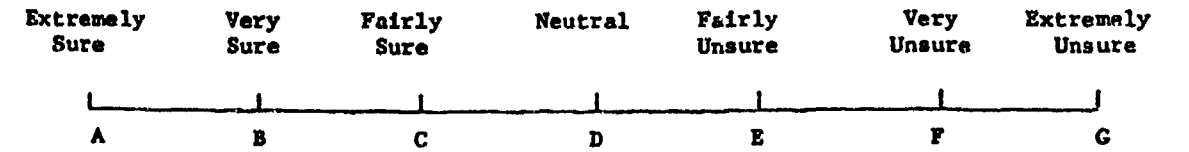
05. How sure do you feel that you can hit a target closer than 50 meters, at night without night vision aids, with the M-16 Rifle? (Choose One)



06. How sure do you feel that you can Zero the M-16 Rifle, given 18 rounds? (Choose One)



07. If you are in combat, how sure do you feel that you will fire the M-16 Rifle at the enemy? (Choose One)



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ARI Distribution List

4 OASD (M&RA)
2 HQDA (DAMI-CSI)
1 HQDA (DAPE-PBR
1 HQDA (DAMA-AR)
1 HQDA (DAPE-HRE
1 HQDA (SGRD-ID)
1 HQDA (DAMI-DOT-C)
1 HQDA (DAPC-PMZ-A)
1 HQDA (DACH-PPZ-A)
1 HQDA (DAPE-HH
1 HQDA (DAPE-MPO
1 HQDA (DAPE-DW)
1 HQDA (DAPE-HRL)
1 HQDA (DAPE-CPS)
1 HQDA (DAFD-MFA)
1 HQDA (DARD-ARS-P)
1 HQDA (DAPC-PAS-A)
1 HQDA (DUSA-OR)
1 HQDA (DAMO-RQR)
1 HQDA (DASG)
1 HQDA (DA10-PI)
1 Chief, Consult Div (DA-OTSG), Adelphi, MD
1 Mil Asst. Hum Res, ODDR&E, OAD (E&LS)
1 HQ USARAL, APO Seattle, ATTN: ARAGP-R
1 HQ First Army, ATTN: AFKA-OI-TI
2 HQ Fifth Army, Ft Sam Houston
1 Dir, Army Stf Studies Ofc, ATTN: OAVCSA (DSP)
1 Ofc Chief of Stf, Studies Ofc
1 DCSPER, ATTN: CPS/OCP
1 The Army Lib, Pentagon, ATTN: RSB Chief
1 The Army Lib, Pentagon, ATTN: ANRAL
1 Ofc, Asst Sect of the Army (R&D)
1 Tech Support Ofc, OJCS
1 USASA, Arlington, ATTN: IARD-T
1 USA Rsch Ofc, Durham, ATTN: Life Sciences Dir
2 USARIEM, Natick, ATTN: SGRD-UE-CA
1 USATTC, Ft Clayton, ATTN: STETC-MO-A
1 USAIMA, Ft Bragg, ATTN: ATSU CTD-OM
1 USAIMA, Ft Bragg, ATTN: Marquat Lib
1 US WAC Ctr & Sch, Ft McClellan, ATTN: Lib
1 US WAC Ctr & Sch, Ft McClellan, ATTN: Trng Dir
1 USA Quartermaster Sch, Ft Lee, ATTN: ATSM-TE
1 Intelligence Material Dev Ofc, EWL, Ft Holabird
1 USA SE Signal Sch, Ft Gordon, ATTN: ATSO-EA
1 USA Chaplain Ctr & Sch, Ft Hamilton, ATTN: ATSC-TE-RD
1 USATSCH, Ft Eustis, ATTN: Educ Advisor
1 USA War College, Carlisle Barracks, ATTN: Lib
2 WRAIR, Neuropsychiatry Div
1 DLI, SDA, Monterey
1 USA Concept Anal Agcy, Bethesda, ATTN: MOCA-MR
1 USA Concept Anal Agcy, Bethesda, ATTN: MOCA-JF
1 USA Arctic Test Ctr, APO Seattle, ATTN: STEAC-PL-MI
1 USA Arctic Test Ctr, APO Seattle, ATTN: AMSTE-PL-TS
1 USA Armament Cmd, Rsstone Arsenal, ATTN: ATSK-TEM
1 USA Armament Cmd, Rock Island, ATTN: AMSAR-TDC
1 FAA-NAFEC, Atlantic City, ATTN: Library
1 FAA-NAFEC, Atlantic City, ATTN: Hum Engr Br
1 FAA Aeronautical Ctr, Oklahoma City, ATTN: AAC-44D
2 USA Fld Arty Sch, Ft Sill, ATTN: Library
1 USA Armor Sch, Ft Knox, ATTN: Library
1 USA Armor Sch, Ft Knox, ATTN: ATSB-DI-E
1 USA Armor Sch, Ft Knox, ATTN: ATSB-DT-TP
1 USA Armor Sch, Ft Knox, ATTN: ATSB-CD-AD
2 HQUSACDEC, Ft Ord, ATTN: Library
1 HQUSACDEC, Ft Ord, ATTN: ATEC-EX-E-Hum Factors
2 USAEEC, Ft Benjamin Harrison, ATTN: Library
1 USAPACDC, Ft Benjamin Harrison, ATTN: ATCP-HR
1 USA Comm-Elect Sch, Ft Monmouth, ATTN: ATSN-EA
1 USAEC, Ft Monmouth, ATTN: AMSEL-CT-HDP
1 USAEC, Ft Monmouth, ATTN: AMSEL-PA-P
1 USAEC, Ft Monmouth, ATTN: AMSEL-SI-CB
1 USAEC, Ft Monmouth, ATTN: C, Facl Dev Br
1 USA Materiel Sys Anal Agcy, Aberdeen, ATTN: AMXSY-P
1 Edgewood Arsenal, Aberdeen, ATTN: SAREA-BL-H
1 USA Ord Ctr & Sch, Aberdeen, ATTN: ATSL-TEM-C
2 USA Hum Engr Lab, Aberdeen, ATTN: Library/Dir
1 USA Combat Arms Trng Bd, Ft Benning, ATTN: Ad Supervisor
1 USA Infantry Hum Rsch Unit, Ft Benning, ATTN: Chief
1 USA Infantry Bd, Ft Benning, ATTN: STEBC-TE-T
1 USASMA, Ft Bliss, ATTN: ATSS-LRC
1 USA Air Def Sch, Ft Bliss, ATTN: ATSA-CTD-ME
1 USA Air Def Sch, Ft Bliss, ATTN: Tech Lib
1 USA Air Def Bd, Ft Bliss, ATTN: FILES
1 USA Air Def Bd, Ft Bliss, ATTN: STEBD-PO
1 USA Cmd & General Stf College, Ft Leavenworth, ATTN: Lib
1 USA Cmd & General Stf College, Ft Leavenworth, ATTN: ATSW-SE-L
1 USA Cmd & General Stf College, Ft Leavenworth, ATTN: Ed Advisor
1 USA Combined Arms Cmbt Dev Act, Ft Leavenworth, ATTN: DepCdr
1 USA Combined Arms Cmbt Dev Act, Ft Leavenworth, ATTN: CCS
1 USA Combined Arms Cmbt Dev Act, Ft Leavenworth, ATTN: ATCASA
1 USA Combined Arms Cmbt Dev Act, Ft Leavenworth, ATTN: ATCACO-E
1 USA Combined Arms Cmbt Dev Act, Ft Leavenworth, ATTN: ATCACC-C
1 USAECOM, Night Vision Lab, Ft Belvoir, ATTN: AMSEL-NV-SD
3 USA Computer Sys Cmd, Ft Belvoir, ATTN: Tech Library
1 USAMERDC, Ft Belvoir, ATTN: STSFB-DQ
1 USA Eng Sch, Ft Belvoir, ATTN: Library
1 USA Topographic Lab, Ft Belvoir, ATTN: ETL-TD-S
1 USA Topographic Lab, Ft Belvoir, ATTN: STINFO Center
1 USA Topographic Lab, Ft Belvoir, ATTN: ETL-GSL
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1 Marine Corps Inst., ATTN: Dean-MCI
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1 AFHRL (DOJN) Lackland AFB
1 HQUSAF (INYSD)
1 HQUSAF (DPXXA)
1 AFVTG (RD) Randolph AFB
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1 Air Force Academy, CO, ATTN: Dept of Bel Scn
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2 Navy Med Neuropsychiatric Rsch Unit, San Diego
1 Nav Electronic Lab, San Diego, ATTN: Res Lab
1 Nav TrngCen, San Diego, ATTN: Code 9000-Lib
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1 NavTrngEquipCtr, Orlando, ATTN: Tech Lib
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1 US Dept of Justice, DC, ATTN: Drug Enforce Admin
1 Nat Bur of Standards, DC, ATTN: Computer Info Section
1 Nat Clearing House for MH-Info, Rockville
1 Denver Federal Ctr, Lakewood, ATTN: BLM
12 Defense Documentation Center
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1 C/Air Staff, Royal Canadian AF, ATTN: Pers Std Anal Br
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1 Military Attache, French Embassy, ATTN: Doc Sec
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1 Ministeris van Defensie, DOOP/KL Afd Sociaal Psychologische Zaken, The Hague, Netherlands