



Research Report 1988

**Marksmanship Requirements from the
Perspective of Combat Veterans -
Volume I: Main Report**

Jean L. Dyer
Consortium of Universities of Washington

February 2106

**United States Army Research Institute
for the Behavioral and Social Sciences**

Approved for public release; distribution is unlimited.

**U.S. Army Research Institute
for the Behavioral and Social Sciences**

**Department of the Army
Deputy Chief of Staff, G1**

Authorized and approved:

**MICHELLE SAMS, Ph.D.
Director**

Research accomplished under contract
for the Department of the Army by

Consortium of Universities of Washington

Technical Review by

Martin L. Bink, U.S. Army Research Institute

NOTICES

DISTRIBUTION: This Research Report has been submitted to the Defense Information Technical Center (DTIC). Address correspondence concerning ARI reports to: U.S. Army Research Institute for the Behavioral and Social Sciences, Attn: DAPE-ARI-ZXM, 6000 6th Street (Building 1464 / Mail Stop: 5610), Fort Belvoir, VA 22060-5610

FINAL DISPOSITION: Destroy this Research Report when it is no longer needed. Do not return it to the U.S. Army Research Institute for the Behavioral and Social Sciences.

NOTE: The findings in this Research Report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

REPORT DOCUMENTATION PAGE

1. REPORT DATE (DD-MM-YYYY) February 2016		2. REPORT TYPE Final		3. DATES COVERED (From - To) November 2012 to August 2014	
4. TITLE AND SUBTITLE Marksmanship Requirements From the Perspective of Combat Veterans – Volume I: Main Report				5a. CONTRACT NUMBER W5J90CQ-11-C-0040	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER 622785	
6. AUTHOR(S) Jean L. Dyer				5d. PROJECT NUMBER A790	
				5e. TASK NUMBER 409	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Consortium of Universities of Washington 1100H Street NW Suite 500 Washington, D.C. 2005				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) U. S. Army Research Institute for the Behavioral & Social Sciences 6000 6 TH Street (Bldg. 1464 / Mail Stop 5610) Fort Belvoir, VA 22060-5610				10. SPONSOR/MONITOR'S ACRONYM(S) ARI	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S) Research Report 1988	
12. DISTRIBUTION/AVAILABILITY STATEMENT: Distribution Statement A: Approved for public release, distribution is unlimited.					
13. SUPPLEMENTARY NOTES ARI Research POC: Dr. Scott E. Graham, Fort Benning Research Unit					
14. ABSTRACT This report summarizes the major findings from an Army-wide questionnaire of individual marksmanship requirements in units. The research addressed the Maneuver Center of Excellence's (MCoE) objective of developing a unit marksmanship training strategy that reflected, as much as possible, the current and near-term operational environments. A total of 1636 leaders from 14 Army branches enrolled in the Captains Career Course, Advanced Leader Course, and Senior Leader Course completed an on-line questionnaire. Overall, 94% of the leaders had been deployed at least once to Iraq or Afghanistan. Clusters of marksmanship skills were identified and linked to three groups of branches. Skills common to all branches were identified as well as those linked to branch groups and to specific branches. Infantry leaders identified more marksmanship requirements than leaders in any other branch. Skills identified reflected the leaders' combat experience. Training of some high priority, common skills will require additional training time, range upgrades, and a high level of trainer expertise. Leaders also described their pre-deployment marksmanship training plus reactions to the qualification course and to the need for a more complex course-of-fire. Findings were presented to the MCoE. A condensation of the findings is in a separate summary report (ARI Research Report 1989).					
15. SUBJECT TERMS Marksmanship, Training, Skills, Questionnaire, Deployment					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES 322	19a. NAME OF RESPONSIBLE PERSON Dr. Scott E. Graham
a. REPORT Unclassified	b. ABSTRACT Unclassified	c. THIS PAGE Unclassified	Unlimited Unclassified		19b. TELEPHONE NUMBER 706-545-2362

Research Report 1988

**Marksmanship Requirements From the
Perspective of Combat Veterans –
Volume I: Main Report**

Jean L. Dyer
Consortium of Universities of Washington

**Fort Benning Research Unit
Scott E. Graham, Chief**

February 2016

Approved for public release; distribution is unlimited.

ACKNOWLEDGMENT

The author expresses gratitude to SFC M. McInroy who provided input to the questionnaire and insured that the Army's Centers of Excellence were aware of the importance of their students completing the questionnaire in a timely manner. The findings and recommendations in the report are derived solely from the input provided by the leaders who completed the questionnaire. The time they devoted to this effort, and the insights and detail they provided were essential to obtaining a clear understanding of why they believed certain skills were important for Soldiers in their branch. Sincere appreciation is extended to all who participated.

MARKSMANSHIP REQUIREMENTS FROM THE PERSPECTIVE OF COMBAT VETERANS - VOLUME I: MAIN REPORT

EXECUTIVE SUMMARY

Research Requirement:

Marksmanship requirements are driven by operational requirements, and change when the combat environment changes, as evidenced by revisions to the Army's qualification course since World War I. New equipment also influences marksmanship requirements. To update the Army's unit marksmanship strategy, the Maneuver Center of Excellence (MCoE) saw a need to examine marksmanship training requirements based on the most recent experiences of leaders from different branches of the Army. This input would enable the MCoE to identify the best use of marksmanship resources (ammunition, range upgrades, trainer requirements, courses-of-fire) across the Army. The research was distinct from most prior marksmanship research which has typically focused on basic rifle marksmanship in initial entry training. The United States Army Research Institute for the Behavioral and Social Sciences analyzed the questionnaire data at the request of the MCoE.

Procedure:

An on-line questionnaire on marksmanship requirements was made available to leaders enrolled in the Captains Career Course, Advanced Leader Course, and Senior Leader Course at the Army's Centers of Excellence from November 2012 through September 2013. A total of 1636 leaders from 14 major Army branches participated. Leaders were asked to address marksmanship requirements from the perspective of the Soldiers in their branch. Questions addressed testing non-live-fire skills as well as training live-fire skills. Additional questions were posed regarding leaders' reactions to the current qualification course-of-fire and the benefits of a more complex course-of-fire. Leaders were also queried on marksmanship pre-deployment training they had received.

Findings:

Overall, 96% of the leaders had been deployed and this deployment experience clearly impacted their responses. A set of common marksmanship non-live-fire skills was identified for a Marksmanship Skills Proficiency Test appropriate for all Soldiers. Live-fire requirements varied considerably with branch. Three groups of branches were identified in terms of the number and type of live-fire requirements. The importance of marksmanship for these branch groups was directly linked to the likelihood that Soldiers in a branch will be involved in the close fight with enemy dismounted forces. Thus it was not surprising that Infantry leaders identified more marksmanship requirements than leaders in other branches, and were a distinct group of their own. Despite branch differences, live-fire requirements for all Soldiers were identified. These requirements included some skills not in the common set of requirements reflected in the current qualification course-of-fire, primarily engaging moving targets, firing from different positions, and discriminating between friendly, enemy and noncombatants. Additional

marksmanship requirements were specified for a subset of branches. Although leaders generally thought current qualification course-of-fire was satisfactory, they suggested some changes which reflected to a great extent their combat experiences. Consistent with the more complex skills which leaders recommended were their comments on the need to develop Soldier marksmanship skills and confidence through means that supplement qualification. The training of some high priority, common skills identified by the leaders will require additional training time, range upgrades, and a high level of trainer expertise.

Utilization and Dissemination of Findings:

The findings were briefed to leaders in the Directorate of Training and Doctrine in the MCoE in June 2014 and again to a MCoE Marksmanship Working Group in August 2014. The findings are an important step in identifying critical requirements for different branches in the Army, and in that regard constitute a form of a front-end analysis. The findings have implications for potential modifications to the current qualification course-of-fire, and whether a more complex course-of-fire is developed for certain branches, primarily Infantry. In addition, the leaders clearly expressed a concern regarding the quality of unit trainers, which could lead to a re-examination of how non-commissioned officers are prepared to effectively train marksmanship skills. The extensive comments given by leaders presented in the report provide an excellent perspective of leaders' understanding of marksmanship skills and their feelings regarding their importance. As the goal of Army training is to prepare Soldiers for combat, the fact that the questionnaire was completed by primarily combat veterans makes their responses particularly salient and relevant to required operational capabilities.

MARKSMANSHIP REQUIREMENTS FROM THE PERSPECTIVE OF COMBAT VETERANS - VOLUME I : MAIN REPORT

CONTENTS

	Page
RESEARCH OBJECTIVES	1
BACKGROUND	2
METHOD	4
Target Population	4
The Sample	5
The Questionnaire	9
RESULTS	12
Pre-Deployment Training	12
Marksmanship Skills Proficiency Test	21
The Approach to a Marksmanship Strategy.....	32
Branch Groups	32
Marksmanship Skill Requirements	35
Courses-of-Fire	42
Linking Marksmanship Requirements and Branches/MOS to a Training Strategy	47
Additional Comments on Marksmanship Training and Resources	54
Train-the-Trainer	55
SUMMARY AND DISCUSSION	57
Who Responded.....	57
Deployment Training.....	58
What Should be in a Marksmanship Skills Proficiency Test?.....	61
Leaders' Perceptions of Selected Sets of Marksmanship Skills	62
What are the Marksmanship Requirements for Each Branch/MOS?	64
Qualification and Other Courses-of-Fire	69
Train-the-Trainer Issues.....	70
Marksmanship Resources	71
Implications of the Branch Groups-Skill Clusters and Some Persistent Marksmanship Issues.....	72
CONCLUSIONS	77
REFERENCES	78

APPENDICES

APPENDIX A.	BRANCHES AND MOSs IN SAMPLE	A-1
APPENDIX B.	BACKGROUND INFORMATION ON LEADERS	B-1
APPENDIX C.	THE MARKSMANSHIP QUESTIONNAIRE	C-1
APPENDIX D.	PRE-DEPLOYMENT TRAINING	D-1
APPENDIX E.	ADDITIONAL PRE-DEPLOYMENT TRAINING NEEDED.....	E-1
APPENDIX F.	LEADER PERCENTAGES BY BRANCH ON A MARKSMANSHIP PROFICIENCY TEST AND ON MARKSMANSHIP SKILLS	F-1
APPENDIX G.	MARKSMANSHIP SKILLS PROFICIENCY TEST: EQUAL BRANCH AND WEIGHTED BRANCH APPROACHES	G-1
APPENDIX H.	COMMENTS ON MARKSMANSHIP SKILLS PROFICIENCY TEST	H-1
APPENDIX I.	MARKSMANSHIP REQUIREMENTS BY BRANCH	I-1
APPENDIX J.	MARKSMANSHIP SKILL REQUIREMENTS: CLUSTER ANALYSES	J-1
APPENDIX K.	OTHER REQUIRED MARKSMANSHIP SKILLS	K-1
APPENDIX L.	QUALIFICATION COURSE-OF-FIRE	L-1
APPENDIX M.	MORE COMPLEX COURSE-OF-FIRE	M-1
APPENDIX N.	ADDITIONAL COMMENTS ON MARKSMANSHIP TRAINING AND RESOURCING MARKSMANSHIP TRAINING	N-1
APPENDIX O.	ACRONYMS.....	O-1

TABLES

TABLE 1.	BRANCHES/CAREER FIELD BY FUNCTIONAL CATEGORY	5
TABLE 2.	NUMBER OF LEADERS COMPLETING THE MARKSMANSHIP QUESTIONNAIRE	6

CONTENTS (continued)

	F Page
TABLE 3. NUMBER OF LEADERS BY RANK AND FUNCTIONAL CATEGORY	7
TABLE 4. DESCRIPTIVE STATISTICS ON YEARS IN SERVICE AND NUMBER OF DEPLOYMENTS BY RANK	8
TABLE 5. MARKSMANSHIP SKILLS IN THE QUESTIONNAIRE.....	11
TABLE 6. COMMENTS ON PRE-DEPLOYMENT TRAINING AND ADDITIONAL TRAINING NEEDED: NUMBER OF COMMENTS AND NUMBER OF BRANCHES RESPONDING BY TRAINING CATEGORY	17
TABLE 7. NUMBER OF BRANCHES IN EACH PERCENTAGE BRACKET INDICATING A SKILL REQUIRED FOR A MARKSMANSHIP SKILLS PROFICIENCY TEST	24
TABLE 8. HIGH TO LOW ORDERING OF SKILLS FOR A MARKSMANSHIP SKILLS PROFICIENCY TEST: COMPARISON OF WEIGHTED BRANCH APPROACH AND EQUAL BRANCH APPROACH	25
TABLE 9. HIGH TO LOW ORDERING OF SKILLS FOR A MARKSMANSHIP SKILLS PROFICIENCY TEST: SUMMARY OF ANALYTIC APPROACHES	29
TABLE 10. NUMBER OF MARKSMANSHIP SKILLS MARKED AS A REQUIREMENT BY A HIGH, MODERATE, AND LOW PERCENTAGE OF LEADERS	34
TABLE 11. AVERAGE PERCENTAGE OF LEADERS BY BRANCH INDICATING SKILLS IN SKILL SETS WERE MARKSMANSHIP REQUIREMENTS.....	36
TABLE 12. INDIVIDUAL MARKSMANSHIP SKILLS MARKED AS A REQUIREMENT BY A WEIGHTED AVERAGE OF AT LEAST 80% OF LEADERS.....	37
TABLE 13. INDIVIDUAL MARKSMANSHIP SKILLS MARKED AS A REQUIREMENT BY A LOW WEIGHTED AVERAGE PERCENTAGE OF LEADERS.....	38
TABLE 14. REQUIREMENT TO FIRE IN COMBAT GEAR: PERCENTAGE OF LEADERS BY BRANCH	39
TABLE 15. AVERAGE PERCENTAGE OF LEADERS IN EACH BRANCH GROUP INDICATING WHETHER HITTING NEAR OR MORE DISTANT TARGETS WAS REQUIRED	40

CONTENTS (continued)

	Page
TABLE 16. REQUIREMENT TO FIRE FROM DIFFERENT POSITIONS: LEADER PERCENTAGES	41
TABLE 17. MARKSMANSHIP SKILL REQUIREMENTS APPLICABLE TO ALL BRANCHES	52
TABLE 18. MARKSMANSHIP SKILL REQUIREMENTS APPLICABLE TO HIGH AND MODERATE BRANCH GROUPS	53
TABLE 19. BRANCH SPECIFIC MARKSMANSHIP REQUIREMENTS.....	53
TABLE 20. MARKSMANSHIP SKILLS NOT PERCEIVED AS A REQUIREMENT	54

FIGURES

FIGURE 1. PERCENTAGE OF LEADERS WITH REPEATED DEPLOYMENTS TO IRAQ OR AFGHANISTAN	9
FIGURE 2. HIERARCHICAL CLUSTERING OF PROFICIENCY TEST ITEMS	26
FIGURE 3. RELATIONSHIP BETWEEN SKILL CLUSTERS AND BRANCH GROUPS.....	51

Marksmanship Requirements from the Perspective of Combat Veterans - Volume I, Main Report

Army training includes common skills, skills specific to duty positions, and skills supporting specific items of equipment. In addition, just as Soldier equipment and vehicular platforms change to reflect the needs of the operational environment and threats to national security, so does training. Training changes because of new equipment or equipment modifications are relatively easy to document. An excellent examination of how changes in the rifle, rifle cartridge, Infantry squad organization, Infantry squad weapons, doctrine, and training have all interacted over time, from World War I to approximately 2006, was provided by Ehrhart (2009). It is always a challenge to update training to address current and future threats and to tailor it to the Soldier's role, by formally incorporating revised training concepts and procedures into institutional and unit training and into the training and doctrine literature. Also accurately predicting training requirements prior to a conflict is difficult; thus training requirements are most likely to be formally refined after a period of conflict.

Dyer et al. (2010) summarized how the marksmanship qualification course-of-fire within the Army changed from 1940 through 2008. The qualification courses were documented in the marksmanship field manuals (FMs) which were published at least once every ten years in that 60-year time period. Although the reasons for the changes in the qualification courses were not cited in the FMs, Dyer et al. concluded that the changes reflected the differing threats during that time period, based on firing positions that were stressed, changes to training range capabilities (e.g., introduction of pop-up targets), need for realistic ranges, and need to provide more accurate measures of proficiency as a systematic function of the distance to the target. The Combat Field Fire (CFF) experiment (Dyer et al., 2010), which resulted in a change to the Army's Marksmanship FM (FM 3-22.9, Change 1, DA Form 7682-R Department of the Army [DA], 2011), reflected a need to have Soldiers fire a training scenario that more closely approximated the Operation Iraqi Freedom (OIF) environment.

Research Objectives

The research reported here was conducted by the Maneuver Center of Excellence's (MCoE) Directorate of Training and Doctrine (DOTD) in 2012-2013 as a part of a larger effort to establish revised marksmanship strategies for units throughout the Army. At the request of DOTD, the United States Army Research Institute for the Behavioral and Social Sciences (ARI) at Fort Benning, GA performed the data analysis. The research reflected continued interest in insuring that marksmanship training reflects the combat requirement. In this case, however, there was a focus on identifying common marksmanship requirements for all Soldiers as well as identifying marksmanship requirements specific to a branch/military occupational specialty (MOS). Leaders in senior officer and non-commissioned officer (NCO) leader courses (Captains Career Course [CCC], Advanced Leader Course [ALC], and Senior Leader Course [SLC]) from primary Army branches were surveyed as these individuals have a good understanding of marksmanship training requirements beyond basic training. These leaders are responsible for

marksmanship training at the company level and below, and also have had multiple years of marksmanship experience.

The research was conducted at a time when most leaders had been deployed to Iraq, Afghanistan, or both combat theaters. Thus it was assumed their responses would reflect these recent combat experiences. Leaders were defined in terms of rank: Captain, Sergeant, Staff Sergeant and Sergeant First Class.

The major objectives of the research were:

- To determine skills for a unit Marksmanship Skills Proficiency Test (not live-fire) for all Soldiers in the three functional categories of Maneuver Fires and Effects (MFE), Force Sustainment (FS), and Operations Support (OS), and
- To determine individual unit marksmanship training requirements common to branches/MOSs as well as specific to a branch/MOS.

The subordinate objectives were:

- To document the deployment training that was viewed as most beneficial, and what additional training would have been beneficial,
- To identify potential changes to the current qualification course-of-fire,
- To determine whether a more complex course-of-fire than the current qualification course is needed, which branches need such a course, and the marksmanship skills to include in a more complex course, and
- To determine leaders' perception of marksmanship trainer skills within units.

Collective marksmanship skills and skills required by other small arms were not a part of the research scope. As pointed out in this report, concerns about marksmanship training and proficiency often ebbs and flows, with considerable attention given to training requirements following periods of combat. Recommendations about solving proficiency issues are made at these times, but are not always implemented. It is hoped that the issues emerging from this research will result in positive actions regarding unit marksmanship training strategies and implementation of those strategies.

Background

The research was distinct from prior research in four major ways. First, it focused on individual marksmanship requirements in units, not requirements for initial entry training. Second, the leaders who responded had been deployed recently to a combat zone, and therefore had first-hand understanding of the combat requirements of Soldiers in their units. Third, as it was critical to obtain an Army-wide picture of requirements, the leaders were from the primary branches in the Army, rather than a narrow set of branches. Fourth, it was not an empirical investigation of marksmanship performance, but a knowledge elicitation approach to obtain leaders' perceptions of marksmanship training.

Much research on Army marksmanship has involved applied research on performance in basic rifle marksmanship, training device effectiveness/capabilities, and variations in programs of instruction, often using Soldiers in initial entry training (Dyer et al., 2012; Evans, Dyer, & Hagman, 2000; White, Carson & Wilborn, 1991). Standards for new courses-of-fire have been investigated (Dyer et al., 2010). This later report also summarized major marksmanship research conducted by Army agencies in the 1950s and the 1980s. When new marksmanship equipment is introduced to the force, the impact of that equipment on marksmanship performance has been investigated. Two examples are night equipment (Dyer, Smith & McClure, 1995) and equipment that enabled reduced exposure firing (Dyer et al., 2005). In addition, Army test agencies conduct formal evaluations of new equipment (not cited here). Some research has focused on the cognitive and perceptual-motor factors that underlie development of marksmanship skills (Chung, Delaruz, deVires, Bewley & Baker, 2006). Klein and Tierney (1978) analyzed the threat to determine target requirements for marksmanship ranges.

Consistent with the objectives of the present research, Ellison (2005) did focus in part on unit marksmanship training requirements. He advocated a change in marksmanship training for all Army MOSs from a defensive to an offensive approach in order for training to be more consistent with an asymmetric combat environment. He stressed the need to go beyond basic rifle marksmanship skill training in units to advanced marksmanship training on close quarters combat (CQC) and short range marksmanship (SRM) skills (within 100 meters). He cited gaps in the Army's marksmanship literature on the specifics of how to train such skills. However, no leader or Soldier data (e.g., interviews, articles, case studies, surveys) were presented on the rationale for all MOSs receiving such training beyond general statements that combat support and combat service support units are often placed in dangerous situations that require these skills.

A report which summarizes the major findings (Dyer, 2015) was written to complement this detailed report. In the summary report, results pertaining to each of the major and subordinate objectives are presented. However, it only presents a limited sample of the leader comments that are in both the body of this main report and the appendices.

Method

Target Population

The target population was specified by the MCoE as leaders in active duty units. However, as described below, not all branches/career fields were included in the target population. The other defining criterion was leader rank: Captain, Sergeant, Staff Sergeant and Sergeant First Class.

It is important to digress at this point to describe the approach used to define the target population, and subsequently the leaders who responded. The Army uses a hierarchical system to group personnel. The highest level used in this report is “functional categories,” applicable to officers: MFE, FS, and OS (Combined Arms Command Center for Army Lessons Learned [CAC-CALL], 2013; Human Resources Command [HRC], 2013). A similar categorization is used for enlisted personnel (HRC, 2013). However, for NCOs, “Maneuver and Fires” is used instead of MFE (HRC, 2013). Within each functional category, officers are assessed in a branch when they enter the Army. Later in their career, they can be assigned to a more specialized functional area. On the other hand, NCOs enter a career management field (CMF), within which there can be numerous MOSs.

Another distinction between officer and enlisted personnel categories is that the Engineer, Military Police, and CBRN¹ (Chemical Biological Radiological and Nuclear) officers are under MFE, and the NCOs in the Engineer, Military Police and CBRN career management fields are under OS (HRC, 2013). For report purposes, the target population for both officers and NCOs is described in terms of the MFE breakout for officers. Thus throughout the report, Engineer, Military Police and CBRN personnel are placed under the MFE category.

The target population did not include all Army branches/career fields. It was restricted as follows. All branches/fields under MFE were included. Within OS, the Military Intelligence and Signal branches were of interest. Within FS, the target population included Transportation, Quartermaster, and Ordnance (Mechanical Maintenance, Ammunition, and Electronic Maintenance). Many FS officers (captains) are categorized as multi-functional logisticians, rather than by specific branches. The Finance, Adjutant General, and Human Resources branches/career fields were excluded from the FS target population. Also excluded were personnel in the medical career field and warrant officers. Table 1 summarizes the scope of the target population by branch/career field. In general, the results are applied to these branches, although some generalizations can probably be made to branches that were excluded.

¹ The CBRN abbreviation is used throughout the remainder of the report for this branch.

Table 1
Branches/Career Field by Functional Category

Maneuver, Fires and Effects (MFE)	Branch/Field
Infantry	11
Engineer	12
Field Artillery	13
Air Defense Artillery	14
Aviation	15
Armor	19
Military Police	31
CBRN (Chemical, Biological, Radiological, Nuclear)	74
Operations Support (OS)	
Signal	25
Military Intelligence	35
Force Sustainment (FS)	
Multi-functional Logistician	90
Transportation	88
Ammunition	89
Mechanical Maintenance	91
Quartermaster	92
Electronic Maintenance	94

The Sample

Individuals enrolled in leader courses representing the branches/career fields in Table 1 were requested to complete an on-line questionnaire via the Army Knowledge Online (AKO) website. Three professional development courses were identified to obtain responses from the leaders in the target population: the CCC, the ALC, and the SLC. In Kish's (2004) terms, the sampling frame was these leader courses. The primary advantages of using courses for obtaining active duty leaders was the relative ease of contacting leaders via the Training and Doctrine Command (TRADOC) school system and the increased likelihood that leaders attending these courses would respond upon request from course instructors. In addition, course size reflects the size of an Army branch. If all individuals in a course and the same number of courses in each branch responded, the resulting numbers would be fairly representative of the Army as a whole.

Participation in the questionnaire was obtained through TRADOC. TRADOC submitted a formal request to the Army's Centers of Excellence (CoEs) for individuals enrolled in the three courses to participate. For example, the Fires CoE was asked to request individuals in the Field Artillery CCC, ALC and SLC to take the questionnaire. Participation was voluntary, and not all courses or individuals in a course participated. A general reminder was sent in January 2013 to all CoEs to elicit a higher rate of response. A third reminder was directed to the specific courses where more responses were needed. Questionnaires were received over an eleven-month period from November 2012 through September 2013. At the end of December 2012, 329 responses were received; at the end of March 2013, 789 were received; at the end of June 2013, 1355 were received, with the final total being 1636 at the end of September 2013.

The numbers of officers and NCOs who responded is in Table 2. Any leaders who responded to the questionnaire were included in the sample, even though they may not have been from a branch or MOS in the target population. Similarly, some first lieutenants were enrolled in the CCC and they were included. Of the NCOs, 34% were enrolled in SLC; 66% in ALC. The goal was to obtain a sample where the proportions of officers and NCOs were relatively consistent with the total population percentages. NCOs constituted slightly more than 81% of those who responded to the questionnaire, with the Army population percentage for all NCOs about 82% (Department of Defense [DoD], 2012). Officers (primarily Captains, Warrant Officers were excluded) constituted 18% of the sample, compared to 15% of all Officers (excluding Warrant Officers) in the Army population (DoD, 2012).

Table 2
Number of Leaders Completing the Marksmanship Questionnaire

Functional Category and Branch	Leader Category		Total #	% of Total
	# Officers	# NCOs		
Maneuver Fires and Effects				
Infantry	104	142	246	15.0
Engineer	14	108	122	7.5
Field Artillery	3	140	143	8.7
Air Defense Artillery	1	26	27	1.7
Aviation	1	61	62	3.8
Armor	44	126	170	10.4
Military Police	70	65	135	8.3
CBRN	37	34	71	4.3
Operations Support				
Signal	1	16	17	1.0
Military Intelligence	5	0	5	0.3
Force Sustainment				
Transportation	3	130	133	8.1
Ammunition	0	73	73	4.5
Mechanical Maintenance	0	258	258	15.8
Quartermaster	1	144	145	8.9
Electronic Maintenance	0	11	11	0.7
Multifunctional Logistician	8	0	8	0.5
Adjutant General ^a	0	2	2	0.1
Finance ^a	5	0	5	0.3
Other				
Medical ^a	0	1	1	0.1
Civil Affairs ^{a b}	2	0	2	0.1
Total	299 (18.3%)	1337 (81.7%)	1636	

^a These career fields were not in the target population but a limited number of individuals in these fields were in the courses which took the questionnaire, and therefore were included in the data set.

^b Civil affairs branch falls under MFE, but since it is not a branch into which an officer enters the Army, it is placed under "Other."

Branch differences also occurred with respect to the proportions of officers and NCOs. Officers were primarily from MFE branches (28% of MFE respondents), while officers were only 4% of the FS and OS leaders. Few leaders from the Military Intelligence and Signal branches replied. Because of the composition of the student population in the courses, the ranks of the individuals who responded were those specified in the sampling plan, although some first lieutenants were enrolled in a CCC (Table 3). Also, some branches were either over or underrepresented compared to the total Army population. For example, across the Army, the largest branch/field is Infantry, but slightly more leaders from the Mechanical Maintenance field responded. See the “Marksmanship Skills Proficiency Test Results” section for more information on branch representation.

A complete list of individual MOSs in the sample is in Appendix A. Only three-digit MOSs are cited as that was what was requested in the questionnaire. The appendix cites the number from each MOS that responded as well as the number of officers by Branch.

Leader rank by functional category is in Table 3. Breakdowns of rank by years of service and the total number of deployments to Iraq and/or Afghanistan are shown in Table 4. Clearly the majority were “combat veterans.” Except for the first lieutenants, less than 7% of the respondents had never been deployed (see Table 4), as the questionnaire was completed by leaders who were in the Army during a period of conflict in the Middle East. A tally of separate deployments to Iraq and Afghanistan is in Appendix B, Table B1. Table B1 shows that for all NCOs, the number of deployments to Iraq was at least twice the number of deployments to Afghanistan.

Table 3
Number of Leaders by Rank and Functional Category

Rank	Functional Category			Total # (%)
	MFE	FS	OS	
First Lieutenant	28	3	0	31 (1.9%)
Captain	246	16	6	268 (16.4%)
Sergeant	224	269	0	493 (30.1%)
Staff Sergeant	327	274	15	616 (37.7%)
Sergeant First Class	151	76	1	228 (13.9%)
Total #	976 (59.7%)	638 (39.0%)	22 (1.3%)	1636

Years in service and total number of deployments by major branch are summarized next. For individual branches within MFE, leaders averaged 8 to 9.5 years in service. Leaders from major branches within FS served an average of 9 to 11 years. The trend within the sample was for leaders from the MFE branches to average about 1.5 years fewer in service than those in the FS branches. Years in service for the branches in OS were slightly higher (10.5 and 14.5 years). Complete information is found in Tables B2 and B3 in Appendix B. The small sample size (~20 or less) for some branches limits generalizing results to these branches.

Table 4
Descriptive Statistics on Years in Service and Number of Deployments by Rank

Service and Deployments	Rank				
	First Lieutenant	Captain	Sergeant	Staff Sergeant	Sergeant First Class
Years of Service					
Mean	8.13	7.50	7.98	10.14	12.99
Mode	4	4	8	6 and 7	10
Median	7	5	8	10	12
SD	4.64	4.86	2.95	3.61	3.40
Min-Max	3-20	3-20	3-18	3-20	7-20
Total # Deployments					
Mean	1.29	1.39	2.05	2.47	2.86
Mode	1	1	2	2	3
Median	1	1	2	2	3
SD	1.01	0.88	1.16	1.33	1.77
Min-Max	0-3	0-5	0-8	0-10	0-11
% with no deployments	22.6%	6.3%	6.7%	4.9%	6.1%

Note. The sample size numbers are in Table 3.

The average number of total deployments per branch ranged between less than 1 and 2.9. However, the percentage of Soldiers who had never been deployed provides a better indication of combat-related experience within the sample. Overall, 6% of the leaders had never been deployed. Within MFE, less than 2% of the leaders from four branches (Infantry, Engineer, Aviation, and Armor) had never been deployed. About 9% of those in Field Artillery and Military Police had never been deployed. The two branches within MFE with the highest percentage of leaders who had not been deployed were CBRN (18%) and Air Defense (44%). In fact, Air Defense had the highest percentage of leaders who had not been deployed in all branches. With regard to FS branches (Quartermaster, Transportation, Ammunition and Mechanical Maintenance), the percentage of individuals who had never been deployed ranged from 4% to 10%. Everyone in the Signal and Military Intelligence branches had been deployed at least once (although this total sample was limited to 22 individuals). In summary, with the exception of Air Defense, the percentage of leaders who had never been deployed from the branches was low, with lowest percentage (less than 2%) for leaders in major MFE branches. Lastly, the maximum number of deployments was highest within MFE: 11 for Infantry, 10 for Aviation, and 9 for Engineer.

In examining deployments to Iraq and Afghanistan (Table B4), the average number of deployments to Iraq was higher than the number to Afghanistan, consistent with the data on rank cited previously. However, this pattern did not exist for all branches. For the four FS branches, the average number of deployments to Iraq was 2 to 3 times the number to Afghanistan. This was also the case for Engineers, Field Artillery, and Armor, but Air Defense deployments to Iraq were six times that to Afghanistan. At the other extreme were Infantry and Aviation branches, with approximately the same average number of deployments to both Iraq and Afghanistan. As

shown in Figure 1, the percentage of leaders with repeated deployments to Iraq was greater than the corresponding percentage to Afghanistan.

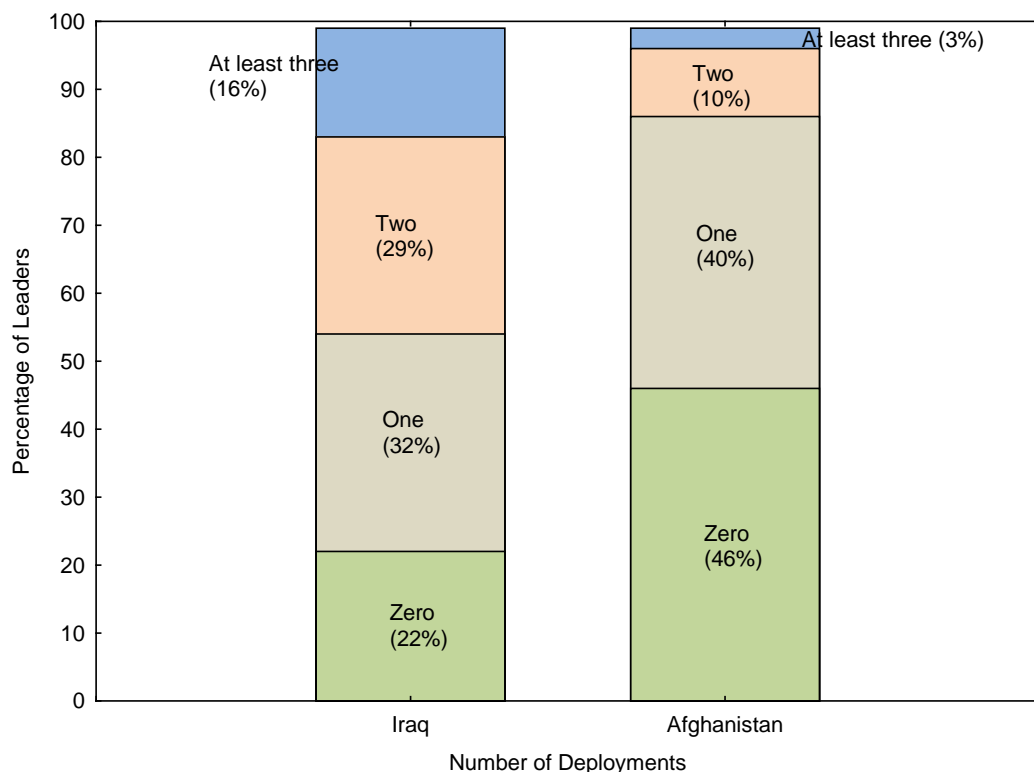


Figure 1. Percentage of leaders with repeated deployments to Iraq or Afghanistan. [Mean number of deployments: Iraq = 1.45 ($SEM=.04$); Afghanistan = 0.94 ($SEM=.02$)].

The Questionnaire

The questionnaire had three major sections: military background, questions on a Marksmanship Skills Proficiency Test, and questions on marksmanship requirements for Soldiers in the leaders' branch/field/MOS. In addition, there were open-ended questions in each section. The entire questionnaire is at Appendix C.

Leader background. The background information on the leaders has already been presented: time in service, numbers of respondents by Officer/NCO and branch, and deployments. Leaders were also asked to indicate the leader course in which they were enrolled. This information was used to track which courses had responded. Two open-ended questions on deployment training were presented in the section on military background:

If you have been deployed, what marksmanship training in your unit contributed the most to your combat effectiveness?

If you have been deployed, what additional marksmanship training would have increased the combat effectiveness of your unit?

Marksmanship proficiency test. This section explained the concept of a Marksmanship Skills Proficiency Test (a non-live-fire test). Then leaders indicated the skills they believed should be in a test for Soldiers in their branch or MOS. The intent was to identify skills viewed as important across most of the Army and therefore should be included in a test. The fifteen skills in the questionnaire are listed below. Each leader simply had to check whether each skill should be in a proficiency test for Soldiers in their branch/MOS. Another item was whether a test of knowledge should be included (Yes or No). They were also asked to list any additional skills to include, if a proficiency test was a good idea (Yes or No), and to cite any additional comments regarding a proficiency test. The skills cited were as follows:

- Assemble/disassemble carbine/rifle
- Perform a function check
- Load magazine
- Change magazines
- Perform immediate action
- Correct a malfunction
- Clear weapon
- Demonstrate correct firing positions (prone supported, prone unsupported, kneeling)
- Mount/remove optic
- Boresight an optic with borelight
- Mount an aiming light
- Boresight an aiming light
- Demonstrate proper use of sling for firing
- Determine dominant eye
- Determine sight adjustment given diagram of grouped, not zeroed, rounds on a 25 m target

Marksmanship skill requirements. Leaders were asked to identify the marksmanship skills which they thought Soldiers in their branch/MOS should be able to perform without assistance. In this case, the purpose of the questions was to identify both common requirements as well as branch/MOS specific requirements. Seven sets of skills were identified with 5 to 9 skills in each for a total of 44 skills. A complete list of all skills is in Table 5. Leaders were also asked to list any other skills required of their Soldiers.

Questions at the end of the questionnaire were:

- If the current qualification course should be changed, and if so, to list the desired changes,
- If Soldiers in their branch should be proficient in executing complex courses-of-fire such as combat field fire which require skill integration (Yes or No),
- If there should be a requirement for a more complex course-of-fire in addition to the current qualification, and if so, to list the core skills for such a course,
- If a system that provides immediate feedback to the Soldier on shot location (hit and miss) would be beneficial (Yes or No), and
- To provide other comments they wished to make regarding the training of and resourcing of marksmanship skills in units.

Table 5
Marksmanship Skills in the Questionnaire

Skills in Each Skill Category	
Zero Weapon (6 skills)	Precision firing (5 skills)
Zero weapon with sighting system organic to unit	Adjust sight picture for firing conditions such as wind
Zero in combat gear	Hit target in a specified lethal zone (vs. just hitting a target)
Zero weapon with backup iron sights	Hit target in multiple-specified lethal zones
Zero at 25 meters	Hit moving targets
Confirm zero at distance	Hit targets at elevations above or below firer's position
Zero at distance (wo/ firing at 25 meters first)	
Firing Positions (9 skills)	Special Equipment (6 skills)
Fire from prone unsupported position	Hit targets in course of fire in combat gear
Fire from prone supported position	Qualify with weapon in combat gear
Fire from kneeling position	Hit targets at night using aiming lights (ALs) & night vision goggles (NVGs)
Fire from standing position	Hit targets at night with thermal weapon sight (TWS)
Fire around or from behind barricades	Fire with protective mask
Fire from windows/enclosures	Fire with a sling
Fire under stress	
Modify firing position to take advantage of man-made objects (e.g., under a car)	
Hit Targets at Different Distances (5 skills)	Other Skills (7 skills)
Hit targets at distances less than 25 meters	Switch between primary and alternate weapon to engage targets
Hit targets at 25 to 100 meters	Quickly change magazines
Hit targets at 100 to 200 meters	Proficient in reacting to malfunctions
Hit targets at 200 to 300 meters	Hit targets at night with unaided eye
Hit targets at extended distances (beyond 300 meters)	Short range marksmanship skills
	Skills with different firing modes (e.g., semi, burst)
	Flexibility to shoot with non-dominant hand
Target Acquisition Skills (6 skills)	
Acquire all targets in sector of fire	
Discriminate between friendly forces, threat personnel, and noncombatants	
Hit single timed targets in sector of fire	
Hit two timed targets in sector of fire	
Hit three or more timed targets in sector of fire	
Hit targets with shorter exposure times than in current courses of fire	

Results

The first part of the Results section summarizes leader comments on their pre-deployment training. The second part is on the Marksmanship Skills Proficiency Test. The third part is on the marksmanship skills requirements. Then comments on the last series of questions which included the qualification course and a more complex course-of-fire are summarized. The open-ended questions yielded much valuable and detailed information, as presented in the appendixes. Although the major results to these questions are summarized in the Results section, if a question is of particular interest, the entire appendix should be examined to fully appreciate leader comments.

The appendixes that detail the leaders' comments leaders to the open-ended questions as well as other key appendixes are listed below.

- Appendix D: Responses to pre-deployment training received
- Appendix E: Responses to pre-deployment training desired but not received
- Appendix F: Percentage of leaders, by branch, who indicated which skills should be in a proficiency test as well as which marksmanship skills were requirements for Soldiers in their branch. This is the major data base.
- Appendix H: Comments on the Marksmanship Skills Proficiency Test
- Appendix I: Profiles of the live-fire marksmanship requirements by branch with skills categorized by a high, moderate and low percentage of leaders
- Appendix K: Comments on other marksmanship skills
- Appendix L: Comments on current qualification course-of-fire
- Appendix M: Comments on a more complex course-of-fire
- Appendix N: Additional comments on marksmanship training and training resources

Pre-Deployment Training

Two open-ended questions addressed pre-deployment training. The first question (#10, Appendix C) asked leaders to describe the pre-deployment marksmanship training they received that contributed most to their combat effectiveness. Although this question was on the training that was most beneficial, it was clear that many leaders simply described the training they received. The second question (#11) asked leaders to comment on additional marksmanship training that would have increased their combat effectiveness, that is, to identify other training that was not received but would have helped. Of the eight open-ended questions in the questionnaire, these two had the highest response rate: 67% of all leaders described their pre-deployment training (from 81% for Infantry to 41% for Air Defense Artillery) and 52% commented on additional, desired training (from 71% for Infantry to 26% for Air Defense Artillery). Appendixes D and E present the comments as they were written and provide a good understanding of how leaders perceived their marksmanship pre-deployment training and training needs. They include responses from all leaders, including those from branches with less than 20 respondents (e.g., Finance, Medical, Civil Affairs).

Pre-deployment training received. Basic Rifle Marksmanship (BRM) and Advanced Rifle Marksmanship (ARM) skills were the primary focus of individual marksmanship training

prior to deployment (see Table 6 [presented later] and Appendix D). BRM comments constituted 39% of all comments; and ARM comments constituted 44%.

BRM comments. Within the general category of BRM, some comments were very brief. Many leaders just said “BRM,” or “PMI or fundamentals” [PMI for preliminary marksmanship instruction] or “EST 2000” [for Engagement Skills Trainer] with little or no additional detail typically provided. With regard to zeroing, there was also little elaboration although the leaders who did elaborate stressed that their Soldiers had good zeros. Some leaders did elaborate on qualification, with the typical comment being that standard qualification (assume qualification was preceded by zeroing) was the only training they received.

Live-fire, excluding zeroing and qualification, was the most frequent type of BRM training cited, constituting 38% of the BRM comments. In some cases, little information was provided. Typical phrases were simply “live-fire” or “range firing” or “going to the range” with no detail on the type of exercises or the objective of the live-fire training. It appeared that actual firing at “popup” targets on ranges was important for many MOSs, as some comments seemed to indicate firing on “pop-up targets” was uncommon, but was viewed as necessary to give Soldiers more experience and confidence with their rifle. For Infantry leaders, shooting on a known distance (KD) course was stressed, constituting 67% of the Infantry leader comments in this subcategory. It was clear from the comments that units had additional ammunition prior to deployment to execute these live-fire exercises.

ARM comments. With regard to ARM training, one subcategory was labeled “ARM” as the comments often simply stated “ARM.” But some of these comments did provide information on specific skills trained. Infantry leaders, who provided one-third of the comments within the ARM subcategory, frequently cited firing from unconventional or modified firing positions, high-angle or elevated shooting (prior to deployment to Afghanistan), training on ballistics, barrier shooting, and various types of drills. Aviation and Military Police leaders cited transition fire training (switching from primary to secondary weapon).

Long range marksmanship skills (LRM, defined as shooting beyond 300 m) was another ARM subcategory; typically cited as training prior to deployment to Afghanistan. In addition, 50% of these LRM comments were from Infantry leaders. Other commonly mentioned types of ARM training included stress shoots, night fire, and training on various optics. The Advanced Combat Optic Gunsight (ACOG or M150 RCO [rifle combat optic]) and the M68 Close Combat Optic (CCO) were cited most frequently.

However, most of the ARM comments (57%) related to firing at close ranges. Two subcategories were created which directly reflected the words used by the leaders. These categories were: Reflexive fire (155 leaders), and SRM (short range marksmanship) skills (often referred to as CQM for close quarters marksmanship or CQB for close quarters battle or SRM, 192 leaders). The distinctions among these categories are often blurred, although all skills relate to firing at close distances. The decision was to simply report the terms the leaders used and to treat reflexive fire as separate category due to the large frequency of comments. Of interest is that these comments came from almost all branches, but were dominated by Mechanical

Maintenance, Engineer, Armor, Field Artillery, and Infantry leaders. Cited below are several comments by leaders on the value of this type of training (also see Appendix D).

- Engineer. *RF drills and magazine change drills were more effective training our Soldiers to be fully functional and proficient with their weapon systems. These training drills proved effective and necessary once engaged by the enemy and the Soldiers being able to shoot and communicate without hesitation.*
- Engineer. *Short Range Marksmanship in Iraq: The enemy TTPs in Iraq were different -- they wanted to get in close and ensure their way in to paradise. The ability to react quickly and effectively to near ambush with effective and lethal fires was not only necessary but key to bringing many of our boys home.*
- Infantry. *CQB. Close Quarters Battle is by far the most useful marksmanship training based off of my past missions sets. Our ability to conduct Direct Action Raids is what makes us who we are. Most of my engagements have been 30m or less.*

Other weapons training. In addition to comments on BRM and ARM training, leaders cited training on weapons other than the M16 rifle/M4 carbine, i.e., trained on crew-served weapons or cross-trained on all weapons in unit. Again, leaders from many branches commented on this type of training. Two detailed comments are cited.

- Ammunition. *When deployed with [X unit], multiple weapons training made me most combat effective as I became a gunner with an M2 and was also issued a shotgun for convoys. Having basic all around weapons knowledge that encompassed these weapons made me much more comfortable when thrown into that position.*
- Quartermaster. *I was in a [X unit] for all 3 deployments. We did lots of marksmanship training on various weapons platforms. The training was very helpful for deployment readiness.*

Special courses. Leaders indicated that units sent individuals to special training courses to increase their marksmanship skills. Leaders had very positive comments on these courses. Squad designated marksmanship (SDM) training was cited, but it was not always clear whether this course was given by the unit or by the United States Army Marksmanship Unit (USAMU). The Asymmetric Warfighting Group (AWG) within the Army also provided training, but primarily to Infantry units (Infantry leaders provided 73% of the comments on AWG training). Leaders indicated that units sent Soldiers to marksmanship courses including private courses/instructors and Special Forces training. In some cases, units paid to have expert instructors provide the training. The courses cited are in Appendix D. Some units designed specific marksmanship training programs.

Collective training. Collective training was also cited (215 comments). These training events are not reported in detail in Appendix D because the questionnaire focused on individual, not collective, marksmanship training. However, the four primary collective training events cited across the branches, accounting for 75% of the comments, were convoy live-fire training, live-fire shoot houses, military operations in urban terrain (MOUT) training, and squad/platoon live-fire exercises (LFX). Leaders from each major branch indicated that at least one of these collective events was conducted during deployment training. Convoy live-fire was commented

on most frequently (28% of all collective training comments), shoot houses and MOUT each accounted for 13% of all comments, and squad/platoon live-fire exercises (LFXs) had 21% of all comments. Squad/platoon LFXs were stressed by Infantry, Armor, and Mechanical Maintenance leaders.

Other comments. Lastly some comments could not be easily classified into the previously-mentioned categories. Some were reasons for receiving little pre-deployment training. Others were information on the training that showed distinctive approaches to pre-deployment training.

Examples of comments on reasons for little pre-deployment training are cited below.

- Ammunition. *As EOD, not allotted the necessary training ammunition to fully give us the amount of basic marksmanship to be proficient in current operational theaters.*
- Aviation. *Concentrated primarily on aircraft maintenance.*
- Aviation. *When deployed, weapons qualified on were not the same as weapons received in theater and then only had 9 rounds to zero.*
- Aviation. *Only required to meet the minimum level of marksmanship training.*
- CBRN. *Unit designated that only IIB needed training*
- Electronics Maintenance. *Deployment with units that did not conduct maneuvers.*
- Engineer. *In Afghanistan, no Soldier in my platoon fired our weapons, and I was never in combat. Pre-deployment training was primarily check the block qualification – not oriented toward combat*
- Field Artillery. *None. Rushed all attachments through. Thought we didn't need training, which was incorrect.*
- Mechanical Maintenance. *Only had to get Soldiers qualified, and some deployed without proper qualification.*

Examples of detailed comments on training by leaders in different branches are cited next.

- Ammunition. *On my deployments to Iraq, the pre-deployment marksmanship training increased as my number of deployments increased. For example, my first deployment we trained at home station and then again at Kuwait. The 2nd and 3rd rotations were similar but with more advanced level of marksmanship, such as CQB, reflexive firing and advanced optics. My only pre-deployment marksmanship training for Afghanistan was simple qualification range.*
- Armor. *Having an NCO driven shooting program that allowed for creative ranges. We would utilize civilian shooting schools to get guys tight on both distance shooting as well as CQB. We were also allotted FRANG ammo for use on steel targets (for instant target feedback).*
- Armor. *My unit was at the range for months before we deployed – every day and some nights. It got to the point that we all shot expert and were fast in handling stoppage issues. We fired in all types of uniforms, i.e., soft cap not IBA/ACH, with IBA/ACH. Also we drilled on all shooting positions, prone, on our side, around corners, from windows, kneeling, standing, out of the back of the LMTV. My ISG kept us up all day and had us*

shoot all night, then again the following day. In short my ISG made sure every Soldier was tactically proficient in any situation in any position that we might have to fire our weapon.

-Engineer. My unit that deployed to Iraq conducted many different ranges and training scenarios. The unit I deployed with to Afghanistan did not provide any training.

-Infantry. High angle fire and stress shots. Other than that multiple platoon LFX. This provided us with training we needed to be able to conduct combat operations in Afghanistan. Weapons, and more important, ammo is completely necessary for you to be able to train your Soldiers.

Also you must have more and more ammo. Ammo is a key asset to training and without it we cannot train on weapon systems. Different training areas are also necessary because this puts the Soldier in unfamiliar areas and adds another stress to the LFX. Range control is also a huge help with providing Soldiers with what they need.

-Infantry. Stress shoots, alternate firing positions (doors, walls, rooftops), customized shooting ranges (qualification range using a controlled pair for each target), qualification range off-hand shooting, buddy team live fires with UBL and controlled pair required for each target. Actually shooting in difficult situations helped immensely. Standard qualification is good to maintain familiarity, but the types of ranges we did before deployment were more focused on shooting in a real firefight. Reflexive fire was less relevant. We did it once in conjunction with a shoot house. One full day was sufficient

Pre-deployment training desired. This section compares pre-deployment training received to additional pre-deployment training desired (from the hindsight of being deployed) . Complete findings are in Appendix E.

Training comparisons. Where possible, the same classification categories used for the pre-deployment training question comments were applied to the second question on additional training that would have been beneficial. The number of comments in these categories for both questions is shown in Table 6, allowing a comparison of responses to the two pre-deployment questions. The number of branches where leaders commented is also indicated. The primary results were:

- There were fewer comments (57% less) to the question on training needed but not received as compared to pre-deployment training, indicating a sizeable portion of the leaders felt the pre-deployment training was satisfactory.
- The number of comments that more BRM training was perceived as still needed after having been deployed was 87% less than the number of BRM comments on pre-deployment training received.
- For ARM, the trend was similar, with the number of post-deployment comments being half that of the pre-deployment comments. The major decrease was in the short-range marksmanship and reflexive fire categories.
- Overall, the emphasis on LRM, other weapons training, and special courses was similar.
- Leaders stressed that more live-fire was needed prior to deployment, but the type of live-fire was not specified.

Table 6

Comments on Pre-Deployment Training and Additional Training Needed: Number of Comments and Number of Branches Responding by Training Category

Marksmanship Training Categories	Pre-Deployment Training		Additional Training Needed	
	# Comments (% of Total)	# Branches	# Comments (% of Total)	# Branches
BRM-Related Skills	530 (39%)		87 (11%)	
BRM (with no details)	109	14	23	11
Qualification	115	14	13 (w zero)	6
Zeroing	30	11	...	...
Live-Fire (excluding qualification & zeroing	205	15	21	4
PMI	31	11	11	4
EST ^a /Simulation	40	13	19	9
ARM-Related Skills	603 (44%)		310 (44%)	
ARM	94	15	64	12
LRM	54	8	68	10
Stress Shoots	59	11	31	10
Optics/Sights/Lasers	25	9	19	11
Night Fire	15	8	15	6
SRM/CQM/CQB	192	15	60	12
Reflexive Fire	155	16	53	14
Other ARM	9	3	...	...
Targetry	...	...	20	8
Training on Other Weapons	135 (10%)		111 (14%)	
Crew-Served Weapons	68	10	59	12
Pistol	23	12	8	5
Gunnery – Vehicle or Aerial	36	9	5	4
Weapons (general)	8	5	27	11
Weapons Used When Deployed	...	...	12	6
Special Course	97 (7%)		77 (10%)	
SDM	26	8	25	8
AWG	11	4	7	2
Sniper School/Training	6	3	12	5
Other Courses	48	11	22	9
Unit Designated Course	3	1	6	5
Private/Personal	3	3	...	...
NCO Training/Preparation	...	...	5	3
More Live-Fire Training: Not defined as BRM or ARM	...	...	195 (25%)	10
Total # of Comments	1365		780	

^a EST stands for Engagement Skills Trainer.

As indicated, there was a major shift in emphasis within the ARM category. For ARM, the relative emphasis upon reflexive fire and SRM decreased, indicating that many leaders viewed the pre-deployment training in these areas as adequate. However, comments on the other ARM subcategories (e.g., ARM in general, stress shoots, optics, night fire) remained about the same, or in some cases the relative percentage of leaders who said specific training would have been beneficial was greater than the percentage who indicated they received the training prior to employment (specifically LRM skills). An additional category on targetry was added to account for the ARM comments from the perspective of training that was needed. Most of these comments referred to the need for moving targets (see Tables 6 and E2).

Overall, the actual number of leaders stressing the importance of training on other weapons was approximately the same, with crew-served weapons training accounting for about 50% of the comments on other weapons training. Other needs, from the hindsight of being deployed, were training on the same weapons used when deployed, training on foreign weapons, and weapon cross-training (see Table E2). In addition, from the perspective of having been deployed, the leaders cited that more special training should have been provided prior to deployment. Squad designated marksmanship training and other special marksmanship courses each accounted for about 30% of these comments.

The major category of more live-fire training (see Table 6) reflected the fact that leaders from all but three branches simply stated that more live-fire or more range firing was needed. For example, one Quartermaster leader said that they fired “*crew served weapons for practice once and our assigned weapons once for qualification during the entire deployment. I believe that we should have gone to the ranges more.*”

Given the interest in the use of marksmanship simulators or training devices as a way to reduce ammunition costs, what leaders said about simulation is reported in more detail here. Overall, compared to all the live-fire training, in pre-deployment training the use of simulation was minimal (40 comments, see Table 6). The simulator used for pre-deployment training was the EST 2000; with one comment on the Weaponeer (see Table D2). Responses from five branches (Ammunition, Aviation, Engineer, Mechanical Maintenance, and Quartermaster) accounted for 57% of the simulation comments. The post-deployment comments (see Table E2) included the EST 2000 plus reference to simulation rounds (19 comments). Three branches accounted for all but one of the EST comments (Aviation, Mechanical Maintenance, and Transportation). For Infantry leaders, simulation was not a preferred mode of training. Only one Infantry leader cited that the EST was used during pre-deployment training. Regarding whether simulation was needed, one Infantry leader commented on the desirability of paint ball rounds.

Consistent with the pre-deployment training comments on collective training, after deployment leaders also commented (125 comments) on the need for more collective training. However, this number was about half the number of comments on collective training prior to being deployed (215 comments). The three most common areas were convoy live-fire and shoot houses (each about 26% of the comments), and MOUT (13% of the comments). Mechanical Maintenance leaders stressed convoy live fire (50% of convoy live fire comments) and Military Police stressed shoot houses (67% of shoot house comments). Infantry and Armor leaders also commented on squad / platoon LFX.

Lastly, some leaders provided extensive comments on marksmanship training needs. Some focused on general issues, rather than deployment per se. These comments were not placed in the categories in Table 6 but are in Appendix E. Infantry leaders provided over half these comments (15 of 25, 60%). A sample of the comments is presented to illustrate the diversity of points made by these leaders.

- Armor: *More SRM and CQB training; this is the most dangerous type of engagement we can do. On several occasions it was usually myself and one or two others entering and clearing a building in Iraq. I must be able to accurately and quickly engage multiple targets and eliminate the threat the first time.*
- Armor: *Marksmanship training at the units is extremely outdated and lacks focus and priority. There is always something more important to do. Leadership seems to not understand the fact that marksmanship is a perishable skill. Most leadership above SFC is not familiar with the "new" FM, even though it was published in 2008. Nor are they familiar with the concepts of that doctrine. We can all agree that doctrine is dated by the time it is published. So leaders are not applying even this doctrine. Combat Marksmanship needs to be included in all training including battle drills.*
- Infantry: *Greater quantity of stress shoots, more flexibility to conduct squad live fires, especially at night. Also more marksmanship training associated with patrolling. Also being able to use our accessory equipment (like thermals) synchronized as in an SOP. Without time to train (for my earlier deployments), focus was on a basic task, then COIN. No high level training or evaluation contributed to individual mastery of skills with all the new tech that came even while in country.*
- Infantry: *We conducted all of the training that was required; however more KD time is the most effective, in my opinion to creating better shooters out of our men. Sniper school, whether DA Sniper or SOTIC, is well worth the time for our [unit X], as they come back to our unit fully understanding ballistics and how to properly utilize their weapon systems. I believe that we should increase the number of ... Soldiers that we put through Sniper schools as it drastically increases their capabilities, not only to shoot themselves, but to instruct others.*
- Infantry: *It was on me as a Senior Sniper Team Leader and Sniper Section leader to train the squad designated marksmen in 2 of our companies' riflescope manipulation, gathering ballistic data, and fabricating a ballistic card for that specific weapon's ballistic profile. In addition I taught how to adjust for windage quickly in one's head for the M118LR cartridge. This was necessary, as the SDM course many Soldiers were sent to incorporated a different optic (not the Leopold Mk4) and indeed a different weapon system altogether--the M16. SDMs use M14s. Create a course for that weapon and optic.*
- Infantry: *Use of the 240B. My unit did many AASLTs and without that weapon system and the ability to fire effectively with it we would have been in a lot of trouble during some engagements. Doing weapon training drills and more importantly gunner drills allowed us to place effective fires on the enemy, This fixed and killed the enemy and allowed me to maneuver my assault force to clear, seize, or destroy objectives that we dealt with on the Battle field. Also much of the fight was dealt with at distance where the 204B could only*

effect. This means that this was our main weapon to engage enemy. [Author note. May explain why leaders stressed training on crew-served weapons.]

- Infantry: I feel more time with the light and heavy machine guns would have had great impact with my unit's success throughout our deployment. Also more long range courses for M4, M24 and .50cal would have helped with not only target identifiers but even long range over watch. My unit only goes to the range once every 4 months to qualify m4 carbines. As a lite Infantry unit I feel that is completely unacceptable. So I feel more time developing machine gunners with solid TTP and better judgment on emplacement and controlling rates of fire will help in a company's overall mission.*
- Infantry: Training the fundamentals and repetition are key. Better training for unit marksmanship trainers would increase effectiveness. Well trained trainers that understand the fundamentals and implement a marksmanship progression would increase effectiveness. Such training would make better use of the little range time most conventional units have.*

Branch comparisons. Of the 13 major branches (with Signal and Military Intelligence combined), at least half the leaders in each branch (the exception was Air Defense Artillery), commented on what was important in their pre-deployment marksmanship training. However, only at least half the leaders from 8 branches commented on additional training that would have been beneficial, but was not received. Thus it would appear that leaders from some branches generally felt their pre-deployment training was not lacking in substantial ways. The major issue addressed in this section is whether there were differences in branch profiles regarding pre-deployment training as well as the type of training leaders believed would have been beneficial. Infantry leaders provided the most comments to both questions. This was not unexpected as they constituted the second largest branch who responded. The number of leader comments by branch is summarized in Tables D3 through D6 and Tables E3 through E6.

Pre-deployment training by branch. Based on the number of comments, some branches had considerably more marksmanship training prior to deployment than others; and Infantry had the most training and the most diverse forms of marksmanship training. Details are provided in the next three paragraphs.

With regard to pre-deployment BRM training, there were very few comments (less than 10 per branch) from leaders in four branches (Air Defense, Aviation, Signal and Military Intelligence). The major trend for the other branches was that there were more comments on live-fire training than BRM training in general, qualification, zeroing, and PMI.

With regard to ARM, comments were the most frequent for six branches (Infantry, Armor, Engineer, Field Artillery, Mechanical Maintenance, and Military Police), but Infantry comments were clearly the most frequent, averaging twice as many as these other branches. Infantry was distinguished by more emphasis on ARM training in general, LRM, and stress shooting. Infantry leaders also indicated that SRM-reflexive fire was common, but the total number of these comments was basically the same as the number of SRM-reflexive fire comments by Mechanical Maintenance leaders. Armor leaders had the most comments on optics and night firing, and also stressed LRM and stress shooting, although the number of comments in these two later categories was less than the Infantry. Leaders from Air Defense, Aviation, Signal

and Military Intelligence made almost no comments (less than 10 per branch), while the number of comments from the other four other branches (Ammunition, CBRN, Quartermaster and Transportation) was slightly higher (approximately 20 per branch).

The Infantry, Armor, Engineer, Field Artillery, Mechanical Maintenance, and Military Police branches, the same branches cited in the previous paragraph with regard to ARM training, also had the most leaders indicating that training occurred on other weapons. Lastly, Infantry leaders were the most likely to cite specialized marksmanship courses in pre-deployment training. Comments by Infantry leaders accounted for 41% of all comments in this category.

Desired training by branch. As with pre-deployment training, leaders from some branches indicated that additional training would have been beneficial. But the number of branches where this was the case was minimal and varied with the type of training. Branch distinctions occurred for ARM, training on other weapons, and specialized courses, with Infantry leaders providing the most comments.

With hindsight, the need for more BRM training of any form was minimal; not cited by more than 20 leaders in any branch. With regard to ARM, Infantry leader comments remained high, being at least twice as many overall as the other branches. As with pre-deployment training, Infantry leaders stressed ARM training in general, LRM, and stress shooting. Leaders from four other branches (Armor, Engineer, Field Artillery and Military Police) indicated they needed more ARM training. Leaders from the remaining branches did not indicate they needed more ARM training prior to deployment.

Leaders from three branches (Infantry, Mechanical Maintenance and Engineer) cited the need for training on other weapons. Lastly, the need for specialized training was again cited by Infantry leaders, but both the percentage of and absolute number of comments decreased. Of interest is that Armor and Engineer leaders commented on the need for this training, with the actual number of leaders commenting being greater than the number who indicated they received such training during pre-deployment.

The live-fire comments (see Appendix E) were many, yet brief --- more range time, more rounds, more trigger time, and different ranges not just qualification. Leaders from 11 branches commented with the most comments from Mechanical Maintenance and Infantry leaders.

Marksmanship Skills Proficiency Test

The concept of a Marksmanship Skills Proficiency Test was based on the Common Gunnery Skills Tests given to Armor and Mechanized Infantry Soldiers (e.g., DA, 2010, Individual and Crew Live-fire Prerequisite Testing, TC 3-20.21.1; DA, 2003, Bradley Gunnery-FM 3-22.1; DA, 1999, Light Cavalry Gunnery, FM 17-12-8). It is a non-live-fire test, administered prior to live-fire gunnery. This Gunnery Skills Test concept was explained in the marksmanship questionnaire, so leaders could see the parallel to the proposed Marksmanship Skills Proficiency Test. A total of 15 non-live-fire marksmanship skills was identified, and leaders were asked to indicate which skills should be on a test. Other questions asked whether a knowledge test should be included, what additional skills should be included, and whether the

test was a good idea. Comments on such a test were also elicited. The specific instructions and questions regarding a proficiency test are in the following exhibit.

Exhibit: Questions on the Marksmanship Skills Proficiency Test

Armor and Bradley crews are required to take a Gunnery Skills Test (Tank Crew Gunnery Skills Test or Bradley Gunnery Skills Test) which consists of basic non-firing skills ranging from vehicle identification, to assembling a machine gun to laying the main gun on multiple targets. Scoring is on a Go/NoGo basis. This is administered prior to live-fire gunnery qualification.

A similar proficiency test concept (non-live-fire) is being considered for all Soldiers on their marksmanship skills. The next series of questions asks you to indicate the skills you believe should be in such a test for **Soldiers in your branch or Military Occupational Specialty (MOS)/Career Management Field (CMF)**, and add any other skills you believe should be included.

-Which of the following skills should be included in a Marksmanship Skills Proficiency Test.

Instructions: Check ALL the skills you believe should be on a proficiency test.

[The 15 skills were inserted here. After the list of skills, the following questions were asked.]

-Are there any other skills you think should be included on a Marksmanship Skills Proficiency Test?

-Do you think a test of basic marksmanship knowledge should also be included in a Marksmanship Skills Proficiency Test? Yes No

Additional Information: The test could include items on round trajectory, bullet dispersion as function of range, minute of angle, sight picture.

-Considering your answers to the previous questions on a Marksmanship Skills Proficiency Test, do you think such a test is a good idea? Yes No

-Include any additional comments you have regarding a Marksmanship Skills Proficiency Test here.

The number of respondents in each branch/MOS was considered in the analytic approach to determining which skills were viewed as important for a proficiency test in active duty units across the Army. Only those branches/MOSs which had at least 20 leaders responding were included in this analysis in order to provide a “reliable” estimate for a branch. To represent the OS functional category, the Signal and Military Intelligence branches were combined for a total of 22 leaders. On the other hand, the following branches/MOSs were eliminated from the analysis: Electronic Maintenance, Multifunctional Logistician, Adjutant General, Finance, Medical, and Civil Affairs (a total of 29 individuals). Thus the input from all but 29 of the 1636 leaders who responded to the questions on a Marksmanship Skills Proficiency Test was analyzed. The final results were therefore based on leaders from a total of 13 branches/MOSs. Appendix F presents the branch percentages for each non-live-fire skill, plus responses to the questions on including a knowledge test and whether leaders favored a proficiency test.

Leader percentages by branch. To identify skills appropriate for a test, the strategy was to analyze the leader percentages to identify consistencies among the leaders from the different branches. Three approaches were used. The first analytic approach treated all branches/MOS equally, called the equal branch approach. In other words, the percentage of leaders from Branch A who indicated a specific skill should be in the test was treated the same as the percentage of leaders from Branch B. The second approach, the weighted branch approach, weighted the leader percentages by the relative size of each branch within the Army, based on 2012 population numbers from the Defense Manpower Data Center. It is acknowledged that this procedure used the leader data as a proxy for how a broader sample of Soldiers within each branch would respond. Thus the more Soldiers in a branch, the greater the weight for the corresponding leader percentage in the analysis. It is noted that the number of leaders who responded from each branch/MOS was not necessarily proportional to the overall size of that branch/MOS within the Army. The third approach was cluster analysis.

With the first approach (equal branch), the percentage of leaders in each branch who indicated a specific skill should be in a skills proficiency test was computed. As expected, the percentages had a wide range, but most were above 50%. To summarize these percentages, six (6) percentage brackets were established and coded as follows: 90% to 100% coded as "9," 80% to 89% coded as "8," 70% to 79% coded as "7," 60% to 69% coded as "6," 50% to 59% coded as "5," and less than 50% coded as "<." The number of branches/fields with percentages in each bracket was then tallied. See Table 7 for a breakout out of these results. To clarify the entries in Table 7, the number "6" in the cell that intersects the "malfunction row" with the "9 category code" column means that at least 90% of the leaders in 6 of the 13 MFE branches/fields indicated that the skill of correcting a malfunction should be on the Marksmanship Skills Proficiency Test.

At the bottom of Table 7 are the results for two other items related to the Marksmanship Skills Proficiency Test. The first is whether a test of knowledge should be included, and the second is whether the leaders favored such a test. Both questions simply required a "Yes" or "No" response.

Different criteria could be used to determine the skills in a proficiency test. A reasonable criterion was to recommend a skill be included in the test if it were marked by at least 70% of the leaders in at least half of the 13 branches (i.e., minimum of 7 branches). The results in Table 7 show that eight (8) of the 15 skills met this criterion as well as the Knowledge Test requirement.

- Correct a malfunction
- Perform immediate action
- Perform a function check
- Assemble/disassemble carbine/rifle
- Clear weapon
- Change magazine
- Demonstration correct firing positions
- Determine sight adjustments from diagram

Load a magazine could also be included, as it was just below the criterion. This criterion distinguished these eight tasks plus load a magazine and a knowledge test from the other skills,

as no other skill was marked by at least 80% of leaders in any branch. Short titles for the skills are given in Table 7.

Table 7

Number of Branches in Each Percentage Bracket Indicating a Skill Required for a Marksmanship Skills Proficiency Test

Skill	Leader Percentage Category Codes (13 Branches Total)					
	9	8	7	6	5	<
Malfunction	6	6	1			
Immed Action	5	5	3			
Function Check	2	10	1			
Assemble/ Disassemble	1	6	5	1		
Clear Weapon	2	8	3			
Change Magazine		4	4	4	1	
Firing Positions		2	7	4		
Sight Adjustment		2	6	4	1	
Load Magazine		2	4	6	1	
Mount Optic				4	5	4
Boresight Optic			2	4	4	3
Dominant eye			1	4	7	1
Demo sling ^a				3	7	3
Mount AL				3	4	6
Boresight AL				3	3	7
<hr/>						
Include Knowledge Test (yes)		1	6	5	1	
Proficiency test - Good idea? (yes)		9	2		2	

Note. Explanation of code used for Percentage Brackets - 9 is 90% to 100%, 8 is 80% to 89%, 7 is 70% to 79%, 6 is 60% to 69%, 5 is 50% to 59%, < is less than 50%. Row totals sum to 13 branches. Question was “Which of the following skills should be included in a Marksmanship Skills Proficiency Test?”

^a “Demo sling” stands for demonstrate proper use of sling.

The second analytic approach (weighted branch) involved weighting the responses for each branch by the number of Soldiers in the population for that branch/MOS. Only the branches used for the analysis in Table 7 were included (Signal and Military Intelligence were combined for their weight). The 29 leaders excluded in the equal branch approach were also excluded from the weighted approach. Table G2 in Appendix G gives the population percentages for each branch and also compares these percentages to the percentage of leaders in branch who responded to the questionnaire. Some branches were overrepresented in the questionnaire sample and some were underrepresented. For example, Signal and Military Intelligence branches were clearly underrepresented in the sample. Mechanical Maintenance and Ammunition were overrepresented, Armor was overrepresented, and Infantry was somewhat underrepresented. With the weighted approach, the Infantry branch had the highest weight (15%) as opposed to being equal in weight to every other branch with the equal branch approach. On the other hand, the Ammunition branch had the lowest weight (2%) as opposed to being treated equally to every other branch in the equal branch approach.

The weighted approach yielded an overall percentage of leaders who indicated each skill should be included in the Marksmanship Skills Proficiency Test. These results are in Table 8, and are also compared with the more qualitative equal branch results cited previously in Table 7.

Table 8

High to Low Ordering of Skills for a Marksmanship Skills Proficiency Test: Comparison of Weighted Branch Approach and Equal Branch Approach

Weighted Branch Approach		Equal Branch Approach
Skill	Weighted %	Skill by Order in Table 7
Perform Immediate Action	87	Malfunction
Correct a Malfunction	87	Immediate Action
Perform a Function Check	86	Function Check
Clear Weapon	84	Assemble/disassemble
Assemble/Disassemble Rifle	81	Clear Weapon
Change Magazine	74	Change Magazine
Determine Sight Adjustment	73	Firing Positions
Demonstrate Firing Positions	71	Sight Adjustment
Load Magazine	68	Load Magazine
Boresight Optic	59	Mount Optic
Determine Dominant Eye	57	Boresight Optic
Demonstrate Proper use of Sling	53	Dominant Eye
Mount/Remove Optic	51	Use Sling
Boresight Aiming Light	49	Mount Aiming Light
Mount Aiming light	45	Boresight Aiming light
Include Knowledge Test	71	Met equal branch criterion for a skill
Proficiency test - Good idea?	79	*** (not a skill)

The weighted branch approach criterion was 70% and confirmed the equal weight approach in that the top eight skills were the same, with minor differences in the high to low ordering. The Knowledge Test also met the weighted criterion. As with the equal branch approach, load magazine was at the top of the “other” skills and could be considered for the test. It appears that an overall weighted criterion of at least 70% was reasonable. If the criterion was 80%, then only 5 skills would be included. The high agreement in the two approaches, despite the difference in branch weights, indicates that, in general, the leaders were in agreement on the most critical, non-firing, skills.

The third analytic approach to identifying skills for the Proficiency Test was cluster analysis. Cluster analysis is an exploratory analysis tool for sorting objects into groups based on their similarities regardless of any prior classification scheme (Overall & Klett, 1972). The objects in one group (a cluster) are more similar (by some means) to each other than they are to objects in other clusters. Cluster analysis can be used to identify underlying structures but does not explain why they exist. Different cluster analytic techniques exist. The analysis yields a hierarchical structure with subclusters grouping to form a larger cluster, and this process continues until all objects form one big cluster. The objects within a cluster have less in

common as you go “up the hierarchy” and as the number of objects in a cluster increases. Determining what is a meaningful cluster is in the “eye of the beholder” (Wikipedia, 2013), as there is no established criterion for where to break a cluster or how diverse a cluster should be.

The data base for the cluster analysis was the percentages of leaders within each branch who stated a skill should be tested, making the skill a requirement for their Soldiers. A hierarchical cluster analysis procedure using Euclidean distance and the complete linkage rule was applied to the 15 skills plus the knowledge test. As shown in the tree diagram (dendrogram) in Figure 2, three distinct clusters emerged (i.e., the A, B, and C labels). Cluster C was the most diverse of the three. Although the analysis linked clusters A and B together prior to the final linkage with cluster C, the tree diagram indicated that the distinction between clusters A and B was warranted and the two clusters were interpretable.² Short titles for the skills are presented.

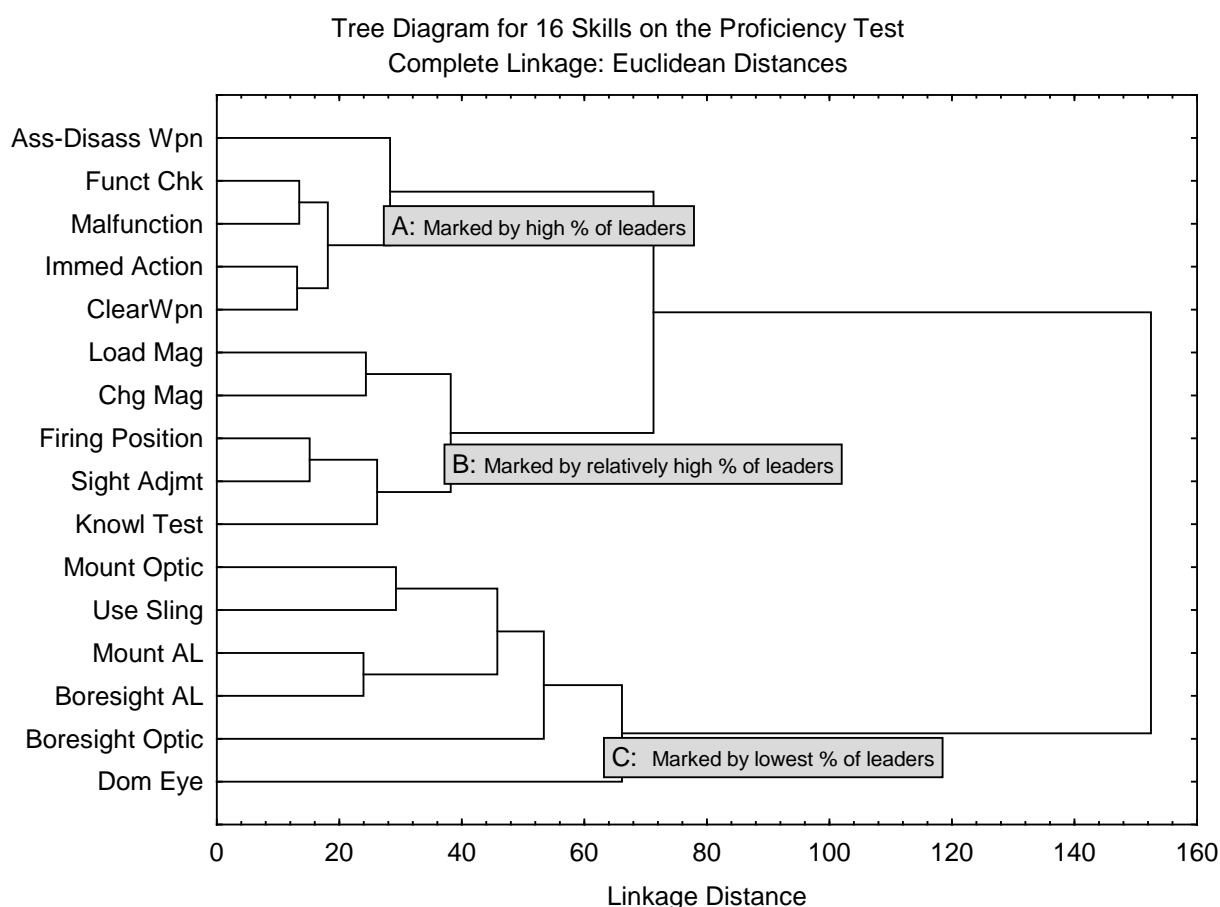


Figure 2. Hierarchical clustering of proficiency test items.

Cluster A included five skills (e.g., assembly-disassembly, clear weapon. Cluster B had 4 skills (e.g., load magazine, sight adjustment) plus the knowledge test. Cluster C had 6 skills

² The analysis was conducted using the Statistica software developed by StatSoft, which is now part of Dell Software. Same procedure was also applied using SPSS (Statistical Package for the Social Sciences) software.

(e.g., mount optic, determine dominant eye). Of interest, is that these clusters were related to the equal branch and weighted branch analytic approaches. All the skills in Cluster A were marked by a weighted average of at least 80% of the leaders and had one to five branches with 90% of the leaders indicating each skill should be tested. Those in Cluster B were marked by a weighted average of 68% to 74% of the leaders. The skills in Cluster C were marked by a weighted average of less than 60% of the leaders (see Table 8). Figure 2 also shows that the skills in Cluster A and B merged together at the next hierarchical level. Thus there is a direct correspondence to the other analytic approaches used.

Leader comments on a Marksmanship Skills Proficiency Test. Leaders were asked if they thought the Marksmanship Skills Proficiency Test was a good idea. At least 80% of the leaders in 9 of the 13 branches thought the test would be a good idea (see Table 7). The weighted average was 79% (see Table 8). The percentage of leaders who favored the test ranged from 98% for Engineers to 59% for Operations Support and Air Defense leaders. Individual branch percentages are in Tables F1 and F2.

The second phase of the analysis used one of the open-ended questions to identify additional frequently cited skills to consider for the proficiency test. The second open-ended question simply asked for additional comments about the test. The complete results on these two questions are in Appendix H. Summaries of the responses to these questions are in the next two sections.

Additional skills. About 25% of the leaders from all branches except Civil Affairs, Medical, and Finance commented on additional skills. Three types of comments were made: non-live-fire skills, live-fire skills which were not the stated purpose of the test, and comments about marksmanship testing and training. The non-live-fire comments are detailed in Appendix H, followed by examples of live-fire comments and other comments.

The highest number of non-live-fire comments was from Infantry leaders (66 comments), followed by Armor (42 comments) and Mechanical Maintenance (34 comments). These three branches accounted for 58% of the non-live-fire comments (total of 245 comments).

As shown in Table H1 (Appendix H), leaders repeated some skills in the questionnaire checklist when answering this question which reinforced the results shown previously in Tables 7 and 8. The typical response elaborated or expanded upon the skill to be tested (Table H2).

- Firing positions: The questionnaire cited just the three positions used in qualification. Most comments were that other firing positions should also be tested.
- Magazine change/reload: Comments stressed the importance of testing tactical or combat magazine changes/reload, and rapid change/reload; all skills required in a fire fight or under stress.
- Malfunctions: no dominant theme, but proficiency was desired.

The top five additional skills cited by the leaders, in order of frequency, were:

- Ballistics/round trajectory: This skill domain was covered in a later question regarding a written test of knowledge, but clearly leaders (from 11 branches) thought it was critical with the same number of comments as marksmanship fundamentals. However, it is noted that Infantry leaders provided 49% of these comments (Table H2). One theme was that Soldiers would gain more confidence and therefore more proficiency with their weapon if they understood ballistics, round trajectory, etc. Leaders also suggested testing knowledge of ballistics and round trajectory when providing general reactions to a proficiency test (Table H5).
- Fundamentals of marksmanship (i.e., steady body position, breathing, trigger squeeze and sight picture): These fundamentals were not specifically cited in the questionnaire, but clearly were skills the leaders thought were important to test, with comments from 12 branches (50% of these comments were from Armor and Mechanical Maintenance leaders). Not every leader who commented cited all four fundamentals, however.
- Optics and peripheral devices (e.g., aiming lights): Comments were distributed across 11 branches with a clear concern that Soldiers were not adequately trained in these areas – zeroing different optics, understanding reticles, application of a reticle to targets at different distances, etc. One leader summarized the situation with one optic as follows: “*how to use the reticle in the ACOG. One of the greatest mysteries in the Army.*”
- Flexibility – nondominant hand and weapon transition: This category was called flexibility because leaders referred to skills that differed from the traditional mode of operation. Using the nondominant hand to fire or to change magazines was cited, as well as skill in transitioning effectively from the primary to secondary weapon (e.g., M4 carbine to M9 pistol). Leaders from 9 branches commented.
- Zeroing: Although there were fewer comments on zeroing per se, excluding zeroing with optics, the leaders who did comment clearly felt that many Soldiers did not understand the concept of battlesight zero nor could they explain it.

Based on these comments, ballistics and zeroing concepts appear to be possible areas for a knowledge test.

Marksmanship Skills Proficiency Test recommendations. The skills recommended for the proficiency test are shown in Table 9. The three analytic procedures presented previously yielded similar results. Nine skills (the skills above the load magazine line in Table 9) plus a knowledge test are recommended for consideration in a Marksmanship Skills Proficiency Test, as they showed high agreement across leaders in the branches surveyed. However, as noted in the footnotes to Table 9, responses to the open-ended question on skills for the test indicated preferences for the scope of testing some skills: load/change magazines, and demonstrate firing positions, plus the knowledge test. Specifically, firing positions should include more than the three currently in the qualification course-of-fire (i.e., prone supported, prone unsupported, kneeling unsupported). Commonly mentioned additional positions were kneeling supported, firing using a barrier/barricade, and standing supported. Leaders also suggested that tactical and rapid magazine change/reload should be tested in order to more closely approximate combat situations. Leaders stated that basic questions on ballistics/round trajectory and battle sight zero should be in the knowledge test.

Table 9

High to Low Ordering of Skills for a Marksmanship Skills Proficiency Test: Summary of Analytic Approaches

Skills in Questionnaire	Analytic Approach		
	Equal Branch (# Branches: > 70%)	Weighted Branch (Weighted %)	Cluster Analysis (Clusters: A, B, C)
Recommended Skills			
Perform Immediate Action	13	87	A
Correct a Malfunction	13	87	A
Perform Function Check	13	86	A
Clear Weapon	13	84	A
Assemble/Disassemble Rifle	12	81	A
Demonstrate Firing Positions ^b	9	71	B
Change Magazine ^c	8	74	B
Determine Sight Adjustment	8	73	B
Load Magazine ^a	6	68	B
Skills not Recommended			
Boresight Optic	2	59	C
Determine Dominant Eye	1	57	C
Demonstrate Use of Sling	0	53	C
Mount/Remove Optic	0	51	C
Boresight Aiming Light	0	49	C
Mount Aiming light	0	45	C
Include Knowledge Test ^d	7	71	B

^a Borderline for inclusion of skills in the test with equal branch and weighted branch approaches

^b Leaders recommended adding positions other than the three in the current qualification course: prone supported and prone unsupported, kneeling unsupported.

^c Leaders recommended tactical and rapid magazine change

^d Leaders recommended including questions on zeroing and ballistics.

Note. With the equal branch and weighted branch approaches, eight skills plus the knowledge test met the criteria. Load magazine was borderline with both approaches. Although the rank order of three skills with the weighted branch approach varied slightly from the equal branch approach, all three skills were above the cut points. Lastly, the cluster analysis showed that the highest ranked skills were in cluster A, the lowest ranked skills in cluster C (below the cut points of the other two approaches), and the remaining skills were in the middle cluster B.

Three other areas were considered, but not recommended. Although leaders stressed the importance of testing the four fundamentals of marksmanship, it could be very difficult to develop objective, reliable, hands-on measures of steady body position, breathing, trigger squeeze, and sight picture. Even though leaders cited that expertise with optics was critical, a common test procedure could be difficult as units have different optics. Weapon transition could be easily tested, but the number of comments on this topic was not substantial.

Major comments on the proficiency test. Only 19% of the leaders commented on their reactions to a proficiency test. However, these leaders provided valuable comments, suggestions, and concerns regarding test development, how to implement the test, ensuring standards are upheld, training of Soldiers on the skills, ensuring the competency of the testers/trainers who administer the test and train the skills, and how the test results will be/can be used. A careful examination of these points would be useful prior to developing a Marksmanship Skills Proficiency Test (see Appendix H).

There were positive comments from leaders in 13 branches (Table H5), which ranged from a short response such as *do it as soon as possible* or *a great idea* or *apply to all MOS* to extended comments on the rationale for why a test is needed. These longer comments included references to the belief that shooting per se does not contribute to Soldiers' understanding of their weapon system; a test would make live-fire qualification easier; a test would give leaders a picture of Soldier proficiency; since marksmanship skills are perishable testing should help sustain skills and force command emphasis; getting back to the basics is beneficial; a test would help to train in a standardized manner. Two extended responses by Armor leaders are:

- *Extensive experience from deploying can help make a great leader or Soldier. However not being able to apply it, or not understanding basic skills for your skill level hinders unit readiness, increases training time when in the field, and holds up good Soldiers and leaders from being able to progress.*
- *Every Soldier should be able to handle their weapon and know how it operates. If they are graded on it then they will play close attention and ensure they know everything about that weapon.*

Leaders from ten branches commented on the written knowledge test as well (in reference to the test of knowledge item in the questionnaire). One trend was that a test would be good for some Soldiers but not all – e.g., good for combat arms, but not necessarily for entry level Soldiers. However testing weapon understanding, and understanding of ballistics was perceived to help Soldiers. The knowledge test need not be highly technical. Selected Infantry comments are:

- *Great idea so Soldiers are forced to understand the basics of marksmanship & what a bullet does/does not do when it leaves the weapon.*
- *Knowledge base is good. For SDMs and Snipers it's definitely necessary, but for your line Soldier, all that matters is that he can follow orders and effectively destroy the enemy by HAVING SHOOTING EXPERIENCE with his weapon.*
- *Many Soldiers know "what" their weapon does but not "how". All infantrymen should have an understanding of how ammunition and weapons work in order to demystify the zeroing and qualifying process and give them greater confidence in their weapon system.*

Comments regarding the skills to test were primarily redundant with the prior question on additional skills to include. One comment was that Soldiers should be able to tell you everything in the FM. One Infantry leader distinguished between weapon proficiency and marksmanship proficiency: *Weapon proficiency test should be how to put an optic on a weapon and take it off, borelight, and other such tasks. Marksmanship proficiency should be based around ability to*

SHOOT a weapon. Given this distinction, most of the leader comments were on weapons proficiency.

Test implementation was also an issue, with comments by leaders from ten branches (Table H5). Test procedures should be standardized; evaluation should be strict and fair. Leaders stressed that the test should be hands-on, although some leaders thought a written test could be included. Hands-on should be with the Soldier's personal weapon. It should be given to all MOSs plus officers. A few leaders cited specific consequences to impose when an individual does not pass the test after several attempts.

Leaders made suggestions regarding test execution procedures and quality control (Table H5). These comments were primarily concerns. One concern was about doing it right and whether the test would be treated as a check-the-box task. Leaders were also concerned about paperwork overload and resources to support the test and the associated training. Questions were raised regarding who should develop the test, who certifies the results and procedures, and the training of NCOs to insure the standards are enforced.

Leaders from ten branches provided reasons for not giving a test. The major point was that although the skills are important, they are covered by good leaders in the unit's marksmanship training program (e.g., PMI, parts of the Expert Infantryman Badge). Others thought the test would take away from valuable training time. Below are some specific leader comments.

- Air Defense Artillery, Engineer, Field Artillery, Military Police. *Should perform these tasks, but should not be a test.*
- Infantry. *The test is just introducing more paperwork and hand jamming into an organization already drowning in it. Good units will conduct this training on their own. Army doctrine can best serve leaders by making this training easy and readily available. Lay out the classes or PMI in the FM and leave it at that. Good leaders will find it helpful, bad leaders will continue to perform sub-standard and can be identified as not conducting to standard classes. Making a skills proficiency test just creates more paperwork and headache for line units.*
- Infantry. *We already have PMI and it covers everything that was listed in the previous questions. Just make the leaders do their job instead of making up some sort of bureaucratic check list and actually give the lower level leadership some extra time to train their Soldiers appropriately instead giving them a multitude of pointless taskings.*

The other most frequent comment concerned unit trainers. The primary theme (leaders from six branches) was that many NCOs do not possess the requisite skills and knowledge. Instructor training and certification are needed. Most comments were made in terms of training versus testing. However, hands-on evaluation requires that the tester knows the skills tested. Illustrative comments by leaders from four branches are as follows:

- Armor. *Test is good idea; problem is that leadership does not know how to conduct tasks themselves*

- Mechanical Maintenance. *Marksmanship skills should be for everyone who handles weapons. I have seen people in higher ranks who do not know anything about their weapons. How can they train anyone on the weapons if they don't know themselves?*
- Mechanical Maintenance. *Many Soldiers do not know the correct way to shoot and their NCOs don't know marksmanship. Therefore Soldiers always shoot bare minimum.*
- Mechanical Maintenance. *Train the NCO Corps from top down.*
- Military Police. *Leaders should be the first to be evaluated. Most leaders have lost the edge that they had over their Soldiers. You cannot train a Soldier if you do not possess the skill yourself.*
- Infantry. *Education pilot program necessary to get senior ranks familiarized with marksmanship terminology, terms, and understandings, e.g. ballistics, pictures identifying malfunctions, or proper sight picture alignment, trajectory are necessary. Video clips of immediate action drills, magazine changes and proper body positions are necessary for uniform standard.*
- Infantry. *I think this idea is great, however the most important piece would be the proper blocks of instruction to ensure that Soldiers are actually receiving this type of information from their leaders. I personally believe all of these skills are critical, however I highly doubt that the average Soldier receives the proper levels of instruction that would ensure success on such tests. The instruction and courses are the critical part, in my opinion*
- Infantry. *Being able to shoot is easy but being able to teach others is the hard part.*

Concerns regarding trainer expertise appeared in response to other questions in the questionnaire and are treated separately in a later Train-the-Trainer section of this report.

The Approach to a Marksmanship Strategy

To address the major objective of this research — providing input to a future unit marksmanship strategy — branches must be grouped in terms of “common” skill requirements. An Army-wide training strategy that specifies a unique set of live-fire skills for each branch is not a feasible approach. Therefore, some skills must necessarily be considered more critical requirements than others for different groups of branches. The analytic procedures used to group the branches are cited in the next section. The second phase of the analysis was to link clusters of skills to the branch groups. This analysis follows the Branch Groups section.

Branch Groups

Three groups of branches were identified. This section presents the rationale for these groups. These groups were based primarily on the percentage of leaders from each branch who marked the skills listed in Table 5 as a requirement (see the questionnaire in Appendix C). The questionnaire instructions stressed that the leaders were to respond with regard to Soldiers in their Branch/MOS/CMF. The instructions also stressed that if they believed a skill was a requirement, then that meant training resources should be allocated to train and sustain that skill. The general instructions were as follows:

*The last part of the questionnaire asks you to identify the marksmanship skills which you believe **Soldiers in your branch or MOS/CMF should demonstrate proficiency (can perform without assistance, can meet unit standards)**. If you think a skill is required, the assumption is that Soldiers must be trained and sustained on this skill, and a marksmanship strategy should allocate the necessary resources for this training.*

As stated previously, seven sets of skills were identified (see Table 5), for a total of 44 individual marksmanship skills. The first skill set focused on zeroing, where six skills were listed. This question is presented next for illustrative purposes. Questions on the other sets of skills followed the same format.

ZERO WEAPON: Which zeroing skills should be proficiency requirements for Soldiers in your branch or MOS/CMF?

Instructions: Check all the skills that apply.

(A list of six zero-related skills followed.)

Individual branch profiles. This section on branch profiles summarizes the marksmanship requirements for each branch. The complete profiles on each branch are shown in separate tables in Appendix I. These tables are ordered by the branches which had the highest percentage of leaders who cited marksmanship requirements to those which had the lowest percentage. In the appendix table for each branch, the skills are presented by the seven skill sets in the questionnaire. Leader responses are categorized from high to low by the percentage who said a skill was required: High - 80% and above, Moderate - 60% to 80%, and Low - less than 60%. To further distinguish skills, those skills were marked by 70 to 79% of the leaders are italicized. In addition, any skills marked by at least 90% of the leaders in each branch are cited in the footnote to each table.

Restating a previous point, the marksmanship skills in the questionnaire clearly distinguished the branches, going from leaders who perceived most skills as requirements for their Soldiers to leaders who basically did not demand skills that went beyond those in the BRM programs in Initial Entry Training (IET), with the exceptions of hitting moving targets and some additional firing positions. Another means of comparing the branches is by a tally of the number of skills in the high, moderate, and low categories. These tallies are summarized in Table 10.

More Infantry leaders stressed marksmanship skills than leaders in other branches. As shown in Table 10, for Infantry leaders 28 of the 44 skills (63%) fell in the “high” category as they were marked by at least 80% of the leaders. In contrast, at the other extreme, 80% of leaders in four branches marked only 3 or fewer skills as requirements for their Soldiers. Also of note is the relatively high number of skills marked by less than 60% of the leaders: the OS functional category, plus Air Defense Artillery, and Transportation. Approximately 50% of the skills fell in this “low, less than 60%” category for these branches, compared to only 11% in the same category for Infantry. Clearly, the number of skills viewed as very critical varied considerably by leaders across the branches surveyed.

Table 10

Number of Marksmanship Skills Marked as a Requirement by a High, Moderate and Low Percentage of Leaders (ordered from high to low by number of skills marked by at least 80% of the leaders)

Branch/Field	Number of Skills Marked by Leaders in each Percentage Category		
	High: At Least 80% of Leaders	Moderate: 60% to 80% of Leaders	Low: Less Than 60% of Leaders
Infantry	28	11	5
Engineer	21	14	9
CBRN	17	21	6
Military Police	15	20	9
Armor	13	19	12
Field Artillery	10	22	12
Mechanical Maintenance	6	28	10
Aviation	6	26	12
Operations Support	5	14	25
Ammunition	3	28	13
Air Defense Artillery	2	12	30
Quartermaster	1	29	14
Transportation	0	23	21

Note. Total number of skills was 44. Based on branch tables in Appendix I.

Determining branch groups. The summary counts in Table 10 did not directly indicate which branches were most similar and which skill requirements were relatively common versus specific to a single branch. Two analytic approaches were used to identify reasonable groups of branches. Both were based on the objective questionnaire data on marksmanship skills perceived as required by Soldiers within each branch.

The first technique was to tally the number of skills marked by at least 80% of the leaders within a branch. The 80% criterion was high, but established to clearly identify critical skills. The results of this approach were shown previously in Table 10. Subjectively, at least two breaks in the percentages appeared in this listing when the 80% cut point was applied; a break after Infantry and one after Field Artillery. This yielded three groups of branches by marksmanship priorities. First, Infantry was separate from the other branches. The next group of branches included five branches from the MFE functional area: Engineer, CBRN, Military Police, Armor and Field Artillery. The third group included eight branches from the three functional areas: Mechanical Maintenance, Aviation, Operations Support (Military Intelligence and Signal), Ammunition, Air Defense Artillery, Quartermaster, and Transportation.

The second technique for examining commonality among the branches was to apply a hierarchical cluster analysis using Euclidean distance and the complete linkage rule to the branch data. Figure J1 in Appendix J shows this cluster analysis. Three groups of branches occurred in this analysis as well, with Infantry having the most requirements. The second group was similar to that described in the previous paragraph, with the only difference being that Mechanical

Maintenance was included in the second group with the Engineer, CBRN, Military Police, Armor, and Field Artillery branches. Refer to Appendix J for a discussion of this analysis.

The branch groups identified in the cluster analysis were the ones used as the basis for identifying marksmanship requirements. For purposes of this report, these three groups are referred to as the High, Moderate, and Low Requirements Groups and are defined as:

- High Requirements: Infantry. Infantry had the most requirements.
- Moderate Requirements: Engineer, CBRN, Military Police, Armor, Field Artillery, and Mechanical Maintenance
- Low Requirements: Aviation, Air Defense Artillery, Operations Support (Military Intelligence and Signal), Ammunition, Transportation, and Quartermaster. These branches had the fewest requirements.

It was not assumed that the marksmanship skill requirements identified for branches in a specific branch group would be perceived as equally important by each branch.

Marksmanship Skill Requirements

What live-fire skills did leaders from the different branches think were important? The sections that follow present basic information on the leader responses by skill set as well as selected subsets of skills, e.g., high priority skills, zeroing, use of combat gear, and firing positions. Next is a summary of leader comments on required skills. Leader reactions to courses-of-fire are presented as they relate to the skills leaders believed were important for the Soldiers in their branch/MOS. This is followed by a major section that presents the analyses and rationale that led to the training recommendations. The last section presents the training skill recommendations for the branch groups and specific branches.

Skill percentages by the skill sets. The purpose of this section is to summarize leader responses by the skill sets to provide a general picture of major trends in the results. Skills common to many marksmanship exercises are examined as well (e.g., zeroing).

As the requirements section of the questionnaire was divided by seven “skill sets,” how the leaders responded to these sets is presented first. Within each set and for each branch, the percentage of leaders who indicated each skill was a requirement was calculated. Then the average of these percentages was computed to present an overall picture of the importance of the skills within each set by branch. The results are in Table 11. The individual branch percentages for each skill in a skill set are in Appendix F.

Table 11

Average Percentage of Leaders by Branch Indicating Skills in Skill Sets Were Marksmanship Requirements

Functional Category and Branch	Skill Sets: Average Percentage of Leaders						
	Zeroing 6 skills	Firing Position 9 skills	Target Distance 5 skills	Target Acquisition 6 skills	Precision Fire 5 skills	Equip- ment 6 skills	Other Skills 7 skills
MFE							
Infantry	71	86	84	79	78	69	75
Engineer	75	81	80	72	68	65	76
CBRN	75	79	77	72	69	71	73
Armor	67	78	72	68	65	61	69
Field Artillery	69	76	73	70	68	62	69
Military Police	60	71	70	59	57	54	66
Aviation	66	73	71	63	58	53	65
Air Defense	53	64	60	57	53	51	48
OS ^a	57	58	55	54	48	43	51
FS							
Transportation	59	65	62	57	59	46	50
Ammunition	66	71	70	63	60	46	66
Mech Maint ^b	69	76	74	66	68	51	67
Quartermaster	61	69	68	60	63	51	59

^a OS is a functional category with Military Intelligence and Signal leaders.

^b Mech Maint stands for Mechanical Maintenance

The percentages in Table 11 clearly show that leaders in different branches had distinct views of the marksmanship requirements for their Soldiers. In examining the MFE and FS functional categories, the FS branches were more homogenous than the MFE branches. Within MFE, the lowest percentages occurred in the Air Defense Artillery branch. The highest percentages within MFE were in the Infantry branch and followed by the Engineer and CBRN branches (Table F4, Appendix F). In fact, considering all functional categories, the highest average percentages were in the Infantry, Engineer, and CBRN branches. The branch(es) with the lowest percentages (approximately 50%) were Military Intelligence and Signal, which generated the OS percentages.

High priority individual skills. Despite the branch differences with the skill sets, the data were examined to identify individual skills marked by a very high percentage of leaders overall, as well as the skills marked by a low percentage. A high percentage was defined as a weighted average of at least 80%. Two brackets were set for a low percentage: less than 50% and between 50% and 60%. Tables 12 and 13 present these results and also identify branches where the leader percentages differed from the average percentage. The analytic approach was to apply the population (branch) weighting procedure to identify these high and low skill requirements.

Seven individual marksmanship skills were identified by a weighted average of at least 80% of the leaders across the branches as a requirement for their Soldiers. These skills involved

basic zeroing skills, hitting targets at relatively short distances, skill in acquiring targets in the sector of fire, discriminating between friendly forces, enemy and noncombatants, and lastly hitting moving targets (see Table 12). Of interest, is that 90% or more of the Infantry and Engineer leaders perceived about half these tasks as critical requirements for their Soldiers.

Table 12

Individual Marksmanship Skills Marked as a Requirement by a Weighted Average of at Least 80% of Leaders

Marksmanship Skill	Weighted Average %	Branches Where at Least 90% of the Leaders Stated Skill was a Requirement
Hit targets at 25 to 100 m	86	Engineer 95%; CBRN & Mechanical Maintenance 91%
Hit moving targets	85	Infantry 95%; Field Artillery 90%
Hit targets at 100 to 200 m	84	Engineer 93%; Infantry 90%
Zero at 25 m	82	No branch
Acquire all targets in sector of fire	81	Engineer 92%
Zero sight organic to unit	81	Infantry 91%
Discriminate between friendly forces, threat personnel, and noncombatants	81	Infantry 93%

Note. Branches with less than 70% of the leaders marking specific skills were: Air Defense for zero organic sight, and acquire all targets in sector of fire, and Transportation for zero organic sight, acquire all targets in sector of fire, and discriminate between types of forces.

Low priority individual skills. Eleven skills were perceived as a low requirement by the leaders, defined as less than a weighted branch average of 60% (see Table 13). Four skills were marked as a requirement by less than 50% of the leaders. These skills were typically very specific skills, including some advanced marksmanship skills (e.g., firing with non-dominant hand, hitting targets with short exposure times). Using unaided night vision to hit targets was probably marked by a low percentage of leaders because of the proliferation of night vision devices in the Army. Infantry leaders and CBRN leaders perceived two tasks very differently than leaders in the other branches. Infantry leaders thought hitting targets at extended distances was important; CBRN leaders thought firing with a protective mask was critical. For the seven marksmanship skills perceived as critical by an average of 50% to 60% of the leaders, more than 60% of the Infantry leaders perceived five of the seven skills as requirements.

Firing in combat gear. The questionnaire included three items on firing in combat gear: whether Soldiers should zero in gear, whether they should shoot courses-of-fire in gear (e.g., known distance, field fire), and whether they should qualify in gear. The information in Table 14 shows the percentages of leaders in each branch who said firing in gear was a requirement. The table also shows the weighted branch average for each question, with zeroing in combat gear receiving the lowest percentage of the three skills. Except for the CBRN branch, the percentages for zeroing in combat gear for each branch were lower than qualifying in gear.

Table 13

Individual Marksmanship Skills Marked as a Requirement by a Low Weighted Average Percentage of Leaders (less than 60%)

Marksmanship Skill	Weighted Average %	Branches Where More Leaders Stated Skill was a Requirement Than the Cutoff of 60%
Flexibility to shoot with non-dominant hand	59	Infantry 73%; Engineer 69%, Ammunition 68%, Military Police & CBRN 66%
Zero in combat gear	57	See Table 14 for details
Adjust sight picture for firing conditions such as wind	56	Infantry 64%; Air Defense 63%, Field Artillery 62%, CBRN 61%
Fire with sling	53	Aviation 61%
Hit 3 or more timed targets	53	Infantry 67%
Hit targets with shorter exposure times than in current courses-of-fire	53	Infantry 66%
Hit target in multiple lethal zones	52	Infantry 66%
Hit targets at night with unaided eye	49	CBRN 62%; Ammunition 60%.
Hit targets at extended distances (beyond 300 m)	46	Infantry 67%
Fire with protective mask	37	CBRN 77%
Zero at distance without zeroing first at 25 m	36	CBRN 55%

The combat gear items resulted in two distinct groups of branches regarding the requirements for firing in gear. One group (Infantry and Armor) did not favor zeroing in gear but did favor firing and qualifying in gear. The Infantry branch was distinct in that less than half of the leaders did not favor zeroing in gear, but had they had the highest percentages of leaders (at least 80%) who said practicing marksmanship skills in gear and qualifying in gear were requirements for Soldiers in their branch. Armor leaders responded the same regarding zeroing, but did not feel as strongly about using gear in marksmanship exercises and in qualifying. The second group involved branches whose leaders reacted similarly to all three questions. One subgroup with eight branches had fairly high percentages regarding firing in combat gear (i.e., 60% to less than 78%). The second subgroup, with three branches, had lower percentages (i.e., 50% to low 60%).

The primary question raised by these results on combat gear is why relatively few Infantry and Armor leaders said zeroing in gear was a requirement. In responding to some of the open-ended questions, leaders did comment on use of combat gear. Some simply said “use” or “do not use,” while a few provided reasons for their answers. With regard to the question on additional marksmanship skills for Soldiers in your branch (Appendix H), an Infantry leader stated “do not zero in gear because it wastes ammo and individual is not properly zeroed.” In answer to the question on the qualification course (Appendix L), a total of five Armor and Infantry leaders commented on zeroing in gear: “no gear for zeroing – never” (2 Armor leaders),

“no gear for zeroing” (2 Infantry leaders), and “have learned not to use gear when zeroing” (1 Infantry leader). It appears that Infantry and Armor leaders know a good zero is critical, and apparently have found that wearing combat gear interferes with getting a good zero.

Table 14

Requirement to Fire in Combat Gear: Percentage of Leaders by Branch (branches ordered from high to low on “qualify in gear” percentages)

% Leaders Indicating Conditions Where Skill With Combat Gear was a Requirement				
Branch	Shooting Condition			Branch Groups
	Qualify	Courses-of-Fire	Zero	
Infantry	80	83	45	Lowest % (plus Armor) on zeroing in gear, but highest on shooting courses and qualifying in gear.
Engineers	76	77	65	Eight branches where the %s ranged from 60% to less than 78% for all conditions.
Field Artillery	75	75	62	
Military Police	74	75	60	
Mechanical Maintenance	73	69	67	
Electronic Maintenance ^a	73	64	73	
CBRN	72	77	73	
Ammunition	71	66	60	
Quartermaster	71	67	60	
Armor	68	71	45	Lowest % (plus Infantry) on zeroing in gear, but relatively high on shooting and qualifying in gear.
Transportation	65	56	55	Three branches where the %s were low, ranging from 50% to 60% for all three conditions.
Operations Support ^b	64	54	59	
Aviation	60	60	52	
Air Defense	56	70	56	Atypical response pattern.
Weighted Average %	71	69	57	

^a Percentages not included in weighted average, but shown for descriptive purposes.

^b Operations Support is a functional category; includes responses from Military Intelligence and Signal branches.

Appendix L, which presents reactions by leaders to the current qualification course-of-fire, also shows the diversity of reaction to use of combat gear for qualification, even by leaders in a given branch. One proposal was to have two qualifications – one without gear and one with gear. No leader cited empirical evidence that firing in gear had a negative impact on qualification scores.

Hitting targets at different distances. Another set of questions was on the distances at which Soldiers should hit targets. Five distances were specified: less than 25 m, 25 to 100 m,

100 to 200 m, 200 to 300 m, and beyond 300 m. The results on the distances at which Soldiers should be proficient in engaging targets merit special discussion. As shown in Table 15, there was a strong relationship between the three branch groups and distance. In progressing from near to far ranges, the High Requirements Group (Infantry) leader percentages were consistently the highest, and Low Requirements Group leader percentages were consistently the lowest. In addition, for each branch group, the percentage of leaders marking engagement distances as a requirement decreased as the distance increased.

Table 15

Average Percentage of Leaders in each Branch Group Indicating Whether Hitting Near or More Distant Targets was Required

		Branch Group: % Leaders		
		High Requirements ^a	Moderate Requirements	Low Requirements
Distance to Target				
Close-in	200 m and closer	89	84	76
Mid-range	200 to 300 m	90	73	64
Long range	beyond 300 m	67	44	36

^a Infantry Branch only.

In making final determinations regarding which skills should be a requirement for branches in each of the three groups, the general guideline was to use 70% of leaders as the cutpoint. The percentages indicate that only close-in targets were a priority for all leaders, given the guideline of 70%. Hitting more distant targets, 200 m and beyond, appeared to be a high priority for only the Infantry leaders. But hitting the 200 m to 300 m targets did not meet the 70% guideline for Low Requirements Group. These results are somewhat inconsistent with the reactions to the open-ended question on whether the qualification course should be changed, where at least 75% of the leaders (including leaders in the Low Requirements Group) indicated it should not change. However, some comments were made to the effect that the hitting the 250 m and particularly the 300 m target should not be required. This inconsistency (no change to qualification versus hitting 200 to 300 m targets not being a priority) could be a statistical artifact resulting from leaders simply electing not to comment on open-ended questions. In general, leaders from the Low Requirements branches were the least likely to provide comments to all open-ended questions, and, in this case, no response to the qualification question was defined as “no change”, otherwise desired changes should have been listed. Refer to Appendix F for individual branch percentages.

Firing positions. Nine firing positions were cited in the questionnaire. They included the current positions used in qualification (prone supported, prone unsupported, kneeling) plus standing which was a position in prior qualification scenarios (Dyer et al., 2010). In addition, items on less common positions were included: firing from or around obstacles, from windows/enclosures, while moving, under stress, and modifying positions to take advantage of man-made objectives (e.g., firing under a car).

All positions were marked by a very similar average percentage of leaders; thus no single position stood out as being most critical (see Table 16, also Appendix F). The results imply that

leaders felt training is required on more than the three positions in current qualification (prone supported, prone unsupported, and kneeling). Infantry leaders were consistently high in indicating all positions were critical (each marked by at least 80% of Infantry leaders). Engineer leaders also stressed many positions, with more than 80% of the Engineers marking 7 of the 9 positions as a requirement. The lowest leader percentages (less than 70%) were from Air Defense Artillery, the OS functional category, and Transportation.

Table 16
Requirement to Fire From Different Positions: Leader Percentages

Firing Position	Weighted Average %	Branch with Highest %	Branch with Lowest %
While Moving	78	Infantry & Engineer (85%)	Air Defense (56%)
From/Around Obstacles	77	Infantry (92%)	Transportation (61%)
Under Stress	76	Infantry (93%)	Air Defense (52%)
Kneeling	76	Infantry (87%)	Transportation (65%)
Prone Supported	76	Infantry (85%)	OS (64%)
Prone unsupported	76	Infantry (86%)	Transportation (68%)
Standing	75	Infantry (84%)	Air Defense (59%)
Modify Position to Take Advantage of Obstacles	70	Infantry (83%)	Transportation (57%)
From Windows/Enclosures	66	Infantry (82%)	OS (41%)

Note. Kneeling supported was not distinguished from kneeling unsupported in the questionnaire.

Leader comments on required skills. Leaders were also asked to comment on other skills, not in the questionnaire, which they believed were required of individuals in their Branch/MOS (see Appendix K). A low percentage of leaders (12%) responded to this question, indicating that most leaders did not specify additional skills. Most comments reinforced in some way the skills the leaders had already cited such as skill with other weapons (crew-served weapons, M9 pistol for Aviation and Military Police), firing under stress, and training on all optics/sights. One additional area cited by leaders from 9 branches was skill in shooting from vehicles. Branch-specific skills were firing in chemical and radiological protective gear and simulating standoff munition disruption (SMUD) cited by Ammunition leaders with 89D MOS.

This question also elicited general comments on the challenges in training Soldiers to be proficient on the marksmanship requirements. The importance of NCOs mastering these skills to in order train them was cited. There were some concerns regarding all unit locations having the facilities to execute some skill training (e.g., Military Police). Acknowledgement that more time and resources would be required was made.

Responses to other open-ended questions yielded more information on why leaders thought certain skills were important. With regard to the current qualification, the largest number of comments (Table L1) was on the need to incorporate different or more positions such as firing from or behind barriers, from standing or kneeling positions, and/or from positions that involve movement. The next most frequent comment was on targets, primarily the need for moving

targets. Leaders from different branches did not agree on target distances. It is noted that these distinctions were already evident in the responses to the check list items. Other comments on targetry, which reflected additional skills, were about the need to make the target presentation unpredictable, to have targets that require target discrimination, and/or require firing at different elevations. General comments on the need to make training realistic and to stress Soldiers were also common responses regarding changes in the current qualification course.

As mentioned previously with regard to the Marksmanship Skills Proficiency test, Infantry leaders, in particular, thought Infantry Soldiers should have knowledge and associated skills regarding ballistics, round trajectory, adjusting sights because of factors such as wind, and hitting targets at different elevations. To achieve this objective, specific exercises would need to be created which stress these skills.

Courses-of-Fire

Four questions at the end of the questionnaire focused on courses-of-fire. One was on the leaders' reactions to the current qualification course. The second was on whether a more complex course-of-fire is needed for Soldiers in their branch. The third was on a course-of-fire that integrates multiple marksmanship skill such as CFF (Yes/No). The fourth was on having a location of miss and hit (e.g., LOMAH) capability for targets in marksmanship ranges.

Qualification course. The question on qualification was: *Do you think the current qualification course-of-fire which is required of all Soldiers should be changed in any way?* If leaders thought changes should be made, they were requested to cite them. However, only 25% of the leaders commented for a total of 533 comments, including comments that current qualification was adequate as a baseline. Thus at a minimum, 75% of the leaders perceived qualification as satisfactory.

Responses to this question are presented in Appendix L. A summary of comments in the major categories follows.

- Qualification as a baseline. Three types of comments were made from all branches (11% of all comments). Some leaders provided the rationale for supporting no change (e.g., tests the basics), while others indicated it was a good baseline, but a more advanced course was needed as well. The latter comment was made primarily by Infantry leaders, and secondarily by Armor leaders. Infantry leaders specifically stated that a more advanced course was needed for Infantrymen. Lastly, some leaders indicated it should be changed, but did not provide any suggestions.
- Qualification standards. Leaders from 13 branches commented (7% of comments). Most comments indicated that leaders thought standards were too easy/not sufficiently challenging for all or for the more experienced Soldiers. To make qualification standards higher, leaders suggested changing either the scenario itself or the scoring procedures. Of interest, is that one Infantry leader commented on the need for two types of qualifications – one focusing on accuracy (not time) and the other adapted to the

contemporary operating environment. Lastly, a few comments were on the frequency of qualification and the need to enforce standards.

Two different perspectives on standards were presented by Infantry leaders. One was that the qualification course should be made more complicated and difficult, even if that meant accepting a lower percentage of hits as the standard for qualification. The other perspective was that people typically view the requirement to zero and then to qualify as encompassing all of marksmanship training, and if people are going to do only the minimum (zero and qualify), then the minimum should be raised.

- Firing positions. The largest number of major comments (32% of the comments from all branches) centered on firing positions. Comments ranged from general statements regarding incorporating different or more positions to specific comments on use of barriers, standing, kneeling, and prone, as well as firing during movement. Typical comments were to include barriers or cover, add standing, and remove kneeling unsupported and prone. Also these comments came from a diversity of leaders. It is noted that Infantry and Mechanical Maintenance leaders frequently mentioned use of obstacles; Mechanical Maintenance leaders also stressed standing with cover; Infantry leaders stressed engaging targets while moving.
- Targets. Range targetry was also commented on frequently (20% of the comments, leaders from 14 branches). Consistent with results from the check list items on marksmanship requirements, moving targets were mentioned by leaders across branches. Comments on changes in target distance were the most common within this category (leaders from 13 branches). Again, consistent with the checklist items, Infantry cited both short and long distances, while leaders from other branches typically did not see a requirement to shoot at 200 m or beyond. Some of the Infantry leaders specifically stated a need to have qualification systematically address Soldier skill at the close-in, mid-range, and longer range fights. Other comments were on target exposure time, making targets unpredictable (random presentation), having targetry that forces Soldiers to discriminate between friendly and enemy, and elevated targets.
- Realism, similarity to contemporary operating environment, stress. General comments were made by leaders from 13 branches (12% of the comments) for a more realistic scenario, one that stressed the Soldier, and/or one consistent with the threat. Mechanical Maintenance and Infantry leaders made more comments than the other leaders. But a substantial number of comments were also made by Armor, Military Police, Quartermaster, Engineer and Field Artillery leaders.

Three other skill areas, each accounting for 6% or less of the comments, were mentioned by the leaders (see Appendix L for details. One area was use of gear during qualification, but some Infantry and Armor leaders also stated that gear should not be used for zeroing. These comments help to explain the low percentage of leaders from these two branches who indicated Soldiers should zero in gear (see prior Table 14). The second area was incorporating magazine changes and malfunctions, which was cited by leaders from nine branches, although stressed by

Infantry leaders. Lastly, short range marksmanship skills and the need to test Soldiers' ability to transition from their primary to secondary weapon were cited.

As only 25% of the leaders suggested ways of changing the current qualification course-of-fire (and some simply restated that it did not need to change), the dominant reaction, by at least 75% of the leaders to the question, was that qualification was satisfactory. Some of the suggested changes could be worked into the current qualification scenario. Other changes would not be as easy to incorporate and it was suggested by some leaders, particularly Infantry, that another course-of-fire is needed for Infantry Soldiers. These ideas, cited by Infantry leaders, included the following.

- *Multiple qualifications: distance qualification where accuracy is stressed over time, then a skills qualification similar to the current but adapted to the modern battlefield with barrier shoots, magazine changes, and malfunction clearances. (Author note. These factors are included in Combat Field Fire).*
- *Good qualification course for other branches, not nearly difficult enough for Infantry.*
- *Should resemble the Marine Corps standards and include moving targets at different distances.*
- *The current qualification for ALL Soldiers should not initially change. There should be a separate test for infantry Soldiers, however, that will engage the enemy in multiple ways primarily with small arms fire. I find it strange that all other branches that engage the enemy with direct and indirect fires, including Armor, Artillery, and Special Forces, have their own qualifications for the specialized shooting skills unique to them, but the infantry does not.*
- *Once initial qualification is complete; range operations should consist of firing from alternate positions, changing mags, having short mags, etc. Engaging targets while maneuvering should not be encouraged. Engaging targets to destroy is different from engaging targets to suppress. This should be determined by METTTC and the T & P given to a unit.*
- *Should have specific engagement zones on targets instead of hit and drop targets that are current. Should increase engagement distance from current 300m to further distance, stress accuracy. Short range qualification lacks in alternate firing positions, adhere to a time limit that tests a candidate.*
- *First qual without gear; second qual with gear*

Some Infantry leaders offered detailed suggestions on how to redesign the entire qualification course-of-fire (see Appendix L). In summary, these implied a more complex course-of-fire.

CFF and LOMAH range capabilities. Separate questions were asked about CFF as a course-of-fire and LOMAH capabilities. Both these training capabilities were favored by a high percentage of all the leaders (82% recommending each, with 73% recommending both). The two questions were as follows

Do you think Soldiers in your branch or MOS/CMF should be proficient in integrating multiple marksmanship skills such as that required in Combat Field Fire? (Yes/No)

Additional information: Combat Field Fire is in Change 1 to FM 3-22.9, 2011, pgs.7-58 – 7-62). It integrates engaging multiple targets in arrays where each target has a different exposure time, some targets require more than one hit, Soldiers must correct malfunctions and change magazines at unexpected times, Soldiers fire from barricades, and other skills

Would a system which provides immediate feedback on the location of each target hit and miss to the firer at the firing line be beneficial for zeroing and training marksmanship skills? (Yes/No)

Additional information: Such a system would provide more than the usual “hit/miss” feedback. It would graphically show the firer where the target was hit (e.g., head shot, center of mass) as well as the location of misses relative to the target (e.g., to the right or left of target, high right of target). It could also be calibrated to score hits within designated areas on a target (e.g., for zeroing at different distances). Because the feedback would be presented at firer’s position on the firing line, firers would not need to walk down range during zeroing.

At least 80% of the leaders from 7 of the 13 branches (Infantry, Armor, Engineer, Military Police, Field Artillery, Mechanical Maintenance and Transportation) marked CFF (or similar demanding scenarios) as a requirement, with 96% of the Infantry leaders indicating such (see Appendix F for branch percentages). At least 80% of the leaders from 11 of the branches (all branches but Air Defense and Transportation) indicated they would favor a system such as LOMAH that provides immediate feedback to Soldiers at their firing point. It is noted that less than half the Air Defense Artillery leaders indicated CFF should be a requirement or favored a LOMAH type system.

More complex course-of-fire than qualification. Leaders were requested to react to whether “a more complex course-of-fire (more complex than qualification) should be required of Soldiers in their branch or MOS/CMF.” If they thought one was needed, they were asked to indicate the skills to include in such a course-of-fire. Responses (total of 604 comments) are detailed in Appendix M. This question was preceded by two questions which also required leaders to think of marksmanship skills in other scenarios. One was the question on CFF where CFF was described briefly in the instructions, and the question regarding whether qualification should be changed. Responses to these two questions have already been discussed. It appears that these questions may have triggered some leader responses to the “more complex course-of-fire” question.

Overall, less than half (45%) the leaders thought a more complex course-of-fire was needed (see Appendix M). When comparing branch responses on this question, clear differences emerged. In only three branches (Infantry, Armor and Engineer) did more leaders say a more complex course was needed compared to those who said it was not needed. The greatest difference was Infantry leaders, where a margin of 27% more said it was needed vice 10% for Armor leaders and 5% for Engineer leaders. This difference for Infantry leaders is consistent with the responses to the qualification question, where many voluntarily said qualification was okay for most, but Infantry Soldiers needed a more difficult, challenging course. The branches

where the preponderance of leaders indicated a more complex course was not needed (by a margin of at least 33%) were Air Defense Artillery, Quartermaster and Transportation.

Approximately 70% of the general positive comments regarding a more complex course were simply “yes” with no elaboration. The general reasons for a more complex course were that it would positively impact skills and confidence or were based on the leaders’ combat experiences which indicated more advanced and complex training is needed. Specifically, leaders from non-Infantry branches indicated that their Soldiers need to possess Infantry skills because combat assignments were not always MOS-specific. Infantry leaders stressed that their Soldiers needed to be very skilled and a more complex course was needed to gain those skills. Some positive comments about a complex course specified contingencies, e.g., necessary for some not all MOS, executed prior to deployment, or executed only after basic skill proficiency had been achieved. Some examples of combat-related reasons are given next.

- Aviation: *Yes, the more comfortable you are with your weapon, the more confident you feel that you will survive.*
- Engineer: *More complex can only help. Simple situations don’t exist very often in combat; therefore we should train complex situations.*
- Engineer: *Believe a complex course is good idea because it teaches Soldiers how to fire under different conditions. In the battlefield you can use those tactics to survive.*
- Infantry: *Yes, being able to adapt to different situations that combat brings to you and being able to overcome and destroy the enemy under unusual circumstances that some training can’t give you.*
- Infantry: *Yes, for Infantrymen using a rifle is their job. They must be trained to be experts, through stress and repetition, not check the block training we currently utilize.*
- Infantry: *Yes, Soldiers will not be firing qualification ranges while in combat.*
- Multifunctional Logistician: *A complex course should include sudden engagements. Soldiers in current combat conditions must often make a snap decision on someone that went from being a non-combatant to a combatant. A decision like that is life altering, especially if the Soldier gets it wrong. Soldiers should be trained on that situation so they can make the best decision possible without recrimination.*
- Transportation: *Yes to keep us engaged in the importance of firing our weapons in real-life situations.*

About half of all comments were on specific skills to include in a more complex course. In general, the skills recommended were consistent with the leaders’ comments on deployment training. The need for training in different firing positions than those in the current qualification was cited by leaders in 12 branches and was the most frequently cited skill (21% of the comments). Firing under stress, shooting and moving, and changing magazines/correcting malfunctions were three other skills; each constituted 12% of the comments. Shooting at moving targets, short range marksmanship skills and discriminating friend from foe were each mentioned less frequently, each constituting 8% of the comments. These six skills were typically cited by leaders from 10 branches, indicating a recognition of their importance for different MOSs/branches. Most of these skills could be incorporated in a complex course-of-fire. For example, shooting from cover, changing magazines, and reacting to malfunctions are in CFF.

However, training some skills would require range upgrades; the best example is shooting at moving targets.

A few leaders who indicated such a course was not needed provided a rationale for their answers. The primary reasons for opposition to a more complex course-of-fire were lack of range resources; Soldiers are not prepared for greater complexity; and not needed for wartime mission.

Linking Marksmanship Skill Requirements and Branches/MOS to a Training Strategy

This section considers all the previously cited findings in order to identify logical, data-based clusters of marksmanship skills. The links between these clusters and the branch groups is then defined in order to delineate marksmanship skill requirements.

Skill clusters. The general analytic strategy was to identify four sets of skills and link them to the branches:

- Skills required by all branches/MOS,
- Skills required by two of the three groups,
- Skills unique to a branch, and
- Skills not perceived as requirements by any branch.

Determining how to group the skills was more challenging than determining the skills for a Marksmanship Skills Proficiency Test. The data were not as “clear-cut.” The partitioning of skills was based primarily on a cluster analysis of the leader reactions to the 44 skills presented in the questionnaire checklists. The cluster analysis approach (hierarchical with Euclidean distance and complete linkage rule) was the same as that used previously. The cluster analysis was applied to determine general commonalities among the 44 skill requirements addressed in the questionnaire. The results are shown in Figure J2, Appendix J.

Five clusters of skills emerged as shown in Figure J2. These clusters relate to some of the distinctions made previously. In summary, the trends were:

Skill Cluster A: Marked by high percentage of leaders

Skill Cluster B: Most skills in this cluster were deemed not required for Soldiers

Skill Cluster C: Mostly High Requirements branch (Infantry) skills

Skill Cluster D: Mix of skills, mostly applicable to both the High and Moderate Requirements branches and some specific to High Requirements branch (Infantry)

Skill Cluster E: A few distinct skills

These clusters were then “fine-tuned” by the actual branch percentages (presented in Appendix F), and also by leader comments to the open-ended questions on deployment training, on the qualification course, and on more complex courses-of-fire. Leader comments served to explain and clarify the rationale for the simple “yes”/“no” responses associated with the checklist.

Skill Cluster A included 19 skills that tended to be marked by a relatively high percentage of all leaders. All the seven skills identified as high priority skills by a weighted average of at least 80% of the leaders were in this cluster. These skills were presented

previously in Table 12. The guideline for determining whether the other skills should be required of all Soldiers was that at least 70% of the leaders in a branch or branch grouping should indicate it was a requirement. In that regard, two skills related to firing positions in Skill Cluster A did not meet that criterion for the Low Requirements Branch Group: firing under stress and firing while moving. It is noted that these skills did meet the requirement for both the High Requirements (Infantry) and the Moderate Requirements Group. The remaining 17 skills were viewed as a starting point for skill requirements for all Army branches. In summary, the skills retained from Skill Cluster A that applied to all branches were:

- Zeroing: zero sight organic to your unit, zero back-up iron sight (BIS), zero at 25m
- Firing distances for hitting targets: close in (less than 25m) to 200m
- Firing positions and conditions: Both prone positions, kneeling, from obstacles, standing
- Basic skills: react to malfunctions, quickly change magazines
- Hit moving targets
- Situational awareness skill integration: Discriminate between friendly, enemy, and noncombatants, acquire targets in sector.

In addition, two skills in Skill Cluster D were judged appropriate for all branches: hitting single targets and hitting two targets. These skills are currently required by all Soldiers during qualification and other marksmanship exercises and were typically marked by 60% to 80% of the leaders. Perhaps the relatively lower percentages resulted from the leaders responding in terms of current marksmanship scenarios and assumed these scenarios would continue to include single and two targets. Based on this rationale, these two skills were designated as common requirements across Army branches, yielding a total of 19 skills common to all branches.

Most of the skills in Skill Cluster B (3 of 4 skills) were judged as not being a requirement for all Soldiers:

- Firing with a sling (typically marked by 50% of fewer leaders in each branch)
- Firing with unaided night vision (marked by a low percentage of leaders probably because of the proliferation of NVGs and ALs, and
- Zeroing with combat gear

All skills related to using combat gear are discussed below under the Cluster D skills. The other skill in this cluster was adjusting the sight for factors such as wind, which was primarily linked to Infantry.

Three of the four skills in Cluster C were rather technical skills which would require extensive training to master, and were consistent with the Infantry leader comments to the effect that more complex skills, and knowledge and application of ballistics were requirement by Infantry. Consequently, these more technical skills were linked to Infantry only (High Requirements Branch).

- Hit targets with shorter exposure times,
- Hit three targets, and
- Hit in several predetermined lethal zones on a target.

The last skill in this cluster was skill with the TWS, a sight that is not common to all branches. It was marked by a higher percentage of leaders overall than the other skills in this cluster. The TWS is most common in the Infantry, but also issued to specific leaders in other branches. It is primarily fielded to leaders in Infantry, Combat Engineers, some Cavalry units and some

Military Police. This skill was marked by 73% of Infantry leaders, 72% Armor leaders, 70% Engineer leaders and 61% Military Police, but marked by fewer leaders in the other branches. Consequently, this task was viewed as a requirement for the designated leaders/Soldiers in the appropriate High and Moderate Requirements branches.

Skill Cluster D had 14 skills which represented a diversity of opinions by branch leaders, and is difficult to summarize. Some skills were common across branches; others applicable to a reduced number of branches; others unique to a branch; and others did not appear to be a requirement for any branch.

Included in this diverse cluster were qualifying in gear and training in gear, which were discussed previously (see Table 14). Zeroing in gear was the third related skill with this equipment. The Infantry and Armor leaders definitely did not recommend zeroing in gear but did favor training and qualifying in gear. The decision was to not make zeroing in gear a requirement for any branch. The issue was narrowed to whether Soldiers in both the Moderate and Low Requirements Branch Groups should train and qualify in gear. Since the overall average for the Low Requirements Group was lower than the Moderate Requirements Group average, the training and qualifying in gear skills retained only for the High (Infantry) and Moderate Requirements Branch Groups.

Six other skills in Skill Cluster D were typically specified by at least 70% of the leaders in the High Requirements (Infantry) Branch Group plus those in Moderate Requirements Branch Group. These skills were

- Confirm zero at distance,
- Use NVGs and ALs,
- Hit targets at elevations that differ from the firer's position,
- Modify firing position to take advantage of man-made objects,
- Fire from windows, and
- Hit targets from 200 to 300 m.

One caveat is that NVG-AL training should be required only for units/duty positions that have this equipment. A seventh skill, firing with different modes of fire such as rapid semi-automatic and burst fire, was a lower priority, but was consistently cited by approximately 67% of the High (Infantry) and Moderate Requirements branches. Of note was that proficiency with NVGs and ALs, hitting targets from 200 to 300 m, and skill in firing from windows were marked by 90% to 93% of Infantry leaders.

Two skills in Skill Cluster D appeared to be primarily Infantry requirements. These skills were hitting targets in a specified lethal zone and firing with non-dominant hand, which were marked by about 74% of Infantry leaders, 10% higher than the average percentage of the branches in the Moderate Requirements Group and about 20% higher than the average of the branches in the Low Requirements Group. Consistent with Infantry leader comments that a higher level of proficiency is needed for Infantrymen, plus comments by Infantry leaders on firing with nondominant hand, these skills were retained as requirements for the Infantry only.

The last skill in Skill Cluster D was switching between a primary and alternate weapon and was marked by 90% of the Military Police leaders. Based on these leader comments they

perceived a need to be skilled in switching between their rifle and their pistol. In contrast, percentages for other branches were approximately 60%.

The relationship between the skills in Skill Cluster D and the Low Requirements Branch Group is summarized as follows. Except for skill in hitting single and two targets, the leaders from the seven branches in the Low Requirements group did not indicate the skills in Cluster D were skill requirements for their Soldiers.

The fifth cluster, Cluster E, had only three skills. Two were requirements for a single branch. Firing with a protective mask was perceived as requirement by CBRN leaders (77%) and engaging targets beyond 300 m was perceived as a requirement by Infantry leaders (67%). Zeroing at a distance initially (vice at 25 m) was not considered a requirement by any branch leaders.

Marksmanship strategy recommendations. Figure 3 summarizes the relationship between skill clusters and branches. The specific skills are presented in Tables 17 through 20. A sizeable percentage (43%) of the 44 skills was considered basic and common to all branches. The Infantry (High Requirements), some MFE branches and Mechanical Maintenance branches in Moderate Requirements Group were linked to an additional 27% of the 44 skills, which were more difficult. Infantry had an additional 16% of skills; the most difficult skills and ones that gave them the greatest capability in an operational environment. The skills perceived as common requirements (Table 17) have been discussed. The skills perceived as requirements for the combined Infantry and Moderate Requirements Group branches presented in Table 18 were based on the general guideline of approximately of 70% of leaders citing them. Branch-specific skills are also cited in Table 19. Skills which were not perceived as a requirement are cited in Table 20.

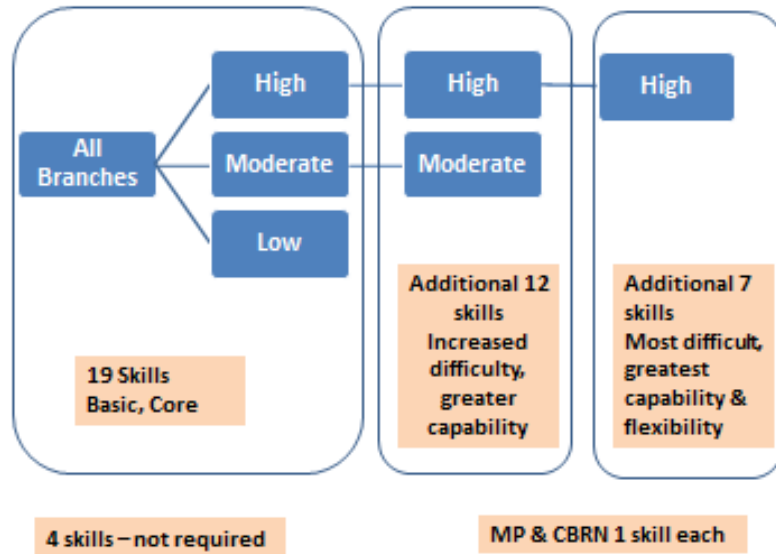


Figure 3. Relationship between skill clusters and branch groups.

Note. – Branches in each group: High: Infantry; Moderate: Engineer, CBRN, Military Police, Armor, Field Artillery, and Mechanical Maintenance; Low: Aviation, Air Defense Artillery, Operations Support (Military Intelligence and Signal), Ammunition, Transportation, and Quartermaster.

Table 17
Marksmanship Skill Requirements Applicable to All Branches

Skill Category and Skill (19 skills)	Comments
Zeroing	
<ul style="list-style-type: none"> Zero sight organic to unit; zero BIS; zero at 25 m 	
Firing distance	
<ul style="list-style-type: none"> Fire at less than 25 m; from 25 to 100 m; from 100 to 200 m Short range skills 	<ul style="list-style-type: none"> Targets beyond 200 m were not included based on the leader percentages. However, 80% of the leaders said qualification should not change.
Firing positions	
<ul style="list-style-type: none"> Prone supported; Prone unsupported Kneeling Other firing positions: Standing, Firing behind or around obstacles 	<ul style="list-style-type: none"> In response to the qualification question, many leaders indicated this should be kneeling supported not unsupported, more typical of combat. Kneeling supported was typically cited with respect to firing from barricades. Category combines several firing positions as leaders commented on the need to train on positions other than those in qualification; firing from obstacles or barricades was frequently mentioned by many leaders, plus standing.
Basic Skills	
<ul style="list-style-type: none"> React to malfunctions Change magazines 	
Precision firing	
<ul style="list-style-type: none"> Hit moving targets 	<ul style="list-style-type: none"> Training Soldiers to hit moving targets would require range upgrades.
Target Acquisition	
<ul style="list-style-type: none"> Hit single targets; Hit double targets Discriminate among targets Acquire targets in sector of fire 	<ul style="list-style-type: none"> Additional and/or different targets would be needed for target discrimination.

Table 18

Marksmanship Skills Applicable to the High and Moderate Branch Groups

Skill Category and Skills (12 skills)	Comments
<ul style="list-style-type: none"> • Qualify in gear and train in gear • Confirm zero at distance • Hit targets with assigned night optics (NVGs & ALs; TWS) • Hit targets at 200 to 300 m, Hit targets at different elevations • Other firing positions: Fire from windows, Modify position when needed, Fire while moving, Fire under stress • Semi and auto fire 	<ul style="list-style-type: none"> • Requirement depends on which units have NVGs and aiming lights and/or TWS. Live fire with TWS requires “thermal” targets on ranges. • Results reflect leader responses. However, targets at 200 to 300 m could be a requirement for all Soldiers as 250 and 300 m targets are in the current qualification. • No formal recommendation regarding whether all firing positions should be trained or only some. Training to fire while moving could be difficult given safety policies on Army ranges. • Lowest priority in skill set for all selected branches (67%).

Note. Branches were Infantry (High) plus Engineer, Armor, Field Arty, CBRN, Military Police, Mechanical Maintenance (Moderate).

Table 19

Branch Specific Marksmanship Requirements

Branch and Skills	Comments
Infantry (7 skills)	
<ul style="list-style-type: none"> • Hit targets beyond 300 m • Fire with nondominant hand • Hit one specified lethal zone on target • Adjust sight picture for firing conditions such as wind • Hit targets with shorter exposure time; Precision firing: Hit 3 targets and hit multiple lethal zones on a target 	<ul style="list-style-type: none"> • Consistent with long range marksmanship comments. Marked by 67% of Infantry leaders; less than 50% for all other branches. • Recommendation based on Infantry leader comments about ballistics. • Reflects need for a more complex course-of-fire for Infantry. Requires software and/or target changes to current ranges.
Military Police (1 skill)	
<ul style="list-style-type: none"> • Switch from primary to alternate weapon 	<ul style="list-style-type: none"> • Marked by 90% of Military Police leaders (by about 65% of leaders in High and Moderate Groups, 55% in Low Group).
CBRN (1 skill)	
<ul style="list-style-type: none"> • Fire with mask 	<ul style="list-style-type: none"> • Marked by 77% of CBRN leaders (by less than 50% of leaders in other branches).

Table 20
Marksmanship Skills not Perceived as a Requirement

Skills (4 skills)	Comments
<ul style="list-style-type: none"> • Zero in combat gear • Zero at distance initially • Unaided night fire • Use of sling 	<ul style="list-style-type: none"> • Recommendation to not zero in combat gear based on input from Infantry and Armor leaders. • If LOMAH becomes program of record, then this skill could be a requirement (currently used only for confirmation of zero in Basic Training). • Very low priority for all, probably because of proliferation of NVGs and ALs. • Low priority by all.
<i>Note.</i> Mean leader percentages for branch groups: High: 46%, Moderate: 53% and Low: 45	

Table J3 (Appendix J) presents the mean percentages for skills in the skill cluster – branch group combinations just discussed. The overall guideline was that an average of 70% of the leaders should mark a skill as a requirement for it to be included as a requirement for that branch. The percentages documented in Table J3 are consistent with that guideline, although they represent all the branches within a group. What is most clearly shown is the low percentages for the skills that were judged as not required for branch groups.

It is important to clarify or reinforce that just because a skill was linked to a specific branch did not mean all leaders within that MOS marked it as a requirement. On the other hand, when a skill was not designated a requirement for a branch did not mean that every leader thought it was not a requirement. Also some leaders who were not in a MFE branch commented that they should receive the same training as the Infantry- the same amount of ammunition, access to practice ranges, etc.

Additional Comments on Marksmanship Training and Resources

The last question allowed leaders to comment on any aspect of marksmanship training and resourcing of this training which they thought had not been covered in other questions (see Appendix N). It was preceded by a question on the value of a LOMAH system, and some leaders addressed LOMAH as well. Only 11% of the leaders commented, with 23% of the Infantry leaders commenting versus only 5% of the Quartermaster and Transportation leaders commenting.

The major topics covered were: use simulators (primarily EST 2000), qualification, resourcing of ammunition, management of time and resources by unit leadership, reactions to the possibility of LOMAH on live-fire ranges, and marksmanship trainer issues. The EST 2000 was mentioned, eliciting both positive and negative responses. For some, qualification was viewed as a check-the-box type of training; for others the concern was with Soldiers who shot repeatedly

and did not qualify with no remedial training or no consequences for failure to qualify. The emphasis upon ammunition was not unexpected; the primary concern was that limited ammunition did not enable Soldiers to be proficient. Leaders also felt it was important to set a high priority for marksmanship training and that did not always occur. Most comments on a LOMAH capability were positive; concerns were voiced by some regarding cost, system reliability, or adequacy of the technology. Training individuals to be good trainers was also critical.

Train-the-Trainer

Although there was no specific question on the quality of marksmanship training, the importance of having good marksmanship trainers emerged in leader comments to several of the questions.

Trainer comments in response to the deployment training questions. The need for good trainers and special training emerged in the leader answers to their pre-deployment marksmanship training (Appendixes D and E). Leaders indicated that units or individuals often received special marksmanship training via Army courses such as USAMU training (e.g., squad designated marksmanship course, BRM, CQM), Mountain Leaders Advanced Rifle Marksmanship [MLARM] course at Fort Drum, Eagle Marksmanship course at Fort Campbell, AWG, Sniper School, and unit SDM courses). Training was also received from private firms or non-Army schools (e.g., Threat Management Group, Midsouth Shooting School) in order to adequately prepare Soldiers. Of interest is that Infantry leaders were most likely to indicate their units/Soldiers had this special training. It appears that some units perceived that they did not have expertise within the unit to adequately prepare Soldiers.

There were positive, yet fewer, comments on unit pre-deployment training which indicated the importance of having good trainers/programs within the unit (primarily by Infantry, Armor and Engineer leaders). Some examples are presented. A CBRN leader indicated the unit had some very qualified NCOs and Soldiers who knew how to shoot, and they helped others. An Infantry leader cited that Sniper teams helped them achieve excellent zeros. In another case, the Senior Sniper leader indicated he developed a special SDM course for two companies tailored to the Soldiers' optic. One Infantry leader indicated his Task Force mandated each Infantry platoon send at least one rifleman to train with their Snipers – so each platoon would have at least one designated marksman for long range engagements. And cited previously under the Deployment Training section was a quote from an Armor leader regarding the extensive training the First Sergeant implemented to ensure Soldiers were proficient.

With regard to post-deployment perspectives on the need for trainers and special courses, leaders again cited special courses that would have been beneficial. In addition, leaders commented on the need for NCOs to be good trainers and/or have the time to train. For example, an Engineer leader indicated there should be certified marksmen available to assist units with marksmanship training, while civilians and/or contractors should manage range operations. A few Armor and Engineer leaders recommended that NCOs should attend small arms or other marksmanship courses so they could bring training to the unit. Another example is that an Armor leader stated that NCOs need to be updated with USAMU concepts of training. Infantry

leaders stressed the need for training Soldiers to be snipers or squad designated marksmen as that not only improved their individual skill but also their ability to train others. Consequently not only is combat effectiveness improved but also training becomes more efficient given the limited range time for most units. Many of the extended comments to the post-deployment training question (Appendix E) stressed skills that needed to be trained and weapon/marksmanship concepts which Soldiers need to understand. The fact that leaders perceived these areas as not being addressed reflects on training and trainer weaknesses within units.

Ironically, Infantrymen were the most likely to get additional or specialized marksmanship training prior to deployment, even though this branch has the most proficient marksmen. After being deployed, some of the Armor and Engineer leaders indicated that specialized training would have been beneficial.

Trainer comments related to the Marksmanship Skills Proficiency Test. The question on the leaders' reaction to the Marksmanship Skill Proficiency Test elicited some of the strongest statements on trainer issues (Appendix H, Table H5 and extended quotations). The primary theme (leaders from eight branches, primarily Armor, Infantry, and Mechanical Maintenance) was that many NCOs do not possess the requisite skills and knowledge, and they are not knowledgeable or proficient with new optics. Instructor training and certification are needed via a unit master gunner or training in the Warrior Leader Course (WLC), ALC and SLC. Hands-on evaluation requires that the tester knows the skills tested. Sample comments by leaders from five branches are:

- Armor: *Test is good idea; problem is that leadership does not know how to conduct tasks themselves.*
- Armor: *Army must train NCOs first, obviously, and hold them to the standard.*
- CBRN: *Ensure items taught are standardized. NCOs always make up information that is not accurate.*
- Mechanical Maintenance: *Marksmanship skills should be for everyone who handles weapons. I have seen people in higher ranks who do not know anything about their weapons. How can they train anyone on the weapons if they don't know themselves?*
- Mechanical Maintenance: *Many Soldiers do not know the correct way to shoot and their NCOs don't know marksmanship. Therefore Soldiers always shoot bare minimum.*
- Mechanical Maintenance: *Train the NCO Corps from top down.*
- Military Police: *Leaders should be the first to be evaluated. Most leaders have lost the edge that they had over their Soldiers. You cannot train a Soldier if you do not possess the skill yourself.*
- Infantry: *Education pilot program necessary to get senior ranks familiarized with marksmanship terminology, terms, and understandings, e.g. ballistics, pictures identifying malfunctions, or proper sight picture alignment, trajectory are necessary. Video clips of immediate action drills, magazine changes and proper body positions are necessary for uniform standard.*
- Infantry: *I think this idea is great, however the most important piece would be the proper blocks of instruction to ensure that Soldiers are actually receiving this type of information from their leaders. I personally believe all of these skills are critical, however I highly doubt that the average Soldier receives the proper levels of instruction*

that would ensure success on such tests. The instruction and courses are the critical part, in my opinion
-Infantry: *Being able to shoot is easy, being able to teach others how to is the hard part.*

Other trainer comments related to the marksmanship training and resources question. A few leaders expressed concerns regarding the quality of trainers and the importance of having good trainers. Three solutions were offered: USAMU mobile training team, a unit designated marksmanship NCO, provide NCOs performance-oriented training in ALC and SLC as was previously done in BNCOC and ANCOC (Basic Noncommissioned Officer Course and Advanced Noncommissioned Officer Course).

Who commented on trainer issues. Leaders from branches where marksmanship skills are the most critical voluntarily commented on trainer issues. From these branches, the most comments were from Infantry leaders, yet the Infantry branch also has the most qualified trainers. These leaders clearly acknowledged the importance of good training, and often indicated there was a need for more qualified NCOs in units, although some units apparently had the required trainer expertise. This profile is consistent with the Infantry's primary combat role and the need for Infantrymen to be highly proficient with their primary weapon, the rifle.

On the other hand, of considerable interest is the few to no comments on these issues from leaders in some branches. Specifically, these leaders were from branches in the Low Requirements Group. This result is consistent with these leaders designating the fewest marksmanship requirements for their Soldiers. However, it may also be that the saying "you don't know what you don't know" applies, in that they may not have been aware of how proficient their Soldiers could have been with specialized training.

Summary and Discussion

The marksmanship skills which Soldiers need in active duty units is an issue that should be examined repeatedly because the combat environment and combat equipment change over time. Historically, one can trace marksmanship qualification courses-of-fire and training to the current threat, weaponry, and doctrine (Dyer et al., 2010; Ehrhart, 2009). This report is based on the input from combat veterans of OIF and Operation Enduring Freedom (OEF). The results provide valuable findings regarding marksmanship requirements, not only because of the combat veteran nature of the sample, but also because leaders from the major Army branches participated, and the focus was on the marksmanship requirements of Soldiers in active duty units, not initial entry training.

Who Responded

The marksmanship skills identified reflect the input from both commissioned and noncommissioned officers (Captains, Sergeants, Staff Sergeants and Staff Sergeants, plus a few First Lieutenants), from 14 major Army branches³ who were deployed to Iraq, Afghanistan or

³ The percentage of leaders from each branch approximated the relative size of the branch within the Army population with a few exceptions. Proportionately Mechanical Maintenance, Ammunition, and Armor were slightly over-represented; Infantry was somewhat under-represented and Signal and Military Intelligence were under-

both. The responses were indicative of the marksmanship skills they found critical in combat. This inference is reinforced by the responses to the open-ended questions, as well as the high percentage (94%) of leaders who had been deployed. In addition, the leaders were not from a single Army Forces Command (FORSCOM) unit, but from different units as they were enrolled in senior leader courses (Captains Career Course, Advanced Leader Course, and Senior Leader Course) at seven Army bases (Forts Benning, Gordon, Huachuca, Lee, Leonard Wood, Rucker, and Sill). This diversity in the sample lends strength to the position that their input reflects their branch as a whole. It was also evident that most leaders gave considerable thought to their responses and/or held strong opinions about marksmanship training and required skills.

The 94% deployment percentage did not apply directly to leaders from each branch. The deployment percentage was very high for most MFE branches; specifically 98% of the Infantry, Engineer, Aviation, and Armor leaders had been deployed. For Field Artillery and Military Police leaders, 91% had been deployed. With the other two MFE branches, 82% of CBRN leaders and 66% of Air Defense Artillery leaders had been deployed. With the FS branches, the percentage deployed ranged from 90% to 96%. All the Signal and Military Intelligence leaders who responded had been deployed, although the sample was small. The frequency of deployments was highest from the MFE branches: maximum of 11 for Infantry, 10 for Aviation, and 9 for Engineers. For the FS branches the maximum number of deployments was 7 and 8. On the other hand, the maximum was 2 to 4 for Air Defense, Military Police, Signal and Military Intelligence leaders.

More leaders had been to Iraq than Afghanistan, with the overall average number of deployments for Iraq being twice the number to Afghanistan. This difference occurred for all branches except the Infantry and Aviation leaders, where the average number of deployments to Iraq and Afghanistan was the same.

Although one would expect leaders from different branches to perceive marksmanship requirements differently, the findings in this report clearly indicate that the leaders' deployment experiences also impacted their responses. In many regards the marksmanship requirements for the branches paralleled the extent of their deployment experiences and the type of deployment experiences. For example, within MFE, the Infantry leader profiles for deployment and marksmanship requirements were distinct with many deployments and many marksmanship requirements. On the other hand, the Air Defense Artillery profiles differed --fewer deployments and few marksmanship requirements.

Deployment Training

Leaders' descriptions of their deployment training and any training they would have found beneficial were often extensive. In total, the comments produced a rather comprehensive picture of the training across the different branches.

represented. The major analyses involving all branches weighted the branch percentages by their relative proportion in the Army population (vs. giving the branches equal weights or weighting them by the sample size). NCOs constituted 82% of the sample, consistent with their representation in the Army population.

Training received. Although there were substantial differences in the pre-deployment training leaders from the branches received due in part to their typical role in a combat mission, there were commonalities. The big picture on pre-deployment training was that BRM and ARM skills were emphasized, with less emphasis on training on other weapons and on special training from Army units or private companies. In addition, pre-deployment training typically addressed the anticipated combat mission, with leaders commenting on specific skills required for Iraq versus Afghanistan.

Many BRM comments were simply “BRM” or “fundamentals” or “qualification.” It was not uncommon for some leaders to indicate that qualification was the only marksmanship training they received. The BRM category included comments on “live fire,” which typically did not elaborate on the type of live fire, referring only to “live fire” or “range firing.” Some leaders specifically commented that shooting at “pop-up targets” was important for their Soldiers, implying that such firing was uncommon, but was viewed as essential for Soldier marksmanship competence and confidence. Infantry leader live-fire comments primarily referred to known distance range firing.

ARM training reflected ARM skills covered in the current Initial Entry Training and Infantry One Station Unit Training programs and aspects of ARM from FM 3-22.9 (DA, 2011), plus long-range marksmanship, short-range marksmanship skills, and stress shoots. Although leaders from many branches commented on ARM skills in general (e.g., firing from barriers, expanding training to firing positions other than prone and kneeling, training on ballistics, high angle shooting, stress shoots) plus long-range marksmanship skills, proportionately more Infantry leaders stressed these skills than leaders in other branches. The stress on long-range marksmanship skills was consistent with the proportion of Infantry leaders deployed to Afghanistan compared to the other branches. Considering all ARM comments, over half were on training SRM and/or reflexive fire skills. These skills were stressed by leaders in all branches, consistent with the fact that more leaders were deployed to Iraq than Afghanistan. The high angle shooting comments and training on ballistics were typically mentioned in regard to deployment to Afghanistan. Use of optics and night firing skills were mentioned by leaders from many branches but were the two least frequently cited ARM skills.

Leaders most frequently stated that training on crew-served weapons was important; in some units, Soldiers trained on all weapons organic to their unit. Comments on special training were not necessarily unexpected. However, of interest, was that both Army training courses (squad designated marksmanship, Sniper) and private courses were cited. About 40% of these comments were from Infantry leaders. Intuitively, this result seems to be the opposite of what one would expect, given the expertise and knowledge of marksmanship trainers/leaders within this branch. However, they may have had a better understanding of the level of marksmanship required in combat, and thus sought out additional means to ensure their Soldiers had these skills.

Some leaders, primarily Infantry, provided extremely detailed comments on their pre-deployment training. Clearly, their units had sufficient ammunition for extensive practice on many skills and other many different conditions. The intent was to approximate combat situations as much as possible and to ensure Soldiers in the unit were thoroughly prepared.

In addition, leaders from each of the major branches commented on collective training events: convoy live fire, shoot houses, MOUT, and squad/platoon live fire exercises. However, the squad/platoon live-fire exercise comments were primarily from Infantry, Armor and Mechanical Maintenance leaders.

Although not requested, some leaders described the reasons for little or no pre-deployment training. In general, the reasons were that the anticipated mission did not require marksmanship skills (e.g., mission was aviation maintenance), unit leaders gave marksmanship pre-deployment training priority to the Infantry, or that the training was limited/rushed/check-the-block type training.

Branch differences existed, and reflected four groups. Leaders from Air Defense Artillery, Aviation, Signal and Military Intelligence indicated they had the least pre-deployment training of any kind. Ammunition, CBRN, Quartermaster, and Transportation leaders indicated their units had more training. Next were leaders from Armor, Engineer, Field Artillery, Mechanical Maintenance, and Military Police branches, all within the MFE functional area except for Mechanical Maintenance. Infantry leaders indicated their units had the most training and the most diverse forms of training. No other branch had the same level of pre-deployment training.

Training desired but not received. What training did leaders think they needed but did not get? Three results support the conclusion that the pre-deployment was satisfactory for some. First, the proportion of leaders who commented on additional training needed was 52%, a 15% drop from the 67% who described their pre-deployment training. Second, the number of comments decreased as well, by at least 50% when all live-fire and collective training comments were considered. Third, some leaders explicitly stated why their training was adequate.

The biggest decreases in comments were in BRM (85% fewer) and ARM (50% fewer). Comments on training on other weapons and on taking special courses remained about the same despite the fewer number of leaders responding to the “what did you need but didn’t receive” question. Of interest, is that the number of Armor and Engineer leaders who commented that special courses would have helped doubled (compared to those who indicated they received this type of training prior to deployment). Within ARM, the greatest drop in comments (75%) was in the SRM-reflexive fire category, whereas LRM, stress shoots, optics/lasers, and night fire comments remained relatively constant.

Many “desired training” comments were simply that more live-fire exercises were needed, beyond qualification. Interestingly, simulation as a means of preparation for combat was cited only rarely. A similar number of comments on the use of simulation as preparation for combat did not exist. A few simulation comments did come from FS branches, plus Aviation and Engineers. These results clearly indicated that leaders believed live-fire training, not the current marksmanship simulators, was the best means of pre-deployment marksmanship training.

Finally, despite the fact that Infantry leaders indicated they received the most extensive pre-deployment training, they also provided the most comments on training that was needed, but

not received. It is not possible to adequately explain this finding, but it is consistent with the deployment backgrounds of Infantry leaders. The frequent comments that more ammunition was needed, although expected, appeared to be due to a concern that Soldiers should really become comfortable with their weapon, know it inside and out, and have confidence in firing in many different situations. The reason for more ammunition was not simply because Soldiers liked to shoot.

What Should be in a Marksmanship Skills Proficiency Test?

One of the two major research objectives was to determine what should be in a non-live fire Marksmanship Skills Proficiency Test, applicable to all Soldiers. Leaders were asked which skills should be required of Soldiers in their branch/MOS. The branch results were analyzed to determine which skills were common requirements. Leaders were also asked to cite any additional requirements, whether a written knowledge test should be included, whether the test was a good idea, and to provide any additional comments on a test.

Skill identified. Overall, 80% of the leaders indicated a Marksmanship Skills Proficiency Test was a good idea. These comments were very positive, e.g., *a great idea, do it as soon as possible, apply to all MOSs*. The percentage of leaders who favored a test was highest for Engineers (98%) and lowest for Operations Support and Air Defense leaders (59%).

Three analytic approaches (branches weighted equally, branches weighted according to population size, and a cluster analysis approach) were used to identify skills for the test. The results of these approaches converged on a set of nine skills plus a Knowledge Test.⁴

- Perform Immediate Action
- Correct a Malfunction
- Perform Function Check
- Clear Weapon
- Assemble/Disassemble Rifle
- Demonstrate Firing Positions (leaders recommended testing additional positions beyond the three currently in qualification)
- Change Magazine (leaders recommended testing tactical and rapid magazine changes)
- Determine Sight Adjustment
- Load Magazine
- Knowledge Test (leaders recommended including questions on zeroing and ballistics)

Leaders did not suggest any additional skills but, as indicated in the list above, did cite important suggestions on the level of difficulty for testing some of the skills. Specifically, firing positions should include more than the three in the current qualification course (kneeling supported and unsupported, and kneeling unsupported), and tactical and rapid magazine changes should be tested. The knowledge test should include items on zeroing with/without optics,

⁴ The six skills excluded from the test were: boresight optic, determine dominant eye, demonstrate use of a sling, mount/remove optic, boresight aiming light, and mount aiming light.

weapon functions, and ballistics but should not be highly technical. Leader comments on the value of the knowledge test are best summarized by one who said “*Soldiers know what their weapon does, but not how.*” Another leader distinguished between weapon proficiency (e.g., how to put on an optic) and marksmanship proficiency (ability to shoot a weapon). Given this distinction, most of the leader comments were on weapon proficiency. It is fairly clear that these comments on why certain skills should be included were based on the leaders’ deployment experiences.

Test implementation and concerns. Although 80% of the leaders favored the test, some indicated why they thought such a test was not necessary: the skills are covered by good units during PMI, many skills are in the Expert Infantryman Badge test, it would create more paperwork, and/or it could waste valuable training time. Leaders also commented on how such a test should be implemented. Primary comments were on quality control procedures, ensuring the test did not become a “check the box” event, who should develop such a test, who certifies test procedures and results, and training NCOs so they can prepare Soldiers for a test. Some leaders from different branches expressed concern that not all NCOs know how to perform the tasks themselves and therefore doubted the ability of the NCO Corps to properly train the skills. Leader suggestions regarding the execution of such a test should be seriously considered prior to implementation. These comments are reported in full in Appendix H, and warrant the attention by decision-makers.

Leaders’ Perception of Selected Sets of Marksmanship Skills

Although a primary objective was to link skill clusters to groups of branches in order to define marksmanship requirements, selected sets of live-fire skills were examined separately. Summarized here are high priority skills for all branches, firing in combat gear, firing from different firing positions, and firing at targets at different distances.

High priority skills. What skills were high priority?⁵ Seven skills met this criterion. Five were not unexpected (e.g., zero at 25 m, hit targets at 25 to 100 m and from 100 to 200 m, zero sight organic to unit, acquire targets in sector of fire). However, quite unexpected was that the ability to hit moving targets was also in this set of high priority targets – marked by at least 70% of leaders within each branch with a weighted branch average of 85% of the leaders. The requirement for Soldiers to hit moving targets clearly reflected the leaders’ deployment experiences. This requirement is not supported with current FORSCOM range facilities nor is it part of the current qualification course, although moving targets are incorporated in some marksmanship simulators. Similarly the requirement to discriminate among targets (friendly, enemy, noncombatants) reflected the leaders’ combat experience and is not part of marksmanship qualification.

Firing in combat gear. Firing in combat gear tends to be a controversial topic, particularly whether gear should be used when zeroing and during qualification. The leaders split into two groups with the primary difference being whether Soldiers should zero in gear. In general, leaders advocated shooting in gear and qualifying in gear. But only a very low

⁵ High priority defined as at least 80% of leaders based on a weighted average of the leader responses according to the size of the branch in the Army population.

percentage of Infantry and Armor leaders specified that Soldiers should zero in gear (marked by 45% of these leaders vs. at least 60% of other leaders). In responding to open-ended questions, Armor and Infantry leaders indicated that zeroing in gear did not result in a good zero.

Firing positions. Firing from different positions did not show a distinct pattern among branches as was the case with combat gear. In contrast, leaders from all branches indicated that positions, in addition to those in current qualification, were important skills for their Soldiers. Infantry and Engineer leaders marked the most firing positions as requirements for their Soldiers. All nine positions in the questionnaire were each marked by at least 80% the Infantry leaders; seven of the nine were each marked by at least 80% of the Engineer leaders. Being able to fire from behind/around barricades, while standing, or while moving were frequently marked requirements by all leaders. These skills were consistent with leader comments regarding pre-deployment training, possible changes to the current qualification course-of-fire, and skills to include in a more complex course-of-fire.

Target distance. Lastly, the distances at which Soldiers should engage targets showed a distinct breakdown by the three branch groups which were identified, with distinctions drawn at 200 m and less, 200 to 300 m, and beyond 300 m. In general, leaders in all branches viewed hitting close-in targets (within 200 m) as critical with the weighted branch average being over 80%. However, there was a clear distinction between Infantry and the other leaders on firing from 200 to 300m, with 90% of the Infantry leaders indicating this was a requirement, compared to 73% of the other MFE branch leaders (excluding Air Defense and Aviation) plus Mechanical Maintenance leaders, and 64% of leaders from the branches with the fewest marksmanship requirements. Of note here is that targets at 250 m and 300 m are in the current qualification course. One can only speculate on the possible reasons for not stressing targets in this range band: combat requirements for these branches may be primarily that of self-protection and therefore may not require shooting much beyond 200 m, more training time is needed for Soldiers to be proficient at these distances, a few leaders commented that longer distance engagements would be acceptable if their Soldiers had optics, leaders indicated that Soldier confidence in hitting targets at these distances is often low and therefore they do not fire, etc. Others argued that firing at these distances enables Soldiers to acquire a level of proficiency that transfers positively to closer targets.

The farthest engagement range posed in the questionnaire was firing beyond 300 m. Consistent with the trend just described, only Infantry leaders marked this as a requirement (67% vs. less than 50% by other leaders). The Infantry response was consistent with the leaders' pre-deployment training comments and it was the primary branch that had long-range marksmanship training. A few leaders remarked that targets at these distances were to be engaged by Snipers and/or Soldiers with crew-served weapons and therefore long-range marksmanship was not required for the typical Soldier. Training Infantry Soldiers to be competent in long-range marksmanship has been stressed by Infantry School Commandants (Burba, 1987; Cavezza, 1990), and is an integral part of the SDM courses.

What are the Marksmanship Requirements for Each Branch/MOS?

Addressing this question was the second primary objective of the research. A major finding was that clear distinctions existed among the branches regarding their marksmanship requirements.

To determine branch requirements, the leaders' responses to whether each of 44 marksmanship skills was a requirement for Soldiers in their Branch/MOS, as well as the comments by leaders to all the open-ended questions, were considered. Leader comments often explained why they felt strongly about selected skills and the level of marksmanship proficiency they perceived as necessary for their Soldiers, and therefore provided additional justification for many of the recommendations in this report. Clearly it was not reasonable to propose an Army-wide marksmanship strategy where each branch/MOS would be trained on a unique set of skills, and the best solutions for linking clusters of skills to groups of branches were not always well-defined by the data. The recommendations are based on the data and the best judgments of the author, and therefore are presented as considerations for military leaders.

Branch groups. Three major groups of branches emerged based primarily on the number of marksmanship requirements. There was a common, minimum set of skills for all branches, and for a subset of branches this set was all that was required. At the second tier or group of branches, additional requirements were specified. From this second tier, the final group was identified, which had even more requirements. Of interest, is that the groupings did not break out according to the familiar "combat arms," "combat service," and "combat service support" division of branches. The three branch groups were:

- **High Requirements:** Infantry. Infantry had the most requirements.
- **Moderate Requirements:** Engineer, CBRN, Military Police, Armor, Field Artillery, and Mechanical Maintenance
- **Low Requirements:** Aviation, Air Defense Artillery, Operations Support (Military Intelligence and Signal), Ammunition, Transportation, and Quartermaster. These branches had the fewest requirements.

The Infantry was distinct in terms of requirements. Infantrymen could clearly be distinguished as "combat shooters." A higher percentage of these leaders marked more skills as requirements than leaders in the other branches. They also provided more detailed comments on what skills their Soldiers needed and the desired proficiency levels. Their deployment training was more extensive and diverse. The leaders often had very strong comments about the need for Infantrymen to be very proficient marksmen. The Moderate Requirements branch group had five branches from the MFE functional category (Armor, Engineers, Field Artillery, CBRN, and Military Police) plus Mechanical Maintenance from the FS functional category. The Low Requirements group had seven branches spread across the functional categories: from MFE – Aviation and Air Defense; from OS – Military Intelligence and Signal, from FS – Ammunition, Quartermaster and Transportation.

Linking marksmanship requirements to these groups resulted in the following relationships to clusters of marksmanship skills:

- Skills required for all branches (19 skills),
- Additional skills (12 skills) required by both the High (Infantry) and Moderate Requirements group of branches (Armor, Engineer, Field Artillery, CBRN, Military Police, and Mechanical Maintenance),
- Additional skills for individual branches: Infantry (7 skills) with Military Police and CBRN each assigned a unique skill, and
- Skills not required for any branch (4 skills)

In general, the guideline for linking a skill to a branch or group of branches was that at least 70% of the leaders marked it as a requirement. However, there were occasional deviations from this guideline.

Common skill requirements. The skills identified for all branches overlap greatly with current marksmanship skills taught in BRM for new Soldiers. These basics were:

- zeroing (with organic sight, with back-up iron sights, at 25 m),
- shooting at close-in targets (within 200 m),
- firing from the firing positions in the current qualification course⁶,
- hitting single and double targets (also in the current qualification course),
- acquiring targets in the sector of fire, and
- changing magazines and reacting to malfunctions.

The three additional skills identified in this common set, but not a part of current qualification or BRM, are more challenging:

- discriminating among targets (friendly, enemy and noncombatants),
- hitting moving targets, and
- firing from alternate positions, primarily from obstacles, but also standing.

Based on the open-ended comments, these requirements clearly reflected the leaders' deployment experiences. These additional skills add an increased level of difficulty to the common skill requirement set. Although existing training ranges can accommodate barricades or other obstacles for firing positions, they cannot be easily or cheaply modified to present moving targets. Moving targets can be incorporated in simulations, but leaders did not recommend this as a training solution.

The other difference from current common skills was that shooting targets beyond 200 m (in current rifle qualification) was not perceived as a common requirement by leaders from the seven branches with the fewest requirements (marked by an average of 64% of these leaders⁷), and thus was not included in the "common" set. Considering all branches, the leaders stressed short-range marksmanship skills as more important during combat operations. It is noted that excluding shooting beyond 200 m from the common skill set was based on the responses to the objective questions in the questionnaire and is not totally consistent with the leaders' written responses to whether qualification should change. At least 75% of the leaders indicated qualification should not change. Thus important issues remain regarding whether limiting common skills to engaging targets from 200 m and closer should be the minimum requirement.

⁶ Questionnaire did not distinguish between kneeling supported and kneeling unsupported.

⁷ The guideline for skill requirement was 70% of leaders in a branch.

It is important to note that the common skill requirements do not refer to what is typically called marksmanship fundamentals, e.g., proper sight picture, trigger pull, ability to group and zero. All these are fundamental to mastering the common set of skills cited here.

Additional skills for the branches with high and moderate requirements: Most MFE branches (Infantry, Engineer, Armor, Military Police, Field Artillery, CBRN) and Mechanical Maintenance. These additional skills were more challenging than those required by all branches and included:

- use of gear in training and in qualification,
- confirming zero at a distance,
- hitting targets from 200 to 300 m,
- firing from additional alternative positions (from windows, under stress, while moving, ability to change firing position when needed),
- using common night equipment (NVGs/ALs, and TWS when equipment is assigned to unit/MOS/duty position) to engage targets, and
- using different firing modes (semi and auto).

The alternative firing positions cited above were grouped together, allowing some flexibility in skills trained based on the unit mission.

Many of these skills are currently specified in either BRM or ARM. However, only hitting targets at 200 to 300m is specifically incorporated in rifle qualification. Based on leader comments, firing in gear for qualification seems to depend on unit standing operating procedures. Interestingly, deployment training with night firing optics/devices was mentioned only infrequently by the leaders in branches where this equipment is issued. The current FM has a scenario for firing with NVG and ALs (DA Form 7489-R, FM 3-22.9, DA, 2011). However, firing with the TWS requires that targets are heated; a capability that may not exist in units. Firing from even more positions could be accomplished relatively easily, except for firing while moving which has safety issues.

Infantry specific skills. The seven additional skills specified only for the Infantry branch were generally more demanding. They would require even more resources for training and sustainment, as well as skilled trainers. These skills were:

- hitting targets at precise locations (one and multiple locations),
- engaging targets more quickly,
- hitting three targets in the sector of fire,
- adjusting sight picture for conditions such as wind,
- firing with non-dominant hand, and
- hitting targets beyond 300 m.

Skill in hitting targets at distances beyond 300 m bears special examination, as decisions regarding this requirement for Infantry should consider the history of marksmanship training and qualification from World War I to the current time, as well as the diversity of shooting skills required by Infantrymen in Iraq and Afghanistan. As pointed out by Ehrhart (2009), from World War I through World War II the Infantryman was trained on precision shooting at mid- to long-range distances (300 to 600 yds [457m]). The pop-up targets on current ranges did not exist and training was accomplished on KD ranges, which still exist on Army posts although in limited

numbers. In addition, Soldiers had weaponry that enabled engagements beyond 300 m. Ehrhart also documented that the Infantry needed both close-in and long-range shooting skills during World War II, depending on the combat theater. The qualification course that emerged after that war, documented in FM 23-5 for the M1 rifle (Departments of the Army and Air Force, 1951; see also Dyer et al., 2010), included some of the skills in the current qualification course, such as engaging targets in a short period of time (quick fire). But target distances ranged from 35 yds to 500 yds, differing from the current minimum and maximum ranges of 50 and 300 m. Also distinctive were the slow fire, precision fire requirements at bulls-eye targets (100 to 500 yds), multiple rounds fired at a target, and ten distinct firing positions (e.g., from a barricade, window, roof top) which required Soldiers to move from one firing lane to the next to shoot.

With the introduction of the TRAINFIRE course (DA, 1957; McFann, Hammes, & Taylor, 1955) in the 1950s (which influenced the current qualification course), invention of the pop-up targets, target exposures at 50 to 300 m, one round per target, changes in weaponry (Ehrhart, 2009), changes in doctrine (Ehrhart, 2009), and the need to have large numbers of marksmen, the emphasis turned to volumes of fire at close distances. Liwanag (2006) summarized the distinction as “TRAINFIRE trains large numbers of Soldiers quickly and cheaply. KD and competition produce precision riflemen” (p. 31). Short-range volume fire was emphasized over precision fire. Dubis and Cooley (1994) argued that KD firing is the essential means for development of marksmanship skills, because of the feedback it provides on trajectory, zero, wind and performance. This information is not available with 25 m zeroing and qualification. As such they stated it is not “expendable.” (p. 44). It is noted that LOMAH systems also provide similar feedback.

Thus in the World War I to World War II period Soldiers in an Infantry squad had a weapon that enabled long-range precision fire, typically taught on KD ranges. Changes in weaponry (from the M1D sniper rifle with telescopic sight to the M14/M16 assault rifle/M4 carbine) and squad organization left the current Infantry squad without the capability for mid- to long-range precision fire (300 to 500 m) (Ehrhart, 2009). Dubis and Dooley (1994) stated that the introduction of the M16 assault rifle, with its relatively flat trajectory out to 300 m, the development of a 25 m battlesight zero, the adoption of other weapon systems which reduced the need for Infantry to fire at maximum distance, and training costs (time, ammunition, range infrastructure) all contributed jointly to the demise of KD shooting as the means of developing marksmanship skill and facilitating long-range marksmanship skills.

However, the need to have this capability and train Infantry in such skills did not disappear after World War II. In fact, Liwanag (2006) noted that at the time TRAINFIRE was introduced, Gen Wyman, Commanding General of the Continental Army Command, stated there would always be a need for extended-range precision rifle fire and a cadre of experts to give quality instruction. The stated plan was to have Infantry trainees receive TRAINFIRE in basic training. Selected riflemen were to take a two-week advanced course in precision-shooting. Soldiers were to be given the opportunity to participate in competition where the best would be selected for sniper training. But, with Vietnam, “manpower requirements demanded large numbers of riflemen from the institutional training base and the Army needed to train thousands of draftees quickly. KD and competition shooting were viewed as expensive and irrelevant for

enhancing combat skills and survivability at jungle-engagement distances.” (Liwanag, 2006, p. 28).

Later, two Commanding Generals of the Infantry School commented on training Infantrymen to shoot beyond 300m. In 1987 MG Burba noted that the fielding of the M16A2 rifle triggered an examination of shooting beyond 300m for basic Infantry trainees. However, based on test results, which apparently involved shooting out to 800 m, the conclusion was that a substantial increase in resources, primarily more training time, would be required, and that such training would not be cost effective. In 1990, MG Cavezza noted that a new Infantry marksmanship program was designed to include precision fire at distances out to 500 m and eventually the M16 rifle would be equipped with an optical sight for engagements at these longer distances. However, the current marksmanship program for new Infantry Soldiers does not include shooting beyond 300 m although Soldiers have the M68 close combat optic.

The concept of the SDM for Infantry units was introduced more recently and was in effect during the deployments to Iraq and Afghanistan applicable to this report. A Soldier assigned as a SDM is trained to engage targets out to 500m. The intent is to fill the gap between the ranges for which most Infantry are trained (300m and less) and Sniper ranges (600 m and beyond). The fact that the additional SDM deployment training the leaders documented in the questionnaire as either received or needed for Iraq/Afghanistan reinforces the need for a longer-range capability in the rifle squad/platoon and supports the requirement for Infantry to shoot beyond 300 m.

The historical picture just described explains why the stress on long range, precise marksmanship skills for the Infantry decreased substantially after World War II. Yet the need for Infantrymen to have these skills has not vanished. The primary issues regarding making this skill a requirement include, at a minimum, training resources (time, ranges, ammunition, expert trainers), and weapon design.

Remaining skills. Military Police leaders strongly desired more training on switching weapons (rifle/carbine and pistol) quickly and proficiently. CBRN leaders were concerned about firing with protective masks in chemical and other potentially toxic environments.

Four skills were not viewed as priority requirements for unit training and sustainment:

- unaided night fire,
- use of sling,
- zeroing at distance --initially, and
- zeroing in gear.

Except for zeroing in gear, no rationale was provided for these priorities in the leaders’ responses. The following possible explanations are offered for each skill. Unaided night fire was probably not viewed as important because of the extensive availability of NVGs and ALs. It is not clear why training in proper use of a sling was a low priority for leaders. Two reasons are offered. Perhaps use of a sling was viewed as an integral part of many engagement tasks and therefore did not warrant special training. On the other hand the sling could have been viewed simply as a means for carrying the weapon and its application to shooting was not thoroughly

understood. Initial zeroing at distance was probably viewed as too difficult and likely to waste ammunition. However, if using LOMAH for this purpose is shown to be effective, this could become a requirement or a commonly executed skill. Lastly, zeroing in gear was designated as not required based primarily on the very low percentage of Infantry and Armor leaders who selected this skill as they felt that it did not result in a good zero.

Qualification and Other Courses-of-Fire

Although the dominant response was not to change the current qualification, many leaders suggested changes which warrant consideration. The primary areas cited were more firing positions, incorporating malfunctions and rapid magazine changes, varied targetry (moving targets, unpredictable targets, etc.), and the target distance with leader comments split at whether Soldiers should fire beyond 200 m. Except for shooting within 200 m, these suggestions imply a more complex course, but they were made by only about 25% of the leaders. Comments on standards were that they were too easy for Soldiers in active duty units. Leaders also acknowledged that units often trained to the test (qualification), and therefore the skills demanded of Soldiers were often limited to the nature of the test and additional marksmanship skills were not gained.

The questionnaire did not have a checklist of skills to include in qualification. Thus if leaders had been queried about the applicability to qualification of the common, minimum set of skills presented previously, it is not known whether the leaders would agree that all these skills should apply to qualification. So the question remains regarding whether changing qualification is the best way to increase Soldier competency with certain skills.

Regarding a more complex course-of-fire, only one branch, Infantry, had a substantial proportion of leaders favoring such a course than those who did not. Even in response to the question on the qualification course, Infantry leaders commented that Infantry needed a more complex course as well. Comments by all leaders on skills to stress in such a course were very similar to the suggestions on how to change qualification. Specific skills cited were: more firing positions, shoot moving targets, shoot while moving, discriminate hostile/nonhostile targets, short range and long range skills, fire with non-dominant hand, weapon transition, react to malfunctions, rapid magazine change, and able to shoot under stress. Obviously, more training resources, including time, would be required for these skills. Why a more complex course? The primary reasons were that leaders believed Soldiers needed such skills to react to different combat situations and they would benefit greatly from the increased confidence that would result.

The current CFF scenario (DA, 2011), favored by 80% of the leaders, includes some of the more complex skills cited by the leaders. Specifically CFF includes firing from barricades, reacting to malfunctions, changing magazines, and engaging all targets in a sector of fire. It also requires more than one shot per target and makes the firer aware of ammunition availability, placing additional stress on good shooting and good decision-making.

There was another trend in the data that implied leaders felt that marksmanship scenarios and training on more than qualification were needed – not necessarily as a “qualification” course

but scenarios that allow Soldiers to learn other skills and gain confidence, and for leaders to have good feedback on the proficiency of Soldiers in their units. Specifically, from a post-deployment perspective, the leaders cited the need for more live fire. However, the type of live-fire scenarios desired was not cited, perhaps because they elected not to say or because they were unable to specify exactly what was needed.

One consideration in this regard is the need to have feedback on the location of rounds relative to a target, such as that provided via KD and LOMAH ranges. Only Infantry leaders cited the use of KD ranges for deployment training; 82% of the leaders surveyed favored a range system such as LOMAH. Current ranges, in part a result of TRAINFIRE, simply provide hit or miss data, but as Liwanag (2009) stated “it was never intended to be, nor is it suitable for, providing the feedback necessary for diagnosing problems, correcting a faulty zero, or gradually refining or sharpening a beginner’s shooting ability” (p. 29). As discussed previously with regard to Infantry shooting at long distances, both KD and LOMAH ranges provide this feedback, essential to the development and sustainment of basic and advanced skills. Marksmanship training scenarios developed for such ranges would seem to fill a gap in current training strategies in some units which consist primarily of the BRM skills of zeroing and qualification, and would allow a more accurate assessment of firer expertise. Such scenarios would also help to train and sustain basic marksmanship skills, which are highly perishable even in the Basic Training (BT)---Advanced Individual Training (AIT) environment (Cobb, James, Graves & Wampler, 2009a, 2009b). Cobb et al. found that the “go” percentage on rifle qualification upon graduation from AIT had declined substantially from BT, to a level that considerable retraining would be needed in units to bring Soldiers back to their initial qualification scores in BT.

Trainer-the-Trainer Issues

As the questionnaire did not include a specific item on the quality or quantity of unit marksmanship trainers, information bearing on this issue was gleaned from the answers to the open-ended questions. Regarding pre-deployment training, leaders indicated that units either sought or designed special courses to ensure Soldiers had the needed marksmanship skills. Some courses / training were provided by the unit, but typically they were specialized Army courses or private courses. It appears that units perceived they did not have the necessary or desired internal trainer expertise. The other trainer comments came in response to meeting the training challenges associated with a Marksmanship Skills Proficiency Test and other requirements. The primary concerns were that NCOs were not sufficiently knowledgeable, not current with training techniques, and/or not proficient with new equipment such as sighting systems. This may not be a recent concern, as Wilson (1971) referenced comments by leaders in the 1970s who stated that a major barrier to good marksmanship was the incompetence of marksmanship instructors, both officers and NCOs.

Overall, most comments on this topic came from Infantry leaders and secondarily from leaders from the group of branches with the second most requirements. No to few comments on trainer quality came from leaders from the branches with the fewest marksmanship requirements. Although Infantry typically are the most skilled marksmen and presumably the best trainers,

Infantry leaders recognized the importance of skilled marksmen at all levels in their units. Their comments on trainer quality are consistent with this objective.

It is not a simple task to train marksmanship skills. As one leader said, *“Being able to shoot is easy, being able to teach others how to is the hard part.”* What is the solution to increasing the quality of trainers? A few leaders offered solutions: USAMU mobile training teams, add the appropriate training in the NCO professional development courses (WLC, ALC, and SLC), and have a designated marksman NCO in the unit. With respect to a training strategy that embeds and supports a program to increase the quality of unit trainers, there remains the issue of which branches should benefit from such a program. Should all branches be treated the same, or should a “train-the-trainer” policy be tailored to the marksmanship requirements associated with each branch? These are policy decisions raised by the findings, but are beyond the scope of the report to recommend solutions.

Marksmanship Resources

Marksmanship strategies must also consider resources to train and sustain skills. Answers to some questions provided insights regarding the leaders’ view of live-fire ranges, special targets on the ranges, live ammunition, software to create firing scenarios, and marksmanship training simulators/simulations. As indicated previously the response to having a LOMAH system on ranges was very favorable, and some leaders indicated prior experience with such a system when they were drill sergeants. Although LOMAH is used to confirm Soldiers’ zero setting in basic training, a LOMAH system on standard ranges in Army units could also serve as a KD range.

A frequent comment was on upgrading or improving the targets on ranges. The need to train Soldiers to hit moving targets at close distances has already been mentioned. Other suggestions included having targets that were unpredictable, multiple timed targets to create stress, targets that allow discrimination between hostile and nonhostile individuals, being able to fire at different elevations, and having targets that require more than one round to go down. These comments were consistent with the reaction that deployment training should be made as realistic as possible.

Leaders indicated more ammunition and more time on ranges were needed for deployment training. These comments were not unexpected and are consistent with comments to other questions regarding training combat-related skills not covered by the qualification course.

Although marksmanship simulators are one way of reducing ammunition costs, use of simulators for deployment training was not cited frequently (in comparison to the magnitude of live-fire comments). Nor was use of simulations perceived as being highly beneficial after being deployed. Final comments on simulations by a few leaders were mixed, both positive and negative. Leader comments did not provide good indications of where leaders thought simulations could best be used. Of interest is that in a review of small arms training strategies and suggestions for improving these strategies, Crowley, Hallmark, Shanley, and Sollinger (2014) stated that the EST should be leveraged to a greater extent than currently for both preliminary and advanced marksmanship training. Another focus of their review was to propose

considerations on how small arms ammunition could be reduced. One strategy was to use simulation more or in different ways. But the authors also stressed that any proposed new strategy must be evaluated to ensure that any savings which might occur did not result in lower levels of proficiency.

Implications of the Branch Groups-Skill Clusters and Some Persistent Marksmanship Issues

Likelihood of close fight with dismounted forces distinguished the branches. A major inference from the data was that the marksmanship skills associated with the three branch groups reflected the likelihood that Soldiers in a branch would encounter a close fight with dismounted forces, in both offensive and defensive situations. Close fights with dismounted forces are most likely with the Infantry, and Infantry leaders clearly indicated their marksmanship requirements were more extensive than leaders from the other branches. At the other extreme, were seven branches where marksmanship skills primarily serve a self-protection or self-defense role in most combat missions and with the least likelihood of direct encounters with enemy dismounted forces. Leaders in these branches indicated the fewest marksmanship requirements. Between these two extremes were six branches where close combat with dismounted forces can occur, but the frequency and intensity of these encounters can vary with the mission.

Marksmanship strategies are complicated if one accepts the concept that somewhat different clusters of skills are valid or appropriate for different branch groups. Three levels of expertise were identified with a cluster of skills common to all. The next level built upon this foundation and included additional skills. The last level was also cumulative, including the other two levels and adding other skills. These different levels of proficiency impact marksmanship resources, among them ammunition, trainer expertise, training time, range capabilities, simulation capabilities, and tests of marksmanship proficiency. These three levels also imply that a unit training strategy should be progressive, allowing for the development and sustainment of more complex marksmanship skills, as new Soldiers will most likely only be trained on the common set of skills in basic training.

Common skill requirements could impact qualification. As stated previously, the common skills that were identified do not agree completely with the current common set of skills, defined in this report as the marksmanship qualification course-of-fire in the Marksmanship FM (FM 3-22.8, DA 2011) and other PMI skills.

Some major issues arise from these differences with current practice. First is the impact on training resources if the qualification course changed based on the common set of skills identified from the questionnaire results. Second is whether these skills are necessary and sufficient for all branches including those branches with the fewest requirements. Third is whether qualification should be the same for initial entry Soldiers and for Soldiers in active duty units as is currently the case. Or should qualification in Initial Entry Training differ from qualification in units? Should qualification serve a different purpose in these two settings? Leaders commented that units often train to the test, so the assessment of marksmanship

proficiency based on qualification plays a critical role in unit training. It is not the purpose of this report to answer these issues, but some considerations regarding each are made.

Potential impacts on qualification. How might qualification change if hitting moving targets and firing from additional positions were included? Possibly more than 40 rounds would be required to have a reliable test of proficiency. Historically, Army marksmanship qualification has not been restricted to 40 rounds (Dyer et al., 2010). Prior to Change 3 of the 1983 version of the marksmanship FM (FM 23-9), the number of rounds for qualification was greater than 40. In fact as Dyer et al reported, the immediately preceding version of the FM specified 140 rounds for qualification. In all prior versions of the FM back to 1940 the number of rounds was greater than 100. The exact reason for the substantial decrease in rounds in the 1983 version was not explained in the marksmanship FM, but many of the initial training units at this time were using just the first phase of the qualification course which had 40 targets (Dyer et al., 2010).

Would a qualification course incorporating moving targets, other firing positions, magazine changes and unexpected malfunctions be more difficult than current qualification? Research on CFF, a more complex course of fire, (Dyer, et al., 2010, 2012, see also DA, FM 3-22.9 Change 1, 2011) indicates that this would probably be the case. Dyer et al. (2012) found that without sufficient training in the ARM phase of marksmanship training, initial entry training Soldiers performed poorly on CFF. CFF involves the integration of multiple skills – firing from barricades, more than one round to “kill” a target, unexpected malfunctions, unexpected magazine changes (out of ammunition), arrays of targets which require firers to decide which targets should be engaged first (the most dangerous targets), etc. Twice as many Soldiers who had the necessary training time and skill preparation scored at or above the criterion CFF score compared to those who did not have this training. Although this research was with new Soldiers, the results should apply to Soldiers in active duty units; that is, if qualification was revised to become more complex or difficult, units who execute the requisite preparatory training will perform better than those who do not. The findings showed what type of training led to proficiency and that more training time and ammunition were necessary to achieve the desired level of proficiency.

Moving targets. The need for Soldiers, particularly Infantry, to be skilled in hitting moving targets is not new. Wilson (1971) presents a history from 1955 to 1971 of the need to train Infantry Soldiers to hit moving targets, moving target research, and training recommendations. Despite the repeated recognized need and recommendations regarding implementing moving target training for Infantry, recommendations were never implemented (e.g., TRAINFIRE in the 1950s and an Infantry School study group in the early 1970s). Wilson presented two possible reasons for the failure to implement such training – training experiments did not substantiate effective training procedures and the engineering problems in developing moving target systems. Wilson also noted that at the time his paper was written, other countries had some form of moving target training, albeit with rudimentary moving targets such as a man-pulled trolley or a gravity powered cart.

There is limited research on the how to best train Soldiers to hit moving targets, and it seems that what has been executed has not definitely shown an effective means of training this important skill (e.g., Wilson, 1971). Hunt, Parish, Martere, Osborne, and Evans (1987)

examined several different training strategies with Infantry trainees. These strategies involved various combinations of training devices and simulations as skill preparation. They also compared the techniques of tracking and trapping in the training (see DA, 2011). Results on the live-fire moving target range at Fort Benning did not strongly favor any approach and the improvement was not substantial, but one approach did significantly help Soldiers who had low pre-test scores.

Experimentation is occurring with robotic moving targets (Marine Corps, 2013). Although this is an expensive solution to the targetry problem, it does offer considerable flexibility as the targets can be moved from range to range, work in different types of terrain, move at different speeds and angles, etc.)

Does the common set best meet the core skill requirements for branches with the fewest requirements? Whether the common set of skills is the appropriate set of skills for branches with the fewest marksmanship requirements must be answered by the appropriate decision-makers. However, as stated previously, leader responses are not totally consistent on the requirement to fire beyond 200 m. Moving target skills, firing from other positions, discriminating between targets, reacting to malfunctions and changing magazines were consistently viewed as important skills. However, they would require more training time and support resources.

Implications for qualification in IET and the unit. Currently the rifle qualification course-of-fire is the same for IET Soldiers (in training) and the more seasoned Soldiers in active duty units. If the common set of skills identified in this report were applied to the qualification in IET, training resources would increase, new training exercises would be required, and there is the question of whether Soldiers could meet the desired level of proficiency given the time allotted for marksmanship training. It is noted that some of the skills in the common set are now classified as advanced rifle marksmanship skills.

If qualification did not change from what it is currently in IET, but unit qualification corresponded more closely to the common set of skills identified here, then there would be an additional training burden placed on units. Units would then be responsible for the initial training on a subset of the skills in qualification.

Relationship between marksmanship skill requirements identified by leaders and Strategies in Training Commission. Does Strategies in Training Commission (STRAC, DA, 2014) support the marksmanship requirements? DA Pam 350-38 (2014), commonly referred to as the STRAC pamphlet, specifies the munitions required to support weapon system training strategies at the individual, crew, and collective levels. The strategies drive range resources and upgrades as well as TADSS (training aids, devices, simulators and simulations). With regard to marksmanship training, resources allocated in STRAC in conjunction with the training and doctrine literature (marksmanship FM 3-23.9, DA, 2011) greatly impact the flexibility units have in marksmanship training and skills that are trained.

With regard to M16/M4 qualification, STRAC (DA, 2014) is primarily a one-size-fits-all approach for the branches covered in this research. Across branches, where units/individuals in

active components have the same equipment (e.g., day and night sights/devices, EST 2000), the qualification requirements are the same. For active duty units, ammunition is allocated for zeroing, practice qualification and qualification every six months on the primary sight with annual qualification on a secondary sight, if available (e.g., CCO or ACOG as primary and iron sight as secondary). Semi-annual night fire qualification with the TWS and AL/NVG is specified for individuals who are assigned these optics/devices. Part of the TWS allocation involved rounds for field fire. If units have the EST 2000, they are to conduct unassisted or unaided night fire and CBRN (protective mask) firing semi-annually with the EST 2000; otherwise these are to be live-fire events.⁸ The courses-of-fire associated with these events are defined in FM 3-23.9 (DA, 2011). It is noted that night fire and protective mask firing are considered advanced marksmanship skills.

Thus STRAC allocates ammunition for qualification on night optics/ devices for individuals assigned these systems, regardless of branch. Although the questionnaire findings were that such firing was viewed as essential by leaders in a subset of branches, STRAC does provide ammunition for all branches/unit where this equipment is assigned. Of interest is that two of the four skills which were not perceived as requirements by the leaders as a whole, unassisted/unaided night fire and protective mask firing⁹, were specified to be fired with simulation capabilities, when available. One aspect of zeroing not covered by STRAC is confirmation of zero at distance.

The remaining issue is whether STRAC allocates ammunition for the training and sustainment of advanced marksmanship skills. A review of the STRAC requirements for the M16/M4 (DA, 2014) revealed that only Infantry had rounds allocated for advanced rifle marksmanship, but all branches did have ammunition allocated for collective M16/M4 events, although the allocation was greatest for Infantry and Combat Engineers. In summary, STRAC does not support many of the advanced marksmanship skills which leaders believed were requirements for their Soldiers (e.g., hitting moving targets, firing from different positions, firing in gear, reflexive fire/short range marksmanship skills, training on CFF, long range marksmanship skills). Also it is difficult to determine whether the Infantry allocation of a total of 200 rounds per Soldier for ARM is sufficient for that branch.

New and persistent issues raised by the findings. Cited here are some issues raised by the findings. Some are relatively new. Others are not new but have not been addressed with marksmanship training strategies. Admittedly, many are not easy to resolve.

Addressing branch differences. In general, it is acknowledged that Army branches have different marksmanship requirements. Yet, the extent and nature of those differences was not known in any great detail, particularly with regard to combat operations. A more complete understanding of those differences emerged from the leaders' responses to the questionnaire. The findings provide a solid basis for identifying critical operational requirements, an essential starting point stressed by Crowley, et al. (2014). The long-term issues become how to best address the different requirements: what resources are needed, the best training strategies and exercises, level of expertise needed, etc.

⁸ The current version of the EST does not support firing with aiming lights and thermal sights.

⁹ CBRN leaders specified firing with protective mask as a requirement for their Soldiers.

Qualification course-of-fire. The Army's qualification course has changed with time (see Dyer, et al, 2010). The findings reported here indicate there is merit to re-examining qualification again.

Need for progressive training. Although leaders specified the requirements for Soldiers in their branch, it was also clear from their responses that often the basic model of zero and qualify was not sufficient to address those requirements; that a training gap existed. There was no strategy in units that allowed for the progressive development of marksmanship skills and/or testing of those skills. However, this should be possible (Crowley, et al., 2014).

Moving target skills. The need for Infantry Soldiers to engage moving targets has been a long-standing requirement, but has never become an integral part of the Infantry's marksmanship training. However, engaging moving targets was a high priority for all branches, which makes this skill assume even more importance. Good training solutions to this issue are complicated primarily because of the lack of (and expense of) moving targetry on ranges, and lack of a solid research base that informs the Army of how best to train these skills, whether with live-fire or simulations.

Infantry: Long range marksmanship. A recurring issue for the Infantry branch is enabling Soldiers to engage targets at distances beyond 300 m. These skills were stressed in the past, but now are primarily reserved for the SDM. However, Infantry leaders acknowledged that units tried to ensure that Soldiers acquired these skills (through special Army or private courses) prior to deploying to Afghanistan, a recognition that more than just the SDM needed these skills.

Marksmanship simulations. Although simulations are integral to training on the Army's major weapon systems, simulation was not a predominant or favored mode of marksmanship training cited by the leaders. No specific question was asked about current marksmanship simulators, so the primary reasons for this finding is not known but bears further investigation.

Expert trainers. For a substantial period of time (Ehrhart, 2009; Wilson, 1971), the Army population has changed from what it was in the early 1900s. Soldiers no longer come from a population of hunters. Thus trainers cannot "refresh" rifle skills or build upon them in training the Army service rifle. This slows the speed at which Soldiers learn marksmanship skills and contributes to a failure to maintain recently learned, often not mastered, skills. Thus the trainers, many of whom do not have extensive marksmanship experience, are faced with training challenges. Leaders often commented on the need to increase the technical skills of the NCOs responsible for training as well as increase their ability to train others. They praised highly the trainers in the special courses they attended prior to deployment. Achieving the desired level of skill expressed by the leaders surveyed cannot be accomplished without expert trainers, and the mechanism for ensuring trainer expertise bears attention by Army decision-makers.

Conclusions

The question of “what do leaders and Soldiers in the field say?” is often asked when the Army considers new equipment, revises policies, or updates training approaches and strategies. The research described here obtained reactions from small-unit leaders on marksmanship skill requirements as input to revisions to unit marksmanship training strategies. The leader sample from fourteen major Army branches was overwhelmingly combat veterans of Iraq and Afghanistan. Consequently, the responses reflected operational requirements as experienced in those combat theaters. To the extent that future operational situations parallel the Iraq and Afghanistan conditions, then the perspectives and recommendations of the leaders regarding marksmanship skills should continue to apply.

The findings showed commonalities in branch/MOS requirements as well as distinct differences with regard to very specific skills. Considerable agreement was found on skills to include in a Marksmanship Skills Proficiency Test. There were also common live-fire requirements, but clusters of other skills related to distinct groups of branches. Infantry leaders clearly delineated the most diverse and difficult marksmanship requirements, consistent with the Infantry’s operational mission. However, the differences in requirements identified for the three branch groups that emerged from the data, if accepted by decision-makers, present challenges to developing and resourcing marksmanship training strategies. In addition, among the common live-fire requirements were skills that are not currently trained such as hitting moving targets, firing from more positions, and target discrimination, which will require additional resources and expert trainers. The findings also revealed recurring marksmanship issues on skills such as the distance at which Soldiers should be trained to hit targets, hitting moving targets, and firing from a variety of positions which have been addressed and then removed from previous marksmanship field manuals.

Beyond the leaders’ reaction to marksmanship requirements, they also provided valuable information on their pre-deployment training, reactions to current courses-of-fire, and trainer issues. Any reader who is interested in a specific area (e.g., deployment training) should read the corresponding appendix in this report. The leaders’ detailed comments are presented there and will give the reader a better understanding of the substance of their comments.

The findings identified marksmanship skills which are not currently emphasized, but definitely warrant consideration. The findings provide decision-makers a foundation for creating future marksmanship strategies and can assist in decisions regarding resource allocations. The following areas were identified as warranting attention by decision-makers:

- How to best address the identified branch differences in marksmanship requirements
- Whether the current qualification course of fire should be changed,
- Development of progressive unit training strategies for branches to ensure required advanced marksmanship skills are trained, sustained, and resourced,
- Addressing recurring issues such as training Soldiers to hit moving targets, not just Infantry but other branches, and the distance at which targets should be engaged, and
- Determining the best means of ensuring expert trainers in units with the required technical expertise and the ability to train others.

References

- Burba, E. H. (1987, March-April). Commandant's notes. *Infantry*, 77 (2), 2-3.
- Cavezza, C. J. (1990, November-December). Commandant's notes. *Infantry*, 80 (6), 1-2.
- Combined Arms Command, Center for Army Lessons Learned, *Army Officer Functional Areas*. October 21, 2013. Retrieved from <http://usacac.army.mil/cac2/call/theasurus/toc.asp?id=3798>
- Chung, G. K. W. K., Delacruz, G. G., de Vries, L. F., Bewley, W. L. & Baker, E. L. (2006). New directions in rifle marksmanship research. *Military Psychology*, 18, 161-179.
- Cobb, M. G., James, D. R., Graves, T. R., & Wampler, R. L. (2009a). *Summary of findings and recommendations from the warrior task skills retention assessment* (ARI Study Note 2009-02). Arlington, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. (DTIC No. AD B353 612)
- Cobb, M. G., James, D. R., Graves, T. R., & Wampler, R. L. (2009b). *Warrior task skills retention assessment* (ARI Study Report 2009-03). Arlington, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. (DTIC No. AD B353 611)
- Crowley, J. C., Hallmark, B. W., Shanley, M. G., & Sollinger, J. M. (2014). *Changing the Army's weapon training strategies to meet operational requirements more efficiently and effectively* (Rand Report 448). Santa Monica, CA: Rand Arroyo Center. Retrieved from http://www.rand.org/pubs/research_reports/RR448.
- Department of Defense. (2012). *2012 Demographics: Profile of the military community*. Retrieved from http://www.militaryonesource.mil/12038/MOS/Reports/2012_Demographics_Report.pdf
- Department of the Army. (1957, September). *Rifle Marksmanship course TRAINFIRE I* (FM23-71), Washington, DC: Author.
- Department of the Army. (1999). *Light cavalry gunnery* (FM 17-12-8). Washington, DC: Author.
- Department of the Army. (2003). *Bradley gunnery* (FM 3-22.1). Washington, DC: Author.
- Department of the Army. (2010). *Individual and crew live-fire prerequisite testing* (TC 3-20.21-1). Washington, DC: Author.
- Department of the Army. (2011). *Rifle marksmanship M16-/M4-series weapons* (FM 3-22.9, Change 1). Washington, DC: Author.

- Department of the Army. (2014). *Standards in training commission* (DA Pam 350-38). Washington DC: Author.
- Departments of the Army and Air Force. (1951). *U.S. Rifle Caliber .30, M1* (FM 23-5). Washington, DC: U. S. Government Printing Office. (Source. 90th Infantry Division Preservation Group. <http://www.90thidpg.us/Reference/Manuals/Index.html>)
- Dubis, G. A., & Dooley, C. O. (1994, March-April). Known-distance marksmanship: The key to increasing combat performance, *Infantry*, 84(2), 41-44.
- Dyer, J. L. (2015). *Marksmanship requirements from the perspective of combat veterans - Volume II: Summary report* (ARI Research Report 1989). Arlington, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.
- Dyer, J. L., Lipinski, J. J., Schaefer, P. S., Goodwin, G. A., James, D. J., & Dlubac, M. D. (2012). *Assessment of new marksmanship strategies in 2010*. (ARI Research Report 1955). Arlington, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. (DTIC No. AD A559 371)
- Dyer, J. L., Salvetti, J. D., Vaughan, A. W., Beal, S. A., Blankenbeckler, P., & Dlubac, M. (2005, May). *Reduced exposure firing with the Land Warrior system* (ARI Research Report 1834). Arlington, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. (DTIC No. AD A435 129)
- Dyer, J. L., Schaefer, P. S., Bink, M. L., James, D. R., Wampler, R. L., & Dlubac, M. D. (2010). *Soldier performance on a new marksmanship course-of-fire* (ARI Research Report 1924). Arlington, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. (DTIC No AD A523 973)
- Dyer, J. L., Smith, S., & McClure, N. R. (1995). *Shooting with night vision goggles and aiming lights* (ARI Research Report 1678). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. (DTIC No. AD-A297 284)
- Ehrhart, T. P. (2009). *Increasing small arms lethality in Afghanistan: Taking back the Infantry half-kilometer*. (Monograph). School of Advanced Military Studies, U.S. Army Command and General Staff College, Fort Leavenworth, KS. (DTIC No. AD A512 331)
- Ellison, I W. (2005). *Current inadequacy of small arms training for all military occupational specialties in the conventional Army* (Master's Thesis, Army Command and General Staff College, Fort Leavenworth, KS). DTIC No AD A436524
- Evans, K. L., Dyer, J. L., & Hagman, J. D. (2000). *Shooting straight: 20 years of rifle marksmanship research* (ARI Special Report 44). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. (DTIC No. AD-A384 197)

- Human Resources Command. (2013, October 22). Enlisted and Officer tabs. Retrieved from <https://www.hrc.army.mil/Enlisted/Enlisted%20Personnel%20Management%20Directorate>
- Hunt, J. P., Parish, J. R., Martere, R. F., Osborne, A. D. & Evans, K.L. (1987). *The development and evaluation of moving target engagement training programs with the M16A1 rifle*. (ARI Technical Report 758). Alexandria, VA: U. S. Army Research Institute for the Behavioral and Social Sciences. (DTIC No. AD-A190 847)
- Kish, L. (2004). *Statistical design for research*. Hoboken, NJ: Wiley-Interscience.
- Klein, R. D. & Tierney, T. J. (1978). *Analysis of factors affecting the development of threat oriented small arms training facilities* (ARI Technical Report 78-B2). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. (DTIC No. AD B026 375)
- Liwanag, D. (2006, July-August). Improving Army marksmanship: Regaining the initiative in the infantryman's half kilometer. *Infantry*, 95(4), 26-32.
- Marine Corps. (2014, July 25). *Marine Corps hones moving target shooting skills*. Retrieved from <http://www.military.com/daily-news/2013/09/27/marine-corps-hones-moving-target-shooting-skills.html>
- McFann, H. H., Hammes, J. A., & Taylor, J. E. (1955). *TRAINFIRE I: A new course of fire in basic rifle marksmanship* (HumRRO Technical Report 22). Washington, DC: Human Resources Research Office, Human Research Unit Nr 3, CONARC, Fort Benning, GA. (DTIC No. AD 89 606).
- Overall, J. E., & Klett, C. J. (1972). *Applied multivariate analysis*. New York: McGraw Hill.
- White, C. R., Carson, J. L. & Wilbourn, J. M. (1991). Training effectiveness of an M-16 rifle simulator. *Military Psychology*, 3(3), 177-184.
- Wikipedia. (2013, November 12). *Cluster analysis*. Retrieved from http://en.wikipedia.org/wiki/Cluster_analysis.
- Wilson, B. E. (1971). *Moving personnel targets and the combat Infantryman*. Unpublished master thesis, Command and General Staff College, Fort Leavenworth, KS. (DTIC No. AD 733 384)

Appendix A

Branches and MOSs in Sample

Table A1

Number of Respondents by Branch (Officers) and Career Management Field/ Military Occupational Specialty (NCOs)

Branch - Career Field	Officer/MOS	Description	# of Respondents
Maneuver, Fires and Effects Functional Category			
Infantry	Officer		104
	11B	Infantryman	129
	11C	Indirect Fire Infantryman	13
Engineer	Officer		14
	12B	Combat Engineer	51
	12C	Bridge Crew Member	4
	12H	Construction Engineering Supervisor	14
	12N	Horizontal Construction Engineer	35
	12P	Prime Power Production Specialist	1
	12V	Concrete & Asphalt Equipment Operator	1
	12Y	Geospatial Engineer	2
Field Artillery	Officer		3
	13B	Cannon Crew Member	53
	13D	Field Artillery Automated Tactical Data System Specialist	15
	13F	Fire Support Specialist	28
	13M	Multiple Launch Rocket System/High Mobility Artillery Rocket System EM Crew Member	20
	13P	Multiple Launch Rocket System Operational Fire Direction Specialist	18
	13R	Field Artillery Firefinder Radar Operator	5
	13T	Field Artillery Surveyor/Meteorological Crew Member	1
Air Defense Artillery	Officer		1
	14E	Patriot Fire Control Enhanced Operator/Maintainer	17
	14G	Air Defense Battle Management System Operator	7
	14H	Air Defense Enhanced Early Warning Operator	3
	14S	Air and Missile Defense Crew Member	2
	14R	Patriot Launching Station Enhanced Operator/Maintainer	6
Aviation	Officer		1
	15D	Aircraft Powertrain Repairer	4
	15E	Unmanned Aircraft Systems Repairer	1

Branch - Career Field	Officer/MOS	Description	# of Respondents
	15G	Aircraft Structural Repairer	5
	15H	Aircraft Pneudraulics Repairer	4
	15K	Aircraft Components Repair Supervisor	7
	15P	Aviation Operations Specialist	1
	15R	AH-64 Attack Helicopter Repairer	8
	15S	OH-58D Helicopter Repairer	8
	15T	UH-60 Helicopter Repairer	12
	15U	CH-47 Helicopter Repairer	13
Armor	Officer		44
	19D	Cavalry Scout	68
	19K	M1 Armor Crewman	58
Military Police	Officer		70
	31B	Military Police	50
	31D	Criminal Investigative Special Agent	12
	31E	Internment/Resettlement Specialist	3
Chemical, Biological, Radiological, Nuclear (CBRN)	Officer		37
	74D	Chemical, Biological, Radiological, Nuclear (CBRN) Specialist	34
Operations Support Functional Category			
Signal	Officer		1
	25N	Nodal Network Systems Operator/Maintainer	12
	25U	Signal Support Systems Specialist	4
Military Intelligence	Officer		5
Force Sustainment Functional Category			
Transportation	Officer		3
	88H	Cargo Specialist	7
	88K	Watercraft Operator	3
	88L	Watercraft Engineer	1
	88M	Motor Transport Operator	103
	88N	Transportation Management Coordinator	16
Ammunition	89B	Ammunition Specialist	37
	89D	Explosive Ordnance Disposal (EOD) Specialist	36
Mechanical Maintenance	91A	M1 Abrams Tank System Maintainer	13
	91B	Wheeled Vehicle Mechanic	97
	91C	Utilities Equipment Repairer	8
	91D	Power Generation Equipment Repairer	35
	91E	Allied Trades Specialist	9
	91F	Small Arms/Artillery Repairer	5
	91G	Fire Control Repairer	2

Branch - Career Field	Officer/MOS	Description	# of Respondents
	91H	Track Vehicle Repairer	4
	91K	Armament Repairer	12
	91L	Construction Equipment Repairer	23
	91M	Bradley Fighting Vehicle System Maintainer	16
	91P	Artillery Mechanic	5
	91S	Stryker Systems Maintainer	5
	91X	Mechanical Maintainer Supervisor	23
	91?		1
Quartermaster	Officer		1
	92A	Automated Logistical Specialist	17
	92F	Petroleum Supply Specialist	4
	92G	Food Service Specialist	70
	92M	Mortuary Affairs Specialist	4
	92R	Parachute Rigger	2
	92S	Shower/Laundry and Clothing Repair Specialist	3
	92W	Water Treatment Specialist	1
	92Y	Unit Supply Specialist	43
Electronic	94D	Air Traffic Control Equipment Repairer	1
Maintenance	94E	Radio & Communications Security (COMSEC) Repairer	3
	94F	Computer Detection Systems Repairer	1
	94M	RADAR Repairer	1
	94R	Avionic & Survivability Equipment Repairer	1
	94S	PATRIOT System Repairer	2
	94X	Senior Missile System Maintainer	1
	94Y	Integrated Family of Test Equipment (IFTE) Operator/Maintainer	1
Multifunctional Logistician	Officer		8
Adjutant General	42A	Human Resources Specialist	2
Finance	Officer		5
Other^a			
Health Services	68W	Health Care Specialist	1
Civil Affairs	Officer		2

^a These three individuals were included with Force Sustainment in the data summaries.

Sources:

Center for Army Lessons Learned (2013). Army officer functional areas. Retrieved from <http://usacac.army.mil/cac2/cal/thesaurus/toc.asp?id+3798>.

US Army Human Resources Command: Enlisted MOS Structure Chart (as of 1 January 2014). Retrieved from <https://www.hrc.army.mil/Enlisted/Enlisted%20Personnel%Management%Directorate>.

Appendix B

Background Information on Leaders

Table B1

Descriptive Statistics on Deployments to Iraq and Afghanistan by Rank

Deployments	Rank				
	First Lieutenant	Captain	Sergeant	Staff Sergeant	Sergeant First Class
# Deployments to Iraq					
Mean	0.55	0.64	1.41	1.69	1.99
Mode	0	0	1	2	2
Median	0	1	1	2	2
SD	0.77	0.71	1.04	1.09	1.13
Min-Max	0-2	0-3	0-6	0-7	0-7
# Deployments to Afghanistan					
Mean	0.74	0.76	0.64	0.78	0.87
Mode	1	1	0	0	0
Median	1	1	0	1	1
SD	0.57	0.77	0.80	1.01	1.17
Min-Max	0-2	0-4	0-6	0-7	0-7

Note. Sample size for each rank is in Table 2.

Table B2

Descriptive Statistics on Total Number of Deployments by Branch/Career Field

Branch/Field	Mean	Mode	Median	SD	Min-Max	% With No Deployments
MFE						
Infantry	2.53	1, 2	2	1.77	0-11	1%
Engineer	2.31	2	2	1.19	0-9	2%
Field Artillery	2.11	2	2	1.16	0-5	8%
Air Defense	0.85	0	1	0.94	0-3	44%
Aviation	2.89	2	2	1.97	0-10	2%
Armor	2.10	2	2	0.95	0-5	2%
Military Police	1.46	1	1	0.89	0-4	9%
CBRN	1.59	1	1	1.38	0-6	18%
OS						
Signal	2.12	2	2	0.78	1-4	0%
Military Intelligence (<i>n</i> = 5)	1.80	2	2	0.45	1-2	0%
FS						
Transportation	2.42	3	2	1.26	0-7	5%
Ammunition	2.16	2	2	1.35	0-8	4%
Mechanical Maintenance	2.35	2	2	1.20	0-7	6%
Quartermaster	2.24	2	2	1.32	0-7	10%
Branches with 11 or fewer members in the sample						
Electronic Maintenance (<i>n</i> =11)	2.00	3	2	1.61	0-5	27%
Multifunctional Logistician (<i>n</i> =8)	1.87	1	1.5	1.12	1-4	0%

Branch/Field	Mean	Mode	Median	SD	Min-Max	% With No Deployments
Finance (n =5)	1.60	1	1	0.89	1-3	0%
Adjutant General (n = 2)	6.00	3, 9	6	4.24	3-9	0%
Civil Affairs (n = 2)	2.00	1, 3	2	1.41	1-3	0%
Medical (n = 1)	4.00	4	...	...	...	0%

Note. Complete information on sample sizes is in Table 2. The sample size of any branch with less than 11 respondents is cited in this table (B2).

Table B3
Descriptive Statistics on Years in Service by Branch/Career Field

Branch/Field	Mean	Mode	Median	SD	Min-Max
MFE					
Infantry	8.37	4	8	3.74	3-20
Engineer	9.17	4,10	9	4.18	3-20
Field Artillery	8.34	6, 7	7	4.08	3-20
Air Defense	8.26	6	8	2.94	3-17
Aviation	9.68	8, 9, 11	9	3.07	5-18
Armor	8.04	5, 8	8	3.08	3-18
Military Police	8.80	4	7	4.79	3-20
CBRN	9.49	4	8	5.27	3-20
OS					
Signal	10.41	6	9	4.94	5-20
Military Intelligence (n = 5)	14.60	20	13	5.13	9-20
FS					
Transportation	11.10	9, 10	11	3.88	3-20
Ammunition	9.23	6	8	3.44	5-20
Mechanical Maintenance	10.74	10	10	3.77	3-20
Quartermaster	10.46	8,10	8	3.79	4-20
Branches with 11 or fewer members in the sample.					
Electronic Maintenance (n = 11)	10.00	8, 9	9.0	5.62	3-20
Multi-functional Logistician (n=8)	8.50	4, 6	6.5	5.29	4-20
Finance (n = 5)	8.60	Multiple	9	2.97	4-12
Adjutant General (n = 2)	13.00	10, 16	13	4.24	10-16
Civil Affairs (n = 2)	17.00	14,20	17	4.24	14-20
Medical (n = 1)	10.00	10	...	..	...

Note. Complete information on sample sizes is in Table 2. The sample size of any branch with less than 11 respondents is cited in this table (B3).

Table B4

Descriptive Statistics on Number of Deployments to Iraq and Afghanistan by Branch/Career Field

Branch/Field	Mean	Min - Max	SD	% With No Deployments
IRAQ				
MFE				
Infantry	1.38	0 - 7	1.23	31%
Engineer	1.48	0 - 5	1.10	21%
Field Artillery	1.38	0 - 4	1.05	26%
Air Defense	0.74	0 - 3	0.90	48%
Aviation	1.37	0 - 5	0.94	16%
Armor	1.61	0 - 5	0.95	12%
Military Police	0.83	0 - 4	0.79	36%
CBRN	0.97	0 - 5	1.06	37%
OS				
Signal	1.00	0 - 3	0.93	35%
Military Intelligence (<i>n</i> = 5)	0.60	0 - 1	0.55	40%
FS				
Transportation	1.87	0 - 6	1.16	10%
Ammunition	1.51	0 - 4	1.03	16%
Mechanical Maintenance	1.79	0 - 5	1.09	12%
Quartermaster	1.49	0 - 4	1.10	21%
Branches with 11 or fewer members in the sample				
Electronic Maintenance (<i>n</i> =11)	1.36	0 - 3	1.12	27%
Multi-functional Logistician (<i>n</i> = 8)	1.12	0 - 2	0.83	25%
Finance (<i>n</i> =5)	0.80	0 - 2	0.84	40%
Adjutant General (<i>n</i> = 2)	5.00	3 - 7	2.83	0%
Civil Affairs (<i>n</i> = 2)	1.50	1 - 2	0.71	0%
Medical (<i>n</i> = 1)	2.00	2 - 2	...	0%
Total Iraq	1.45	0 - 7	1.11	22%
AFGHANISTAN				
MFE				
Infantry	1.15	0 - 7	1.21	27
Engineer	0.83	0 - 5	0.84	38%
Field Artillery	0.73	0 - 4	0.75	41%
Air Defense	0.11	0 - 1	0.32	89%
Aviation	1.52	0 - 7	1.64	29%
Armor	0.49	0 - 4	0.65	57%
Military Police	0.63	0 - 2	0.64	46%
CBRN	0.62	0 - 5	0.88	56%
OS				
Signal	1.12	0 - 3	0.99	29%
Military Intelligence (<i>n</i> = 5)	1.20	1 - 2	0.45	0%

Branch/Field	Mean	Min - Max	SD	% With No Deployments
FS				
Transportation	0.55	0 - 3	0.68	55%
Ammunition	0.66	0 - 6	0.99	53%
Mechanical Maintenance	0.55	0 - 5	0.73	55%
Quartermaster	0.75	0 - 7	0.97	48%
Branches with 11 or fewer members in the sample				
Electronic Maintenance (<i>n</i> =11)	0.64	0 - 3	1.03	64%
Multi-functional Logistician (<i>n</i> = 8)	0.75	0 - 3	1.04	50%
Finance (<i>n</i> =5)	0.80	0 - 1	0.45	20%
Adjutant General (<i>n</i> = 2)	1.00	0 - 2	1.41	50%
Civil Affairs (<i>n</i> = 2)	0.50	0 - 1	0.71	50%
Medical (<i>n</i> = 1)	2.00	2 - 2	...	0%
Total: Afghanistan	0.74	0 - 7	0.94	46%

Note. Complete information on sample sizes is in Table 2. The sample size of any branch with less than 11 respondents is cited in this table (B4).

Appendix C

The Marksmanship Questionnaire

Marksmanship Questionnaire: M4 Carbine and M16 Rifle¹⁰

The Maneuver Center of Excellence (MCoE) is examining future unit marksmanship training strategies with the M4 carbine and the M16 rifle. As part of that analysis and decision-making process, we are requesting input from active-duty leaders regarding the criticality of marksmanship skills for Soldiers in their branch or specialty.

We are surveying commissioned officers and noncommissioned officers in the Army who are taking career and advanced leader/senior leader courses.

There are three parts to this questionnaire:

- Basic information on your military background
- Marksmanship skills proficiency test
- Marksmanship skill requirements

Your participation in this data collection is voluntary, and you may choose at any time not to participate. There is no penalty for choosing not to participate.

Your input is confidential. We will not identify you or attribute comments to any particular respondent. Your name or other personally identifiable information will not be included in any briefing or report.

However, the questionnaire is not anonymous in that we may want to follow-up on responses that require clarification.

The questionnaire should take about 15 to 20 minutes of your time.

Do not submit any classified information when answering the open-ended questions.

We value the feedback and input you can provide to the MCoE on the criticality of marksmanship skills for Soldiers in your branch or specialty. Thank you for your participation.

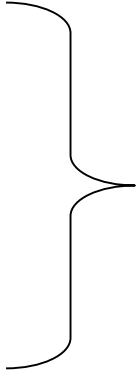
¹⁰ Branching in the questionnaire is highlighted in gray.

Military Background

1. In what type of unit did you serve before taking your current professional development course?

Instructions: For some individuals taking this questionnaire, the unit may be the one in which you are currently serving.

BCTs are listed first, followed by multi-functional units. Check the appropriate unit (check only one).

Armored BCT		<div>Branch to #2</div>
Infantry BCT		
Stryker BCT		
Special Operations Forces		
Fires Bde		
Aviation Bde		
Armored Cavalry Regiment		
Sustainment Bde		
Battlefield Surveillance Bde		
Maneuver Enhancement Bde		
TDA unit (e.g., TRADOC, Recruiting Command)		
Other unit		
	(branch to #1.1)	

[Branching item]

1.1 You checked “other unit” when you answered the previous question. Please indicate the type of unit you served in before taking your current professional course.

Instructions: Provide your answer in the space below.

(go to #2)

2. Are you a Commissioned Officer or Noncommissioned Officer?

Instructions: Check one category.

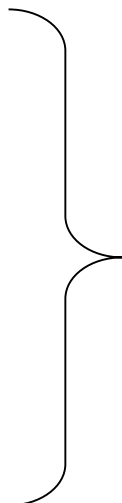
- | | |
|---------------------------|-----------------|
| - Commissioned Officer | [branch to 3.1] |
| - Noncommissioned Officer | [branch to 4.1] |

Officer Branching Items (questions 3.x)

3.1 What is your primary branch?

Instructions: Check one option. Branches are listed alphabetically.

Adjutant General
Air Defense Artillery
Armor
Aviation
Chemical
Engineer
Field Artillery
Infantry
Logistics
Military Intelligence
Military Police
Ordnance
Quartermaster
Signal
Transportation
Other



Go to # 3.2

Branch to 3.1.1

Instructions: Check only one option. Check "Other" if your primary branch is not listed, or if you have already attended your primary branch career course or are qualified in a functional area, and are now attending another primary branch career course).

Branching Item

3.1.1. You checked "other" when you answered the previous question on your primary branch. Please indicate your primary branch or functional area (if appropriate).

Instructions: Provide your answer in the space below.

[Go to #3.2]

3.2 In which Captains Career Course are you currently enrolled?

Instructions: Check the appropriate course. Courses are listed alphabetically.

Adjutant General
Air Defense Artillery
Aviation
Chemical (CBRN)
Combined Logistics
Engineer
Field Artillery
Maneuver
Military Intelligence
Military Police
Signal

At end of Officer branching –go to rank question #5

Noncommissioned Officer Branching Items (4.x.)

4.1 Noncommissioned Officers. What is your 3-digit MOS (e.g., 11B, 91A, 25B)?

Instructions: Please provide your 3-digit MOS in the space below.

4.2 Are you attending an Advanced Leader Course (ALC) or a Senior Leader Course (SLC)?

Instructions: Check the appropriate type of course.

ALC

Branch to 4.2.1

SLC

Branch to 4.2.2

[Branch to ALC list in 4.2.1, if checked ALC in Qtn 4.2]

4.2.1 Check the ALC course in which you are currently enrolled.

Instructions: Courses are listed alphabetically. The many ALC courses at Ft. Lee under the Army Logistics University have all have been combined under a single category of "Logistics ALC." If you are attending one of these courses, please check "Logistics ALC."

Check the appropriate course.

Adjutant General
Air Defense Artillery
Armor
Aviation
Chemical (CBRN)
Engineer
Field Artillery
Infantry
Logistics ALC
Military Intelligence
Military Police
Signal
Other ALC



Go to #5

Branch to 4.2.1.1

Branching Item for ALC

4.2.1.1. You marked "Other ALC" on the previous question. Please indicate the ALC course you are currently attending.

Instructions: Provide your answer in the space below.

End of branching if ALC student. Go to rank question #5.

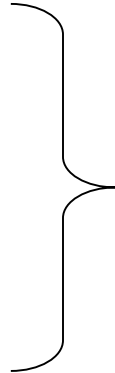
[Branch to SLC list in 4.2.2, if checked SLC in Qtn 4.2]

4.2.2 Check the SLC course in which you are currently enrolled..

Instructions: Courses are listed alphabetically. The many SLC courses at Ft. Lee under the Army Logistics University have all have been combined under a single category of "Logistics SLC." If you are attending one of these courses, please check "Logistics SLC."

Check the appropriate course.

Adjutant General
Air Defense Artillery
Aviation
Chemical (CBRN)
Engineer
Field Artillery
Logistics SLC
Maneuver
Military Intelligence
Military Police
Signal
Other SLC



Go To #5.

Branch to #4.2.2.1

Branching Item for SLC

4.2.2.1. You marked "Other SLC" on the previous question. Please indicate the SLC course you are currently attending.

Instructions: Provide your answer in the space below.

At end of NCO branching, go to Rank Question # 5

5. What is your rank?

Instructions: Check one option

First Lieutenant
Captain
Sergeant
Staff Sergeant
Sergeant First Class

6. Which of the following additional skill identifiers (ASIs) do you hold?

Instructions: Check all that apply.

A8
K8
R8
J3
G
V
None, do not have any of these ASIs

7. Please indicate the number of years you have been in the Army.

Instructions: Check the number of years.

3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

(Note – options shown as a vertical list in the questionnaire)

8. How many times did you deploy to Iraq?

Instructions: Check only one option.

0, 1, 2, 3, 4, 5, 6, 7

(Note – options shown as a vertical list in the questionnaire)

9. How many times did you deploy to Afghanistan?

Instructions: Check only one option.

0, 1, 2, 3, 4, 5, 6, 7

(Note – options shown as a vertical list in the questionnaire)

10. If you have been deployed, what marksmanship training in your unit contributed the most to your combat effectiveness?

Instructions: Please provide comments in the space below. If you have not been deployed or have no comments to make, type "none."

11. If you have been deployed, what additional marksmanship training in your unit would have increased your combat effectiveness?

Instructions: Please provide comments in the space below. If you have not been deployed or have no comments to make, type "none."

Marksmanship Skills Proficiency Test

The second part of the questionnaire is on a Marksmanship Skills Proficiency Test.

Armor and Bradley crews are required to take a Gunnery Skills Test (Tank Crew Gunnery Skills Test or Bradley Gunnery Skills Test) which consists of basic non-firing skills ranging from vehicle identification, to assembling a machine gun to laying the main gun on multiple targets. Scoring is on a Go/NoGo basis. This is administered prior to live-fire gunnery qualification.

A similar proficiency test concept (non-live-fire) is being considered for all Soldiers on their marksmanship skills. The next series of questions asks you to indicate the skills you believe should be in such a test for **Soldiers in your branch or Military Occupational Specialty (MOS)/Career Management Field (CMF)**, and add any other skills you believe should be included.

R1. Which of the following skills should be included in a Marksmanship Skills Proficiency Test.

Instructions: Check ALL the skills you believe should be on a proficiency test.

- ☐ Assemble/disassemble carbine/rifle
- ☐ Perform a function check
- ☐ Load a magazine
- ☐ Change magazines
- ☐ Perform immediate action
- ☐ Correct a malfunction
- ☐ Clear weapon
- ☐ Demonstrate correct firing positions: prone sptd, prone unsptd, kneeling
- ☐ None of the above

R2. Here are some additional skills. Which of these skills do you think should be included in a Marksmanship Skills Proficiency Test?

- ☐ Mount/remove optic
- ☐ Boresight an optic with borelight
- ☐ Mount an aiming light
- ☐ Boresight an aiming light
- ☐ Demonstrate proper use of sling for firing
- ☐ Determine dominant eye
- ☐ Determine sight adjustment given diagram of grouped, but not zeroed, rds on a 25m tgt
- ☐ None of the above

R3. Are there any other skills you think should be included on a Marksmanship Skills Proficiency Test?

Instructions: Please include any additional skills you think are important.

If you have none to add, type in "none."

R4. Do you think a test of basic marksmanship knowledge should also be included in a Marksmanship Skills Proficiency Test?

Additional Information: The test could include items on round trajectory, bullet dispersion as function of range, minute of angle, sight picture.

Instructions: Check "yes" or "no."

Yes

No

R5. Considering your answers to the previous four questions on a Marksmanship Skills Proficiency Test, do you think such a test is a good idea?

Instructions: Please mark "yes" or "no."

Yes

No

R6. Include any additional comments you have regarding a Marksmanship Skills Proficiency Test here.

Instructions: If you have nothing to add, please type "none."

Marksmanship Skill Requirements

The last part of the questionnaire asks you to identify the marksmanship skills which you believe **Soldiers in your branch or MOS/CMF should demonstrate proficiency (can perform without assistance, can meet unit standards)**. If you think a skill is required, the assumption is that Soldiers must be trained and sustained on this skill, and a marksmanship strategy should allocate the necessary resources for this training.

The marksmanship skills are grouped by seven categories. Skills incorporated in the current qualification (record fire) course are presented as well as other skills.

S1. ZERO WEAPON: Which zeroing skills should be proficiency requirements for Soldiers in your branch or MOS/CMF?

Instructions: Check all the skills that apply.

- ☐ Zero weapon with sighting system organic to unit
- ☐ Zero in combat gear
- ☐ Zero weapon with back-up iron sights
- ☐ Zero at 25 meters
- ☐ Confirm zero at distance
- ☐ Zero at distance (without firing at 25 meters first)
- ☐ None of the above

S2. FIRING POSITIONS: What firing positions should Soldiers in your branch or MOS/CMF be able to assume in order to effectively engage targets?

Instructions: Check all the positions that apply

- ☐ Fire from prone supported psn
- ☐ Fire from prone unsupported psn
- ☐ Fire from kneeling psn
- ☐ Fire from standing psn
- ☐ Fire around or from behind obstacles using appropriate firing psns (e.g., Kneeling, prone, standing)
- ☐ Fire from windows / enclosures
- ☐ Fire while moving
- ☐ Fire under stress
- ☐ Modify firing position to take advantage of man-made objects (e.g., firing under a car)
- ☐ None of the above

S3. HIT TARGETS AT DIFFERENT DISTANCES: At what distances should Soldiers in your branch or MOS/CMF be proficient in hitting targets?

Instructions: Check all the distances that apply.

- ☐ Hit targets at distances less than 25 meters
- ☐ Hit targets at 25 to 100 meters
- ☐ Hit targets at 100 to 200 meters
- ☐ Hit targets at 200 to 300 meters
- ☐ Hit targets at extended distances (beyond 300m)
- ☐ None of the above

S4. TARGET ACQUISITION SKILLS: Which target acquisition skills should be required of Soldiers in your branch or MOS/CMF?

Instructions: Check all the skills that apply.

- ☐ Acquire all targets in sector of fire
- ☐ Discriminate between friendly forces, threat personnel, and noncombatants
- ☐ Hit single timed targets in assigned sector of fire
- ☐ Hit two timed targets in assigned sector of fire
- ☐ Hit three or more timed targets in assigned sector of fire
- ☐ Hit targets with shorter exposure times than in current courses-of-fire
- ☐ None of the above

S5. PRECISION FIRING. Which precision-firing skills should be required of Soldiers in your branch or MOS/CMF?

- ☐ Adjust sight picture for firing conditions such as wind
- ☐ Hit target in a specified lethal zone (vs. just hitting a target)
- ☐ Hit a target in multiple-specified lethal zones
- ☐ Hit moving targets
- ☐ Hit targets at elevations above or below firer's position
- ☐ None of the above

S6. SPECIAL EQUIPMENT. Which marksmanship skills that use special equipment should be proficiency requirements for Soldiers in your branch or MOS/CMF?

Instructions: Check all the skills that apply.

- ☐ Hit targets in courses-of-fire (e.g., known distance, field fire) while wearing combat gear
- ☐ Qualify with weapon while wearing combat gear
- ☐ Hit targets at night using aiming lights and night vision goggles
- ☐ Hit targets at night with thermal weapon sight
- ☐ Fire with protective mask
- ☐ Fire with a sling
- ☐ None of the above

S7. OTHER SKILLS: Which of the following marksmanship skills should be proficiency requirements for Soldiers in your branch or MOS/CMF?

Instructions: Check all the skills that apply.

- ☐ Switching between primary and alternate weapons to engage targets
- ☐ Quickly change magazines during firing exercises
- ☐ Proficiency in reacting to malfunctions during firing exercises
- ☐ Hit targets at night with unaided eye
- ☐ Short range marksmanship skills (e.g., slow & rapid aimed fire controlled pairs, reflexive fire)
- ☐ Skill in using different firing modes: rapid semi-automatic fire, automatic or burst fire
- ☐ Flexibility to shoot with nondominant hand when needed
- ☐ None of the above

S8. Do you think Soldiers in your branch or MOS/CMF should be proficient in integrating multiple marksmanship skills such as that required in Combat Field Fire ?

Additional Information: Combat Field Fire is in Change 1 to FM 3-22.9, 2011, pgs.7-58 – 7-62). It integrates engaging multiple target in arrays where each target has a different exposure time, some targets require more than one hit, Soldiers must correct malfunctions and change magazines at unexpected times, Soldiers fire from barricades, and other skills

Instructions:

Check "yes" or "no" regarding whether such a course-of-fire is needed for Soldiers in your branch or MOS/CMF.

Yes

No

S9. What other skills do you think are required of Soldiers in your branch or MOS/CMF?

Instructions: Please list other skills you think are required.

If you have none to add, please type "none."

S10. Do you think the current qualification course-of-fire which is required of all Soldiers should be changed in any way?

Additional information: Changes could involve different firing positions, targets distributed at different distances, standards for marksmanship categories.

Instructions: Please indicate changes you think should be considered.

If you do not recommend any changes, please type in "none."

S11. Do you think a more complex marksmanship course-of-fire (more complex than qualification) should ALSO be required of Soldiers in your branch or MOS/CMF?

Instructions: If you think a more complex course is a good idea, indicate the core skills you think are important. If you think a more complex course is not needed, please type "No."

S12. Would a system which provides immediate feedback on the location of each target hit and miss to the firer at the firing line be beneficial for zeroing and training marksmanship skills?

Additional information: Such a system would provide more than the usual "hit/miss" feedback. It would graphically show the firer where the target was hit (e.g., head shot, center of mass) as well as the location of misses relative to the target (e.g., to the right or left of target, high right of target). It could also be calibrated to score hits within designated areas on a target (e.g., for zeroing at different distances). Because the feedback would be presented at firer's position on the firing line, firers would not need to walk down range during zeroing.

Instructions: Check "yes" or "no" regarding whether you think such a system would be beneficial.

Yes

No

S13. Please use this space for any other comments you have about the training of and resourcing the training of marksmanship skills in units.

Instructions: If you have no additional comments to make, please type "none."

Thank you for completing the questionnaire. We greatly appreciate your time and input.

Appendix D

Pre-Deployment Training

Question 10: If you have been deployed, what marksmanship training in your unit contributed the most to your combat effectiveness?

(If not deployed or have no comments, please type “none.”)

Question 10 Summary: Marksmanship Training Prior to Deployment

Who Commented

Overall, 67% of the leaders responded to this question, the highest percentage of leaders who responded to any of the open-ended question (see Table D8). In addition, leaders from each branch responded. The percentage of leaders responding in the major branches ranged from a high of 81% for Infantry to 41% for Air Defense Artillery. About half the leaders from the Transportation and Quartermaster branches responded, while the percentage was at least 61% from the other major branches.

Content of the Comments

Responses were diverse. This diversity meant that in summarizing the comments, responses by individual leaders were often placed in more than one category. For some leaders, the comments likely reflected everything they did, rather than what marksmanship training benefited them the most in combat operations. Most responses were placed in one of four major categories: basic rifle marksmanship (BRM) related skills, advanced rifle marksmanship (ARM) related skills, other weapons training, and special marksmanship courses. Responses in these four categories are tabulated in Table D1 and detailed in Table D2. Two other types of responses occurred: live-fire collective training and comments that did not fit any of the major categories. A summary of the live-fire responses and a sample of the “other” comments are provided.

Table D1

Number of Comments in Each Major Category for Question 10: Pre-Deployment Training

Major Category	# of Comments
BRM-Related Skills	(530)
• BRM (with no detail)	109
• Qualification	115
• Zeroing	30
• PMI	31
• EST/simulation	40
• Live-fire (excluding qualification and zeroing)	205
ARM-Related Skills (including LRM and SRM)	(603)
• ARM	94
• LRM	54
• Stress shoots	59
• Optics/Sight/Lasers	25
• Night fire	15
• SRM/CQM/CQB	192

Major Category	# of Comments
• Reflexive Fire	155
• Other ARM	9
Training on Other Weapons	(135)
• Weapons (general)	8
• Crew-served Weapons (specific)	68
• Pistol	23
• Gunnery – from vehicle or aerial platforms	36
Special Courses	(97)
• SDM	26
• AWG	11
• Sniper School /Sniper Training	6
• Other Courses	48
• Unit Designed Courses	3
• Private / Personal	3

Summary of Major Comments ¹¹

For some categories the comments were very brief. Selected comments which elaborated on the nature of marksmanship training are included in the summary below.

BRM-related Training

BRM-related training comments were placed in six categories: BRM-General, Zeroing, Qualification, Preliminary Marksmanship Instruction (PMI), EST/Simulator, and Live Fire Exercises. Each is described below and selected comments are presented to illustrate the categories. Leaders from most of the branches provided comments in each of the BRM subcategories.

- **BRM-general.** Most comments in this category were short, some leaders simply cited “BRM” with no detail.

Infantry

--The highest amount of marksmanship training had was on BRM to qualify for our weapon.
 --The best was basic marksmanship, hands down; but usually that was pushed forward resulting in lower qualification scores

- **Qualification.** Qualification comments often indicated that the only unit preparation was qualification.

Armor

--Marksmanship training was very minimal; the only training that was conducted was rifle qualification.-Stronger emphasis was put on redundant classes that served no purpose in preparing Soldiers for deployment

¹¹ Leader quotations were not edited for spelling, abbreviations, or grammatical errors.

--We never did a lot of marksmanship training. Just zeroed and qualified, and they said we were good. If anything we needed ALOT more marksmanship training.

CBRN

--Unit ensured all Soldiers were qualified on his/her weapon system

Field Artillery

--Received no marksmanship training other than going to a qualification range

Quartermaster

--Range training was minimal with 2 qualification dates with 2 separate units

Transportation

--None, the requirement was also to have one standard qual prior to deploying

- **Zeroing**

Armor

--We did a two hundred yard zero which was great. This led to great confidence in weapons during trainup and during deployment, though we never fired our weapons. Had we had to engage anyone, it would have been between 25-100m, so reflexive fire would have come into play.

Infantry

--Excellent zero standards aided by Sniper teams

- **PMI (Preliminary marksmanship Instruction).** With regard to PMI, there were general references to training the fundamentals and specific reference to malfunctions, dime-washer, trigger squeeze, etc.
- **EST/Simulator.** The primary simulator cited was the EST 2000. Of interest is that only one Infantry leader cited use of the EST 2000, which is the Army-approved marksmanship simulator. This data point was an outlier as typically Infantry leaders provided the most (or a very high number of) comments overall as well as within specific categories.

Aviation

--EST (plus qual): The EST while potentially an effective tool, is not being used to its full capabilities at my home station

--EST training before we deployed by a knowledgeable retired Special Forces Soldier

Mechanical Maintenance

--EST 2000 visual marksmanship training helped out a lot. Being trained on the EST 2000 also helped out greatly because I was able to teach my Soldiers on my marksmanship training

- **Live fire exercises.** The live-fire exercises subcategory had the most leader comments (38%). This category excluded qualification and zeroing. In some cases, little information was provided in the comments. Typical phrases were simply “live-fire” or

“range firing” or “going to the range” with no detail on the type of exercises or the objective of the live-fire training. It appeared that actual firing at “popup” targets on ranges was important for many MOSs, as some comments seemed to indicate firing on “pop-up targets” was uncommon, but was viewed as necessary to give Soldiers more experience with and confidence in their rifle. For Infantry leaders, shooting on a known distance (KD) course was stressed, constituting 67% of the Infantry leader comments in this subcategory. It was clear from the comments that units had additional ammunition prior to deployment to execute these live-fire exercises.

Ammunition

--Extensive amounts of Individual range time; Not just qualifying.

CBRN

--Actually firing at popup targets. Also unit had some very qualified NCOs and Soldiers who knew how to shoot. They helped others get through.

Engineer

--Ranges lots of ranges and lots of bullets to do different scenarios,

--Going to the ranges and shooting as often as we could to ensure everyone was comfortable with their assigned weapon

ARM-related Training

This category included the skills taught in ARM during initial entry training (i.e., Infantry OSUT), long range marksmanship skills, and short range marksmanship skills. Many of the comments indicated that long range skills were trained for deployments to Afghanistan, while short range skills (e.g., close quarter marksmanship) were trained for deployments to Iraq. Typically, leader comments were short phrases, e.g., “reflexive fire,” “stress shoots,” “night fire.”

- **ARM skills.** Many comments in this category (42%) were simply “ARM” with no additional detail, and one-third of all comments were provided by Infantry leaders. One specific skill cited by Infantry leaders was practice in shooting from different/unconventional/modified positions. High angle shooting or elevated shooting was also cited by Infantry leaders. Transition fire training (M4 to M9 or from a primary to a secondary weapon) was cited by Aviation and Military Police leaders. Infantry comments below illustrate the level of detail which some leaders provided and clearly illustrate different unit deployment training programs.

Infantry

--High angle training that allowed my Rangers to conduct KD and advanced marksmanship training in a mountainous environment shooting from 100 to 1000 meters at various angles. This replicated the mountainous terrain in AFG and allowed Rangers to properly understand the various holds that they must utilize when shooting at high angles.

--Understanding caliber of weapons, effects of elevation and wind on long shots; knowing what sight picture to use when using non-standard shooting positions

--Close range Non-Standard response drills, movement drills, ammunition management drills including immediate and remedial action, rapidly transitioning between various positions,

transitions from rifle to pistol. Any drill that requires decision making on the part of the shooter. Any drill that rewards the correct balance of speed and accuracy for a given shot. Drills that isolate trigger control are especially effective, since trigger control is 90% mental and 10% physical. These drills give the shooter a baseline to default to under conditions of stress.

-- For Iraq multiple shot drills. Getting guys in the habit of shooting a target till it's down and out. For Afgan using the ACOG correctly. Also teaching Joe to shoot the same guy as his battle buddy is shooting at to raise the chances that they will kill the target faster and more effectively.

- **Long Range Marksmanship (LRM) training.** LRM, defined as shooting beyond 300m, was cited with regard to deployment to Afghanistan. Infantry leaders were the most likely to cite LRM, constituting 50% of the LRM comments.

Engineer

--LRM in Afghanistan: The enemy liked to engage at the limits of their effectiveness to ensure the highest amount of survivability for themselves. With several LRM/SDMs in the patrol we were still able to put accurate and effective fires on the enemy at range.

--Using KD ranges & shooting distances past 300m because most of your targets are not going to be real close

Infantry

--Before I deployed to Afghanistan my unit conducted a Long Range M4 range which taught our Soldiers how to be more efficient with their optics on their weapons at longer ranges than what is provided at the normal qualification range

--Shooting under stressful conditions and LRM were the two training events that best contributed to our combat effectiveness. Average engagement distances for SAF were approx 500-800 meters, with engagements by enemy PKMs at over a kilometer being very common. The biggest source of frustration was our limited ability to return fire at these extended ranges.

- **Stress shoots.** The typical comment here was simply "stress shoots" or "stress fires."

Infantry

-- The stress shoot exercise contributed the most to combat effectiveness. It gave you a realistic feel of how it is to be under extreme stress and engage targets while in that feeling. During combat, this is how it feels to be under contact and is one of the most effective exercises in marksmanship training.

Military Police

--Stress fires were the most effective once basic marksmanship was achieved throughout the course of training.

- **Optics/sights/lasers.** The most commonly cited sights were the ACOG (advanced combat optic gunsight) and the M68 CCO (close combat optic). Laser aiming lights/illuminators, e.g., PEQ were also cited.
- **Night fire.** The fewest comments were regarding night fire, and no branch dominated in terms of the number of comments.

Two categories were created which directly reflected the words used by the leaders. These categories were: Reflexive fire (150 leaders), and short range marksmanship (SRM) skills (often

referred to as CQM for close quarters marksmanship or CQB for close quarters battle or SRM - 190 leaders). The distinctions among these categories are often blurred, although all skills relate to short range marksmanship skills. The decision was to simply report the terms the leaders used and to treat reflexive fire as separate category due to the large frequency of comments.

- **SRM/CQM/CQB.** There were comments from 15 branches. Leaders from the following branches had the most comments: Infantry (22%), Armor and Mechanical Maintenance (each 16%), and Engineer and Field Artillery (each 10%).

Engineer

--CQM training provided all engineer assets with the ability to be like that of an infantry squad. Basically self-sufficient in a fighting aspect

--Short Range Marksmanship in Iraq: The enemy TTPs in Iraq were different -- they wanted to get in close and ensure their way in to paradise. The ability to react quickly and effectively to near ambush with effective and lethal fires was not only necessary but key to bringing many of our boys home.

Field Artillery

--CQM is equally important as LRM

Infantry

--CQB. Close Quarters Battle is by far the most useful marksmanship training based off of my past missions sets. Our ability to conduct Direct Action Raids is what makes us who we are. Most of my engagements have been 30m or less.

--Extensive CQB training

- **Reflexive Fire (RF).** There were comments from 16 branches. The most frequent comments were leaders from Mechanical Maintenance (20%), and Engineer, Armor, Field Artillery and Infantry (each 12%).

Armor

--RF by far was the most effective marksmanship training the unit does

Engineer

--RF drills and magazine change drills were more effective training for our Soldiers to be fully functional and proficient with their weapons systems. These training drills proved effective and necessary once engaged by the enemy and the Soldiers being able to shoot and communicate without hesitation.

Infantry

--My first deployment after zero and qual would focus on reflexive/ stress firing. This would imply bounding, or something kind of movement while using the basics of reflexive fire and focusing on accurate firing on targets. All this while in full battle, making sure we were ready with full outside the wire gear.

Training on Other Weapons

Leaders from all major branches commented that pre-deployment training involved having Soldiers trained on crew-served weapons or trained on all weapons organic to their unit.

Specific weapons typically cited were the M249, M240B, and M2 .50 caliber machine gun. Pistol training was cited by leaders from 12 branches, but no branch dominated. Lastly, other comments related to shooting/gunnery from vehicle (e.g., Armor leaders) or aerial platforms (Aviation leaders).

Ammunition

--When deployed with [X Unit] multiple weapons training made me most combat effective as I became a gunner with an M2 and was also issued a shotgun for convoys. Having basic all around weapons knowledge that encompassed these weapons made me much more comfortable when thrown into that position.

Engineer

--Crew served – several scenarios where we qualified with every crew served wpn in the company

Infantry

--Crew served weapon cross-training on all company weapon systems

Mechanical Maintenance

--Crew served weapons training was the most important

Military Police

--We did the Marksmanship ranges with all of our weapons to include 249, 50 cal, Mark 19, M4.

Quartermaster:

--I was in a Special Forces unit for all 3 deployments. We did lots of marksmanship training on various weapons platforms. The training was very helpful for deployment readiness.

Special Courses

Leaders also indicated that units sent individuals to special training to increase their marksmanship skills. Squad designated marksmanship (SDM) training was cited, but it was not always clear whether this course was given by the unit or by the United States Army Marksmanship Unit (USAMU). The Asymmetric Warfighting Group (AWG) in the Army also provided training, but primarily to Infantry units (Infantry leaders provided 73% of the comments on AWG training). Leaders also indicated that units decided to send Soldiers to marksmanship courses including private courses/instructors and Special Forces training. In some cases, units paid to have expert instructors provide the training. Leaders provided very positive comments on these courses. Examples of courses cited are: Mountain Leader Advanced Rifle Marksmanship (MLARM) course provided by the 10th Mountain Division, USAMU, Eagle Marksmanship – Fort Campbell, Threat Management Group (TMG), Viking Tactical School (Aviation leaders), Tiger Swan, Ranger Regiment Program, Special Forces Urban Assault Course (SFUAC), Germany- Barnhart, SF, and Mid South Institute. Lastly, some units designed specific marksmanship training programs.

Collective Training

Approximately 215 leaders commented on the value of collective training events. These are not reported in detail because the questionnaire focused on individual, not collective, marksmanship training. The primary collective training events cited across the branches, accounting for 75% of the comments, were convoy live fire training, live fire shoot houses, military operations in urban terrain (MOUT) training, and squad/platoon live fire exercises (LFX). Leaders from each major branch indicated that at least one of these collective events was conducted during deployment training. Convoy live fire was the most common comment (28% of total), shoot houses and MOUT each accounted for 13%, and squad/platoon LFX had 21% of the total. Squad/platoon LFX were stressed by Infantry, Armor and Mechanical Maintenance leaders. Of interest is that only a few (about 5) leaders commented on exercises conducted at the Joint Readiness Training Center (JRTC) or National Training Center (NTC).

Other Comments

Lastly, there were comments (58) which could not be easily classified in the prior categories. Some of these comments included the component skills cited previously in Table D1, but were kept intact to illustrate the entire sequence/program of marksmanship training prior to deployment. A sample of these comments is in Table D3.

Table D2 provides details on the major categories and subcategories cited in Table D1. In some cases, Leader comments pertained to more than one category. Thus each tally represents the number of comments, not number of leaders. For each subcategory in Table D2, the number of comments per each branch is tallied in the second column. The third column cites the individual comments by branch. The number in parentheses following each comment indicates the number of times each comment was made.

Table D2

Summary of Comments to Question 10: If You Have Been Deployed, What Marksmanship Training in Your Unit Contributed the Most to Your Combat Effectiveness?

Comment Category	# Comments by Branch	Specific Comments on Pre-Deployment Training
Basic Rifle Marksmanship (BRM) Related Skills: 530 Total Comments		
BRM cited (no to minimal details) (109 comments)	1 Air Defense Artillery	<u>Air Defense Artillery</u> : BRM (1)
	8 Ammunition	<u>Ammunition</u> : BRM (8)
	10 Armor	<u>Armor</u> : BRM (8), Basic BRM was the only thing we conducted (1), Repetitions of basic rifle marksmanship (1)
	3 Aviation	<u>Aviation</u> : BRM (3)
	5 CBRN	<u>CBRN</u> : BRM (2), BRM really contributed. It is not something that can easily come with certain various MOS.
	1 Electronic Maint	Rifle qualification is for most only touched on once a year if that, one cannot expect another to become an expert at something rarely practiced. I had the lucky opportunity to train with a non-Army school called Threat Management Group (TMG) from my time in an Ordnance Battalion (EOD). This group instilled confidence and awareness that I feel cannot be taught in regular military courses. It
	7 Engineer	
	7 Field Artillery	
	1 Finance	
	16 Infantry	
	22 Mechanical Maint	
	13 Military Police	
	6 Quartermaster	
	9 Transportation	

Comment Category	# Comments by Branch	Specific Comments on Pre-Deployment Training
		<p>is worth its cost. (1), Basic marksmanship training (1), Standard Army Marksmanship Course (1)</p> <p><u>Electronic Maintenance</u>: BRM (1)</p> <p><u>Engineer</u>: BRM (7)</p> <p><u>Field Artillery</u>: BRM (7)</p> <p><u>Finance</u>: BRM (1)</p> <p><u>Infantry</u>: A focus on basic marksmanship (1), BRM (10), I deployed as soon as I got to my unit, the only marksmanship training I received at Ft. XX prior to deployment was at Individual Replacement Training. This was a few days of refresher training from Eagle Marksmanship Academy ensuring we had the basic skills to deploy (1), Individual marksmanship training (1), The highest amount of marksmanship training had was on BRM to qualify for our weapon (1), The best was basic marksmanship, hands down; but usually that was pushed forward resulting in lower qualification scores (1), We didn't have enough BRM/ARM (1)</p> <p><u>Mechanical Maintenance</u>: BRM (22)</p> <p><u>Military Police</u>: BRM (12), Firing from one knee was one of the most important aspects to me (1)</p> <p><u>Quartermaster</u>: BRM (6)</p> <p><u>Transportation</u>: BRM (9)</p>
Qualification (115 comments)	7 Ammunition 11 Armor 5 Aviation 9 CBRN 10 Engineer 10 Field Artillery 10 Infantry 16 Mechanical Maint 1 Medical 2 Military Intelligence 14 Military Police 9 Quartermaster 3 Signal 8 Transportation	<p><u>Ammunition</u>: Weapon qualification (6) Qualification with full PPE (1)</p> <p><u>Armor</u>: Qualification (8), Marksmanship training was very minimal, the only training, that was conducted was rifle qualification. Stronger emphasis was put on redundant classes that served no purpose in preparing Soldiers for deployment (1), Very little, mainly just go to the range and qualify so the box was checked (1), We never did a lot of marksmanship training. Just zeroed and Qualified, and they said we were good. If anything we needed ALOT more marksmanship training (1)</p> <p><u>Aviation</u>: Just regular qualification (1), As an aviation unit we just qualified every 6 or 12 months to keep the record up to date (1), Going to several ranges to ensure Soldiers were trained and qualified on weapons systems (1), In Army Aviation we are required to maintain the most minimum level of marksmanship training. That consists of range qualification once a year. No additional training provided. I have received no training that I felt contributed to combat effectiveness (1), The qualification range and the EST is the only training that we used for marksmanship. (1)</p> <p><u>CBRN</u>: ALT C I guess because it was easy to set up and my platoon could get in and get out with qualifying on ALT C within an hour. An easy, efficient way to conduct</p>

Comment Category	# Comments by Branch	Specific Comments on Pre-Deployment Training
		<p>training (1), Qualification (1), None because all we did was standard paper target qualification and a convoy live fire; it was irrelevant to our mission or not enough training (1), Qualification day and night (1), Qualification (3), Quarterly qualification until 30- days prior to deployment (1), Unit ensured all Soldiers were qualified on his/her weapon system (1)</p> <p><u>Engineer</u>: Qualification (7), Just qualifying with basic weapon helped me and my Soldiers (1) Quarterly qualification (1), We did a stress shoot where we did various exercises before completing a 40-round qualification (1)</p> <p><u>Field Artillery</u>: Qualification (6) , Received no marksmanship training other than going to a qualification range (1) None, Just standard qualification (1), Quarterly qual (1) Qual before and during deployment (1)</p> <p><u>Infantry</u>: Qual (7), Alternative Qual (1), At the times I deployed there was no marksmanship training other than the basic zero and qual, which other than having a zeroed weapon was useless for the combat environment (1), Not really any. We were heavy on stabilized gunnery then deployed with MRAPs. Individual marksmanship was simple ranges to go and zero and qual (1)</p> <p><u>Mechanical Maintenance</u>: Qualification (15), Qualify on 25m paper target (1)</p> <p><u>Medical</u>: Qual (1)</p> <p><u>Military Intelligence</u>: Qual (2)</p> <p><u>Military Police</u>: Qual (7), Combat pistol, MPFQC, and M4 Qual contributed to preparations for combat operations. I did not conduct any further marksmanship training immediately prior to deployment (1), Iron sight qual (1), Deployed as an individual augmentee. The only marksmanship training prior to deploying was at CRC, Fort Benning. This was simply one qualification table (1), Deployed 4 times and never had to fire weapon, but did qualify (1), My Platoon maintained qualification standards for the M4 prior, during and following our 1 year deployment to Afghanistan (1), Qualify quarterly on handgun, not rifle (1), Prior to deployment my unit conducted PMI, followed by zero and qualification of assigned weapons (1)</p> <p><u>Quartermaster</u>: Qual (8), Range training was minimal with 2 qualification dates with 2 separate units (1),</p> <p><u>Signal</u>: Qual (3)</p> <p><u>Transportation</u>: Qual (4), qualified with personal wpn and also in theater (1), Qualified expert (1), Yearly Qual (1), None, the requirement was also to have one standard qual prior to deploying (1)</p>

Comment Category	# Comments by Branch	Specific Comments on Pre-Deployment Training
Zeroing (30 comments)	1 Air Defense Artillery: 5 Armor 1 CBRN 2 Engineer 6 Field Artillery 6 Infantry 2 Mechanical Maint 1 Medical 3 Military Police 2 Quartermaster 1 Transportation	<u>Air Defense Artillery</u> : Zeroing (1) <u>Armor</u> : Simple zero ranges (1), We did a two hundred yard zero which was great. This led to great confidence in weapons during trainup and during deployment, though we never fired our weapons. Had we had to engage anyone, it would have been between 25-100m, so reflexive fire would have come into play (1), Zeroed (2), Zero range in country (1) <u>CBRN</u> : Zeroing (1) <u>Engineer</u> : Zeroing (2) <u>Field Artillery</u> : Zeroing (6), <u>Infantry</u> : Zeroing (4), Excellent zero standards aided by Sniper teams (1), Group and zero (1) <u>Mechanical Maintenance</u> : Zeroing (2) <u>Medical</u> : Zero (1) <u>Military Police</u> : Proper zeroing of weapons (2), Zero ACOG only (1) <u>Quartermaster</u> : Making sure my weapon was zeroed (1), Zero (1) <u>Transportation</u> : Zeroed (1)
PMI (31 comments)	4 Air Defense Artillery 2 Ammunition 2 Armor 1 Aviation 4 Engineer 6 Infantry 3 Mechanical Maint 4 Military Police 2 Quartermaster 3 Transportation	<u>Air Defense Artillery</u> : PMI (2), Dime washer (1), Marksmanship fundamentals (1) <u>Ammunition</u> : PMI (1), Weapons clearance (1) <u>Armor</u> : Mag change (1) The basics of firing have always been helpful. Understanding our weapon systems and how rounds are affected in different settings and ranges. (1) <u>Aviation</u> : Dime and washer (1) <u>Engineer</u> : Assembly/Disassembly, instructor/peer observation during dry fire, instructor observation during practice fire (1), Familiarization/Grouping on 25m target – just shoot until you feel you can’t improve anymore (1), PMI (2) <u>Infantry</u> : Malfunction drills (1), Dime washer drills (1), Dry-fire drills with reloads; trigger squeeze and sight picture training (1), 1 to 5 days of PMI (1), PMI (2) <u>Mechanical Maintenance</u> : Basic PMI (2), Weapons fundamentals (1) <u>Military Police</u> : Fundamentals (1), PMI (2), Immediate action drills (1) <u>Quartermaster</u> : PMI (1), Basic fundamentals we had problems with simple mechanics, breathing, trigger squeeze, so we trained (1) <u>Transportation</u> : PMI (3)
EST 2000/ simulation (40 comments)	1 Air Defense Artillery: 4 Ammunition 4 Aviation 2 CBRN 1 Electronic Maint	<u>Air Defense Artillery</u> : EST 2000 (1) <u>Ammunition</u> : EST (4) <u>Aviation</u> : EST 2000 (1), EST (plus qual) , The EST while potentially an effective tool, is not being used to its full capabilities at my home station (1), EST training

Comment Category	# Comments by Branch	Specific Comments on Pre-Deployment Training
	4 Engineer 3 Field Artillery 1 Infantry 7 Mechanical Maint 3 Military Police 1 Multif Logistica 4 Quartermaster 2 Signal 3 Transportation	<p>before we deployed by a knowledgeable retired Special Forces Soldier (1), Simulator (1)</p> <p><u>CBRN</u>: Basic training through simulated fire range (1), Simulator (1).</p> <p><u>Electronic Maintenance</u>: EST trainer (1)</p> <p><u>Engineer</u>: EST 2000 (3), Weapon simulator (1)</p> <p><u>Field Artillery</u>: EST (2), Scenario based EST (1)</p> <p><u>Infantry</u>: EST shoot don't shoot (1),</p> <p><u>Mechanical Maintenance</u>: EST (5), EST 2000 visual marksmanship training helped out a lot. Being trained on the EST 2000 also helped out greatly because I was able to teach my Soldiers on my marksmanship training (1), Going to the weapon simulation center and the scenario-based squad level center (1),</p> <p><u>Military Police</u>: EST training before live fire (1), EST (1), simulation training (1)</p> <p><u>Multif Logistician</u>: EST (1)</p> <p><u>Quartermaster</u>: EST (3), Weaponeer (1)</p> <p><u>Signal</u>: EST (2)</p> <p><u>Transportation</u>: EST (3)</p>
Live Fire (excluding qualification and zeroing) 204 comments)	9 Ammunition 17 Armor 6 Aviation 6 CBRN 18 Engineer 24 Field Artillery 27 Infantry 29 Mechanical Maint 1 Military Intelligence 13 Military Police 3 Multif Logistician 2 Civil Affairs 27 Quartermaster 4 Signal 19 Transportation	<p><u>Ammunition</u>: Continued practice beyond qual (1), Firing weapons at actual distances (1), Plenty of M16 and M4 ranges (1), Ranges (2), Live fire (1), KD range (1), Positional shooting (1), We did very little basic marksmanship training. We did some advanced marksmanship training, but the number of rounds fired was still abysmally low. Not enough practice to overcome the amount of neglect that the Army has paid to marksmanship. (1)</p> <p><u>Armor</u>: KD ranges (5), Constant training on primary weapon systems (1), Field fire (1), Going to different ranges to get to know the rifle more (1), Did not trainup with unit – got marksmanship training in theater (1), Iraq-basic rifle range (1), Range firing (6), Extensive amounts of Individual range time; Not just qualifying. My favorite was putting Soldiers on ranges and letting them shoot, at a pop up range, or shooting lanes (walking through the woods and having pop up targets) (1)</p> <p><u>Aviation</u>: Range training (4), Going out to the Range and just being able to shoot rounds freely down the range. Gave us more time to get familiarized with the weapon system (1), M16/M9 range (1)</p> <p><u>CBRN</u>: Actually firing at popup targets. Also unit had some very qualified NCOs and Soldiers who knew how to shoot. They helped others get through (1), Constant small arms ranges (1), Live fire ranges (2), M4 firing (1), While deployed went to the range every month (1)</p> <p><u>Engineer</u>: Going to the range for live fire (11), Going to</p>

Comment Category	# Comments by Branch	Specific Comments on Pre-Deployment Training
		<p>the range often (1), Shooting at the ranges and getting time with your weapon (1), Live fire ranges contributed a lot to my marksmanship training because it is extremely easy to be a good marksman while you are on a range and in a comfortable position. It is a whole different story when you are moving as an element and shooting targets that are behind cover. It gave much more realistic training. (1), Going to ranges at home station and down range (1), Ranges lots of ranges and lots of bullets to do different scenarios (1), Multiple ranges prior to deployment (1), Going to the ranges and shooting as often as we could to ensure everyone was comfortable with their assigned weapon (1)</p> <p><u>Field Artillery</u>: Range firing (9), Constant ranges (1), Conduct frequent and regular range days (1), Field fire (1), Going to the range and actually firing the weapons helps me the most. After grouping and zeroing you should have your breathing, sight picture and trigger squeeze perfected. Then it's just a matter of taking what you learned and applying them to the qualification range (1), Going to the range before we left (1), KD (4), LF exercises (2), Ranges helped to ensure my weapon was zeroed and accurate (1), Went to the range to fire weapon with plate carriers (1), Weapon familiarization (1), went to range 3 times year (1)</p> <p><u>Infantry</u>: KD (16), Excessive KD range training (1), LOMAH (1), All the range time (2), Constantly going to the range and shoot (2), Excessive range time (1), Quality range time (1), Ranges conducted in country prior to moving to theater (1), shooting (1), Unknown distance ranges (1)</p> <p><u>Mechanical Maintenance</u>: Live fire ranges (18), Any range time was good (1), All marksmanship training helped (1), Constant familiarization (1), Going to the range (& at proper time) (2), Live fire exercises were helpful but I believe Gunnery, EST and WST was most effective but I would recommend every unit/company should go through gunnery (1), Went to the range at least once every month (1), Went to range once prior to deployment (2), Trigger time (2)</p> <p><u>Military Intelligence</u>: Ranges (1)</p> <p><u>Military Police</u>: Live fire many times (2), Range firing (4), Live fire (1), Going to the ranges was sufficient/effective (2), KD range (2), Range density (1), Range conducted before deploying and requal ranges on the FOB (1)</p> <p><u>Multif Logistician</u>: Range time (1), Range training at home plus in theater (1), KD (1)</p> <p><u>Civil Affairs</u>: M4 training (2)</p>

Comment Category	# Comments by Branch	Specific Comments on Pre-Deployment Training
		<u>Quartermaster:</u> Range time (23), Allow us to shoot whichever way is most comfortable (1), Familiarizing with your weapon (1), Live fire (1), KD (1) <u>Signal:</u> Range firing (3), KD (1) <u>Transportation:</u> Range firing (11), Going to the range before deployment (1), Multiple range times (1), Range once a month (1), Range week (1), Various ranges (1), Regular marksmanship training conducted in Kuwait (1), Weapons --as training was really good; prepared me to feel completely comfortable firing my assigned weapon (1), We don't have enough, if any, practice ranges (1)
Training sequence # comments	1 Military Police	<u>Military Police:</u> Prior to deployment my unit conducted PMI, followed by zero and qualification of assigned weapons. (1)
Advanced Rifle Marksmanship (ARM)–Related Skills: 603 Total Comments Includes both LRM and SRM Skills		
ARM (94 comments)	1 Air Defense Artillery 7 Ammunition 10 Armor 2 Aviation 1 CBRN 1 Electronic Maint 11 Engineer 3 Field Artillery 31 Infantry 10 Mechanical Maint 12 Military Police 1 Multif Logistician 2 Quartermaster 1 Signal 1 Transportation	<u>Air Defense Artillery:</u> ARM (1) <u>Ammunition:</u> ARM (5), precision shooting (1), Sniper (SMUD) (1) <u>Armor:</u> ARM for Afghanistan (1), ARM day and night (1), ARM (5), Precision shooting, agility, and firing on burst (1), Prior to Afghanistan the most useful training was the three ranges we did at high, low angle fires in high wind (1), Transition shooting (1) <u>Aviation:</u> M4/M9 transition drills (1), Transition drills from primary to secondary weapon systems and no ACH (1) <u>CBRN:</u> ARM (1) <u>Electronic Maint:</u> ARM (1) <u>Engineer:</u> ARM (11) <u>Field Artillery:</u> ARM (2), Firing from behind barriers and from unconventional positions (1) <u>Infantry:</u> ARM (13), Modified positions (Standing, Kneeling, sitting, prone) Shooting from a barrier; Known Distance Ranges (100m-500m); High elevation to ground shooting. (2), Alternate firing position using different types of cover (1), CATC and high angle training (1), Classes on minutes of angle (1), Elevation shooting (1), Close range Non-Standard response drills, movement drills, ammunition management drills including immediate and remedial action, rapidly transitioning between various positions, transitions from rifle to pistol, any drill that requires decision making on the part of the shooter, any drill that rewards the correct balance of speed and accuracy for a given shot, drills that isolate trigger control are especially effective, since trigger control is 90% mental and 10% physical. These drills give the shooter a baseline to default to under conditions of stress. (1), For

Comment Category	# Comments by Branch	Specific Comments on Pre-Deployment Training
		<p>Iraq multiple shot drills. Getting guys in the habit of shooting a target till it's down and out. For Afghan using the ACOG correctly. Also teaching Joe to shoot the same guy as his battle buddy is shooting at to raise the chances that they will kill the target faster and more effectively (1), Frequent long range marksmanship classes, elevated shooting classes, and marksmanship classes for our Squad Designated Marksmen WOULD have been helpful. <i>We received none of that</i> during our pre-deployment train-up. (1), High angle training that allowed for my Rangers to conduct KD and advanced marksmanship training in a mountainous environment shooting from 100 to 1000 meters at various angles. This replicated the mountainous terrain in AFG and allowed for Rangers to properly understand the various holds that they must utilize when shooting at high angles. The training was conducted at Fort Harrison, Montana on a Company OPT from Fort [X] (1), Live fire maneuver ranges performed at the individual level at flat ranges from 100 to 500 meters (1), Training on ballistics for higher elevations and distance (1), Understanding caliber of weapons, effects of elevation and wind on long shots; knowing what sight picture to use when using non-standard shooting positions (1), Once we completed basic marksmanship it was the advanced marksmanship that proved to be the best, because we taught our Soldiers to fire and maneuver. Immediate action drills were very important to clear malfunctions which occurred when you least expected them. Finally, training in different firing positions instead of foxhole positions was useful. (1), Sending 1 x SM per squad through LRM training (1), Shooting under stressful conditions and LRM were the two training events that best contributed to our combat effectiveness. Average engagement distances for SAF were approx 500-800 meters, with engagements by enemy PKMs at over a kilometer being very common. The biggest source of frustration was our limited ability to return fire at these extended ranges. (1), Alternative firing positions (1), The marksmanship training that was conducted at the platoon level that had little to no guidance from the battalion level. This primarily consisted of moving and shooting, barrier shooting and shooting from various firing positions (1)</p> <p><u>Mechanical Maintenance:</u> ARM (6), ARM with SF sniper (1), Shooting from behind barriers, standing, kneeling, while patrolling and laying down (1), Shoot from vehicles, shooting on or around vehicles while using the vehicle as cover (1), Alternate firing positions (1)</p> <p><u>Military Police:</u> ARM (8), CART-C combat assault rifle</p>

Comment Category	# Comments by Branch	Specific Comments on Pre-Deployment Training
		<p>firing techniques (1), Weapon transition training – M4/M9(3), shoot and don't shoot scenarios and live fire lanes incorporating transitioning weapons from M4 to M9 while moving through the lane like you would do in MOUT training (1)</p> <p><u>Multif Logistician</u>: High angle marksmanship (1)</p> <p><u>Quartermaster</u>: Transition firing (1), Shooting from various stances (1)</p> <p><u>Signal</u>: Shoot don't shoot (1)</p> <p><u>Transportation</u>: ARM (1)</p>
LRM (54 comments)	1 Ammunition 10 Armor 7 Engineer 5 Field Artillery 27 Infantry 1 Mechanical Maint 1 Quartermaster 2 Transportation	<p><u>Ammunition</u>: LRM (1)</p> <p><u>Armor</u>: LRM (8), LRM Course allowed me to engage targets out to 600 meters and made me more confident with my M4 because of this. (1), LRM ranges from 300 to 800m with ACOG (1)</p> <p><u>Engineer</u>: LRM (5), LRM in Afghanistan: The enemy liked to engage at the limits of their effectiveness to ensure the highest amount of survivability for themselves; with several LRM/SDMs in the patrol we were still able to put accurate and effective fires on the enemy at range. (1), Using KD ranges & shooting distances past 300m because most of your targets are not going to be real close (1)</p> <p><u>Field Artillery</u>: LRM (4), LRM is key (1)</p> <p><u>Infantry</u>: LRM (20), An LRM training team that we sent all team leaders and some squad leaders to prior to marksmanship density. (1), Before I deployed to Afghanistan my unit conducted a Long Range M4 range which taught our Soldiers how to be more efficient with their optics on their weapons at longer ranges than what is provided at the normal qualification range (1), LRM for Afghanistan (1), LRM to 300-500m (2), LRM was a great help to give me a better understanding of our weapon systems (1), Shooting under stressful conditions and LRM were the two training events that best contributed to our combat effectiveness. Average engagement distances for SAF were approx 500-800 meters, with engagements by enemy PKMs at over a kilometer being very common. The biggest source of frustration was our limited ability to return fire at these extended ranges. (1)</p> <p><u>Mechanical Maintenance</u>: LRM for Afghanistan (1)</p> <p><u>Quartermaster</u>: LRM (1)</p> <p><u>Transportation</u>: LRM (2)</p>
Stress shoots (59 comments)	1 Ammunition 12 Armor 4 CBRN 1 Electronic Maint 2 Engineer 6 Field Artillery	<p><u>Ammunition</u>: Stress shoots (1)</p> <p><u>Armor</u>: Stress shoots (11), Stress shoot training which elevates the heart rate (1)</p> <p><u>CBRN</u>: Stress shoots (3), Stress fires and vehicle live fires were instrumental in improving both confidence and overall marksmanship. They incorporated more realistic</p>

Comment Category	# Comments by Branch	Specific Comments on Pre-Deployment Training
	18 Infantry 2 Mechanical Maint 9 Military Police 3 Quartermaster 1 Transportation	scenarios and more closely resembled actual combat environments. (1) <u>Electronic Maintenance</u> : Stress shoots (1) <u>Engineer</u> : Stress shoots (2) <u>Field Artillery</u> : Stress shoots (6) <u>Infantry</u> : Stress shoot (17), The stress shoot exercise contributed the most to combat effectiveness. It gave you a realistic feel of how it is to be under extreme stress and engage targets while in that feeling. During combat, this is how it feels to be under contact and is one of the most effective exercises in marksmanship training. (1) <u>Mechanical Maintenance</u> : Stress shoot (2) <u>Military Police</u> : Stress shoots (7), Stress fire contributed to combat effectiveness. Helped simulate the realism of engaging threats while fatigued and the impact it has on marksmanship (1), Stress fires were the most effective once basic marksmanship was achieved throughout the course of training. (1) <u>Quartermaster</u> : Stress shoots (3) <u>Transportation</u> : Stress shoot (1)
Optics/sights/lasers (25 comments)	1 Air Defense Artillery 6 Armor 1 CBRN 2 Engineer 3 Field Artillery 3 Infantry 4 Mechanical Maint 4 Military Police 1 Transportation	<u>Air Defense Artillery</u> : Advanced optics & lasers (1) <u>Armor</u> : Advanced optics (1), Optics expert course (1), Shooting with ACOG, PEQ-15 and with NODs (1), Training on the ACOGs, and CCOs (1), LRM with ACOG (1), Zero M68s and ACOGs (1). <u>CBRN</u> : Optics (1) <u>Engineer</u> : ACOG point of aim training (1), Optics training with M68 and ACOG (1) <u>Field Artillery</u> : Shooting with optics (2), ACOG sites and optics/ PEQ 15 (1) <u>Infantry</u> : PEQ-15 zero and night fire qual using the PEQ-15 (1), Training with advanced optics and lasers (1), Classes on ACOG and KD marksmanship using ACOG reticle to hit at various ranges (1) <u>Mechanical Maintenance</u> : ACOG training (1), Small arms optics course (1) Training with M4 carbine, combined with NVG and Pas 13 (1) <u>Military Police</u> : Optics training (2), After normal zeroing, individuals who had advanced optics then had to zero and qual with them and conduct NVG familiarization (1), Advanced optics/lasers (1) <u>Transportation</u> : Optics (1)
Night fire (15 comments)	4 Armor 2 Engineer 2 Field Artillery 2 Infantry 1 Mechanical Maint 2 Military Police	<u>Armor</u> : Night fire (2), Night ranges (1), Night fire moving with NVGS on, not that 50m pop-up. Moving at night with our NVGS and engaging targets (1) <u>Engineer</u> : Night fire (2) <u>Field Artillery</u> : Night fire (2) <u>Infantry</u> : Night fire (2)

Comment Category	# Comments by Branch	Specific Comments on Pre-Deployment Training
	1 Multif Logistician 1 Transportation	<u>Mechanical Maintenance</u> : Night fire (1) <u>Military Police</u> : Night fire (1), Night fires using night optics on all assigned weapons systems (small arms and crew served weapons) (1) <u>Multif Logistician</u> : Limited visibility ranges (1) <u>Transportation</u> : Night fire (1)
SRM/CQM/ CQB (192 comments)	1 Air Defense Artillery 8 Ammunition 30 Armor 1 Aviation 6 CBRN 2 Electronic Maint 22 Engineer 18 Field Artillery 43 Infantry 32 Mechanical Maint 12 Military Police 2 Multif Logistician 6 Quartermaster 1 Signal 8 Transportation	<u>Air Defense Artillery</u> : CQM (1) <u>Ammunition</u> : CQM (7), SRM (1) <u>Armor</u> : CQM (22), CQM was by far the best (1), CQB (1), Close-in fire and accuracy at 25m or less (1), My Unit conducted several CQM ranges along with reflexive fire ranges. I believe these two types of ranges greatly improved our Marksmanship in the Urban environment (1), Prior to Iraq the focus was CQM/ ready-up drills (1), SRM (3) <u>Aviation</u> : CQM (1) <u>CBRN</u> : CQM (4), CQM w RF (1), SRM (1) <u>Electronic Maintenance</u> : CQM (1), Close quarters shooting (1) <u>Engineer</u> : CQM (19), CQM training provided all engineer assets with the ability to be like that of an infantry squad. Basically self-sufficient in a fighting aspect (1), SRM (1), Short Range Marksmanship in Iraq: The enemy TTPs in Iraq was different -- they wanted to get in close and ensure their way in to paradise. The ability to react quickly and effectively to near ambush with effective and lethal fires was not only necessary but key to bringing many of our boys home. (1) <u>Field Artillery</u> : CQM (13), CQM is equally important as LRM (1), CQB (3), CQM was helpful for most of us who hadn't deployed because it was something new (1) <u>Infantry</u> : CQM (21), CQB (8), SRM (7), CQM prior to deploying to Iraq (1), CQB / SRM was conducted with an emphasis on quickly engaging targets of increasing range just after the shooter had conducted a variety of movement techniques. (1), CQB. Close Quarters Battle is by far the most useful marksmanship training based off of my past missions sets. Our ability to conduct Direct Action Raids is what makes us who we are. Most of my engagements have been 30m or less. (1), Extensive CQB training (1), Minimal CQB drills (1), SRM for close quarter battles (1), SRM was a great help to give me a better understanding of our weapon systems (1) <u>Mechanical Maintenance</u> : CQM (22), CQB and reflexive fire were the most effective because of the mission we were given (1), CQB for Iraq (1), SRM (2), CQB (6) <u>Military Police</u> : CQB (3), CQM (6), SRM(3) <u>Multif Logistician</u> : CQM (1), Did 80 hours of CQB from

Comment Category	# Comments by Branch	Specific Comments on Pre-Deployment Training
		10 th SPG before we left. Infinitely more valuable than static range training (1). <u>Quartermaster:</u> CQM (6) <u>Signal:</u> CQM (1) <u>Transportation:</u> CQM (8)
Reflexive Fire (RF) (155 comments)	1 Air Defense Artillery 6 Ammunition 18 Armor 4 Aviation 8 CBRN 1 Civil Affairs 2 Electronic Maint 19 Engineer 19 Field Artillery 1 Finance 19 Infantry 31 Mechanical Maint 10 Military Police 6 Quartermaster 2 Signal 8 Transportation	<u>Air Defense Artillery:</u> RF (1) <u>Ammunition:</u> RF (6) <u>Armor:</u> RF (14), My unit conducted several CQM ranges along with reflexive fire ranges. I believe these two types of ranges greatly improved our Marksmanship in the Urban environment. (1), Day/night RF (1), RF by far was the most effective marksmanship training the unit does (1), We did a lot of RF training which was helpful (1) <u>Aviation:</u> RF (4) <u>CBRN:</u> RF (7), RF training completed in Kuwait was the best marksmanship training I have received (1) <u>Civil Affairs:</u> RF (1) <u>Electronic Maintenance:</u> RF (2) <u>Engineer:</u> RF (17), Lots of bullets for reflexive fire (1), RF drills and magazine change drills were more effective training our Soldiers to be fully functional and proficient with their weapons systems. These training drills proved effective and necessary once engaged by the enemy and the Soldiers being able to shoot and communicate without hesitation. (1) <u>Field Artillery:</u> RF (17), Company went to range to conduct RF weekly (1), RF – believed it seriously enhanced personal security (1) <u>Finance:</u> RF (1) <u>Infantry:</u> RF (12), My first deployment after zero and qual would focus on reflexive/ stress firing. This would imply bounding, or something kind of movement while using the basics of reflexive fire and focusing on accurate firing on targets. All this while in full battle, making sure we were ready with full outside the wire gear. (1), Ready-up drills (5), Reflexive fire drills while deployed (1) <u>Mechanical Maintenance:</u> RF (29), CQB and reflexive fire were the most effective because of the mission we were given (1), Prior to crossing into Iraq, my unit provided us with reflexive-fire training and live-fire exercises. (1) <u>Military Police:</u> RF (8), RF contributed most to our success (1), RF contributed to combat effectiveness. Helped simulate the realism of engaging threats while fatigued and the impact has on marksmanship (1) <u>Quartermaster:</u> RF (6) <u>Signal:</u> RF (2) <u>Transportation:</u> RF (8)

Comment Category	# Comments by Branch	Specific Comments on Pre-Deployment Training
Other ARM (9 comments)	6 Infantry 2 Military Police 1 Quartermaster	<u>Infantry</u> : Moving target range (2), Pop-up movers (1), Off-hand shooting (1), My company conducted a combat fitness focused range with militaryathlete.com to improve marksmanship while operating with increased adrenalin and heart rates. (1), Target discrimination training (1) <u>Military Police</u> : Target discrimination training (1), Moving target ranges (1) <u>Quartermaster</u> : Optics/advanced optics (1)
Training on Other Weapons (not just rifle/carbine): 135 Total Comments		
General reference to other weapons (8 comments)	1 Ammunition 1 Aviation 1 Engineer 2 Mechanical Maint 3 Military Police	<u>Ammunition</u> : Additional weapon systems familiarization (1), using different weapons (1) <u>Aviation</u> : Training on various weapon systems including foreign weapons (1) <u>Engineer</u> : PMI of all wpns in unit, ranges of all wpns (1) <u>Mechanical Maintenance</u> : Other weapon training (1), Ranges for all types of weapons used during deployment (1) <u>Military Police</u> : Bde requirement for 100% familiarization of all weapons systems for the Company prior to its deployment to OEF (1), Soldiers qualified on all weapons (1), Training on all weapons system prior to deployment. During our deployment, we were required to use multiple weapon systems that prior to the deployment we did not think that we would use. Additionally, using crawl, walk, run during training ensure all personnel on the deployment were trained to standard.(1)
Crew served weapons plus M249, M240, Mk19, 50 cal, M203/M302 (68 comments)	1 Adjutant General 3 Ammunition 6 Armor 8 Engineer 11 Field Artillery 9 Infantry 11 Mechanical Maint 6 Military Police 6 Quartermaster 7 Transportation	<u>Adjutant General</u> : MK 19 urban live fire with organic targets was quite possibly the most beneficial marksmanship relative to my combat effectiveness. (1) <u>Ammunition</u> : 50 cal (1), Our ranges were specifically pertaining to the M2 and the M203 (1), Heavy weapons live fire (1), When deployed with 1/82nd ABN DIV multiple weapons training made me most combat effective as I became a gunner with an M2 and was also issued a shotgun for convoys. Having basic all around weapons knowledge that encompassed these weapons made me much more comfortable when thrown into that position. (1) <u>Armor</u> : 50 cal (1), Crew served ranges (1), Anytime able to use crew served wpns (1), Small arms , M240B qual (1), Sniper (1), MK19, 50 cal, M240, M249,M203/M302 (1) <u>Engineer</u> : Crew served weapons (3), M2, MK19, M240B, M249 (1), M249 & M240 ranges (1), Machine gun & grenade launcher ranges (1), Qualifying on all crew served wpns (1), Go to Multiple ranges throughout deployment, to include every weapon system assigned to our MTOE (1), Crew served – several scenarios where we

Comment Category	# Comments by Branch	Specific Comments on Pre-Deployment Training
		<p>qualified with every crew served wpn in the company (1)</p> <p><u>Field Artillery</u>: Crew served weapons training (5), M249 (1), 50 cal (1), M240, M249, M203 50 cal and grenade training (1), M2 .50 cal, M249, M240B (1), Machine gun training (1), Crew served weapon qual and familiarization. Trouble shooting all weapon systems (1), Quarterly weapons qual on M2, 50 cal, M249, M240B (1)</p> <p><u>Infantry</u>: 50 cal & MK19 (1), Long range M240B training (1), Crew served weapon cross-training on all company wpn systems (1), Familiarization with M320 and TPT rounds was critical (1), M2 and MK19 ranges (1), Machine gun competition (1), Machine gun qualification (1), Machine gun ranges (1), Machine gun leaders course (1)</p> <p><u>Mechanical Maintenance</u>: Crew served weapons training (5), Crew served weapons training was the most important (1), M2 50 cal qualification & M240 qual (1), M2, M249, M240B marksmanship (1), 50 cal and 240B (1), MK19, M320, 50 cal, M249 Live fire exercises and crew served wpn range (1), Plenty of range time with M2 50- cal & 240/249 (1)</p> <p><u>Military Police</u>: We did the Marksmanship ranges with all of our weapons to include 249, 50 cal, Mark 19, M4. (1), Sniper employment (1), Crew served wpns qualification (1), CROWS (1), M11 qual – my primary weapon (1), M240, M249 & 50 cal ranges (1), Engaging short and long range targets with 50 cal, MK19 & M240B (1)</p> <p><u>Quartermaster</u>: 50 cal (2), 50 cal, minigun, M249, MK19 training (1), Familiarization training with crew served wpns (1), Grenadier training (1), I was in a Special Forces unit for all 3 deployments. We did lots of marksmanship training on various weapons platforms. The training was very helpful for deployment readiness. (1)</p> <p><u>Transportation</u>: 50 cal (2), Crew served wpns training (2), M240 and M249 zero and qualify (1), M2 50 cal and MK19 ranges (1), Training on unit's wpn systems to include M249, M2 and MK19 (1)</p>
Pistol (23 comments)	3 Ammunition 2 Armor 1 Aviation 1 CBRN 1 Civil Affairs 1 Electronic Maint 1 Field Artillery 2 Infantry 4 Mechanical Maint 4 Military Police 2 Quartermaster	<p><u>Ammunition</u>: M9 pistol, M107 Barrett (1), Combat pistol training (1), M9 qual (1),</p> <p><u>Armor</u>: M9 (1), M9 qual (1)</p> <p><u>Aviation</u>: M9 (1)</p> <p><u>CBRN</u>: 9mm (1)</p> <p><u>Civil Affairs</u>: M9 training (1)</p> <p><u>Electronic Maintenance</u>: Combat pistol range (1)</p> <p><u>Field Artillery</u>: 9mm (1)</p> <p><u>Infantry</u>: Pistols (1), M9 qual (1)</p> <p><u>Mechanical Maintenance</u>: M9 training (3), Extensive training with 9mm pistol (1)</p>

Comment Category	# Comments by Branch	Specific Comments on Pre-Deployment Training
	1 Transportation	<u>Military Police</u> : M9 (4) <u>Quartermaster</u> : M9 (2) <u>Transportation</u> : 9mm (1)
Gunnery (primarily vehicle/aerial platform-related) (36 comments)	9 Armor 7 Aviation 1 CBRN 2 Engineer 4 Field Artillery 4 Infantry 5 Mechanical Maint 3 Military Police 1 Transportation	<u>Armor</u> : Gunnery (3), Mounted engagements (1), Vehicle gunneries (3), Unstabilized gunnery (2) <u>Aviation</u> : Aerial gunnery (7) <u>CBRN</u> : Vehicle live fire (1) <u>Engineer</u> : From moving Stryker (1), MG training and auto rifle on remotely operated turrets (1) <u>Field Artillery</u> : Crew served wpns training on moving vehicles (1), Mounted LF (1), Gunner training (1), Unstable gunnery (1) <u>Infantry</u> : Vehicle live fires (1), Bradley gunnery (1), Mtd wpn system training on a moving platform (1), Most effective: Mounted Gunnery and machine gun qualification (certified three individuals for every weapon system) (1) <u>Mechanical Maintenance</u> : Mounted gunnery (2), Light cavalry gunnery (2), Unstabilized gunnery (1) <u>Military Police</u> : Ranges with mounted weapons on HUMVEE and ASV (1). Mtd gunnery was valuable (1), Gunner mounted on vehicle (MRAP, ASV, HMMWV) (1) <u>Transportation</u> : M114 gunnery (1)
Special Courses 97 Total Comments		
SDM (26 comments)	3 Ammunition 5 Armor 2 Engineer 1 Field Artillery 11 Infantry 1 Mechanical Maint 2 Military Police 1 Quartermaster	<u>Ammunition</u> : SDM from light Infantry, instruction by SF (1), SDM (2) <u>Armor</u> : SDM (4), Marksmanship training conducted at Ft. Bragg while I was assigned to the 82nd ABN DIV, including designated marksman. (1) <u>Engineer</u> : SDM (2) <u>Field Artillery</u> : SDM (1) <u>Infantry</u> : SDM (9), Going through the SDM course. It greatly improved my shooting and helped me understand the flight trajectory of a bullet. (1), Bde conducted SDM training for one Soldier from each squad (1) <u>Mechanical Maintenance</u> : SDM (1) <u>Military Police</u> : SDM from AMU (1), SDM course (1) <u>Quartermaster</u> : SDM (1)
AWG - CAT-C (11 comments)	1 Field Artillery 8 Infantry 1 Military Intelligence 1 Quartermaster	<u>Field Artillery</u> : AWG training (1) <u>Infantry</u> : AWG-CAT-C (5), AWG during my third deployment, three day course, helped immensely. Also using a 200 meter zero over the 300 meter zero (1), Beyond BRM defined as zero, grouping, and qualify. – Also I attended a training course assisted from AWG called CAT-C for over a month. Then I took this training from AWG and tailored it (named SAP-C) for Iraq deployment and continued the training for the BDE leaders while in Iraq. (1), AWG training (1)

Comment Category	# Comments by Branch	Specific Comments on Pre-Deployment Training
		<p><u>Military Intelligence</u>: AWG taught my platoon a class of "advanced" marksmanship. It wasn't really advanced, it was basic stuff taught really well. Went over cover, tactical reloading, and the fundamentals of firing. That was best and most important marksmanship training we received. (1)</p> <p><u>Quartermaster</u>: AWG Combat skills training course (1)</p>
Sniper School / Sniper training (6 comments)	1 Armor 1 Engineer 4 Infantry	<p><u>Armor</u>: Sniper (1)</p> <p><u>Engineer</u>: Was sent to Sniper School (1)</p> <p><u>Infantry</u>: Sniper School (4)</p>
Other Courses (48 comments)	2 Ammunition 3 Armor 5 Aviation 5 CBRN 1 Engineer 5 Field Artillery 14 Infantry 2 Mechanical Maint 6 Military Police 3 Quartermaster 2 Transportation	<p><u>Ammunition</u>: Viking Tactical Shooters course (1), Training from Threat Management Group (1)</p> <p><u>Armor</u>: No unit training stood out before I deployed. The only Marksmanship training to date that has made an impact was by the United States Army Marksmanship Unit (USAMU) on BRM. They used the newest methods and got rid of a bunch of the old "back in my day" stuff. (1), Mountain Leaders Advanced Rifle Marksmanship (MLARM) course (1), We combined knowledge gained from the 10th Mountain Divisions MLARM and a civilian program called Project Appleseed. Later we incorporated lessons learned from several civilian courses (1)</p> <p><u>Aviation</u>: 160th enlisted Green Platoon marksmanship training (1), Viking Tactical course (sent by unit – increased confidence w different shooting positions) (2), Unit worked with SF on walking while firing, shooting on the dismounted, reactive fire from contacts on left & right, reload techniques (1), Excellent training on Germany from 2004-2008 all prior to deployments covered by survey (1)</p> <p><u>CBRN</u>: Advanced carbine tactics taught by Civilian at Ft. Lewis (1), Eagle Marksmanship Program at Ft. Campbell with AMU trained instructors (2), Threat Management School – nonArmy – good training (1), Unit began own advanced marksmanship training taught by 10th SF (1)</p> <p><u>Engineer</u>: German marksmanship training (1)</p> <p><u>Field Artillery</u>: Unit did a lot of training with the ODA special forces unit and it was effective (1), DARC in Little Rock (1), MLARM (1), Hired an ex SF guy to come in and teach marksmanship techn and how to shoot on the move (1), Trained for 14 days with Special Ops - reloading drills good for me (1)</p> <p><u>Infantry</u>: MLARM (1), I took a train the trainer coarse at Ft Drum called MLARM, probably the best marksmanship class in the Army (1), MLARM course - exceptional for jr leaders & angle fires training is also exception (1), Advanced Marksmanship courses such as Barnhart shooting course, RMIC and VTAC (1) Black hawk</p>

Comment Category	# Comments by Branch	Specific Comments on Pre-Deployment Training
		<p>shooters course in Germany– by Barnhart (1), Advanced marksmanship training provided by Team Tiger Swan when at Ft Bragg. The contractors consisted of former Navy SEALs, Delta Force Operators, and Special Forces team members. It wasn't necessarily the company, but just working with true professionals. I've also recently conducted training with the Army's Marksmanship Unit. They are world class instructors that need to be utilized more (1), Tiger Swan (1), Eagle Marksmanship Academy – Ft. Campbell (2), Most knowledge gained from SOF and USAMU (1), Marksmanship progression IAW 75th Ranger Rgmt 350-10 provided the best training (2), Midsouth shooting school (1), USAMU training (1)</p> <p><u>Mechanical Maintenance:</u> Rifles only training in Kingsville TX (1), Iron warrior tables (1)</p> <p><u>Military Police:</u> CQM from USAMU (1), My last unit sent 4 officers and 4 senior NCO's to a week of M/O training to defend our small FOB (1), SFUAC – Special Forces urban assault course (1), We sent NCOs to our on post MLARM course, and then trained our unit on the same skill sets.(1), When I deployed, able to train with AMU at Benning (1), The best training I had wasn't until I came back from IRAQ. It was at Ohio Valley Tactical -- a civilian swat team course for active shooters. It was some of the best rifle and handgun training I have received. But before we shipped out for IRAQ I believe we were under trained in basic marksmanship, cause we don't really train all that well when it comes down to it. We just train to qualify. Shooting is a perishable skill and needs to be worked on constantly. (1)</p> <p><u>Quartermaster:</u> Our SOF group conducted training at the Mid-South institute of combat and defense shooting. This course is designed to teach advanced marksmanship skills such as shooting on the move. While still ensuring safe practices are followed, the training is realistic in that weapons are always loaded and ready to fire. This builds confidence in the weapon systems and the SMs ability to handle it safely. (1), Special forces basic combat course (1),</p> <p>PMI and training with SF – improved my shooting scores every time (1)</p> <p><u>Transportation:</u> CQB drills taught by contractors at TOBC (Ft. Eustis) 2004/5 (1), Attendance at various marksmanship courses (1)</p>
Unit Designed Courses (3 comments)	3 Infantry	<p><u>Infantry:</u> Gun fighting courses developed and conducted by the unit internally. The Army marksmanship program is woefully inadequate to train Soldiers to handle and employ their weapon system. Marksmanship instruction</p>

Comment Category	# Comments by Branch	Specific Comments on Pre-Deployment Training
		had to be designed and built in order to focus on the appropriate skills necessary. These courses used other units, special operations techniques, civilian tactical instruction and theory to create a balanced and effective program. (1), Preceding deployment to OEF 11-12, my Task Force mandated each Infantry Platoon send at least 1 rifleman to train with our organic snipers. The snipers and their leadership trained the riflemen to proficiency on their Enhanced Battle Rifles during a several day exercise and various ranges. This allowed each platoon to have at least one designated marksmen capable of engaging targets out to 800m successfully. The EBR and its optics proved a valuable asset on dismounted patrols. (1), Participation in a SF SpendEx – instructors provided an incredible volume of training (1)
Personal/ Private (3 comments)	1 Ammunition 1 Military Police 1 Multif Logistician	<u>Ammunition:</u> Private on hand gun (1) <u>Military Police:</u> None of the typical unit marksmanship really applied. During my first deployment we did a join with SF which taught me a lot of new things. Prior to my deployment to Afghanistan, I participated in a pistol marksmanship range with the DEA, where I learned and honed skills which were much more beneficial than the ones I had taught. The DEA course was not arranged by my unit, but something which I arranged with DEA agents I know and work with and was conducted on my own time. (1) <u>Multif Logistician:</u> Spent personal funds to attend classes at a private training facility (1)

Tables D3 through D6 summarize the number of leader comments by branch in Table D2. In these tables, the Signal and Military Intelligence branches are reported separately. Other branches with fewer than 20 individuals are not included.

Table D3

Number of Leader Comments in BRM Training Categories: Question 10 Pre-Deployment Training

Branch	BRM- gen	Qual & Zero	PMI	Live Fire	Simulation	Total
Air Defense	1	1	4	0	1	7
Ammunition	8	7	2	9	4	30
Armor	10	16	2	17	0	45
Aviation	3	5	1	6	4	19
CBRN	5	10	0	6	2	23
Engineer	7	12	4	18	4	45
Field Artillery	7	16	0	24	3	50

Branch	BRM- gen	Qual & Zero	PMI	Live Fire	Simulation	Total
Infantry	16	16	6	27	1	66
Mech Maint	22	18	3	29	7	79
Military Police	13	17	4	13	3	50
Quartermaster	6	11	2	27	4	50
Transportation	9	9	3	19	3	43
Signal	0	3	0	4	2	9
Military Intell	0	2	0	1	0	3

Table D4

Number of Leader Comments in ARM Training Categories: Question 10 Pre-Deployment Training

Branch	ARM-gen	LRM	Stress	Optics & Night	SRM	Reflexive Fire	Total
Air Defense	1	0	0	1	1	1	4
Ammunition	7	1	1	0	8	6	23
Armor	10	10	12	10	30	18	90
Aviation	2	0	0	0	1	4	7
CBRN	1	0	4	1	6	8	20
Engineer	11	7	2	4	22	19	65
Field Artillery	3	5	6	5	18	19	56
Infantry	31	27	18	5	43	19	143
Mech Maint	10	1	2	5	32	31	81
Military Police	12	0	9	6	12	10	49
Quartermaster	2	1	3	0	6	6	18
Transportation	1	2	1	2	8	8	22
Signal	1	0	0	0	1	2	4
Military Intell	0	0	0	0	0	0	0

Table D5

Number of Leader Comments in Other Weapons Training Categories: Question 10 Pre-Deployment Training

Branch	General	Crew- served	Pistol	Gunnery	Total
Air Defense	0	0	0	0	0
Ammunition	1	3	2	0	6
Armor	0	6	2	9	17
Aviation	0	0	1	7	8
CBRN	0	0	1	1	2

Branch	General	Crew-served	Pistol	Gunnery	Total
Engineer	1	8	0	2	11
Field Artillery	0	11	1	4	16
Infantry	0	9	2	4	15
Mech Maint	2	11	4	5	22
Military Police	1	6	4	3	14
Quartermaster	0	6	2	0	8
Transportation	0	7	1	1	9
Signal	0	0	0	0	0
Military Intell	0	0	0	0	0

Table D6

Number of Leader Comments Regarding Special Marksmanship Courses: Question 10 Pre-Deployment Training

Branch	SDM	AWG	Sniper	Other	Unit	Personal or Private Courses	Total
Air Defense	0	0	0	0	0	0	0
Ammunition	3	0	0	0	0	1	4
Armor	5	0	1	0	0	0	6
Aviation	0	0	0	5	0	0	5
CBRN	0	0	0	5	0	0	5
Engineer	2	0	1	1	0	0	4
Field Artillery	1	1	0	5	0	0	7
Infantry	11	8	4	14	3	0	40
Mech Maint	1	0	0	2	0	0	3
Military Police	2	0	0	6	0	1	9
Quartermaster	1	1	0	3	0	0	5
Transportation	0	0	0	2	0	0	2
Signal	0	0	0	0	0	0	0
Military Intell	0	1	0	0	0	0	1

Other Comments to Question 10 on Pre-Deployment Training

- **Reasons Leaders Cited for Why Unit Did Not Get Marksmanship Training (or the Type Perceived as Needed) Prior to Deployment**

Air Defense Artillery

--I have only been to Kuwait in support of OEF. I was a TCA for an ADA Battery. We applied very little marksmanship training in our build up to deploying.

Ammunition

--As EOD we are not allotted the necessary training ammo to fully give us the amount of basic marksmanship to be proficient in the current operational theaters

Aviation

--Aviation is only required to meet the minimum level of marksmanship training, which is once a year we go to a range to fire our weapons with no other additional training. So just about no training whatsoever contributed to any unit I have been to as far as combat

--In the combat environment, we concentrated the most on aircraft maintenance to keep them Full Mission Capable to fight the enemy on the daily basis

--When we deployed, the weapons we qualified with were not the same weapons we deployed with when we got to Afghanistan. We were given 9 rounds to zero our weapons.

CBRN

--Unit designated that only 11B needed training

Electronic Maintenance

--No specific marksmanship training assisted in providing combat effectiveness. Deployments were with units that did not conduct maneuvers.

--Our missions dealt with support operations in the field of maintenance, rather than anything that was combat-driven. So the training itself was not truly put into use. All of the training that is conducted prior to deploying, however, is very good and all units should undergo it

Engineer

--None. In 12 months in Afghanistan, neither I nor any Soldier in my platoon fired our weapons. Furthermore, I was never in combat. Pre-deployment marksmanship training seemed to be the check-the-qualification-box variety and not oriented toward combat, but I'm only guessing here. At the end of our mobilization training there was some additional time available for extra training, and I recommended demolition or additional machine gun training to my company commander, but both of those were denied. In hindsight, demolition training would have been beneficial for when rock was encountered.

Field Artillery

--None. Rushed all attachments through. Mistakenly thought they didn't need training, which was incorrect.

Infantry

--None, it was terrible. As a former Marine, I can speak confidently when I say that comparatively the Army's Marksmanship program as a whole is broken. My recommendation: each base needs a stand-alone marksmanship training unit responsible for oversight and conducting marksmanship training. It should NOT be left to the units, because typically rifle score cards are altered embellished and many of the leaders in the units are poorly trained themselves. We cannot ask poorly trained SSGs and SFCs to teach marksmanship to young enlisted/officers; and so the cycle continues.

Mechanical Maintenance

--None of it. We only had ranges to get Soldiers qualified. And there were even some that deployed without proper qualification.

--NONE we don't shoot enough.

- **Examples of Marksmanship Training**

Ammunition

--On my deployments to Iraq, the pre-deployment marksmanship training increased as my number of deployments increased. For example, my first deployment we trained at home station and then again at Kuwait. The 2nd and 3rd rotations were similar but with more advanced level of marksmanship, such as CQB, reflexive firing and advanced optics. My only pre-deployment marksmanship training for Afghanistan was simple qualification range.

Armor

--Basic rifle qualification through advanced marksmanship instruction and ranges. With great amounts of training gained from Team, Squad, and Platoon live fire.

--Having an NCO driven shooting program that allowed for creative ranges. We would utilize civilian shooting schools to get guys tight on both distances shooting as well as CQB. We were also allotted FRANG ammo for use on steel targets (for instant target feedback).

--My unit was at the range for months before we deployed – every day and some nights. It got to the point that we all shot expert and were fast in handling stoppage issues. We fired in all types of uniforms, i.e., soft cap not IBA/ACH, with IBA/ACH. Also we drilled on all shooting positions, prone, on our side, around corners, from windows, kneeling, standing, out of the back of the LMTV. My 1SG kept us up all day and had us shoot all night, then again the following day. In short my 1SG made sure every Soldier was tactically proficient in any situation in any position that we might have to fire our weapon.

--Our 1SS had a 150m range and a 25m range. These ranges contributed greatly to maintenance of our skills during deployment. We were able to safely execute ranges without any red tape typically associated with ranges. This did not mean that we were not safe, but we could design our own ranges and shoot when we wanted.

--The biggest thing we took away from the training that contributed to my deployment was the training on the new equipment in CONUS on the equipment that we would be using OCONUS.

--While deployed to Iraq we mainly were dismounted in an urban environment. Some of the most relevant training for that deployment was CQM and BRM; also unstablized gunnery was a big help for gunners on the MRAPs.

Engineer

--My unit that deployed to Iraq conducted many different ranges, and training scenarios. The unit I deployed with to Afghanistan did not provide any training.

--We received Pre Mission Training (PMT) similar to the special forces. The training is called special forces urban assault course (SFUAC). Typically, we do not receive all the training being support, but the little training we do receive is very helpful and realistic.

--We were able to build a 25 meter range on our FOB. We then were able to qualify a few times while there.

Infantry

--High angle fire and stress shots. Other than that multiple platoon LFX. This provided us with training we needed to be able to conduct combat operations in Afghanistan. Weapons, and more important, ammo is completely necessary for you to be able to train your Soldiers.

Also you must have more and more ammo. Ammo is a key asset to training and without it we cannot train on weapon systems. Different training areas are also necessary because this puts the Soldier in unfamiliar areas and adds another stress to the LFX. Range control is also a huge help with providing Soldiers with what they need.

--Reflexive Fire exercises, Zeroing, Weapons Qualification, and Live Fire exercises each contributed equally in different aspects to our combat effectiveness.

--Stress shoots, alternate firing positions (doors, walls, rooftops), customized shooting ranges (qualification range using a controlled pair for each target), qualification range off-hand shooting, buddy team live fires with UBL and controlled pair required for each target. Actually shooting in difficult situations helped immensely. Standard qualification is good to maintain familiarity, but the types of ranges we did before deployment were more focused on shooting in a real firefight. Reflexive fire was less relevant. We did it once in conjunction with a shoot house. One full day was sufficient.

Mechanical Maintenance

--During my first deployment I was part of the PST team. We conducted many familiarization ranges on small weapons. Running ranges, gave me most of my experience and not the unit currently in.

--Training in Germany before each deployment made a huge difference in my marksmanship as well that of my Soldiers.

--Very helpful because the training did save my life down the road.

Multifunctional Logistician

--Maximizing the amount of time on the range at home station in conjunction with training conducted in theater. For example, range time while in Kuwait was extremely beneficial because the Soldiers were focused and aware they were about to enter combat operations.

Quartermaster

--Marksmanship ranges conducted on the FOB.

--Marksmanship training in Kuwait and one qualification range mid-tour in Iraq

Signal

--Besides home station, we also conducted more tailored training while in Kuwait (cordon and knock, raid, enter and clear a house).

Transportation

--The best training came from outside units that mostly happened in theater.

- **General Comments on Marksmanship Training**

Infantry

--I believe the basic marksmanship training that units do is a waste of time. It is what it is for boot camp. Units do not set up training properly because of risk or whatever. Soldiers can barely hit target further than 250 meters away. The normal pop up target ranges do not show where they are really impacting at. If this really matters then maybe go look at the Marine Corps and see how they go through a week long PMI and another week long on a range to understand how they shoot and what they do wrong so they can become a better marksman.

Transportation

--There has been a lot of focus in the field of traditional marksmanship. But I think there should be more focus on advanced marksmanship for those not in combat arms MOSs. I personally like to shoot and am pretty good at it. I think providing the Soldiers of the army an opportunity to really test their skills on a more difficult course would be beneficial to the units and the Army in general.

Table D7 presents the number and percentage of leaders within each branch who commented on the pre-deployment question (Question 10).

Table D7

Percentage of Leaders Who Commented on Question 10: If You Have Been Deployed, What Marksmanship Training in Your Unit Contributed the Most to Your Combat Effectiveness?

Branch	Leaders Who Commented
Branches With More Than 20 Respondents ^a	Number and Percentage
Infantry	199 (81%)
Engineer	94 (77%)
OS (Signal and Military Intelligence)	16 (73%)
Armor	123 (72%)
Military Police	97 (72%)
Field Artillery	97 (68%)
Ammunition	48 (66%)
CBRN	45 (63%)
Aviation	39 (63%)
Mechanical Maintenance	157 (61%)
Transportation	75 (52%)
Quartermaster	67 (50%)
Air Defense Artillery	11 (41%)
Branches With Less Than 20 Respondents	
Civil Affairs	2 (100%)
Medical,	1 (100%)
Multifunctional Logistician	7 (88%)
Finance	4 (80%)
Electronic Maintenance	11 (64%)
Adjutant General	1 (50%)
Total (1636 respondents)	1090 commented – 67% 546 did not comment – 33%

Notes. Includes all leader branches/categories, not just the ones with more than 20 respondents. Military Intelligence and Signal combined to be consistent with categories used in body of report. Includes all comments

^a Ordered from high to low by percentage of leaders who made comments. Each branch percentage is based on number of leaders in that branch who responded to the questionnaire.

Appendix E

Additional Pre-deployment Training Needed

Question 11: If you have been deployed, what additional marksmanship training in your unit would have increased your combat effectiveness?

(If not deployed or have no comments, please type “none.”)

Who Commented

Overall, 52% of the leaders responded to this question. The percentage of leaders responding within each of the major branches ranged from a high of 71% for Infantry to 26% for Air Defense Artillery. At least half of the leaders from each of the following major branches responded: Engineer, OS (Signal and Military Intelligence), Armor, Military Police, CBRN, Aviation, and Field Artillery (see Table E7 at the end of the Appendix).

Content of the Comments

In general, the responses reflected the same categories as those used in analyzing the pre-deployment training comments (Question 10, Appendix D). Consequently the same categories were used wherever possible. Tables E1 and E2 include these categories. Live-fire collective training comments also occurred as was the case with Question 10. In addition, many comments were simply that more live-fire training was needed with no detail provided. And there were some comments that integrated many aspects of marksmanship training or expressed a particular point of view regarding marksmanship training that were not categorized, but are reported “intact.” It is noted that comments could cover more than one category, so the totals in Table E1 do not represent the number of leaders, but rather the number of comments.

Table E1

Number of Comments in each Major Category for Question 11: Additional Pre-Deployment Training Desired

Major Category	# of Comments
BRM-Related Skills	(87)
• BRM	23
• Qualification &/or Zeroing	13
• PMI	11
• Live-Fire (excluding qualification and zeroing)	21
• EST/simulation	19
ARM-Related Skills (including LRM and SRM)	(310)
• ARM	64
• LRM	68
• Stress shoots	31
• Optics/Sight/Lasers	19
• Night fire	15
• SRM/CQM/CQB	60
• Reflexive Fire	53
• Targetry	20

Major Category	# of Comments
Training on Other Weapons	(111)
• Crew-served Weapons (specific)	59
• Pistol	8
• Gunnery – from vehicle or aerial platforms	5
• Weapons (general)	27
• Weapons used when deployed	12
Special Courses	(77)
• SDM	25
• AWG	7
• Sniper School /Sniper Training	12
• Other Courses	22
• Unit Designed Courses	6
• NCO Training/Preparation	5
General Comments on Adequacy of Training	(29)
• Training was satisfactory	20
• Needed Improvements to Training	9
More Live Fire Training	(195)

Summary of Major Comments

BRM-Related Skills

The total number of comments in the BRM category was substantially less than the pre-deployment comments in the same category (85% fewer responses). Thus, in general, leaders did not perceive that they should have had substantially more BRM training prior to deployment.

- **BRM.** The main point was that some Soldiers simply needed more training on marksmanship basics and fundamentals.
- **Qualification and/or Zeroing.** Most leaders simply cited the need to qualify and/or zero.
- **Preliminary Marksmanship Instruction.** As with BRM, more training in fundamentals was cited, with specifics given such as weapon familiarization, weapons handling, or just “PMI.”
- **EST/ Simulation.** Comments in this category included paintball rounds, which were not mentioned as a training technique prior to deployment.
- **Live-fire Exercises (excluding qualification and zeroing).** The dominant response was that more Known Distance practice was needed. Infantry leaders accounted for 63% of the comments.

ARM-Related Training

The total number of comments in the ARM category was 50% less than the pre-deployment comments in the same category.

- **ARM Skills.** Comments included training on alternate/degraded positions, firing from vehicles, high angle/elevation change shooting (Infantry leaders), more on ballistics and weapon transitioning.
- **Long Range Marksmanship (LRM) training.** Many of these comments focused on the need for such skills when deployed to Afghanistan. Infantry leaders accounted for 38% of these comments, with Armor and Engineer leaders each accounting for 15% of these comments.
- **Stress Shoots.** The typical comment was the need for more stress shoots. Infantry leaders provided 38% of these comments.
- **Optics/Sights Lasers.** The ACOG was the most frequent sight cited, with generic reference to more training on optics to include zeroing and boresighting as some leaders indicated their Soldiers were not confident in the use of these sights.
- **Night Fire.** The need for more night fire training was cited with little to no explanatory detail.
- **SRM/CQM/CQB.** There were 60% fewer comments in this category than with the pre-deployment question, so pre-deployment training was seen as adequate by most, but not all, leaders. Infantry leaders provided 20% of the comments with Armor, Engineer, Field Artillery, Mechanical Maintenance, and Military Police each providing about 12% of the responses
- **Reflexive Fire.** As with SRM/CQM/CQB there were substantially fewer comments (67%) in this category than with the pre-deployment question, so pre-deployment training was seen as adequate by most, but not all, leaders. Mechanical Maintenance leaders provided 19% of the comments.
- **Targetry.** This category was not used for categorizing the pre-deployment comments. The dominant comment was regarding the need for moving targets. Infantry leaders accounted for 50% of the comments, but leaders from eight branches commented.

Training on Other Weapons

Many leaders perceived that pre-deployment training on other weapons was not adequate. Specifically, the total number of comments in this category did not differ substantially from responses to the pre-deployment question (111 perceived as needed after deployment, 135 pre-deployment training). The need for crew-served weapons training dominated (50% of the comments). A few comments related to specialty weapons that Soldiers had to use when

deployed such as anti-armor weapons, CROWS (a new system), etc. Presented in the integrated comments at the end is a good detailed explanation of why an Infantry Leader stressed training on the M240B.

Special Courses

Many leaders perceived a need for special marksmanship courses that was not met during pre-deployment training. Specifically, the total number of comments in this category did not differ substantially from responses to the pre-deployment question (77 perceived as needed after deployment, 97-- pre-deployment training). The most frequent comments were with regard to squad designated marksmanship training and special courses offered by USAMU, MLARM, etc.

Training Adequacy

Table E2 also presents the small number of leader comments on the adequacy of training.

More Live-Fire Training

Many comments (195) were simply that more live fire, more range time was needed without further elaboration. More information is provided after Table E2.

Collective Training

In answer to the prior question on pre-deployment training that was received, a substantial number of leaders (215) commented on conducting collective training prior to being deployed. Three types of exercises dominated these comments: convoy live fire, shoot houses, and MOUT training. However, with respect to what additional training was needed (Question 11, this appendix), only 125 leaders commented on collective training. The same three areas were commonly cited, with more on convoy live fire and shoot houses (~26% for each) and less often on MOUT (13%). It is noted that Mechanical Maintenance leaders stressed convoy live fire (50% of these comments) and Military Police stressed shoot houses (67% of these comments). Infantry and Armor leaders also commented on squad/ platoon live fire exercises. Examples of these responses were: *more Plt STX lanes or even more focused battle buddy shooting, increased number of live fire exercises, team through company – every training cycle should include all of these LFXs at a minimum, mounted live fire with dismounted live fire simultaneously, more maneuver live fire for platoon/squad, more combined arms live fire with CAS and CCA would have helped overall effectiveness.*

More Realism in Training

A few comments (20) were on the need for realistic target scenarios (both live-fire and simulation).

Table E2 details the comments to the categories in Table E1. Selected comments on live-fire follow the table. Then there is a section on “integrated comments,” comments that could not be easily divided into the categories in Tables E1 and E2. These comments were typically

extensive comments, and provide a better understanding of leaders' reaction to their pre-deployment training.

Table E2

Summary of Comments to Question 11: If You Have Been Deployed, What Additional Marksmanship Training in Your Unit Would Have Increased Your Combat Effectiveness?

Comment Category	# Comments by Branch	Specific Comments on Additional Marksmanship Training Needed Prior to Deployment
Basic Rifle Marksmanship: 87 Total Comments		
BRM (23 comments)	1 Air Defense Artillery 1 Aviation 2 CBRN 1 Electronic Maint 1 Field Artillery Infantry 6 Mechanical Maint 1 Military Intelligence Military Police Quartermaster Transportation	<u>Air Defense Artillery</u> : BRM (1) <u>Aviation</u> : BRM (1) <u>CBRN</u> : M4 (1), Individualized training (1) <u>Electronic Maintenance</u> : Any and all marksmanship training is very good because most units don't go to the firing ranges enough, or as much as they should (1) <u>Field Artillery</u> : Being issued an M4 would have been preferable (1) <u>Infantry</u> : BRM (1), More focused on basic marksmanship (1) <u>Mechanical Maintenance</u> : BRM (4), Focus on how negligent discharges can happen, and how they can be prevented (1), Training without IBA knee and elbow pads prior to training – to build confidence in yourself and weapon system (1) <u>Military Intelligence</u> : Most people could use help with the basics (1) <u>Military Police</u> : BRM (1), M4 (1) <u>Quartermaster</u> : Basics then trouble shooting options (1), BRM (1), BRM was enough because was not involved in direct conflict (1) <u>Transportation</u> : Marksmanship training; (1), Training on assigned weapons – M4 vs. M16 (1)
PMI (11 comments)	2 Ammunition 3 CBRN 4 Mechanical Maint 2 Transportation	<u>Ammunition</u> : Stop teaching bad habits to the young Soldiers (i.e., magazine retention) (1), More hands-on and cleaning instruction, not just ranges (1) <u>CBRN</u> : PMI (1), More weapons handling (changing magazines, move with weapon, target identification) (1), target ID (1) <u>Mechanical Maintenance</u> : More PMI (2), Weapon familiarization (2) <u>Transportation</u> : More prior and time to conduct PMI (1), PMI (1)
Qualification &/or Zeroing (13 comments)	1 Ammunition 2 CBRN 3 Engineer 3 Field Artillery 2 Mechanical Maint 2 Quartermaster	<u>Ammunition</u> : M16 qual (1) <u>CBRN</u> : Qualification (1), Qualification and zeroing (1) <u>Engineer</u> : Pop-up qualification (1), Weapons qual (1), Normal qualifying and zero range (1) <u>Field Artillery</u> : Actual qual in day (1), More time zeroing and qualifying (1), If we had the chance to confirm our zero and re-zero our weapon (1) <u>Mechanical Maintenance</u> : Qualification (2)

Comment Category	# Comments by Branch	Specific Comments on Additional Marksmanship Training Needed Prior to Deployment
		<u>Quartermaster</u> : M16 qualification (1), When qualifying down range – having the proper target such as ACOG so we could accommodate Lanes (1)
Live-fire other than zeroing and qualification (21 comments)	4 Armor 1 Engineer 14 Infantry 2 Military Police	<u>Armor</u> : KD training (3), Known distance ranges are effective, or use a standard qual range and put some target on “bob” so the firer can see the target fall (1) <u>Engineer</u> : KD (1) <u>Infantry</u> : KD ranges (3), More KD shooting (6), Additional KD range time for riflemen (2), Additional time on the KD range would have been advantageous. Any practice engagements at 500 meters would have increased our ability to effectively return fire (1), KD ranges give Soldiers downrange feedback, more trigger time is how you learn to shoot. I would not recommend that the Army continue to get in foxholes and qualify (1), Time spent on KD ranges would have been helpful for all Soldiers in better understanding their capabilities as well as their weapons’ capabilities at long distance (1) <u>Military Police</u> : Qualifying on a rifle or being given more training on it (1), Pistol qualification is currently inadequate (1)
Simulation/EST (19 comment)	1 Armor 6 Aviation 1 Field Artillery 1 Finance 1 Infantry 4 Mechanical Maint 1 Military Police 1 Quartermaster 3 Transportation	<u>Armor</u> : More simulation rounds (1) <u>Aviation</u> : EST 2000(2), More EST training for fundamentals (2), Some simulator time with scenarios would have been useful (1), Most units I deployed with did not have effective training. I received EST training at Ft. Eustis and plan to take what I learned back to my unit so they can gain from my experience (1) <u>Field Artillery</u> : Believe plastic rounds would be more effective than MILES gear as it immediately correct things such as leaving yourself exposed too long in order to gain sight of the enemy. Also gives immediate feedback when you are being fired upon (1) <u>Finance</u> : EST 2000 (1) <u>Infantry</u> : Using paint rounds or use of sim rounds to get accurate picture of whether you are actually hitting target in force-on-force with your weapon and your zero (1) <u>Mechanical Maintenance</u> : EST 2000 (1), Engagement simulator training (1), Schedule EST prior to range and identify personnel that need more training (1), Paintball – for the feedback it provides (1) <u>Military Police</u> : More sim round training (1) <u>Quartermaster</u> : More EST training (1) <u>Transportation</u> : EST 2000 (3)
Advanced Rifle Marksmanship (ARM) Related Skills: 310 Total Comments		
ARM (64 comments)	8 Armor 2 Aviation 3 CBRN	<u>Armor</u> : ARM (1), More advanced description of ballistics to lowest level Soldier (1), Alternate fire positions (1), ARM training such as learning how to shoot moving targets and

Comment Category	# Comments by Branch	Specific Comments on Additional Marksmanship Training Needed Prior to Deployment
	1 Electronic Maint 8 Engineer 4 Field Artillery 16 Infantry 6 Mechanical Maint 10 Military Police 1 Multif Logistician 2 Quartermaster 3 Transportation	<p>adjusting for degraded shooting conditions such as extreme heat or wind (1), Barrier shoot, or anything besides the normal popup target engagements (1), High and low angle fires/ranges (1), More allocated rounds to conduct different live fires. Shoot houses and shoot areas where you can fire from elevated positions, from the ground, from vehicles and fire at targets straight, above, and below the weapon system (1), Shooting from unsupported positions (1)</p> <p><u>Aviation</u>: Transition drills (1), Air gunnery (1)</p> <p><u>CBRN</u>: ARM (2), Shoot from moving vehicles (1)</p> <p><u>Electronic Maintenance</u>: Deeper look into effective marksmanship techniques (1)</p> <p><u>Engineer</u>: ARM (4), High angle convoy training using MRAPs and MATVs Gunners did not have a realistic idea of what they would encounter with their actual vehicles (1), Magazine and belt-changing reloading drills (in day or dark with maximum efficiency and speed) (1), Our normal advanced marksmanship range (1), Learning how to adjust for wind gusts (1)</p> <p><u>Field Artillery</u>: ARM (1), Firing from moving platform or vehicle (1), Gunners being able to shoot on the move (1), Firing from unusual positions, such as around corners and over barricades (1)</p> <p><u>Infantry</u>: ARM to include alternate firing positions (1), Angle shooting especially for Afghanistan (1), Barrier shooting, weak side shooting, shooting in woodline and not an open field (1), Focus mostly on elevation change shooting, i.e., the ballistic difference of being at a higher elevation and engaging a target at a lower elevation (1), Going in depth on KD, ARM, shooting from windows and barriers would have increased the units lethality and combat effectiveness (1), High altitude marksmanship (1), High angle shooting (mountainous terrain (2), High angle shooting (1), Non-standard shooting position as rarely are you in a perfect shooting stance when being engaged, so Soldiers need to work more on off hand and nonstandard shooting positions (1), Training to shoot up and down steep inclines (2), Would benefit Soldiers to receive training in high angle shooting given the types of environments we have seen in Iraq and Afghanistan with the mountainous and urban terrain (1), Qual ranges using controlled pair per target, qualifying off hand, qual ranges alternating between standing, kneeling, prone for each targets and engaging with a controlled pair, alternate fighting positions; less “ready up” drills . Focus on training the 200—500 meter firefight. Urban is useful, but I think we focus too much on it (1), Off-hand firing (1), Shooting from various positions including standing and kneeling but in a stress type environment (1)</p>

Comment Category	# Comments by Branch	Specific Comments on Additional Marksmanship Training Needed Prior to Deployment
		<p><u>Mechanical Maintenance</u>: ARM (3), kneeling psn (1), Shoot don't shoot (1), shooting uphill/downhill and wind effects (1)</p> <p><u>Military Police</u>: 9mm shoot don't shoot (1), More ARM (1), More slots to advanced marksmanship schools on post (1), Better overall understanding of ballistics and trajectory (1), Firing from corners and from behind cover (1), Some advanced pistol and rifle training like civilian SWAT training (1), Weapon transition (1), After BRM, smaller versions of Advanced Marksmanship is needed (1), More advanced marksmanship training prior to deployment (1), I was a staff primary. I carried an M4 and a 9mm. If I had to use either one of those weapons, most likely it would be close range while on a FOB either due to an "active shooter" scenario (green on blue engagements) or while being attacked with small arms. More training with engaging targets at 50 - 100 meters with my M4, with multiple friendlies surrounding the target, would have been more realistic training than engaging "Ivans" popping up at 300 meters. (1)</p> <p><u>Multif Logistician</u>: More ARM... Soldiers were aware of the right thing to do and how to manipulate their weapons, but did not have the muscle memory that would be desired for Soldiers deploying to a theater of combat. (1)</p> <p><u>Quartermaster</u>: Kneeling while using M16 (1), Unstabilized platform gunnery (1)</p> <p><u>Transportation</u>: ARM (1), Shooting while on the move,(2), Hit moving targets from vehicle (10)</p>
LRM (68 comments)	2 Ammunition 10 Armor 2 CBRN 7 Engineer 9 Field Artillery 26 Infantry 1 Mechanical Maint 5 Military Police 2 Quartermaster 4 Transportation	<p><u>Ammunition</u>: LRM (2)</p> <p><u>Armor</u>: LRM (7), LRM for all Soldiers (2), Fundamentals of long range precision engagements (1),</p> <p><u>CBRN</u>: LRM (2)</p> <p><u>Engineer</u>: LRM (7)</p> <p><u>Field Artillery</u>: LRM (8), LRM with the M4 rifle would have aided the combat effectiveness of the entire unit (1)</p> <p><u>Infantry</u>: LRM (13), Any practice engagements at 500m would have increased our ability to effectively return fire (1), Advanced long distance marksmanship training with M4s out to 500-600 meters. With many engagements in Afghanistan taking place at ranges beyond 300 meters the Army qualification standard of 300 meters doesn't cut it. (1), Company- wide LRM. Only SDMs were able to go to LRM. Nearest DF TIC in my Battalion was 200m, all others occurred between 400-800m (1), Engaging long range targets (500m to 800m) (1), Frequent long range marksmanship classes, elevated shooting classes, and marksmanship classes for our Squad Designated Marksmen WOULD have been helpful. We received none of that during our pre-deployment train-up. (1), I joined unit in Afghanistan. Range estimation and long range shooting 600-700m would have helped. I</p>

Comment Category	# Comments by Branch	Specific Comments on Additional Marksmanship Training Needed Prior to Deployment
		<p>realize that is past the “effective range of the M4, but sometimes a boy’s just gotta make do (1), Long range firing training would have helped (2), KD long distance training for all Soldiers (1), More training on extended range shooting (1), Shooting at long distances (1), More long distance shooting scenarios (1), Squad designated marksmen train Soldiers to engage targets with rifles from 300m to 600m. With the types of engagements we are seeing in Afghanistan, this training would have greatly benefited the individual Soldier. We should in the future incorporate our weapons qualification and training to extend to the max. effective range (at point targets) for each weapon system. (1)</p> <p><u>Mechanical Maint:</u> LRM (1)</p> <p><u>Military Police:</u> LRM (4), LRM with all weapon systems (1)</p> <p><u>Quartermaster:</u> LRM (1), Some distance shooting (1)</p> <p><u>Transportation:</u> LRM (3). Long range target engagement could have been good to have – something like a basic sniper engagements (1)</p>
Optics/sights/ Lasers (19 comments)	2 Ammunition 3 Armor 1 Aviation 1 CBRN 3 Engineer 1 Field Artillery 2 Infantry 2 Mechanical Maint 2 Military Police 1 Quartermaster 1 Transportation	<p><u>Ammunition:</u> Advanced optics (1), Optics(1)</p> <p><u>Armor:</u> Getting ACOGs earlier in train-up so as to best train all our Soldiers (1), More training with ACOG and TWS (1), Allow Soldiers to choose the optic and the way it sits on the wpn that is comfortable to them. Our squadron dictated to the Soldiers where the ACOG should be placed and what it was mounted on despite Soldiers being uncomfortable with it and marksmanship scores dropping (1)</p> <p><u>Aviation:</u> We needed more training on using the NVG firing techniques. A lot of the junior enlisted only fire weapons at ranges. To put them in a live fire condition the junior and some of the senior enlisted were not comfortable under these conditions making it unsatisfactory (1)</p> <p><u>CBRN:</u> More training with different optics (1)</p> <p><u>Engineer:</u> More with optics (2), All engineer units should be provided with the same CCOs as Infantry. We do fight the same fight (1)</p> <p><u>Field Artillery:</u> Proper use of the M68 and ACOG sights. For example, having Soldiers properly borelight these sights then attempt to zero and qualify correctly, not using the word of mouth method from previous experiences (1)</p> <p><u>Infantry:</u> ACOG training. We received them on the eve of deployment and never got to train on and go to ranges with them. I was not confident in using the ACOG system (1), In depth explanation of how sights (i.e., ACOG) works. A lot of Soldiers did not know how to use them (1).</p> <p><u>Mechanical Maintenance:</u> More emphasis on various sights, instructions on how to zero and qualify with sights (1), More time on range with optics (1)</p> <p><u>Military Police:</u> Additional night fire with optics (1), Use of</p>

Comment Category	# Comments by Branch	Specific Comments on Additional Marksmanship Training Needed Prior to Deployment
		night optics with the weapon's optical sights (1) <u>Quartermaster</u> : ACOG training (1) <u>Transportation</u> : Use of optics (1)
Stress Shoots (31 comments)	5 Armor 2 CBRN 1 Engineer 2 Field Artillery 12 Infantry 1 Mechanical Maint 1 Military Intelligence 4 Military Police 2 Quartermaster 1 Transportation	<u>Armor</u> : More stress shoots, we didn't do many prior to deployment (1), More stress fire situational training (2), stress shoots (2) <u>CBRN</u> : Stress fire shoots are great. Stress fires can be made into a competition, are a great way to push Soldiers, and it's easy to justify awarding an AAM to the Soldier or group of Soldiers who did the best (1), Stress shoots (1) <u>Engineer</u> : Stress fire (1) <u>Field Artillery</u> : Stress shoots (1), Reloading under stress (1) <u>Infantry</u> : Stress shooting (3), More stress shoots (6), urban stress shoot (1), My unit did not fire its weapons enough prior to deploying. More stress shoots, ranges with moving targetry and cross-training with snipers would have benefitted our unit greatly (1), More ammunition to conduct more ranges and nontraditional ranges like stress shoots (1) <u>Mechanical Maint</u> : Stress shoots (1) <u>Military Intelligence</u> : Stress fire drills (1) <u>Military Police</u> : Stress shoots (4) <u>Quartermaster</u> : Stress shoots (2) <u>Transportation</u> : Stress shoots (1)
Night fire (15 comments)	2 Armor 2 Engineer 4 Field Artillery 1 Infantry 4 Military Police 2 Quartermaster	<u>Armor</u> : More night fire (2) <u>Engineer</u> : More night fire (2) <u>Field Artillery</u> : More night live fire (2), Night qual (1), Just more time on ranges night shooting – night vision training (1) <u>Infantry</u> : Night maneuver range (1) <u>Military Police</u> : Better understanding of night fire (1), Night fire would have been beneficial (1), NVG marksmanship training with the M4 (1), Increased limited visibility and night fire training (1) <u>Quartermaster</u> : Night ranges/fire (2)
Reflexive fire (53 comments)	1 Air Defense Artillery 6 Ammunition 2 Armor 2 Aviation 2 CBRN 1 Electronic Maint 5 Engineer 6 Field Artillery 4 Infantry 10 Mechanical Maint 1 Military Intelligence 7 Military Police 1 Signal 5 Transportation	<u>Air Defense Artillery</u> : Reflexive fire training (1) <u>Ammunition</u> : Reflexive fire (6) <u>Armor</u> : Reflexive fire (2) <u>Aviation</u> : Reflexive fire (1), Reflexive fire more than once (1) <u>CBRN</u> : Reflexive fire scenarios (1), The reflexive fire training completed in Kuwait was the best marksmanship training that I have received (1) <u>Electronic Maintenance</u> : Reflexive fire (1) <u>Engineer</u> : Reflexive fire (5) <u>Field Artillery</u> : Reflexive fire (4), Quick reaction drills (2) <u>Infantry</u> : Reflexive fire (3), More focus on employing controlled fires (1) <u>Mechanical Maintenance</u> : Reflexive fire (8), Reflexive fire would have been nice given the mission we were assigned

Comment Category	# Comments by Branch	Specific Comments on Additional Marksmanship Training Needed Prior to Deployment
		<p>(1), Reflexive fire should not only be how to get on our target quickly but also should push more target confirmation training (1)</p> <p><u>Military Intelligence</u>: Reflexive fire (1)</p> <p><u>Military Police</u>: I was an individual deployee – unable to participate in unit marksmanship training. Reflexive fire would have increased preparation for combat situations (1), More reflexive fire (6)</p> <p><u>Signal</u>: Reflexive fire (1)</p> <p><u>Transportation</u>: Reflexive fire (5)</p>
SRM/CQM/CQB (60 comments)	1 Ammunition 7 Armor 1 Aviation 1 CBRN 8 Engineer 9 Field Artillery 12 Infantry 8 Mechanical Maint 8 Military Police 1 Quartermaster 1 Signal 3 Transportation	<p><u>Ammunition</u> : CQM (1)</p> <p><u>Armor</u>: CQM (5), CQM with nonlethal munitions. We had to conduct a familiarization range with our non-lethal munitions in country (1), combat marksmanship need to be included in all training including battle drills (1).</p> <p><u>Aviation</u>: CQM (1)</p> <p><u>CBRN</u>: CQM (1)</p> <p><u>Engineer</u>: CQM (6), CQB (1), Combat live fire exercise (1)</p> <p><u>Field Artillery</u>: CQM (7), CQB (1), Should have continued CQM through all deployments(1)</p> <p><u>Infantry</u>: CQM (5), CQB (2), Advanced CQB (1), For Iraq more re-action drills and walking live fire lanes. Same for Afghan just increase the distance (1), More ammunition to conduct more ranges and nontraditional ranges like CQM (1), SRM (2)</p> <p><u>Mechanical Maintenance</u>: CQM (8)</p> <p><u>Military Police</u>: Additional SRT training for whole unit as only the QRF was sent to SRT training (1), CQM (4), CQB and use if CQB optics (1), We did not put much focus on CQM; that would have strongly increased our combat effectiveness (1), SRM (1)</p> <p><u>Quartermaster</u> : CQM (1)</p> <p><u>Signal</u>: CQM (1)</p> <p><u>Transportation</u>: CQM/CQB (3)</p>
Targetry (20 comments)	2 Armor 1 CBRN 2 Engineer 1 Field Artillery 9 Infantry 3 Mechanical Maint 1 Military Police 1 Multif Logistician	<p><u>Armor</u>: The Army needs to come up with <i>targetry that moves</i>. Current ranges do not reflect this. The enemy does not stand there and let you shoot him. Marksmanship needs to tailor this. (1), Using small arms to fire on moving targets. Currently the only moving targets we have trained against have been moving vehicles fired on from mounted positions. The unit could have benefited from practice engaging moving troop and truck targets from dismounted positions with the M240, M249 and M4/M16 (1)</p> <p><u>CBRN</u>: Use modern electronics ranges (1)</p> <p><u>Engineer</u>: Moving targets (1), Different styles of ranges, not just qualification (paper target), but Popup target ranges, moving targets, paint ball course in urban area (1)</p> <p><u>Field Artillery</u>: Firing at moving targets (1)</p>

Comment Category	# Comments by Branch	Specific Comments on Additional Marksmanship Training Needed Prior to Deployment
		<p><u>Infantry</u>: Moving targets / ranges (6), Shooting moving target at known distances (1), Less pop-up ranges and more freedom to do barrier and movement shooting (1), More training that provided immediate and accurate feedback. Getting to shoot on steel targets would have been a great opportunity, but I feel like the resources/time to do so were not available (1)</p> <p><u>Mechanical Maintenance</u>: More time at the range shooting moving targets (2), Moving targets (1)</p> <p><u>Military Police</u>: Rapid fire ranges with more than one moving target (1)</p> <p><u>Multif Logistician</u>: Moving target ranges (1)</p>
Training on Other Weapons: 111 Total # Comments		
General reference to other weapons (27 comments)	1 Ammunition 2 Armor 2 Aviation 2 CBRN 6 Engineer 2 Field Artillery 1 Finance 3 Infantry 4 Mechanical Maint 3 Military Police 1 Quartermaster	<p><u>Ammunition</u>: Training on a wider range of weapon systems (1)</p> <p><u>Armor</u>: Train on other weapon systems (1), JTAC, CAS/AWT was crucial in both OIF/OEF and we did absolutely no live LFX. Doing classes out of the book was completely different than “winging” it when we needed it most (1).</p> <p><u>Aviation</u>: Feel we could have been more suited in an Aviation unit to have been trained and deployed with the M9 versus the M4 rifle (1), Keeping the same weapon you zero with from the range at home station (1)</p> <p><u>CBRN</u>: Additional range time for all applicable weapon systems (1), Qualifying on different weapon systems (1)</p> <p><u>Engineer</u>: Cross training on all weapon systems (1), Having every single Soldier be trained on every weapon system we use (1), Get more Soldiers qualified on all the weapon we have in our arms room (1), More live fire with the actual vehicles I am going to use (1), Foreign weapons training (1), Require combat marksman for TL and above (1)</p> <p><u>Field Artillery</u>: More live fire with unknown distance and with all the different small arms weapons (1), Foreign weapons training (1)</p> <p><u>Finance</u>: We should have been allowed to shoot more different weapons than just M16s (1)</p> <p><u>Infantry</u>: Weapons cross training(1), Foreign weapons training (2)</p> <p><u>Mechanical Maintenance</u>: Go to more ranges and train every Soldier on all the weapons, not just the few to meet the standards (1), More target identification training IAW rules of engagement (3)</p> <p><u>Military Police</u>: Use of cross training and not focusing on just assigned weapons (1), Basic preliminary marksmanship training on all MP weapons, not just the ones Soldiers are assigned (1), Ensure safeties know the weapon system in order to help Soldiers on line (1)</p>

Comment Category	# Comments by Branch	Specific Comments on Additional Marksmanship Training Needed Prior to Deployment
Crew served weapons plus (59 comments)	5 Armor	<u>Quartermaster:</u> Train on all weapon systems (1)
	1 Aviation	<u>Armor:</u> More training on all other weapon systems, i.e., shot gun/m14 (1), Heavy weapon marksmanship (1), Machine gun ranges from a foxhole or tower. We shoot them while laying down at the range, but I have never fired a machine gun while laying down in combat (1) M203/320, MK19 (1), MK 19(1)
	8 Engineer	<u>Aviation:</u> Crew served weapons (1)
	5 Field Artillery	<u>Engineer:</u> 50 cal (1), Additional machine gun and automatic rifle training in a mounted scenario (1), Crew served weapon training for every Soldier (1), Crew served weapons training/qualification (2), M107 training (1), M240, M249 ranges (1), M2 .50 cal training (1)
	10 Infantry	<u>Field Artillery:</u> Crew served weapons training (3), M249 (1), MK19, .50 cal (1)
	14 Mechanical Maint	<u>Infantry:</u> Additional .50 cal and MK-19 training (1), Additional crew served weapons training (1), Additional M2/Mk19 training – need more overall (1), A good machine gun course would help develop better gun teams (1), Heavy weapons fam/KD ranges (1), Heavy weapons marksmanship is often under trained (1), Qual more Soldiers on crew served weapons (1), Mark 19 training, (1) More machine gun training (1), Use of the 240B. My unit did many assaults and without that weapon system and the ability to fire effectively with it we would have been in a lot of trouble during some engagements. Doing weapon training drills and more importantly gunner drills allowed us to place effective fires on the enemy, This fixed and killed the enemy and allowed me to maneuver my assault force to clear, seize, or destroy Obj that we dealt with on the battlefield. Also much of the fight was at distances where the 204B could only effect. This means that this was our major weapon to engage enemy. (1)
	1 Military Intelligence	<u>Mechanical Maintenance:</u> .50 cal (2), More crew served weapons training (8), train on different weapon systems such as M2 and M249 (1), Shotguns (1), Everyone should have pistol and shotgun training so everyone is more rounded in marksmanship (1), MK19, M4, M9, M320, .50 cal, M249 training (1)
	4 Military Police	<u>Military Intelligence:</u> More shotgun training (1)
	1 Multif Logistician	<u>Military Police:</u> M240 (1), More crew served weapons training (3)
	1 Civil Affairs	<u>Multif Logistician:</u> Stateside crew served weapons training is such a safety nightmare, that it does not give Soldiers the training and comfort level Soldiers need to execute the task down range. Safety is key, but not to the extent that it changes the way we train (1)
	7 Quartermaster	<u>Civil Affairs:</u> M2 and M249 training would have helped considerably before getting to theater (1)
	2 Transportation	<u>Quartermaster:</u> .50 cal (1), AT-4, M240B, M249, M4, M2

Comment Category	# Comments by Branch	Specific Comments on Additional Marksmanship Training Needed Prior to Deployment
		(1), Mark 19 (1), More crew served weapons training (2), Mk19, .50 cal, SAW, machine gun (1), Vehicle mounted machine gun range (1) <u>Transportation</u> : .50 cal (1), Crew served weapons (1)
Pistol (8 comments)	3 CBRN 2 Infantry 1 Military Police 1 Quartermaster 1 Transportation	<u>CBRN</u> : 9mm marksmanship course (1), M9 range (1), More M9 training(1) <u>Infantry</u> : Pistol marksmanship (1), More combined training, like transitioning from rifle to pistols (1) <u>Military Police</u> : Transitioning fires (1) <u>Quartermaster</u> : M9 (1) <u>Transportation</u> : Transition drills (1)
Gunnery (5 comments)	2 Armor 1 Aviation 1 Electronic Maint 1 Transportation	<u>Armor</u> : More tank gunnery (1), More unstabilized gunnery. The CAIMAN II gunners missed a lot (1) <u>Aviation</u> : Aerial gunnery (1) <u>Electronic Maintenance</u> : Light cavalry gunnery skills testing (1) <u>Transportation</u> : More driving live-fire ranges (1)
Weapons used when deployed (12 comments)	2 Armor 2 Engineer 1 Field Artillery 5 Infantry 1 Mechanical Maint 1 Military Police	<u>Armor</u> : CROW (1), TOW/ITAS LFX, SMAW-D, LAW and AT-4 LFX (1) <u>Engineer</u> : Specialty weapons – SMAW-D, AT4, M203, shotgun, M14 (1), Rotating weapons systems (RWS) training (1) <u>Field Artillery</u> : Variety of weapons to include LAW, AT4, and explosives would have been a benefit to our unit's training (1) <u>Infantry</u> : CROWS training upon entering Afghanistan (1), more time/resources on long range weapons including weapons mtd on a remote weapon station (CROW, RWS, etc m2 .50 cal, MK19, ITAS TOW (1), More cross training on RWS (1), Mtd live fire exercises on MRAP vehicles/gunnery which is what we used when we deployed instead of learning in country(2), Training weapon that were issued in theater – 60mm mortar, XM 25, Gustav (1) <u>Mechanical Maintenance</u> : Weapons knowledge of the CROWS system (1) <u>Military Police</u> : We had the CROWS systems available to us immediately after arriving to theater, yet no one had seen it until getting there. Having some training on the system to work on things like system malfunctions would have been very helpful. A firefight is the wrong time to learn (1)
Special Courses: 77 Total # Comments		
SDM (25 comments)	5 Ammunition 7 Armor 1 CBRN 3 Engineer 1 Field Artillery 6 Infantry 1 Military Police	<u>Ammunition</u> : SDM training (2), Counter sniper (1), Tiger Swan (1), The same level of training provided to individuals choosing to take private courses would have been beneficial to the unit as a whole. (1) <u>Armor</u> : Squad Designated marksman (4), More Soldiers attend SDM and LRM marksmanship courses (1), SDM courses would have helped; because we were tankers we

Comment Category	# Comments by Branch	Specific Comments on Additional Marksmanship Training Needed Prior to Deployment
	1 Transportation	<p>didn't get that training, even though we were doing a job that would have been enhanced by those skills (1), Platoon designated marksmen (1)</p> <p><u>CBRN</u>: SDM Training (1)</p> <p><u>Engineer</u>: SDM course (2), Every Soldiers should take a CQM or SDM course to enhance their individual combat effectiveness. I personally would have benefited from the LRM course (1)</p> <p><u>Field Artillery</u>: SDM (1)</p> <p><u>Infantry</u>: SDM (4), All Soldiers in line platoon should attend the squad marksmanship course (1), SDM for everyone (1)</p> <p><u>Military Police</u>: SDM training (1)</p> <p><u>Transportation</u>: SDM training (1)</p>
AWG (7 comments)	6 Infantry 1 Military Intelligence	<p><u>Infantry</u>: AWG marksmanship course (2), AWG's marksmanship training was the best that I received; would like them to push this training on the rest of the Army (1), CAT-C course would have been helpful (1), CAT-C would help increase combat effectiveness (1), CAT-C training was sufficient with other training being fluff and confidence building or small unit tactics training (1)</p> <p><u>Military Intelligence</u>: More AWG training. We only had a week. Going through the same training several times would have been very helpful (1)</p>
Sniper (12 comments)	3 Armor 3 Engineer 1 Field Artillery 4 Infantry 1 Military Police	<p><u>Armor</u>: Cross-train with Snipers (1), Sniper school (1), Sniper training for at least one Soldier per squad (1)</p> <p><u>Engineer</u>: [Unit X] sent Soldiers to Sniper School and LRM training to combat the sniper threat in the area of operations we were going to. Being schooled in these traits allowed us to train our Soldiers in the capabilities of snipers and different types of TTPs enemy snipers were using. –increasing our overall effectiveness in countering and denying sniper's threats. (1), Sniper training (2)</p> <p><u>Field Artillery</u>: Sniper School (1)</p> <p><u>Infantry</u>: Sniper (4)</p> <p><u>Military Police</u>: Sniper would have helped. We sent several to SDM and one to counter-sniper and 3 to LRM and all M4s had ACOGs. (1)</p>
Other Courses (22 comments)	1 Armor 2 Aviation 3 CBRN 2 Engineer 9 Infantry 2 Military Police 1 Multif Logistician 1 Quartermaster 1 Transportation	<p><u>Armor</u>: MLARM at Ft. Drum (1),</p> <p><u>Aviation</u>: Viking Tactical (2)</p> <p><u>CBRN</u>: Send people to AMU (1), Threat Management Group (1), Believe USMC model of marksmanship is far superior to the Army's. We should model their 3-week marksmanship module (1)</p> <p><u>Engineer</u>: Have a team come out to teach Soldiers about advance shooting (1), Direct Action Resources Center (DARC) school at Little Rock AR, where I train advanced tactical carbine and pistol (1)</p> <p><u>Infantry</u>: USAMU training (2), Attendance at civilian</p>

Comment Category	# Comments by Branch	Specific Comments on Additional Marksmanship Training Needed Prior to Deployment
		<p>shooting schools (1), Anything, doesn't have to be advanced (1), MLARM (1), More Mid South training (1), Advanced marksmanship course (1), Tiger Swan training would have been nice for everyone (1), Additional marksmanship training that may have increased combat effectiveness was the PSD course held in Dallas Texas at US Shooting Academy who specialize in tactical and professional shooting techniques for specialized units or professional shooters who compete (1)</p> <p><u>Military Police</u>: MP Advanced Arms Range Training (1), I went to the DEA course prior to last deployment. Think these types of advanced marksmanship courses and techniques would be beneficial to others (1)</p> <p><u>Multif Logistician</u>: Send everyone to a tactical carbine class at Gunsite or Thunder Ranch. Perhaps SF cadre could provide something similar (1)</p> <p><u>Quartermaster</u>: Eagle marksmanship course (1)</p> <p><u>Transportation</u>: Ranger (1)</p>
Unit training (6 comments)	1 Armor 1 Engineer 1 Infantry 1 Military Police 2 Quartermaster	<p><u>Armor</u>: More classes and sergeants time with the weapons. (1)</p> <p><u>Engineer</u>: Certified marksmanship individual available to assist units with marksmanship training, civilians, and/or contractors managing the range in order for unit manpower to focus on Soldier training (1)</p> <p><u>Infantry</u>: SME coming to unit to give more in depth training on ballistics, etc. (1)</p> <p><u>Military Police</u>: One of my team leaders was SRT and often trained the platoon on small range marksmanship and transition drills while we were in Afghanistan (1)</p> <p><u>Quartermaster</u>: Specialized coaching with a master marksman (1), If additional training is available, it should be posted for those interested. Such training wasn't available, My interest is the M9 Pistol, however my scheduled training is limited to the requirement. Additional training with weapons is discouraged (1)</p>
NCO training/ preparation (5 comments)	2 Armor 2 Engineer 1 Mechanical Maint	<p><u>Armor</u>: NCOs should have at least gone to small arms machine gun school (1), Train at small unit level; avoid entire Battalion/ Squadron firing at the same time. Let the NCOs teach, coach and mentor each of their Soldiers while they shoot (1)</p> <p><u>Engineer</u>: More slots for NCOs to attend close quarters battle and small arms master marksman course so they could bring that training to the unit (1), Having the proper equipment available in order to effectively train troops on TTP that will be carried and executed in theater (1)</p> <p><u>Mechanical Maintenance</u>: Send NCOs to EST 2000 training so they can understand better their marksmanship skills (1)</p>
General Comments on Adequacy of Training 29 Total # Comments		
Training was	3 Armor	<u>Armor</u> : All we did was good (1), Pre-deployment training

Comment Category	# Comments by Branch	Specific Comments on Additional Marksmanship Training Needed Prior to Deployment
Satisfactory (elaborations on “none” response) (20 comments)	1 Aviation 1 CBRN 2 Field Artillery 2 Infantry 2 Mechanical Maint 2 Military Police 3 Quartermaster 2 Signal 2 Transportation	<p>was adequate for our company (1), ISG made us shoot tired, in the rain, in the dark. We practiced every situation. It was rough, long days, early mornings, everything. At the end, it saved lives and made us all feel like there was nothing that we could not do (1)</p> <p><u>Aviation</u>: We had a great marksmanship program (1)</p> <p><u>CBRN</u>: My unit provided the appropriate level of training for the type of mission conducted (1)</p> <p><u>Field Artillery</u>: Received the training I needed (2)</p> <p><u>Infantry</u>: Marksmanship training we did was fine (1), My units have always had good marksmanship programs and plenty of time (1)</p> <p><u>Mechanical Maintenance</u>: My unit was well prepared for our last deployment (1), We made due with the terrain and equipment we had, it was pretty good training for being in a foreign land (1)</p> <p><u>Military Police</u>: Was very well trained (1), There is no better training we could have received (1)</p> <p><u>Quartermaster</u>: All training received proved that we were effective; also trained in between missions (1), None – training was on point and direct (1), Was trained above standards (1)</p> <p><u>Signal</u>: No other training comes to mind that would have further increased our effectiveness. I was a 13F during the time of my deployments serving in a light infantry Platoon (1), None –we had adequate marksmanship (1)</p> <p><u>Transportation</u>: Great training in unit (1), They trained me well (1)</p>
Needed Improvements to Training (9 comments) <i>[Not an exhaustive list, as other reactions to training are cited in other appendices]</i>	3 Armor 1 Engineer 3 Mechanical Maint 2 Military Police	<p><u>Armor</u>: Any marksmanship training would have been great for us as we did not before the deployment (1), All Soldiers should attend the training. In unit selection for additional training was Soldiers that were “good shots.” But Soldiers that aren’t as good marksmen should definitely attend to enhance their skills so everyone is on the same level or at least close (1), Everything; there was not near enough marksmanship training conducted at my previous unit (1)</p> <p><u>Engineer</u>: Having the proper equipment available in order to effectively train troops on TP that will be carried and executed in theater (1)</p> <p><u>Mechanical Maintenance</u>: All types of training (1), Any training (2)</p> <p><u>Military Police</u>: Clear and concise guidance from higher along with adequate time to include multiple green cycles into an MP company’s training cycle (1), Any training would be a good start (1)</p>

Tables E3 through E6 summarize the number of leader comments by branch in Table E2. In these tables, the Signal and Military Intelligence branches are reported separately. Other branches with fewer than 20 individuals are not included.

Table E3

Number of Leader Comments in BRM Training Categories: Question 11 Desired Training

Branch	BRM-general	Qual & Zero	PMI	Live Fire	Simulation	Total
Air Defense	1	0	0	0	0	1
Ammunition	0	1	2	0	0	3
Armor	0	0	0	4	0	4
Aviation	1	0	0	0	6	7
CBRN	2	2	3	0	0	7
Engineer	0	3	0	1	0	4
Field Artillery	1	3	0	0	1	5
Infantry	2	0	0	14	1	17
Mech Maint	6	2	4	0	4	16
Military Police	2	0	0	2	1	5
Quartermaster	3	2	0	0	1	6
Transportation	3	0	2	0	1	6
Signal	0	0	0	0	0	0
Military Intell	0	0	0	0	0	0

Table E4

Number of Leader Comments in ARM Training Categories: Question 11 Desired Training

Branch	ARM- gen	LRM	Stress	Optics & Night	SRM	Reflexive Fire	Targetry	Total
Air Defense	0	0	0	0	0	1	0	1
Ammunition	0	2	0	0	1	6	0	9
Armor	8	10	5	2	7	2	2	36
Aviation	2	0	0	0	1	3	0	6
CBRN	3	2	2	1	1	2	1	12
Engineer	8	7	1	5	8	5	2	36
Field Artillery	4	9	2	5	9	6	1	36
Infantry	16	26	12	3	12	4	9	82
Mech Maint	6	1	1	2	8	10	3	31
Military Police	10	5	4	6	9	7	1	42
Quartermaster	2	2	2	3	1	0	0	10
Transportation	3	4	0	1	1	5	0	14
Signal	0	0	0	0	1	1	0	2
Military Intell	0	0	1	0	0	1	0	2

Table E5

Number of Leader Comments in Other Weapons Training Categories: Question 11 Desired Training

Branch	General	Crew- served	Pistol	Gunnery	Weapons when deployed	Total
Air Defense	0	0	0	0	0	0
Ammunition	1	0	0	0	0	1
Armor	2	5	0	2	2	11
Aviation	2	1	0	1	0	4
CBRN	2	0	1	0	0	3
Engineer	6	8	0	0	2	16
Field Artillery	2	5	0	0	1	8
Infantry	3	10	2	0	5	20
Mech Maint	4	14	0	0	1	19
Military Police	3	4	1	0	1	9
Quartermaster	1	7	1	0	0	9
Transportation	0	2	1	1	0	4
Signal	0	0	0	0	0	0
Military Intell	0	1	0	0	0	1

Table E6

Number of Leader Comments Regarding Special Marksmanship Courses: Question 11 Desired Training

Branch	SDM	AWG	Sniper	Other	Unit	NCO Prep	Total
Air Defense	0	0	0	0	0	0	0
Ammunition	5	0	0	0	0	0	5
Armor	7	0	3	1	1	2	14
Aviation	0	0	0	2	0	0	2
CBRN	1	0	0	3	0	0	4
Engineer	3	0	3	2	1	2	11
Field Artillery	1	0	1	0	0	0	2
Infantry	6	6	4	9	1	0	26
Mech Maint	0	0	0	0	0	1	1
Military Police	1	0	1	2	1	0	5
Quartermaster	0	0	0	1	2	0	3
Transportation	1	0	0	1	0	0	2
Signal	0	0	0	0	0	0	0
Military Intell	0	1	0	0	0	0	1

More Live-Fire Training

This was a large category, with a total of 195 comments from the leaders. Typical responses were: more range time, more live fire, more rounds, more range days, more trigger time, and different ranges not just qualification. The most comments came from Mechanical Maintenance (n = 38) and Infantry leaders (n= 29). Between 10 and 20 leaders from each of 6 branches said more live fire: Armor, Aviation, Engineer, Field Artillery, Quartermaster and Transportation. Nine leaders from Ammunition, CBRN, and Military Police branches commented. Some examples of more detailed responses are presented below.

Armor

--More small arms ranges before deployment

- The training we conducted was good. We needed more emphasis placed on marksmanship. It is a perishable skill which you have to practice more than once a quarter and that was not emphasized.

-- There is no substitute for re-zeroing every other week or once a month. Sadly there is not enough time or resources to make this happen... But I really think we could have used more time with plain shooting.

Engineer

--More time on the range. The units I deployed with were only going to the range once a year.

--There needs to be continuous weapons training. It needs to be trained at least twice a week during pre-mob.

Field Artillery

--More time on ranges and being allowed to zero all sights – iron sights, optics and lasers.

Mechanical Maintenance

--I believe support units need to go to the range more often and focus more on marksmanship. Usually you go to the range to qualify with your personal weapon once a year and that's pretty much it. Unless you are on a security team where you get the chance to go to ranges whenever you want, go through gunnery tables and when you deploy to NTC or JRTC you get to experience the same thing the combat arms units go through for training.

Quartermaster

--We only fired our crew served weapons for practice once and our assigned weapons once for qualification during the entire deployment. I believe that we should have gone to the ranges more.

Integrated Comments

Below are detailed comments from leaders on their views of what type of training was needed. These responses were not placed in the categories in Table E-2, because it was important to provide examples of the full rationale for the changes the leaders proposed. Responses are presented by branch. Infantry comments are the last group and they were the most extensive of all the leaders.

Ammunition

--More focus on the fundamentals with BRM prior to engaging moving targets after ARM plus the ballistics and physiology of what various weapons platforms are capable of on actual targets utilizing various forms of cover and concealment. In essence, a general overhaul in the level of priority associated with training in all relevant weapons platforms with available optical accessories with each. Many units will "check the block". A few units will assign a slightly higher priority to this with available time and assets. Very few units will or are able to apply an "Infantry First" priority to this.

Armor

--Extensive Marksmanship training, Combat Marksmanship School is fantastic I was lucky to get into it and it is literally the best school/course I have ever been to for Army equipment. In order for it to work though the highest level of leadership should attend so they understand the course, just because I know the rules and can run a range after the school doesn't actually help if they don't believe or know it.

--More SRM and CQB training; this is the most dangerous type of engagement we can do. On several occasions it was usually myself and one or two others entering and clearing a building in Iraq. I must be able to accurately and quickly engage multiple targets and eliminate the threat the first time.

--It should really just be more frequent. The EST is a great training aid, but I do not believe it should replace ranges. We should utilize both the EST, and live fire ranges more often. We should not shoot at paper targets because they do not effectively train you to respond to a threat. The targets should not just pop up, but also move. We should do reflexive fire at the range, and not all targets should be enemy. If that is too dangerous, use paintball or sim rounds to mitigate that risk without sacrificing the training. We should clear buildings as well as part of this training.

--Definitely AMU's version of BRM training. Most NCOs today still swear by "nose to the charging handle" and a bunch of other outdated beliefs. Teaching natural point of aim properly and knowing how to truly identify a shooter's issues needs to become paramount. The old way of taking a shot group and saying its trigger squeeze or breathing based off of where the bullets fall is a bit outdated. There is so

much more to it than that. A Soldier can have perfect trigger discipline and breath control and still be all over the place. Most leaders don't know how to train Soldiers through this.

--Marksmanship training at the units is extremely outdated and lacks focus and priority. There is always something more important to do. Leadership seems to not understand the fact that marksmanship is a perishable skill. Most leadership above SFC is not familiar with the "new" FM, even though it was published in 2008. Nor are they familiar with the concepts of that doctrine. We can all agree that doctrine is dated by the time it is published. So leaders are not applying even this doctrine. Combat Marksmanship needs to be included in all training including battle drills

Engineer

--During the phases of basic rifle marksmanship, the stationed units have a tendency to jump over and pre-fire drills or pre-qualification ranges, and go directly into the qualification days following a PMI. I think that no matter how long a Soldier is in service; they need to start at the beginning or at least at a down range feedback live fire so that the Soldiers will be comfortable with their fundamentals as well as confidence in their own abilities to hit what they are actually firing at.

--More Soldiers trained at Squad Designated Marksman Level would have provided a better base of fire and more effective fires on the enemy in Afghanistan. All Soldiers should be trained at Short Range Marksmanship, and reactionary fires to ensure the best ability to defend oneself at ranges less than 100 meters. These skills are key. To be able to fire your weapon effective both singularly and as part of a larger fire team should be a goal attained by all forces the Army over.

Signal

--I have prior service history with the Marines where to learn to shoot it was a three week process. I would love to see the army adapt and spend this type of time on marksmanship in all units. I think shooting known distance course and teaching the fundamentals of marksmanship, like being able to call your shots and figure out windage within units would go a long way in improving marksmanship. Some people just can't shoot. Soldiers may be unskilled with weapons when they enter service, longer range time and emphasis on shooting from higher would mandate units to stop taking short cuts.

Mechanical Maintenance

--I believe support units need to go to the range more often and focus more on marksmanship. Usually you go to the range to qualify with your personal weapon once a year and that's pretty much it unless you are on a security team which you get the chance to go to ranges whenever you want, get to go through gunnery tables and when you deploy to NTC or JRTC you get to experience the same thing the combat arms units go through for training.

Infantry

--Greater quantity of stress shoots, more flexibility to conduct squad live fires, especially at night. Also more marksmanship training associated with patrolling. Also being able to use our accessory equipment (like thermals) synchronized as in an SOP. Without time to train (for my earlier deployments), focus was on a basic task, then COIN. No high level training or evaluation contributed to individual mastery of skills with all the new tech that came even while in country.

--Classes on fire control, weapons capabilities and limitation, effects of weapons on various types of buildings, trees, cover. Soldiers need to understand the importance of things like ammunition conservation, how to employ their crew served weapons in different situations, why using a tripod provides more accuracy, Leaders need to understand how to Escalate Force in their squad, platoon,

company. And how to position and utilize small arms weapons efficiently from the defense or a hasty battle position.

--We conducted all of the training that was required; however more KD time is the most effective, in my opinion to creating better shooters out of our men. Sniper school, whether DA Sniper or SOTIC, is well worth the time for our Rangers, as they come back to our unit fully understanding ballistics and how to properly utilize their weapon systems. I believe that we should increase the number of Rangers and Soldiers that we put through Sniper schools as it drastically increases their capabilities, not only to shoot themselves, but to instruct others.

--Any advanced marksmanship. Train Soldiers on the ballistics of an M4 M16. The more a Soldier understands what the round is going to do from chamber to target. The better understanding you have the better you will shoot. Also need time on Known Distance, LOMAH (Location of hits and Miss) Ranges, so Soldiers can see where they are hitting on a target to better understand point of aim to point of impact.

--Practice on engaging randomly moving targets. Engagement of reactive targets, whether steel or otherwise provides INSTANT feedback --- that is key to training Soldiers how to not just hit targets, but FIGHT with their small arms. See any writings by Bill Rogers (SA, FBI retired) on the importance of instant feedback. Additional training on what actually happens when the bullets start hitting an objective would help Soldiers understand the style of shooting they should use when they are part of an SBF. There needs to be more explanation of the dynamics direct fire encounters so the Soldiers know "WHY"

--Shooting from vehicle platforms outside of the competitive scoring bounds of gunnery. Doing light wheeled gunnery was a good exercise at carefully aiming and quickly killing targets from a dramatically slowed or stopped vehicle. It would have been good to have gunners practice hitting targets from a moving vehicle when the driver isn't going to slow to a crawl. Companies get caught up in the competition and scores of gunnery and you don't get high scores if you're learning, trying new things, and training. You only demonstrate your ability to perform within the game.

--More time on the range with more ammo. You can never have enough of those as an infantryman. More time also needs to be spent on crew served weapons systems, as well as anti-tank systems (AT-4, Javelin, TOW-IIB, SMAW-D, Carl Gustav, etc.). These need to be incorporated into live fires as well as M203/M320's with live rounds, not TP rounds. These are all platoon internal systems that the platoon leadership and squads need to learn how to incorporate during a safe training environment. Not for the first time in a firefight on the side of a mountain.

--It was on me as a Senior Sniper Team Leader and Sniper Section leader to train the squad designated marksmen in 2 of our companies' riflescope manipulation, gathering ballistic data, and fabricating a ballistic card for that specific weapon's ballistic profile. In addition I taught how to adjust for windage quickly in one's head for the M118LR cartridge. This was necessary, as the SDM course many Soldiers were sent to incorporate a different optic (not the Leopold Mk4) and indeed a different weapon system altogether--the M16. SDMs use M14s. Create a course for that weapon and optic.

--Additional Known Distance Ranges that provide more feedback than steel targets and Green Ivan targets. Guys never really know how they shoot at distance and what this means ballistically for their zero. Work on shooting positions: Most ranges are so sterile that they revert back to prone, kneeling or standing positions and fail to properly incorporate a dynamic blend of cover and concealment. Being able to shoot well is one thing. Being able to shoot well while not getting shot yourself is a completely different thing.

--Training the fundamentals and repetition are key. Better training for unit marksmanship trainers would increase effectiveness. Well trained trainers that understand the fundamentals and implement a marksmanship progression would increase effectiveness. Such training would make better use of the little range time most conventional units have.

--Use of the 240B. My unit did many AASLTs and without that weapon system and the ability to fire effectively with it we would have been in a lot of trouble during some engagements. Doing weapon training drills and more importantly gunner drills allowed us to place effective fires on the enemy, This fixed and killed the enemy and allowed me to maneuver my assault force to clear, seize, or destroy objectives that we dealt with on the Battle field. Also much of the fight was dealt with at distance where the 204B could only effect. This means that this was our main weapon to engage enemy.

--Squad designated marksmen train Soldiers to engage targets with rifles from 300m to 600m. With the types of engagements we are seeing in Afghanistan, this training would have greatly benefited the individual Soldier. We should in the future incorporate our weapons qualification and training to extend to the max effective range (at point targets) for each weapons system. It would also benefit Soldiers to receive training in high angle shooting given the types of environments we have seen in Iraq and Afghanistan with the mountainous and urban terrain.

--All the Programs I said worked great other than that I would say that to become a great shooter you need the trigger time. It is a perishable skill and all the classes in the world will not make you a greater shooter if you only shoot a couple of times a year.

--More shooting: Urban prone, supine, barricade shooting positions etc.; malfunction drills: Types I - IV, shooting from a vehicle, from inside a vehicle, shooting from a vehicle while moving, how to maneuver in, near and around vehicles while shooting while a buddy shoots right next to you; a comprehensive, complex and analytical class on how all of the infantry's weapons work from the M9 up to M2. Shooting while moving, shooting from an up-range position while someone else is downrange. Soldiers lack a very serious understanding of the weapons they carry and as a result there are NDs!!!

--I feel more time with the light and heavy machine guns would have had great impact with my unit's success throughout our deployment. Also more long range courses for M4, M24 and .50cal would have helped with not only target identifiers but even long range over watch. My unit only goes to the range once every 4 months to qualify m4 carbines. As a lite Infantry unit I feel that is completely unacceptable. So I feel more time developing machine gunners with solid TTP and better judgment on emplacement and controlling rates of fire will help in a company's overall mission.

Table E7

Percentage of Leaders Who Commented on Question 11: If You Have Been Deployed, What Additional Marksmanship Training in Your Unit Would Have Increased Your Combat Effectiveness?

Branch	Leaders who Commented
Branches With More Than 20 Respondents ^a	<i>Number and Percentage</i>
Infantry	175 (71%)
Engineer	75 (62%)
OS (Signal and Military Intelligence)	13 (59%)
Armor	99 (58%)
Military Police	75 (56%)
CBRN	38 (55%)
Aviation	33 (53%)
Field Artillery	75 (52%)
Ammunition	34 (47%)
Mechanical Maintenance	117 (45%)
Transportation	48 (36%)
Quartermaster	51 (35%)
Air Defense Artillery	7 (26%)
Branches With Less Than 20 Respondents	
Medical	1 (100%)
Multifunctional Logistician	7 (88%)
Finance	3 (60%)
Electronic Maintenance	6 (55%)
Civil Affairs	1 (50%)
Adjutant General	0 (0%)
Total (1636 respondents)	858 commented – 52% 718 did not comment – 48%

Note. Includes all leader branches/categories, not just the ones with more than 20 respondents. Military Intelligence and Signal combined to be consistent with categories used in body of report. Includes all comments

^a Ordered from high to low by percentage of leaders who made comments. Each branch percentage based on number of leaders in that branch who responded to the questionnaire.

Appendix F

Leader Percentages by Branch on a Marksmanship Skills Proficiency Test and on Marksmanship Skills

For each block of items (which were in a checklist format), leaders were given a final option of marking “none of the above.” The “none” category for each block represents the percentage of responses which were “none of the above.” Also included are the percentages for four “Yes”/“No” items which addressed the following

Whether a test of knowledge should be included in a Proficiency Test

Whether the Proficiency Test was a good idea

Whether a course-of-fire such as Combat Field Fire was required for Soldier in their branch/MOS

Whether a range system that provides feedback on the location of rounds relative to each target would be beneficial (e.g., LOMAH).

Table F1

Percentage of Leaders Marking Skills for a Marksmanship Skills Proficiency Test and as Marksmanship Requirements for Soldiers in Their Branch: Maneuver Fires and Effects Branches

Skill Set	Branch Percentage							
	Infantry (n=246)	Armor (n=170)	Military Police (n=135)	Engineer (n=122)	Field Artillery (n=143)	CBRN (n=71)	Aviation (n=62)	Air Defense (n = 27)
Proficiency Test Set A								
Assemble/Disassemble	85	85	83	94	85	84	77	67
Function Check	87	88	88	97	86	90	85	81
Load Mag	77	69	68	80	72	86	63	48
Change Mag	86	73	81	84	75	86	74	56
Immediate Action	95	92	87	96	87	90	90	74
Malfunctions	96	90	90	93	90	91	89	81
Clear Weapon	87	87	84	96	85	90	84	74
Firing Positions	71	70	69	80	77	84	73	63
None	4	3	4	2	3	3	3	7
Mean	85.50	81.75	81.25	90.00	82.13	87.63	79.38	68.00
Proficiency Test Set B								
Mount Optic	50	49	63	63	53	65	52	30
Boresight Optic	72	75	65	68	68	66	42	37
Mount AimLight	48	49	53	54	43	55	35	30
Boresight AimLight	61	65	52	58	47	61	39	33
Sling	45	42	53	61	59	69	56	48
Dominant Eye	50	48	61	65	59	66	69	70
Sight Adjustment	78	70	77	85	75	82	74	59
None	10	9	7	7	8	11	8	15
Mean	57.71	56.86	60.57	64.86	57.71	66.29	52.43	43.86
Include Knowl Test	76	66	70	74	69	70	71	67
Favor Proficiency Test	86	82	85	89	82	80	82	59

Skill Set	Branch Percentage							
	Infantry		Military		Field		Air	
	(n=246)	(n=170)	(n=135)	(n=122)	(n=143)	(n=71)	(n=62)	(n = 27)
Skill Requirements (Skill Sets S1 through S7)								
S1 - Zeroing								
Zero Organic Sight	91	88	83	88	79	83	79	59
Zero in Gear	45	45	60	65	62	73	52	56
Zero BIS	83	83	83	86	78	82	81	56
Zero at 25m	86	78	79	87	82	84	89	78
Confirm Zero at Dist	85	75	72	80	75	75	63	44
Zero at Distance	37	34	38	43	38	55	31	26
None Zero	2	2	4	2	3	3	5	15
Mean	71.17	67.17	59.86	74.83	69.00	75.33	65.83	53.17
S2-Firing Position								
Prone Supported	85	75	70	79	78	79	76	81
Prone Unsupported	85	71	73	81	75	79	74	70
Kneel	87	82	77	84	74	84	69	70
Stand	84	76	76	84	75	82	71	59
From Obstacles	92	81	87	81	80	76	77	67
From Windows	82	76	74	70	68	75	69	59
While Moving	85	81	84	85	82	82	69	56
Under Stress	93	82	87	85	83	86	76	52
Modify Position	83	77	76	81	69	72	73	59
None Firing Position	2	3	3	3	1	3	5	7
Mean	86.22	77.89	70.70	81.11	76.00	79.44	72.67	63.67
S3 Distance								
Fire Under 25 m	82	72	81	85	71	86	79	56
Fire 25-100 m	89	83	89	95	82	91	89	85
Fire 100-200 m	90	84	82	93	87	89	87	78
Fire 200-300 m	90	73	62	77	78	76	65	63
Fire Beyond 300 m	67	47	38	48	47	44	35	18
None Distance	1	3	1	2	2	4	5	7
Mean	83.60	71.80	70.40	79.60	73.00	77.20	71.00	60.00
S4 - Target Acquisition								
Targets in Sector	87	81	81	92	81	80	76	63
Discriminate targets	93	86	87	88	85	80	82	74
Single Target	77	69	64	70	66	79	64	70
Two Targets	82	73	70	75	71	75	66	59
Three Targets	67	54	50	54	59	58	43	44
Shorter time	66	46	59	54	55	58	47	33
None Target Acq	2	2	2	2	3	7	5	11

Skill Set	Branch Percentage							
			Military		Field		Air	
	Infantry (n=246)	Armor (n=170)	Police (n=135)	Engineer (n=122)	Artillery (n=143)	CBRN (n=71)	Aviation (n=62)	Defense (n = 27)
Mean	78.67	68.17	59.00	72.17	69.50	71.67	63.00	57.17
S5 - Precision Firing								
Adjust Sight	64	54	51	52	62	61	50	63
Hit Single Lethal Zone	75	56	67	66	59	66	47	41
Hit Multi-lethal Zone	66	50	57	56	53	55	37	33
Hit Moving Target	95	89	89	87	90	83	89	70
Hit Target at Elevation	88	78	73	80	77	82	69	59
None Precision Firing	2	5	4	7	3	6	8	15
Mean	77.60	65.40	56.83	68.20	68.20	69.40	58.40	53.20
S6-Equipment								
Fire in Gear	83	71	75	77	74	77	60	70
Qualify in Gear	80	68	74	76	75	72	60	56
Hit with AL-NVG	93	78	74	77	72	76	63	48
Hit with TWS	73	72	61	70	57	65	45	41
Fire with Mask	34	29	33	31	37	77	27	44
Fire with Sling	52	48	53	57	59	58	61	48
None Equipment	2	5	7	3	5	3	6	22
Mean	69.17	61.00	53.86	64.67	62.33	70.83	52.67	51.17
S7- Other Skills								
Switch Weapon	68	71	90	74	61	66	68	41
Change Mag	95	87	86	93	85	82	79	52
React to Malfunction	88	76	82	91	78	83	77	59
Unaided Night Fire	49	45	58	49	54	62	45	44
Short Range Firing	88	80	84	84	77	82	71	48
Different Fire Modes	65	64	61	69	70	69	63	41
Nondominant Hand	73	57	66	69	59	66	53	52
None Other Skills	1	4	1	3	4	4	10	26
Mean	75.14	68.57	66.00	75.57	69.14	72.86	65.14	48.14
Favor CFF	96	86	87	88	87	77	71	48
Favor LOMAH	85	83	81	85	80	84	85	59

Note. Any percentages greater than or equal to 90% are bolded. Skill descriptions are shortened; see Table F3 in this Appendix, Appendix C or body of report for complete description.

Table F2

Percentage of Leaders Marking Skills for a Marksmanship Skills Proficiency Test and as Marksmanship Requirements for Soldiers in Their Branch: Force Sustainment and Operations Support Branches

Skill Set	Branch Percentage				
	Force Sustainment				Operations Support
	Transportation	Ammunition	Mechanical Maintenance	Quarter-master	
	(n=130)	(n= 73)	(n = 258)	(n=144)	
Proficiency Test Set A					
Assemble/Disassemble	75	75	82	74	77
Function Check	80	79	85	85	82
Load Mag	64	73	64	66	59
Change Mag	65	78	67	65	68
Immediate Action	79	89	84	78	86
Malfunctions	81	82	87	83	77
Clear Weapon	77	86	86	77	82
Firing Position	72	66	77	71	64
None	7	5	4	6	14
Mean	74.13	78.50	79.00	73.33	74.38
Proficiency Test Set B					
Mount Optic	49	60	55	58	36
Boresight Optic	47	55	54	53	50
Mount AimLight	40	48	43	53	36
Boresight AimLight	45	45	45	52	32
Use Sling	51	51	56	60	50
Dominant Eye	55	56	58	56	59
Sight Adjustment	65	67	78	67	64
None	15	16	9	15	18
Mean	50.29	54.57	55.57	57.00	46.71
Include Knowl Test	67	63	77	81	59
Favor Proficiency Test	76	71	82	87	59
Skill Requirements (Skill Sets S1 through S7)					
S1 - Zeroing					
Zero Organic Sight	65	77	77	71	82
Zero in Gear	55	60	67	60	59
Zero BIS	61	71	75	60	82
Zero at 25m	71	81	82	69	86
Confirm Zero at Dist	61	70	74	65	64
Zero at Distance	40	36	39	42	23
None Zero	11	7	6	6	0
Mean	58.83	65.83	69.00	61.17	56.57
S2-Firing Position					

Skill Set	Branch Percentage				
	Force Sustainment				Operations Support
	Transportation	Ammunition	Mechanical Maintenance	Quarter-master	
	(n=130)	(n= 73)	(n = 258)	(n=144)	
Prone Supported	72	67	80	74	64
Prone Unsupported	68	67	77	71	73
Kneel	65	73	76	74	68
Stand	70	66	74	70	73
From Obstacles	61	78	76	69	68
From Windows	61	66	71	58	41
While Moving	68	75	78	74	77
Under Stress	63	74	76	69	59
Modify Position	57	73	72	60	59
None Firing Position	8	5	3	6	0
Mean	65.00	71.00	75.56	68.78	58.20
S3 Distance					
Fire Under 25 m	60	77	77	66	64
Fire 25-100 m	78	81	91	85	82
Fire 100-200 m	70	89	89	78	77
Fire 200-300 m	66	66	72	66	59
Fire Beyond 300 m	35	37	39	43	45
None Distance	5	3	2	4	4
Mean	61.80	70.00	73.60	67.60	55.17
S4 - Target Acquisition					
Targets in Sector	68	77	80	74	86
Discriminate Targets	67	73	75	67	77
Single Target	58	62	67	62	59
Two Targets	60	64	68	60	59
Three Targets	48	52	55	49	41
Shorter time	43	51	49	48	50
None Target Acq	10	8	4	8	4
Mean	57.33	63.17	65.67	60.00	53.71
S5 - Precision Firing					
Adjust Sight	59	53	56	58	45
Hit Single Lethal Zone	52	55	65	63	54
Hit Multi-lethal Zone	48	47	57	51	41
Hit Moving Target	75	77	86	78	77
Hit Target at Elevation	61	66	74	64	54
None Precision Fire	11	15	6	10	14
Mean	59.00	59.60	67.60	62.80	47.50
S6-Equipment					
Fire in Gear	56	66	69	67	54
Qualify in Gear	65	71	73	71	64

Skill Set	Branch Percentage				
	Force Sustainment				Operations Support
	Transportation (n=130)	Ammunition (n= 73)	Mechanical Maintenance (n = 258)	Quarter-master (n=144)	
Hit with AL-NVG	60	63	67	59	59
Hit with TWS	51	45	59	58	32
Fire with Mask	38	36	39	49	32
Fire with Sling	46	49	60	58	45
None Equipment	14	14	7	10	18
Mean	52.67	55.00	61.17	60.33	43.43
S7- Other Skills					
Switch Weapon	53	59	64	60	50
Change Mag	63	74	79	69	50
React to Malfunction	61	70	71	65	68
Unaided Night Fire	48	60	51	49	41
Short Range Firing	57	71	76	63	73
Different Fire Modes	55	57	67	58	59
Nondominant Hand	53	68	59	51	50
None Other Skills	11	11	5	10	14
Mean	55.71	65.57	66.71	59.29	50.63
Favor CFF	67	73	82	83	64
Favor LOMAH	74	88	84	83	82

Note. Operations Support includes Signal and Military Intelligence branches. Skill descriptions are shortened; see Table F3 in this Appendix, Appendix C or body of report for complete description.

Table F3

Weighted Percentage of Leaders From All Branches Marking Skills for a Marksmanship Skills Proficiency Test and as Marksmanship Requirements for Soldiers in Their Branch

Skill Set	Weighted %
Proficiency Test Set A	
Assemble/Disassemble Rifle	80.8
Perform a Function Check	85.7
Load Magazine	68.1
Change Magazine	73.8
Perform Immediate Action	87.3
Correct a Malfunction	87.1
Clear Weapon	84.1
Demonstrate Correct Firing Position	71.4
Mean	79.8
Proficiency Test Set B	
Mount Optic	50.9
Boresight Optic	59.0
Mount Aiming Light	44.9
Boresight Aiming Light	48.9
Demonstrate Proper Use of Sling	52.7
Determine Dominant Eye	57.4
Determine Sight Adjustment from Diagram	72.5
Mean	55.1
Include Knowledge Test	71.0
Favor Proficiency Test	79.1
Skill Requirements	
S1 – Zeroing	
Zero Sight Organic to Unit	80.7
Zero in Gear	56.6
Zero BIS	76.8
Zero at 25m	81.5
Confirm Zero at Distance	71.5
Zero at Distance Initially	35.7
Mean	65.1
S2-Firing Position	
Prone Supported	75.7
Prone Unsupported	75.7
Kneeling	76.2
Standing	75.4
Around or Behind Obstacles	77.4
From Windows/Enclosures	65.7
While Moving	78.2
Under Stress	76.4

Skill Set	Weighted %
Modify Position to take Advantage of Obstacles	70.2
Mean	73.1
S3 Distance	
Under 25 m	73.3
From 25-100 m	86.3
From 100-200 m	83.9
From 200-300 m	71.8
Beyond 300 m	46.4
Mean	70.1
S4 – Target Acquisition	
Acquire Targets in Sector of Fire	81.1
Discriminate between Friendly/Enemy/Noncombatants	80.6
Hit Single Target	66.6
Hit Two Targets	68.5
Hit Three Targets	52.7
Hit Targets w/ Shorter Exposure Time	52.7
Mean	65.2
S5 - Precision firing	
Adjust Sight Picture for Conditions such as Wind	55.7
Hit in Single Lethal Zone	61.4
Hit in Multi-lethal Zones	52.0
Hit Moving Targets	84.9
Hit Targets at Elevations Different from Firer	71.5
Mean	63.5
S6-Equipment	
Fire in Gear	69.1
Qualify in Gear	70.9
Hit Targets with Aiming Light and Night Vision Goggles	70.6
Hit Targets with Thermal Weapon Sight	56.6
Fire with Protective Mask	36.6
Fire with Sling	53.3
Mean	55.7
S7- Other Skills	
Switch between Primary and Secondary Weapons	63.1
Quickly Change Magazine	76.6
React to Malfunctions in Exercises	75.3
Hit Targets with Unaided Night Vision	48.5
Short Range Marksmanship Skills	75.4
Skill with Different Firing Modes	62.4
Shoot with Nondominant Hand when Needed	59.4
Mean	64.2
Favor CFF	80.5

Skill Set	Weighted %
Favor LOMAH	82.3

Table F4

Average Skill Set Percentage for Leader Branches: Marksmanship Requirements (Ordered from highest to lowest)

Branch	Functional Category	Average Skill Set Percentage
Infantry	MFE	77
CBRN	MFE	74
Engineer	MFE	74
Field Artillery	MFE	70
Armor	MFE	69
Mechanical Maintenance	FS	67
Aviation	MFE	64
Ammunition	FS	63
Transportation	FS	62
Military Police	MFE	61
Transportation	MS	57
Air Defense Artillery	MFE	55
Operations Support (Signal and Military Intelligence)	OS	52

Appendix G

Marksmanship Skills Proficiency Test: Equal Branch and Weighted Branch Approaches

Table G1

Number of Branches by Functional Category in Each Percentage Bracket Indicating a Skill Required for a Marksmanship Skills Proficiency Test

Skill	Functional Category (# Branches in Category)																	
	MFE (8)						FS (4)						OS (1)					
	Leader Percentage Brackets																	
	9	8	7	6	5	<	9	8	7	6	5	<	9	8	7	6	5	<
Malfunction	6	2					4								1			
Immed Action	5	2	1				2	2					1					
Function Check	2	6					3	1					1					
Assemble/ Disassemble	1	5	1	1			1	3						1				
Clear Weapon	2	5	1				2	2					1					
Change Magazine		4	3		1				1	3						1		
Firing Positions		2	4	2					3	1						1		
Sight Adjustment		2	5		1				1	3						1		
Load Magazine		2	2	3		1			1	3							1	
Mount Optic				3	3	2				1	2	1						1
Boresight Optic			2	4		2					3	1					1	
Dominant eye			1	4	2	1					4						1	
Demo sling ^a				2	3	3				1	3						1	
Mount AL ^a				3	3	2					1	3						1
Boresight AL ^a				3	2	3					1	3						1
Include Knowledge Test (yes)				5	3			1	1	2							1	
Proficiency test - Good idea? (yes)		7			1									2	2		1	

Note. Explanation of code used for Percentage Brackets - 9 is 90% to 100%, 8 is 80% to 89%, 7 is 70% to 79%, 6 is 60% to 69%, 5 is 50% to 59%, < is less than 50%. Question was “Which of the following skills should be included in a Marksmanship Skills Proficiency Test?”

^a AL stands for aiming light. “Demo sling” stands for demonstrate proper use of sling.

Table G2

Population Percentages of Soldiers in the Branches Plus Percentages of Leaders Responding to Questionnaire by Branch

Functional Category and Branch	Population % (excludes warrant officers)	Questionnaire
	Weighted Branch Approach: % Weights Applied to Branch Responses	# (%) Responses to Questionnaire
MFE		
Infantry	18.82%	246 (15.0%)
Field Artillery	7.29%	143 (8.7%)
Aviation	6.50%	62 (3.8%)
Engineer	6.13%	122 (7.5%)
Armor	5.99%	170 (10.4%)
Military Police	4.94%	135 (8.3%)
Air Defense Artillery	2.37%	27 (1.7%)
CBRN	2.05%	71 (4.3%)
OS		
Signal	16.44%	17 (1.1%)
Military Intelligence	Combined Signal and Military intelligence for weighting	5 (0.3%)
FS		
Quartermaster	12.49%	145 (8.9%)
Mechanical Maintenance	10.05%	258 (15.8%)
Transportation	5.25%	133 (8.1%)
Ammunition	1.68%	73 (4.5%)
Other Branches: Electronic Maintenance, Finance, Civil Affairs, Multifunctional Logistician, Adjutant General, Medical	NA – insufficient response	29 (1.7%)

Note. Population percentages based on input from the Defense Manpower Data Center (Active Duty Personnel Master File), 2012

Appendix H

Comments on Marksmanship Skills Proficiency Test

Appendix H includes results from the two open-ended questions that focused on the Marksmanship Skills Proficiency Test. This test was defined as a non-live-fire test, although many leader responses were on live-fire. Detailed results are presented only on the non-live-fire comments; short summaries are given of the live-fire comments.

The two questions were:

R3: Are there any other skills you think should be included on a Marksmanship Skills Proficiency Test?

Instructions: Please include any additional skills you think are important. If you have none to add, type in "none."

R6: Include any additional comments you have regarding a Marksmanship Skills Proficiency Test here. Instructions: If you have nothing to add, please type "none."

Question R3 Summary: Other Skills to Test

R3: Are there any other skills you think should be included on a Marksmanship Skills Proficiency Test?

Instructions: Please include any additional skills you think are important.

Who Commented

Overall, 24.4% of the leaders commented (leaders from every branch except three (Civil Affairs, Medical and Finance) (see Table H4). Three types of comments were made: comments on non-live fire skills, comments on live-fire skills which was not the stated purpose of the test, and some additional comments about marksmanship testing and training. The non-live fire comments are detailed in this appendix. Examples of live-fire comments and other comments follow the non-live-fire comments.

The highest number of non-live-fire comments was from Infantry leaders (66 comments), followed by Armor (42 comments) and Mechanical Maintenance (34 comments). These three branches accounted for 58% of the non-live-fire comments.

Content of the Non-live Comments

Table H1

Number of Comments in the Major Non-Live Fire Categories

Major Category	# of Comments
Skills cited in the questionnaire	(53)
• Firing positions	22
• Magazine change/reload	17
• Malfunctions	12
• Assemble/disassemble	2

Major Category	# of Comments
Skills not cited in questionnaire	(192)
• Ballistics/trajectory	39
• Fundamentals of marksmanship	38
• Optics and peripheral devices	27
• Flexibility – nondominant hand & weapon transition	22
• Zeroing	17
• Use of equipment	15
• Maintenance	11
• Weapon knowledge	8
• Target acquisition	5
• Ammunition	3
• Coaching	2
• Other	5

Note. Numbers do not represent the number of leaders as many leader comments were placed in more than one category.

Summary of Non-Live-Fire Comments

As shown in Table H1, some skills in the questionnaire were repeated in answer to this question. The typical response elaborated or expanded upon the skill to be tested.

- **Firing positions:** The questionnaire only cited the 3 positions used in qualification. The majority of the comments were that other firing positions should also be tested.
- **Magazine change/reload:** Comments stressed the importance of testing tactical magazine changes/reload, combat, rapid change/reload – all skills required in a fire fight – under stress
- **Malfunctions:** no dominant theme, but proficiency was desired

A summary of the top five additional skills cited by the leaders is presented next.

- **Ballistics/round trajectory:** This skill domain was covered in a later question regarding a written test of knowledge, but clearly leaders (from 11 branches) thought it was critical with basically the same number of comments as fundamentals of marksmanship. Comments from Infantry leaders constituted 47% of the comments. One theme was that Soldiers would gain more confidence and therefore more proficiency with their weapon if they understood ballistics, round trajectory, etc.
- **Fundamentals of marksmanship** (Steady body position, sight picture, trigger squeeze and sight picture): These fundamentals were not specifically cited in the questionnaire, but clearly were skills the leaders thought were important to test, with comments from 12 branches (47% of comments were from Armor and Mechanical Maintenance leaders). Not every leader cited all four fundamentals, however.
- **Optics and peripheral devices** (e.g., aiming lights): Comments were distributed across 11 branches with a clear concern that Soldiers were not adequately trained in these areas –zeroing different optics, understanding reticles, application of a reticle to targets at different distances , etc. One leader summarized the situation with one optic as follows: *“how to use the reticle in the ACOG. One of the greatest mysteries in the Army.”*

- **Flexibility – nondominant hand and weapon transition:** This category was called flexibility because leaders referred to skills that differed from the traditional mode of operation. Using the nondominant hand to fire or to change magazines was cited, as well as skill in transitioning effectively from your primary to secondary weapon (M4 to M9). Leaders from 9 branches commented.
- **Zeroing:** Although there were fewer comments on zeroing per se, excluding zeroing with optics, the leaders who did comment clearly felt that many Soldiers did not understand the concept of battlesight zero nor could they explain it.

Non-live-fire comments were divided into two major categories: comments that repeated skills on the questionnaire checklist and new skills not on the checklist. It is noted that some skills presented in Table H2 could be viewed as predominantly live-fire, but with components that could be tested with non-live-fire techniques. Many of the original comments are paraphrased in Table H2. As stated previously, since leader comments often covered more than one category, the numbers in Table H2 represent the number of comments, not the number of leaders.

Table H2

Summary of Non-Live-Fire Comments to Question R3: Other Skills You Think Should be Included on a Marksmanship Skills Proficiency Test

Comment Category	# Comments by Branch	Specific Comments on Tests
Comments on Skills listed in the Checklist Questions		53 Total Comments
Magazine changes/loading (17 comments)	1 Adjutant General	<u>Adjutant General</u> : Reload/mag change under stress (1).
	3 Armor	<u>Armor</u> : How to change magazine in fire fight (1), Speed
	3 Engineer	Reloads and Tactical Reloads (basically the Soldier must reload with every magazine in his LBE) (1), Tactical,
	3 Infantry	admin, and combat reloads with the rifle. Also kit set up;
	2 Mechanical Maint	i.e., where and how your mags will be stowed. (1).
	1 Military Intelligence	<u>Engineer</u> : Change magazines in tactical, combat
	3 Military Police	environment (2), Rapid magazine change (1).
	1 Transportation	<u>Infantry</u> : Load/clear, tactical and speed magazine changes (1), Clean magazine (1), Change magazines with nondominant hand (1).
Firing Positions – checklist only had the Firing Positions in qualification (22 comments)	1 Ammunition	<u>Mechanical Maintenance</u> : Rapid reload – mag change (1), Tactical reload (1).
	2 Armor	<u>Military Intelligence</u> : Tactical reload (1).
	2 CBRN	<u>Military Police</u> : Combat/quick reload (1), Multiple reloads (1), Reload drills(1).
	1 Engineer	<u>Transportation</u> : Rapid fire with magazine drop and reload wo/ taking weapon out of firing shoulder(1).
	9 Infantry	<u>Ammunition</u> : Other firing positions (1).
	3 Mechanical Maint	<u>Armor</u> : Sitting, crouching behind cover (1), Focus on kneeling position, proper sandbag height on prone supported, proper combat stance for moving (1).
		<u>CBRN</u> : Moving between different firing positions (1), Use terrain to stabilize weapon, use cover. (1)

Comment Category	# Comments by Branch	Specific Comments on Tests
	3 Military Police 1 Quartermaster	<p><u>Engineer</u>: Standing position (1)</p> <p><u>Infantry</u>: Alternate firing positions (3), Alternate positions should be considered; seldom do Soldiers fire from the prone or prone unsupported. More often Soldiers are taking a knee, firing while behind cover such as a car or wall or from a guard tower (1), Beyond the standard shooting positions in the qualification test, Soldiers should also train on uncommon shooting techniques (over vehicles, through holes in walls, etc.) as well as the effects of canting a weapon sideways and how it effects sight alignment and offset (1), Firing techniques behind different types of cover (1), More kneeling techniques (1), Different firing positions – on side, back (1), Proper shooting positions (1)</p> <p><u>Mechanical Maintenance</u>: Fire from alternate positions (1), Proper shooting stances from the standing to the prone unsupported. Soldiers will shoot better being comfortable firing the weapon (1), Replace prone supported, prone unsupported, and kneeling unsupported with standing supported, standing unsupported, and kneeling supported as part of qualification. Not once in combat have I ever laid down to fire nor fire without some type of support. (1)</p> <p><u>Military Police</u>: Body positioning during firing, The BRM technique is outdated and ineffective compared to that learned in CART-C (1), Tactics on shooting while on move or diff psn - behind veh, laying on side, laying on back (1), The use of multiple positions such as kneeling, and standing that have been newly introduced to marksmanship tables but have been a common skill used in the current operational theatre (1).</p> <p><u>Quartermaster</u>: Describe or demonstrate a close combat stance and ready position (1).</p>
Malfunctions (12 comments)	1 Field Artillery 7 Infantry 1 Mechanical Maint 3 Quartermaster	<p><u>Field Artillery</u>: Malfunctions (1).</p> <p><u>Infantry</u>: Correct malfunction (2), Causes of said malfunctions to include most if not all of the causes of malfunctions to the M4 or M16 rifles (1), Immediate and remedial action(1), Correcting malfunctions with nondominant hand (2), Correcting malfunctions – even prior service members do not know this (1)</p> <p><u>Mechanical Maintenance</u>: Proving you can clear a malfunction quicker than resorting to a secondary weapon. (1)</p> <p><u>Quartermaster</u>: Difference between immediate and remedial action (1), How to repair and troubleshoot the equipment when needed (1), Normal PMI and function check (1).</p>
Assemble/	1 Field Artillery	<u>Field Artillery</u> : Assemble/disassemble for crew-served

Comment Category	# Comments by Branch	Specific Comments on Tests
disassemble rifle (2 comments)	1 Infantry	weapons (1). <u>Infantry:</u> Assemble/disassemble rifle (1)
Skills not on the Checklist: 192 Total Comments		
Zeroing skills (17 comments)	1 Air Defense Artillery 2 Armor 2 Engineer 7 Infantry 2 Mechanical Maint 1 Military Police 1 Quartermaster 1 Transportation	<u>Air Defense Artillery:</u> Mechanical zero on M16/M4 (1). <u>Armor:</u> Basic knowledge of the zeroing and functions of iron sights as well as the optical sight assigned to the weapon to be fired (1), Being able to fire the weapon is simply not enough. understanding the purpose of zeroing as a means to ensure the weapon meets requirements not to see if you can fire a weapon. The more we know about our equipment the more powerful we are with it the more confidence we have the better we are as an army. (1). <u>Engineer:</u> Zeroing targets with different optics (2) <u>Infantry:</u> Boresighting (1), Proper conduct of 200m zero (1), Focus on fundamentals, teach Soldiers how to properly zero iron sights, and zero their optics properly that is key to developing a better marksmanship dime and washer drills and shadow boxing (1), How to adjust your sight to your weapon during zeroing this will be done using all optics in a units MTOE (1), How to battle zero iron sights and optics, how to zero iron sights and optics at 25m (1), Battlesight zero for 300m at 25m target (1), Zero a borelight to weapon (1) <u>Mechanical Maintenance:</u> Explain how to zero a wpn and to make necessary adjustments (1), Battlefield zero with fixed sights (1) <u>Military Police:</u> Battle zero weapon (1) <u>Quartermaster:</u> Test battle sight zero – most Soldiers do not know what it means (1) <u>Transportation:</u> Know proper sight adjustmt for battlefield zero/qual. Most E1-E4s do not know this basic step (1)
Fundamentals of Marksmanship (38 comments)	1 Air Defense Artillery 2 Ammunition 9 Armor 2 Aviation 1 CBRN 1 Engineer 3 Field Artillery 4 Infantry 10 Mechanical Maint 1 Military Police 2 Quartermaster 2 Transportation	<u>Air Defense Artillery:</u> Breathing (1) <u>Ammunition:</u> Know 4 fundamentals of marksmanship (1), Trigger, aim and breathing are a significant part of learning how to qualify. I believe this should be emphasized more during training. (1). <u>Armor:</u> Be able to demonstrate BRAS -- Breath, Relax, Aim, Squeeze, a dime drill could be used to show this control. (1), Breathing techniques, sight picture at different distances (1), Demonstrate 4 fundamentals of marksmanship (1), Proper sight picture/alignment (1), Testing the fundamentals would improve Soldiers. Just so they can relearn proper sight picture, breathing, trigger squeeze (1), Fundamentals (2), Proper grip of the weapon (not gripping the weapon by the magazine well) (1), Natural point of Aim, Eye relief from rear sight

Comment Category	# Comments by Branch	Specific Comments on Tests
		<p>aperture, Heavy focus on sight picture, alternative placement of non-firing hand, trigger follow through, check-to-stock weld (1).</p> <p><u>Aviation</u>: Proper fundamentals (1), Proper sight picture and trigger squeeze and use of iron sight (1).</p> <p><u>CBRN</u>: Fundamentals (1).</p> <p><u>Engineer</u>: Marksmanship fundamentals (1).</p> <p><u>Field Artillery</u>: Marksmanship fundamentals (2), Basic fundamentals – breathing, trigger squeeze,- steady position,- same sight picture (1).</p> <p><u>Infantry</u>: 4 fundamentals of rifle marksmanship, Steady body position, sight picture, trigger squeeze and sight picture (2), Trigger squeeze (1, Demonstrate proper sight picture and alignment with iron sights (1)</p> <p><u>Mechanical Maintenance</u>: Breathing (1), Trigger squeeze (2), Sight picture (2), Sight adjustment (2), Learn how to use iron sights(1), Proper firing techniques (1), Show different grips to fire with. Determine which grip is comfortable for you. (1).</p> <p><u>Military Police</u>: Determine the proper sight picture based on the distance to a target (1).</p> <p><u>Quartermaster</u>: Breathing technique (1), Sight line adjustment (1).</p> <p><u>Transportation</u>: Breath control and sight picture (1), Natural point of aim (1).</p>
Ballistics, Trajectory (39 comments)	2 Ammunition 4 Armor 1 Aviation 2 Engineer 1 Field Artillery 19 Infantry 4 Mechanical Maint 1 Military Intel 2 Military Police 2 Multif Logistica 1 Transportation	<p><u>Ammunition</u>: Bullet flight ballistics (1), How to adjust for bullet drop/rise (1).</p> <p><u>Armor</u>: Being able to fire the weapon is simply not enough we should understand how ballistics work --it brings great confidence in my weapon (1), Better knowledge of ballistics (1), Wind correction (1), Range estimation (1).</p> <p><u>Aviation</u>: Ballistics(1).</p> <p><u>Engineer</u>: Determine range estimation, calculate windage and bullet drop compensation for a given range in meters (1), Target traversing, trajectory identification, DOPE calculation (1).</p> <p><u>Field Artillery</u>: Windage and the effects on bullets (1).</p> <p><u>Infantry</u>: Ballistics and trajectory (2), Understanding of weapon max capability (1), Ballistics (1), Basic understanding of external ballistics (2), Demo knowl of POA, POI and how it relates to ACOG and zeroing wrt ballistic path of round (1), Basic rifle ballistics to include the flight of the round at distance in regards to the current zero, the proper use of iron sights to include windage and distance adjustments, the effects of 5.56 on common targets and more detail in regards to the use of PEQ-15s or equivalent laser systems (1), Estimating bullet drop</p>

Comment Category	# Comments by Branch	Specific Comments on Tests
		<p>(1), I believe Soldiers will benefit greatly if they knew the science behind certain ammunition: Effects on hard/soft target, wind/elevation, terminal velocity, etc.</p> <p>(1), Internal, external and terminal ballistics (1), MOA minute of angle, ballistics (2), Bullet flight path and point of impact at different ranges given a 200 or 300m zero. Effect of wind (1), Knowledge of trajectory, minute of angle, terminal ballistics / theory of incapacitation, None of these things need to be taken to the PhD level...just simple "so what's" and "why's" (1), Point of aim for round to effectively engage a target. How to place a target in the "Danger Zone" (1), Range estimation with accurate reporting of with accurate reporting of the 3Ds (1), Minute of angle knowledge would be greatly beneficial particularly when you do not get to rezero downrange on a regular basis (1), Zero and ballistic understanding, identify the fundamentals as well as the ability to shoot an E type target from 100 to 300 meters at the basic training level or level 0. Good understanding of ballistics, zero, fundamentals, and the ability to shoot a specific point on an E type target from 100 to 300 meters at the young PV2 to Specialist rank in the current unit or level 1. Complete understanding of zero and ballistics, poses the ability to teach the fundamentals and train level 0/1 Soldiers - these Soldiers are the Cpl to SGT or level 2. (1)</p> <p><u>Mechanical Maintenance</u>: Adjust fire using windage and sight adjustment for longer range targets (1), Everyone should have some training on windage and how to figure minute of angle to account for extreme elevation and distance (1), Trajectory (2)</p> <p><u>Military Intelligence</u>: Adjust windage and elevation. That is a HUGELY important task that the army does not teach. Most Soldiers have no idea how to use their iron sights, and only know to point the rifle in the opposite direction of the wind. The entire Army is illiterate on the basic function of their weapon. (1)</p> <p><u>Military Police</u>: Determine wind direction and speed by eye (1), Range estimation (1)</p> <p><u>Multifunctional Logistician</u>: How rifle fire affects fortification and sandbags (1), Understand external ballistics of small caliber bullets from muzzle to target, to include penetration factors and ricochet. (1)</p> <p><u>Transportation</u>: Wind/weather conditions, sectors of fire(1)</p>
Skill with optics &/or peripheral devices	2 Ammunition 8 Armor 2 CBRN	<u>Ammunition</u> : I feel there should be instruction on what to do in case of optics failure. Perhaps a skills scenario where Soldier must negotiate an obstacle, engage a target,

Comment Category	# Comments by Branch	Specific Comments on Tests
(27 comments)	3 Engineer 3 Field Artillery 4 Infantry 1 Mechanical Maint 1 Military Intel 1 Military Police 1 Multif Logistician 1 Transportation	<p>notice optics failure, perform immediate action to correct and if necessary remove and reacquire target with iron sights (1), Ranging with optic stadia (1)</p> <p><u>Armor</u>: Acquire targets w/ ACOG, use proper sight placement for proper range (1), Basic knowledge of the zeroing and functions of iron sights as well as the optical sight assigned to the weapon to be fired (1), Employment of peripheral devices, like PEQ-15, lights (IR and white) (1), Point of aim for M68, ACOG, iron sights, M150; mount /zero thermal optics (1), Difference on how to/how far to zero different optics (1), Zeroing with alternative optics (1). Point of aim for different ranges and optics (1), Sight placement for ranges (1).</p> <p><u>CBRN</u>: Include NVGs and thermal sights as well as iron sights, CCO, and ACOG (1), Use of optics (1).</p> <p><u>Engineer</u>: Boresight laser optics (1), Optics (1), A familiarization, function and capabilities test, for lasers and sights should be included (1).</p> <p><u>Field Artillery</u>: Proper use of PEQ4 (1), Turn off/turn on PEQ-15 (1), Qualifying with the proper target to show the displacement for all optics, not just drawing where one "thinks" it goes (1).</p> <p><u>Infantry</u>: Demonstrate the proper use of the optics reticle, demonstrate the proper zeroing techniques for different optics (i.e. EOTECH, ACOG, M68) (1), How to use the reticle in the ACOG. One of the greatest mysteries in the Army (1), Proper aiming with different optics at diff ranges & moving speed. Example -EOTECH sight (1), A zero optics and laser (1).</p> <p><u>Mechanical Maintenance</u>: How to zero a CCO optic on a M16 rifle. 8 years in the military and so far not many NCOs or officers know how to zero it. (1)</p> <p><u>Military Intelligence</u>: Use of NODs with PEQ-2, etc. (1)</p> <p><u>Military Police</u>: Optics w/ crew-served weapons (1)</p> <p><u>Multifunctional Logistician</u>: Mount optics (1)</p> <p><u>Transportation</u>: Crew served wpn skills. Many Logistics units don't have optics so optic train/test rqmt not practical (1)</p>
Flexibility – nondominant hand, secondary weapon (22 comments)	5 Armor 2 Aviation 1 CBRN 2 Engineer 1 Field Artillery 4 Infantry 3 Mechanical Maint 1 Military Intel 3 Military Police	<p><u>Armor</u>: Being left handed but right eye dominant. Figuring out how to use the rifle or the other way around being right handed but left eye dominant (1), Changing weapons M4 to M9 (1), Going from long rifle to side arm (1), Off-hand firing shooting with your nondominant side (1), Transitioning from main weapon M4 to secondary weapon M9 or 320 (1).</p> <p><u>Aviation</u>: Transition from M4 to M9 (1), Transition from side arm to rifle and back (1).</p> <p><u>CBRN</u>: Switch firing shoulders if injured (1).</p>

Comment Category	# Comments by Branch	Specific Comments on Tests
		<u>Engineer</u> : Fire with nondominant side/hand (2). <u>Field Artillery</u> : Transition firing (1). <u>Infantry</u> : Nondominant hand firing (3), Rifle to pistol transition & support hand firing (1). Mechanical Maintenance: How to properly switch to your side arm when under a fire properly (1), Transition weapon systems (1), Fire with nondominant hand (1). <u>Military Intelligence</u> : Switching from rifle to pistol (1). <u>Military Police</u> : Transition fire (2), Specifically for MPs: Transition drills from either an M4 to the M9, or from a lethal weapon system to a non-lethal weapon system. (1).
Weapon cleaning / maintenance (11 comments)	1 Armor 1 Aviation 1 Electronic Maint 1 Engineer 2 Infantry 2 Mechanical Maint 1 Military Intelligence 1 Military Police 1 Transportation	<u>Armor</u> : Proper way to clean weapon with minimal cleaning supplies (1). <u>Aviation</u> : Maintenance (1). <u>Electronic Maintenance</u> : Clean weapons efficiently (1). <u>Engineer</u> : Full PMCS – weapon, optics and attachments (1). <u>Infantry</u> : Maintenance (1), Knowing what damages to look for when PMCSing your weapon, i.e. what wear and/or damages are common and how to detect these things before the part actually breaks. (1). <u>Mechanical Maintenance</u> : Cleaning of weapon-- bolt and barrel (1), Weapon cleaning and oiling (1). <u>Military Intelligence</u> : Proper cleaning of an M4 Rifle and TTPs for cleaning an M4 Rifle (1). <u>Military Police</u> : Properly clean a weapon (1). <u>Transportation</u> : Weapon maintenance (1).
Weapon knowledge (8 comments)	2 Armor 1 Aviation 1 Engineer 2 Infantry 1 Mil Intel 1 Multif Log	<u>Armor</u> : Descriptions and functions of the rifle (1), Identify by name the parts of the assigned weapon (1). <u>Aviation</u> : Identification and proper use of enemy weapons in case your weapon is destroyed (1). <u>Engineer</u> : Know the names of all components of the weapon. Anyone can learn how to (dis)assemble, but individuals should know what the components are called. Provides for better communication with armorer or repairing authority, as well as demonstrates competence and knowledge of leaders. (1). <u>Infantry</u> : A written test on the cycle of function for the Soldier's assigned weapon (1), Basic understanding of the operation of weapon system (1). <u>Military Intelligence</u> : Explain function of the rifle, how function check works (1). <u>Multifunctional Logistician</u> : Show understanding of mechanical function of the gas operated system of the M4 (1).
Use of equipment (15 comments)	1 Ammunition 2 Armor 2 CBRN	<u>Ammunition</u> : NBC and NVG firing (1). <u>Armor</u> : Mount on tripod, mount on vehicle (1). Mounting a sling (1).

Comment Category	# Comments by Branch	Specific Comments on Tests
	2 Engineer 1 Field Artillery 4 Infantry 3 Mechanical Maint	<u>CBRN</u> : Assemble/disassemble NVG from ACH (1), demonstrate firing techniques and procedures while in JS-List would be appropriate for chemical Soldiers (1). <u>Engineer</u> : Weapon safety (1), Proper wear of gear (1). <u>Field Artillery</u> : Muzzle awareness (1). <u>Infantry</u> : 4 safety rules (1), Kit configuration (1), Use of gear and other equipment typical of theater (1), Proper ways of carrying weapon (1) <u>Mechanical Maintenance</u> : Weapon control and handling (1), Low crawling with weapon (1), The skill that I would like to see implemented is how to properly carry and or hold the M4 or M16. I often see laziness in this area and have to correct it often. So testing Soldiers on this would be a great way to ensure that everyone is fundamentally cognizant of how to carry their assigned weapon. (1)
Ammunition (3 comments)	2 Armor 1 Transportation	<u>Armor</u> : Ammunition identification (1), Identify damaged/unserviceable ammunition (1). <u>Transportation</u> : Ammunition identification (1).
Target acquisition (5 comments)	1 Armor 1 Engineer 2 Infantry 1 Quartermaster	<u>Armor</u> : Target acquisition (1). <u>Engineer</u> : Target acquisition (1). <u>Infantry</u> : Target detection (2) <u>Quartermaster</u> : Target discrimination (1).
Coaching (2 comments)	1 Armor 1 Mechanical Maint	<u>Armor</u> : Coaching (1). <u>Mechanical Maintenance</u> : How to coach a buddy (1).
Other (5 comments)	1 Aviation 2 Mechanical Maint 1 Quartermaster 1 Signal	<u>Aviation</u> : Methods of returning to target center after firing each round (1). <u>Mechanical Maintenance</u> : Create 360 degree security around vehicle during recovery operations (1) Weapon accountability procedures (1). <u>Quartermaster</u> : Just training or a site that would familiarize a Soldier before going out to qualify (1) <u>Signal</u> : Bullets on target is critical test. Other skills should be known but not tested – they are basic. (1).

A summary of the comments in the major categories on additional skills to include in the Proficiency Test by branch is in Table H3.

Table H3

Number of Leader Comments in Major Categories Regarding Other Skills: Question R3-Other Skills for Proficiency Test

Branch	Cited in Checklist			Not Cited in Checklist				
	Firing Psn	Mag Change/Reload	Mal-function	Ballistics-Trajectory	Fundamentals	Optics	Flex-ability	Zero-ing
Air Defense	0	0	0	0	1	0	0	1
Ammunition	1	0	0	2	2	2	0	0
Armor	2	3	0	4	9	8	5	2
Aviation	0	0	0	1	2	0	2	0
CBRN	2	0	0	0	1	0	1	0
Engineer	1	3	0	2	1	3	2	2
Field Artillery	0	0	1	1	3	3	1	0
Infantry	9	3	7	19	4	4	4	7
Mech Maint	3	2	1	4	10	1	3	2
Military Police	3	3	0	2	1	1	3	1
Quartermaster	1	0	3	0	2	0	0	1
Transportation	0	1	1	1	2	1	0	1
Signal	0	0	0	0	0	0	0	0
Military Intell	0	0	1	1	0	1	1	0

Examples of Complete Non-Live Fire Comments (Question R3 continued)

Below are examples of the complete text of selected non-live fire comments. The content of each comment is included in Table H2 above, but the complete comment is cited to provide a better understanding of the leaders' concepts.

Ammunition

- I feel there should be instruction on what to do in case of optics failure. Perhaps a skills scenario where the Soldier must negotiate an obstacle, engage a target, notice optics failure, perform immediate action to correct and if necessary remove and reacquire target with iron sights.

Armor

--Being able to fire the weapon is simply not enough, we should understand how ballistics work, it brings great confidence in my weapon. Also understanding the purpose of zeroing as a mean to ensure the weapon meets requirements not to see if you can fire a weapon. The more we know about our equipment, the more powerful we are with it the more confidence we have the better we are as an army.

--Natural point of Aim, Eye relief from rear sight aperture, Heavy focus on sight picture, Proper sandbag height on prone supported, alternate placement of non-firing hand, trigger follow through, cheek-to-stock weld, better focus on kneeling position, proper combat stance for moving.

Engineer

--Training on basic skills for all weapon systems should be the focus for an all-encompassing Proficiency test. A familiarization, function and capabilities test, for lasers and sights should be included as well for the weapon systems used. And, of course, firing of all weapons systems.

Infantry

--Leaders need to understand the concept behind getting a battlesight zero for 300m at a 25m target.

-- How to use the reticle in the ACOG ---one of the greatest mysteries in the Army. Bullet flight path and point of impact at different ranges given a 200 or 300 meter zero. Effect of wind.

--Knowledge of trajectory, minute of angle, terminal ballistics / theory of incapacitation, effects of stress on the body and mind, Kit configuration, maintenance. None of these things need to be taken to the PhD level...just simple "so what's" and "why's"

--Basic rifle ballistics to include the flight of the round at distance in regards to the current zero, the proper use of iron sights to include windage and distance adjustments, the effects of 5.56 on common targets and more detail in regards to the use of PEQ-15s or equivalent laser systems.

-- Zero and ballistic understanding, identify the fundamentals as well as the ability to shoot an E-type target from 100 to 300 meters at the basic training level or level 0. Good understanding of ballistics, zero, fundamentals, and the ability to shoot a specific point on an E-type target from 100 to 300 meters at the young PV2 to Specialist rank in the current unit or level 1. Complete understanding of zero and ballistics, poses the ability to teach the fundamentals and train level 0/1 Soldiers these Soldiers are the Cpl to SGT or level 2.

Military Intelligence

--Switching from rifle to pistol. Engage targets under NOD with illuminator (PEQ-2, etc. Tactical reload. Adjust windage and elevation. That is a HUGELY important task that the army does not teach. Most Soldiers have no idea how to use their iron sights, and only know to point the rifle in the opposite direction of the wind. The entire Army is illiterate on the basic function of their weapon. Explain the function of the rifle, how function check works, and why squeezing trigger after clearing is stupid.

Live-Fire Skill Summary and Examples (Question R3 continued)

Some leaders commented on live-fire skills, even though the proficiency test scope was clearly stated as non-live fire. Live-fire comments included: firing while moving, under stress, shoot don't shoot scenarios, night shooting, reflexive fire/immediate action drills, shoot move and communicate test, close quarters marksmanship, pistol training, shoot more (only two qualifications per year is inadequate), and shoot moving targets. Examples of comments are presented below.

Ammunition

-- Identify the back drop behind/near a target and the probabilities of a miss relative to the scenario. Engage a stationary target at field expedient estimated known distances. Engage a dismounted moving target. Engage a mounted threat. Engage an aerial threat. Proper use of Escalation of Force (Live Fire Exercise). Best use of an Authorized Warning Shot(s). Provide Cover Fire for Battle Buddy during reload. Provide Cover Fire for Battle Buddy during a malfunction. Transition to all available Weapons Systems

CBRN

-- I think budget should not affect military proceedings. With that, we should have opportunities to fire with our non-dominant hand. We should have opportunities to fire our weapons in unconventional positions such as upside down or hanging from an elevated position. Just scenario based positions. If airborne, one may need to fire from a tree if one landed in a tree. If a mission dictated, one may need to climb into a building entering through a crawl space which may require the individual to maneuver in a way which ended the position upside down.

Electronic Maintenance

--More realistic ranges, like we had when I first came in. With real pressure, and things to throw Soldiers off to test and improve Soldiers in these conditions. An example would be simulated ordnance, explosions and bullets that would get Soldiers use to that. Then they would react better if they ever got into a situation like that.

Engineer

--Know the names of all components of the weapon. Anyone can learn how to (dis)assemble, but individuals should know what the components are called. Provides for better communication with armorer or repairing authority, as well as demonstrates competence and knowledge of leaders.- Performing the following under stress and fatigue: immediate action, changing magazines, remedial action, accurately engaging the enemy using metal targets so you can hear if you're hitting the target or not. Moving from one position to another while "under fire", alternate from shooting right handed to left handed while behind cover.

Infantry

--Focus less on process and more on results. Can the Soldier effectively engage targets in COMBAT conditions. Controlled pair firing enhances his ability to control recoil. Switching positions elevates heart rate enough to have him focus on controlling his breathing and getting a proper sight picture every time.

--If a 'gunnery' is to be done for small arms then it should include the following: current qualification, known distance range, moving target range, Short Range Marksmanship / Close quarters marksmanship, magazine change drills....heck, train each Soldier to be a Designated marksman with an M4/M16 and we'll all be better for it.

--Need to focus more on Close Quarters Marksmanship. The Conventional Army's idea of a qualification is out of date and is not relevant to what Soldiers have encountered in Iraq, Afghanistan and what I would assume future wars and conflicts our military will be involved in.

--Training events where Soldiers Engage targets while physically exhausted during "stress shoots" could give leaders at the tactical level a better idea of their Soldier's physical fitness. In the current OE, Soldiers are regularly carrying loads of 100 pounds or more at 8,000 feet above MSL. This is inherently exhausting and my men were not prepared to engage targets while maneuvering for several missions until their bodies adapted.

--Yes, do not rely on marksmanship competence to rely only on qualifying marksman, sharpshooter, or expert. Create a test that involves barriers, moving and shooting and engaging targets from multiple firing positions that are not stationary.

Military Police

--Use of deadly force in law enforcement specialties, methods of non-lethal rules of engagement before using primary firearm. Marksmanship qualification should include pop-up targets of civilians and offenders as well as moving targets. This should apply to MP and CID Specialties only.

-- Military Police need more training with Pistols in a Law Enforcement Setting. With Active shooters on the rise it is possible they may be called on to respond. Also with the Need for MPs to carry weapons in Condition 1 or RED employing the weapon needs to be a priority

Multi-functional Logistician

--Greater emphasis on immediate action under stress. The first mag change in combat is always shaky and feels like it takes a million times longer than on the range.

Quartermaster

--If you assign an ACOG, spend more time training with the sight, before going down range and expecting the SM to know all there is. So that refresher should be all the SM would need.

Transportation

-- I think we need to spend more time with the Soldiers training them how to ZERO and teaching them to be more comfortable firing the Weapon, due to the fact that our weapon is designed to engage the enemy and save ours and our fellow Soldiers life. If we only spend time firing the weapon 1-2 times a year at Qualifying ranges then we are not preparing enough.

Examples of Other Comments (Question R3 continued)

Resources/ Unit Flexibility

Engineer

--You cannot properly boresight if the units cannot fund the purchase/creation of a proper rifle rest or buy batteries. Back Up Iron Sights, including use and adjustments, should be mandatory on all weapons, zeroed and qualified with before earning any type of optic!

Ammunition

--More ability for NCOs to tailor the shooting packages of the Soldiers he is in charge of. AKA, more flexibility on ranges while still maintaining the Army standards for shooting and qualification.

Armor

--The Army needs to come up with targetry that moves. Current ranges do not reflect this. The enemy does not stand there and let you shoot him. Marksmanship needs to tailor this.

Scope of Test

Infantry

-- Don't do ANYTHING that is not actually firing IF it is a total replacement from shooting the real thing. Nothing can replace that! If that's the case then the Army is taking yet another step backwards from a "scary gun," because we don't understand it or are too scared to have something bad happen while we're on the range and or deployed somewhere.

Engineer

--Training on basic skills for all weapon systems should be the focus for an all-encompassing Proficiency test.

Skills Needed

Infantry

--I think one skill that is not trained on during our weapons training is athleticism. Shooting is like playing any other sport. You run, jump, dive, and seek cover as quick as you can. Most Soldiers sit and do nothing and lay on the ground and shoot. To only have three positions, prone, kneeling, and standing, limits the Soldier. We should teach Soldiers multiple ways to shot and move. We need to let our Soldiers loosen up and that will cause them to be more comfortable behind the weapon system. This would then cause the Soldier to feel more comfortable when he is engaging an enemy combatant.

--With regard to the skills to be tested; although load and change a magazine are critical, making them graded "stations" like the events of BGST would be splitting hairs. EIB does a great job at looking comprehensively how to clear, functions check, load, fire, perform immediate action, and unload and clear a weapon. When I would do PMI for my guys the day prior to going to the range, I would always cover these topics. I think creating a BGST for small arms is too regulatory; rather a better option would be to standardize PMI in each weapons system's FM.

Quartermaster

--The only specific training I received on marksmanship was while I served with security forces (SAC) during my US Air Force enlistment. I was on a special team designated for increased effectiveness. I believe more focused training should include all service members. I don't think Soldiers train enough. I believe advanced training should be made available for combat readiness open to all MOS's. Soldiers are frustrated by the limited advancement options. They feel inhibited.

Field Artillery

--I believe we should stick to the basics and qualify quarterly. We are so focused on details that we skip marksmanship training and firing. We, as NCOs get mad at our Soldiers when they do not qualify; we can't get mad at our Soldiers when we don't train them due to details.

Execution of the Test

Infantry

--Must be constructed such that an entire company can be tested in one day in a company area at the company level. This is a decent idea because it is a forcing function to ensure competency in some additional skills (for instance, efficient magazine changes). However the resourcing and design should allow it to be conducted internally to prevent it from becoming a huge ordeal that detracts from other training days that could be used for actual live fire marksmanship training beyond that of standard qual (which for an IBCT, is essentially a bump on the road to real marksmanship training)

-- I really think this is reaching for more things to put as a check the block training for non mech Soldiers. Soldiers do most of the tasks listed during weapon maintenance in a good unit.

Table H4 summarizes the number and percentage of leaders by branch who made any type of comment to question R3. Thus the table includes non-live –fire, live fire and other comments.

Table H4

Percentage of Leaders Who Made Any Comment on Question R3: Other Skills to Include on a Marksmanship Skills Proficiency Test

Branch	Leaders who Commented
Branches With More Than 20 Respondents ^a	Number and Percentage
Infantry	108 (44%)
Engineer	37 (30%)
Aviation	17 (27%)
Armor	43 (25%)
OS (Signal and Military Intelligence)	5 (23%)
Ammunition	16 (22%)
Field Artillery	31 (22%)
CBRN	15 (21%)
Mechanical Maintenance	48 (19%)
Military Police	24 (18%)
Air Defense Artillery	4 (15%)
Transportation	19 (14%)
Quartermaster	20 (14%)
Branches With Less Than 20 Respondents	
Multifunctional Logistician	5 (63%)
Electronic Maintenance	6 (55%)
Adjutant General	1 (50%)
Medical, Civil Affairs, Finance (each branch)	0 (0%)
Total (1636 respondents)	399 commented – 24%
	1237 did not comment – 76%

Note. Includes all leader branches/categories, not just the ones with more than 20 respondents. Military Intelligence and Signal branches are combined to be consistent with categories used in body of report. Includes all comments

^a Ordered from high to low by percentage of leaders who made comments. Each branch percentage based on number of leaders in that branch who responded to the questionnaire.

Question R6 Summary: Additional Comments on Test

R6: Include any additional comments you have regarding a Marksmanship Skills Proficiency Test here. *Instructions: If you have nothing to add, please type “none.”*

Although leaders were asked whether they favored a Marksmanship Skills Proficiency Test (yes or no), this question (R6) was designed to elicit other reactions to this concept. A high response rate was not expected, but it was important to understand potential benefits and /or concerns which leaders envisioned with the implementation of such a test.

Who Commented

Overall, 19% (306) of the leaders commented (Civil Affairs leaders did not comment). In terms of absolute numbers, the highest numbers were from Infantry leaders (67), followed by Mechanical Maintenance (43) and Armor (39), Engineer (28) and Field Artillery (23). These five branches accounted for 47% of the leaders who commented.

Content of Comments

Despite the relatively low percentages of leaders who commented on the proficiency test, the individual responses were lengthy and quite diverse. Responses by a leader often fit into more than one category. The non-live fire comments were categorized as show in Table H5 below. Trainer issues were treated as a special category of concerns. Question R6 followed the question on a “test of marksmanship knowledge” and therefore some leaders commented on including such a test.

Table H5

Number of Comments in the Major Categories to Question on Additional Comments on the Marksmanship Skills Proficiency Test (Question R6)

Major Category	# of Comments
General Comments	(162)
• Positive with and without suggestions	53
• Test implementation suggestions	35
• Reference to prior question on written knowledge test	25
• Skills to test and scope of test	19
• General comments on importance of skills	10
• Test in other situation and/or weapons	9
• Test frequency	5
• Other	6
General concerns and suggestions	(29)
• Test execution/quality control	13
• Concern re purpose & implementation	8
• Test scope	4
• Soldier proficiency	3

• Unintended consequences	1
Reasons for not giving a proficiency test	(28)
• Covered in PMI or BCT	13
• Need to be on a range	8
• Insufficient time/waste of time	6
• Other	1
Trainer Concerns and Issues	(22)
• Train the trainer/leader knowledge is weak	16
• Need skill in how to train	4
• Master trainer	1
• Crew-served weapons	1

Summary of the Major Comments on the Proficiency test (reference Table H5 [Question R6])

Positive comments. Positive comments, from leaders in 13 branches, ranged from a short response such as *do it as soon as possible* or *a great idea* or *apply to all MOS* to extended comments on the rationale for why a test is needed. These longer comments included references to the belief that shooting per se does not contribute to Soldiers' understanding of the weapon system; a test would make it easier to qualify; a test would give leaders a picture of Soldier proficiency; since marksmanship skills are perishable testing should help sustain skills and forces command emphasis; getting back to the basics is beneficial, and a test would help to train in a standardized manner. Two detailed responses given by Armor leaders were:

- Extensive experience from deploying can help make a great leader or Soldier. However not being able to apply it, or not understanding basic skills for your skill level hinders unit readiness, increases training time when in the field, and holds up good Soldiers and leaders from being able to progress.
- Every Soldier should be able to handle their weapon and know how it operates. If they are graded on it then they will play close attention and ensure they know everything about that weapon.

Test implementation. Comments were from leaders from ten branches. Test procedures should be standardized; be strict and fair. Leaders stressed that the test should be hands-on, although some leaders thought a written test could be included. Hands-on should be with the Soldier's personal weapon. Test should be given to all MOS including officers.

Comments on written knowledge test. The question on a knowledge test (R4) immediately preceded this question (R6) which asked for additional comments from leaders. Leaders from 10 branches commented on a knowledge test, with a primary focus on ballistics. In the knowledge test item, ballistics was used as an example to illustrate what a knowledge test could include and presumably explains the emphasis on ballistics in these comments. However, comments on knowing ballistics and trajectory were cited in the prior question on additional skills.

One trend was that a knowledge test would be good for some Soldiers but not all – e.g., combat arms, but not necessarily for entry level Soldiers. Understanding of ballistics would help Soldiers. The knowledge test need not be highly technical. Selected Infantry comments were.

--Great idea so Soldiers are forced to understand the basics of marksmanship & what a bullet does/does not do when it leaves the weapon.

--Knowledge base is good. For SDMs and Snipers it's definitely necessary, but for your line Soldier, all that matters is that he can follow orders and effectively destroy the enemy by **HAVING SHOOTING EXPERIENCE** with his weapon.

--Many Soldiers know "what" their weapon does but not "how". All infantrymen should have an understanding of how ammunition and weapons work in order to demystify the zeroing and qualifying process and give them greater confidence in their weapon system.

Skills to test and scope. Many of the comments were redundant with the prior question on additional skills to include. One comment was that Soldiers should be able to tell you everything in the FM. One Infantry leader distinguished between weapon proficiency and marksmanship proficiency: *Weapon proficiency test should be how to put an optic on a weapon and take it off, borelight, and other such tasks. Marksmanship proficiency should be based around ability to SHOOT a weapon.* Given this distinction, most of the comments were on weapons proficiency.

Test execution / quality control. Comments in this category were primarily concerns. One concern was about doing it right and whether the test would be treated as a check-the-box task. Leaders were also concerned about paperwork overload and resources to support the test and the associated training. Questions were raised regarding who certifies the results and procedures. Some examples of extended comments by Infantry leaders are presented below.

--It should be a combination of written and practical test. Most shooters are going to be junior enlisted and the test needs to be able to fit the unit and the person. Should not be some centralized test from HQDA. If this is the route to go, then we should be sending our best shooters (E5/E6 or maybe E7) to go to a course where he can then come back and help command teams develop the training and testing plan. One size does not fit all.

--Marksmanship skills are easy to test in theory, but get very complex depending on the level of skill a Commander wishes to evaluate. Basic marksmanship is simple and easy to test with standard qualification training, but it does NOT resemble the modern battlefield.

--Test should be a hands-on functionality test that is also tested at every promotion board for Soldiers and NCOs as well. Should not be a written only examination.

Reasons for not giving a test (leaders from 10 branches). The major point was that although the skills are important, they are covered by good leaders in the unit's marksmanship training program [PMI, parts of EIB [Expert Infantryman Badge]]. Others thought the test would take away from valuable training time. Below are some specific comments from Infantry leaders.

--Should perform these tasks, but should not be a test.

--The test is just introducing more paperwork and hand jamming into an organization already drowning in it. Good units will conduct this training on their own. Army doctrine can best serve leaders by making this training easy and readily available. Lay out the classes or PMI

in the FM and leave it at that. Good leaders will find it helpful, bad leaders will continue to perform sub-standard and can be identified as not conducting to standard classes. Making a skills proficiency test just creates more paperwork and headache for line units. .

--We already have PMI and it covers everything that was listed in the previous questions. Just make the leaders do their job instead of making up some sort of bureaucratic check list and actually give the lower level leadership some extra time to train their Soldiers appropriately instead giving them a multitude of pointless taskings. (very similar to an Engineer leader comment)

Trainer concerns and issues. The primary theme (leaders from 6 branches) was that many NCOs do not possess the requisite skills and knowledge. Instructor training and certification are needed. Most comments were made in terms of training vs. testing (however, hands-on evaluation requires that the tester knows the skills tested). Sample comments by leaders from four branches are:

Armor

--Test is good idea; problem is that leadership does not know how to conduct tasks themselves.

Mechanical Maintenance

--Marksmanship skills should be for everyone who handles weapons. I have seen people in higher ranks who do not know anything about their weapons. How can they train anyone on the weapons if they don't know themselves?

-- Many Soldiers do not know the correct way to shoot and their NCOs don't know marksmanship. Therefore Soldiers always shoot bare minimum.

-- Train the NCO Corps from top down.

Military Police

--Leaders should be the first to be evaluated. Most leaders have lost the edge that they had over their Soldiers. You cannot train a Soldier if you do not possess the skill yourself.

Infantry

--Education pilot program necessary to get senior ranks familiarized with marksmanship terminology, terms, and understandings, e.g. ballistics. pictures identifying malfunctions, or proper sight picture alignment, trajectory are necessary. Video clips of immediate action drills, magazine changes and proper body positions are necessary for uniform standard.

--I think this idea is great, however the most important piece would be the proper blocks of instruction to ensure that Soldiers are actually receiving this type of information from their leaders. I personally believe all of these skills are critical, however I highly doubt that the average Soldier receives the proper levels of instruction that would ensure success on such tests. The instruction and courses are the critical part, in my opinion

-- Being able to shoot is easy, being able to teach others how to is the hard part.

Live-fire training. Lastly, there were other comments on live-fire training, not the test per se. These are only summarized in this Appendix; they are not presented in detail. These comments dealt with the need for more realistic firing scenarios, Army should adopt the Marine Corps

program, moving targets, short range firing, make advanced marksmanship training available to all Soldiers, and more range time to practice skills not just qualification. There were two unique comments that bear mentioning. One was to go back to 3-round shot groups – to save time and money compared to a 5-round shot group. The second was that each Soldier’s weapon should stay with him/her for his career.

Table H6

Summary of Non-Live Fire Comments to Question R6: Additional Comments on Marksmanship Skills Proficiency Test

Comment Category	# Comments by Branch	Specific Comments on Tests
General Comments on the Skills Proficiency Test: 162 Total Comments		
Positive w/ & wo/ other suggestions (53 comments)	3 Ammunition	<p><u>Ammunition:</u> As a former 11B believe support personnel will benefit from prof test: they are not comfortable firing wpn. At least the test will not hurt anything and can only help (1), Marksmanship training, as well as First Aid should take priority over all other training for Soldiers on the Road To War to hostile areas. Allocations and resources for refinement and retraining should be highly considered with Unit Planning. Our enemies are training. (1), More comprehensive test. Practical demonstration of skills applicable to COE. (1).</p> <p><u>Armor:</u> Add as soon as possible. If possible, make it supervised by outside units for all ranks. (1), Believe skills tests are a great idea. Believe a yearly test on basic MOS skills by level would be a great asset to NCOs and officers. It should be a requirement to not only be promoted but to continue service. Extensive experience from deploying can help make a great leader or Soldier. However not being able to apply it, or not understanding basic skills for your skill level hinders unit readiness, increases training time when in the field, and holds up good Soldiers and leaders from being able to progress. (1), This is a great idea. We should expect a lot from our Soldiers. Adding this requirement will increase basic knowledge and marksmanship across the force. (1), A test could help a Soldier to shoot and become more effective at hitting. Not only shooting a weapon is vital but knowing where your rounds land is important too. (1), Every Soldier should be able to handle their weapon and know how it operates. If they are graded on it then they will play close attention and ensure they know everything about that weapon. (1), Test is a great idea (1), Test will enhance proficiency; reinforce sqd/ldr training (1).</p> <p><u>Aviation:</u> Every Soldier regardless of MOS is rifleman first. A rifle is a machine & Soldiers should know everything about it. (1), Great idea to include this proficiency test because our old way of just shooting</p>
	7 Armor	
	4 Aviation	
	1 CBRN	
	5 Engineer	
	7 Field Artillery	
	3 Infantry	
	4 Mechanical Maint	
	1 Medical	
	8 Military Police	
	2 Multif Logistician	
	5 Quartermaster	
	3 Transportation	

Comment Category	# Comments by Branch	Specific Comments on Tests
		<p>doesn't contribute to the basic knowledge of the weapon system. (1), Test would save big Army money; employing skilled marksmen for training and drill (1), We are falling away from marksmanship in some units who do not go outside the wire. I went from an AVN company to a BCT - - totally different --- some sort of a test is a good idea. Most Joes have trouble keeping the optics secured to their weapon; getting back to basics would be beneficial. (1). <u>CBRN</u>: Good if it improves marksmanship skill (1). <u>Engineer</u>: Anything that will make our Soldiers and leaders more knowledgeable on weapon systems will improve our forces (1), Good idea; will keep Soldiers current with their assigned weapon. (1), If the new Soldiers arrive in their first duty station proficient in Marksmanship, NCOs can spend more time training on advanced marksmanship and less on remedial training. (1), Is a great idea – implement at all levels (1), Test most beneficial for non-maneuver units. Mandate it; Have seen negative effects with special troops (1). <u>Field Artillery</u>: Great idea. (1), Applies to all combat MOS (1), Basic skills are ok – had a good set of fundamentals (1), Feel test better suited for MOS that use these skills more often (1), Let's do it (1), Needs to happen sooner than later (1), Great idea (1) <u>Infantry</u>: A Marksmanship Skills Proficiency Test would allow unit leaders to train their Soldiers in a standardized manner. Several units I have been in have done marksmanship training differently. (1), Don't change the test. (1), The previously mentioned skills under consideration in a new test are perishable. Thus, any training and testing which places emphasis on these skills is a good idea and forces emphasis from the command. The daily optempo often precludes a unit's ability to engage in non-mandatory training; therefore, making this a mandatory and testable event prevents us as leaders from allowing it to fall off the plate. (1). <u>Mechanical Maintenance</u>: It will ensure everyone has a complete understanding of the consequences of not cleaning your bolt properly. Proper lubrication of main parts and bullet trajectory (1), Need to fully understand weapon; leads to more confidence in combat - for protecting themselves and battle buddies (1), Test will ensure all Soldiers have the ability to fully function their weapon in combat, wo/ assistance from their leader (1), Test will enable you to identify shortcomings in your unit, not just the Soldiers (1). <u>Medical</u>: Test needed for all regardless of job. As medic have personally had to jump behind crew-served wpns due</p>

Comment Category	# Comments by Branch	Specific Comments on Tests
		<p>to mission (1).</p> <p><u>Military Police</u>: All Soldiers should know everything about their primary weapon with no excuses (1), Good idea as we focus less and less on these skills (1), Adding a Skills Proficiency Test would be beneficial because it keeps Soldiers engaged with all actions of the weapon, rather than simply firing it. (1), I believe the way we conduct our weapons training is flawed and we need to fix by implementing such a test and taking Soldiers out and work with them constantly with weapons and advanced training. (1), Test is important because need to ensure Soldiers have the tools necessary to complete the mission (1), Test would make it easier for Soldiers to qualify if they had these marksmanship skills freshly going through their heads - trigger squeeze, breathing (1), Testing of marksmanship skills should be trained and tested at basic training and that marksmanship skills listed be developed in Soldiers by their leaders. (1), In today's combat environment, should not be limited to combat arms. Most MOSs have chance of an engagement when deployed (1).</p> <p><u>Multifunctional Logistician</u>. Implement as soon as possible (1), These subjects should be taught in basic training and reinforced when Soldiers arrive at their unit. (1)</p> <p><u>Quartermaster</u> Marksmanship training and proficiency is just as important for a non combat MOS Soldier as it is for a combat MOS Soldier. We should accept the fact that all Soldiers may be asked to perform combat duties at some point in their career and should maintain the ability to do it well at all times. (1), Great tool for leaders to get a snapshot of each Soldier's skills (1), Would decrease number of bolos on range if training was more frequent and in depth (1), Marksmanship is a matter of life or death and should be held at the highest standards and the best training available. The enemy has automatic weapon fire, we have marksmanship. The importance is downplayed and shooting at the range with some units has become too check the block by the numbers. Soldiers are constantly forced to take unnecessary precautions and follow unwritten rules which cause them to be scared of handling a weapon instead of confident. (1), Test needed to ensure understanding of marksmanship (1)</p> <p><u>Transportation</u>: Any time we can make Soldiers more proficient with firing their weapon or give them a better understanding of the function of the weapon or attachments we are providing a good training. This test could be a good assessment tool to evaluate our Soldiers comprehension of the current weapon systems (1), More</p>

Comment Category	# Comments by Branch	Specific Comments on Tests
		training on marksmanship skills would be helpful (1), I don't think that we can get enough weapons training. Every Soldier should know entirely everything about the one piece of equipment that could mean living or dying. (1)
Test implementation suggestions (35 comments)	3 Armor 3 Aviation 3 CBRN 1 Electronic Maint 2 Engineer 5 Field Artillery 7 Infantry 8 Mechanical Maint 1 Military Police 2 Quartermaster	<p><u>Armor</u>: A more standardized outline of what should be included in PMI should be available. The test if implemented should be a basic certification of skills prior to firing. (1), One day should be hands on, next day test, last weapons qual (1), Should see results- so all of this testing should be done at once at range. Start with stripped weapon, mount optics then boresight, and then zero, then qualify in the same day during same event (1)</p> <p><u>Aviation</u>: Should be Army wide. (1), Should have a timed assembly/disassembly task (1),. Test every Soldier to ensure they are prepared for the qualification range, and that they know their assigned weapon. This would save a lot of money by not wasting ammunition. (1).</p> <p><u>CBRN</u>: Not only give a test but also hands-on PE. (1), Test should start in basic training (1), Test procedures should be standardized; NCOs make up information that is inaccurate (1).</p> <p><u>Electronic Maintenance</u>: Be strict and fair so that Soldiers are properly trained, as lives depend on this (1).</p> <p><u>Engineer</u>: I believe that if a Soldier in a combat MOS fails this marksmanship test two times consecutively, then this Soldier should be re-evaluated to be discharged from that MOS or from the Army. If a Soldier cannot accurately engage the enemy under stressful environments then is more of a safety risk than an asset to the team. (1), Should be a test to refresh some and to bring those lacking up to speed (1).</p> <p><u>Field Artillery</u>: All tasks given in both offensive and defensive training and evaluated by company cdrs for proficiency (1), Need to result in chapter if fail – like APFT. Necessary for all Soldiers to fire weapon and be efficient w/ wpn (1), Opposed, but if imperative, best suited as an annual AWT test (1), Really need to be stricter on the basic fundamentals of shooting in testing (1), Who & when would it be administered? Is it part of actual qualification (1).</p> <p><u>Infantry</u>: Most of the proposed changes while good ideas should be confirmed by team leaders at a Soldier's first duty station. For the purposes of marksmanship, being able to put rounds effectively on target is all that matters. (1), Conduct wo/ body armor (1), Test must be hands-on w/ Soldier's personal wpn – not computerized or written. (1), Test should be hands-on not written. A standardized</p>

Comment Category	# Comments by Branch	Specific Comments on Tests
		<p>training plan should precede the test. (1), The training should be geared to actual combat scenarios, e.g. correct a malfunction (1), There is no way a Soldier will actually understand unless he is tested; not only that but there is no way he will fully understand how to shoot unless he goes out to the range and shoots, not alone but with a coach. (1), There should be an advanced marksmanship proficiency test for personnel above the rank of specialist. (1).</p> <p><u>Mechanical Maintenance:</u> Evaluation should be go / no go not a point system. (1), Test should be held at unit and WLC levels (1), Recommend 4 day period – day 1-2 instruction, PEs on many of the skills in the test (wpn knowl, wpn handling, bullet knowl, disassemble etc.) (1), Test applies to officers as well (1), Test for ability not speed (1), Hands-on, not paper (2), Written and proctored test in general knowledge and optics (1).</p> <p><u>Military Police:</u> Be properly administered; standard to graduate from AIT and remain in unit (1).</p> <p><u>Quartermaster:</u> Should not be a timed event, but should be done in a timely manner (1), Some people are hands on trainers as well as learn hands on, some are book personnel, if such a test should exist I think the test should be both hands on and written. Reason not everyone learns the same way! I strongly believe that if you know the block you will know one of the two ways then you can average the scores of both tests. (1).</p>
References to prior question on written knowledge test (25 comments)	3 Armor 1 Aviation 3 CBRN 1 Electronic Maint 2 Engineer 8 Infantry 1 Mechanical Maint 3 Military Police 2 Quartermaster 1 Signal	<p><u>Armor:</u> Would only have LRM or DM take this test to ensure they understand ballistics and environmental changes. (1), Instead of focusing on the higher element and higher thinking, the test that is being considered should be like BGST essentially, can you put this weapon into use and fix it if you need to. (<i>respondent misinterpreted question to apply to the knowledge test component</i>) (1), Yes, everyone should be tested to see if they have the knowledge and understanding of the ballistics of bullet. This is equally as important as trigger squeeze, etc, it is a major factor in accuracy. (1)</p> <p><u>Aviation:</u> These previous questions asked about trajectory, dispersion etc... These things are good to know. Some are more important than others though. (1).</p> <p><u>CBRN:</u> Pertinent for all troops to understand how the environment affects rounds going down range at different altitudes and distances. (1), Knowledge of basic ballistics may help Soldiers employ rifles. (1), The minute of angle, bullet dispersion, and other general trajectory questions will be useful for many combat arms MOSs but it will be over the level of most CBRN Soldiers. (1).</p>

Comment Category	# Comments by Branch	Specific Comments on Tests
		<p><u>Electronic Maintenance:</u> Marksmanship skills must be practiced. It is up to Units and First Line Leaders to ensure that happens. Low proficiency is a direct reflection of the Leadership on one of the most fundamental Soldiering tasks. A knowledge based test would help ensure Leaders understand how to train marksmanship to their subordinates. (1).</p> <p><u>Engineer:</u> Think it should be left to just basic questions such as effective range, point and area targets and the four basic fundamentals of shooting, because a Soldier right out of basic training needs to start with just the basics and practice them before he or she moves on to anything more difficult like minutes of angle and things like that. I do think maybe some sort of knowledge based test would be a good thing though. (1), Understanding how round travels will help Soldiers understand basic marksmanship & how other things influence the round heading down range. (1).</p> <p><u>Infantry:</u> Great idea so Soldiers are forced to understand the basics of marksmanship & what a bullet does/does not do when it leaves the weapon (1), Knowledge base is good. For SDMs and Snipers it's definitely necessary, but for your line Soldier, all that matters is that he can follow orders and effectively destroy the enemy by HAVING SHOOTING EXPERIENCE with his weapon. (1), Many Soldiers know "what" their weapon does but not "how". All infantrymen should have an understanding of how ammunition and weapons work in order to demystify the zeroing and qualifying process and give them greater confidence in their weapon system. (1), More understanding of marksmanship and ballistics theory is always good. (1), Soldiers need proper training on ballistics and trajectory and how weather, elevation, barometric pressure and humidity can effect where your round can go. (1), The more a Soldier knows about how, why, and where his rounds land, the more proficient he will become (1), This information will likely be too much for the basic Soldier to handle early on. (1), Understanding minute of angle would be useful but ballistic coefficients are not needed at skill level 1 level. (1).</p> <p><u>Mech Maint:</u> Test of knowledge good - so don't lose this information: a way to ensure skill development. Do APFT & exercise everyday - so why not shoot & exercise marksm skills as often. (1).</p> <p><u>Military Police:</u> Bullet trajectory is getting into advanced marksmanship. It should be taught but not at the beginning level. Only after basic proficiency is achieved. (1), Do not need to teach math skills behind</p>

Comment Category	# Comments by Branch	Specific Comments on Tests
		<p>marksmanship (1), It's a task that is not trained as much as it should be. (1).</p> <p><u>Quartermaster:</u> If start teaching Soldiers the how and why of ballistics and marksmanship they will take ownership of their own proficiency (1), Would be good to test on the difference between a 25-100m zero vs. 50 – 200m zero (1).</p> <p><u>Signal.</u> General knowledge is sufficient in order to shoot. Don't need to test on how bullet will fragment or figure out bullet trajectory (1).</p>
Skills to test & scope (19 comments)	1 Armor 6 Engineer 3 Field Artillery 6 Infantry 1 Mechanical Maint 2 Transportation	<p><u>Armor:</u> Soldiers should also learn the different specs of each type of ammunition fired, i.e., tracer, green tip, green ammo, range, tracer burnout, angle of travel. (1).</p> <p><u>Engineer:</u> BUIS zero & qualification before learning any optic (1), Proper use of rifle sling (1), Knowing how to adjust your BUIS and a given optic for zeroing (1), Demonstrating "correct" firing positions sounds good on paper, but I don't think that's essential. Steady position IS one of the 4 fundamentals, but, not everyone successfully fires according to the book. (1), Emphasize safety to minimize NDs (1), If they can demonstrate how to do all the function tests and tear down and reassemble, that is the test. (1).</p> <p><u>Field Artillery:</u> Soldiers need to quickly and effectively put rounds down range or place them properly while assaulting a position. This type of training is vital. Some paper test will be of little value when you are in a fire fight. All evaluations should be hands on!! (1), Soldiers should be able to tell you anything in the FM (1), The test is a great idea. I believe it should be focused on functions, clearing procedures, assembly disassembly and correct forms for firing i.e., prone, kneeling and standing. Also think proper ways of firing using the environment around you i.e., corners, debris, windows. (1).</p> <p><u>Infantry:</u> A proficiency test should be given. However there are two different tests here, weapon proficiency and "marksmanship proficiency". Weapon proficiency test should be how to put an optic on a weapon and take it off, borelight, and other such tasks. Marksmanship proficiency should be based around ability to SHOOT a weapon. (1), A proficiency test should not include tasks that are normally a portion of PMI, i.e. bore sighting, mounting an optic, but should focus on that individual's ability to operate the weapon system. Demonstrating the ability to safely handle a weapon is absolutely essential, however, it is questionable whether that ability should be measured through a test or through leader oversight. The inability to properly clear a weapon, perform a malfunctions check,</p>

Comment Category	# Comments by Branch	Specific Comments on Tests
		load, reload, etc. is indicative of a failure of the individual Soldier training model. (1), Insure everyone knows the max effective range (1), Include iron sights and optics (1), Many of the tasks being considered for the test are already incorporated into EIB testing & preparation (1), Weapon handling and marksmanship are only two parts of gunfighting. Combat mindset must be trained as well. (1). <u>Mechanical Maintenance</u> : A Soldier should know how to use the rifle, clean the rifle, do function check, load the rifle and shoot the rifle again. Its only use is for protection in combat zones, not to test a Soldier's IQ. Any more training than how to keep that rifle fully functional in combat is useless information and will only take away time from doing more useful training. (1). <u>Transportation</u> : Zeroing optics as most units now have optics(1), Needs to include basic rules of safety (1).
Test frequency (5 comments)	1 Ammunition 1 Armor 1 Engineer 2 Mechanical Maint	<u>Ammunition</u> : Units should give annually (1) <u>Armor</u> : Useful, but should be annual requirement so does not detract from other training (1) <u>Engineer</u> : Test should be administered at least once a month to help build muscle memory (1) <u>Mechanical Maintenance</u> : Give yearly /prior to deployment schedule (1), Do annually. Marksmanship is a perishable skill so the emphasis on this test should be great. Potentially a requirement for boards and promotions (1).
Test in other situations & or weapons (9 comments)	1 Ammunition 2 Armor 1 Aviation 1 Field Artillery 2 Infantry 1 Mechanical Maint 1 Military Police	<u>Ammunition</u> : Sniper application (1). <u>Armor</u> : Where is the attention to crew-served weapons such as the M240B? (1), It should be done at both the individual level as well as crew level, for example mounting, and preparing the .50cal and M240B to tripods for dismounted use. (1). <u>Aviation</u> : Units should be required to train and test on all weapons systems they have in their unit and ensure everyone is up to speed and date and are able to qualify with any weapon they may encounter. (1). <u>Field Artillery</u> : For all weapons not just M4 (1). <u>Infantry</u> : Marksmanship proficiency test should not be limited to M4, should include all weapons organic to the unit (1), Too many infantrymen do not know their weapon systems. They just zero and qualify with their assigned weapon then turn it back into the arms room. They don't have a complete idea what SDZ, REDs, trajectory of specific rounds. This includes the M240 and M249. All Infantrymen should be proficient with a M9 9mm as well. (1). <u>Mechanical Maintenance</u> : It is important to know and understand all the weapons we have, you never know

Comment Category	# Comments by Branch	Specific Comments on Tests
		<p>when you could be the only one left to man a weapon, saying I do not know this weapon in a time of crisis is not good. (1).</p> <p><u>Military Police</u>: Test should also be given for crew-served weapons (1).</p>
General comments on importance of skills (10 comments)	4 Armor 1 Aviation 2 Engineer 2 Infantry 1 Mechanical Maint	<p><u>Armor</u>: Important to be skilled at every aspect of marksmanship (1), Marksmanship is one of the most important jobs of Scouts and Infantry Soldiers, not enough is being done to instill the knowledge and employment of different weapons systems. We go with set "crews" which means gunners are gunners and drivers are drivers. And while this is important, it causes complacency and marksmanship is a perishable skill. (1), There is a low knowledge of the M4 because too much time is placed on training other weapons platforms and other skills that are needed during deployments. The army as a whole has forgotten how to shoot a personal weapon (1), Trajectories and minutes are more of an advanced marksmanship, but we definitely didn't pay enough attention to the basics in our unit because we assumed everyone learned them at least in Basic training. The issue is that marksmanship is a perishable skill and needs to be trained periodically. (1).</p> <p><u>Aviation</u>: Test will give feedback to Soldiers and commanders (1)</p> <p><u>Engineer</u>: Marksmanship is a skill lagging behind in today's army with the emphasis being pulled away from the individual Soldier in favor of other resources. Each Soldier needs to be able to effectively engage the threats to his mission, and against himself and his fellow Soldiers. I have seen far too many times the infantry Soldier not correctly identifying his target and engaging friendly troops. The lack of effective fires by the Soldier have been the only reason blue on blue casualties did not occur. Marksmanship needs to be taught and emphasized at the Soldier level. (1), Soldiers should be able to perform basic skills (1).</p> <p><u>Infantry</u>: Helping Soldiers understand in depth marksmanship w/ the carbine is extremely important, but also need much live fire. (1), To be a good Soldier you should know everything about your weapon. (1).</p> <p><u>Mechanical Maintenance</u>: Soldiers in support units require more marksmanship training. Can easily be moved to a combat unit and when they are not being utilized for their job then they could very well be put on patrol. It is important that are capable confident Soldiers so they will not hesitate or second guess. (1).</p>
Other	2 Armor	<u>Armor</u> : it may confuse them (1), Soldiers will increase

Comment Category	# Comments by Branch	Specific Comments on Tests
(6 comments)	2 Infantry 1 Mechanical Maint 1 Transportation	<p>proficiency if grouping & zeroing are taken more seriously. Before getting to that stage, proper fundamentals need to be rehearsed w/ exercises like dime -washer drills or EST. (1).</p> <p><u>Infantry</u>: Pass down skills taught to Tier 1 units and Ranger Bn to make every Soldier a marksman regardless of MOS. (1), The only way to get better is to keep doing it, not just twice a year. (1).</p> <p><u>Mechanical Maintenance</u>: Crews need to focus on their assigned wpns. (1).</p> <p><u>Transportation</u>: It's about marksmanship skills, not range operations (1)</p>
<p align="center">General Concerns and Suggestions: 29 Total Comments</p> <p align="center"><i>Trainer concerns are listed in separate section.</i></p> <p align="center"><i>Some concerns reflect training vice testing per se.</i></p>		
Test execution/ quality control (13 comments)	4 Armor 2 Field Artillery 5 Infantry 1 Mechanical Maint 1 Signal	<p><u>Armor</u>: Do it but do it right, make it worth everyone's time not a check the box test. Should be taught by professionals. Train as you fight, fighting is serious this should be as well. (1), Train the NCOs first, and hold them to the standard; Leaders must ensure that standard is upheld, otherwise it will turn into another check the block training. (1), Very important subject. Marksmanship is a core fundamental. 1st Cavalry Division has already developed an SOP for train up and qualification for a Small Arms Gunnery which provides synchronization across units and a proper build-up. Too often units do basic rifle marksmanship in the name of training without accounting for collective progression and individual improvement. (1), Zeroing products for machine gun sights, ACOGs, and other optics are difficult to acquire. TAS-C or Range Control should make these more available. (1)</p> <p><u>Field Artillery</u>: Good idea, if provided time to conduct the training & not overloaded with paperwork (1), Extra training costs more money. Can the Army pay for it? (1)</p> <p><u>Infantry</u>: A written test does not translate to how well a Soldier can shoot or manipulate a weapon. Tests must be hands on and on the range. (1), It should be a combination of written and practical test. Most shooters are going to be junior enlisted and the test needs to be able to fit the unit and the person. Should not be some centralized test from HQDA. If this is the route to go, then we should be sending our best shooters (E5/E6 or maybe E7) to go to a course where he can then come back and help command teams develop the training and testing plan. One size does not fit all. (1), Marksmanship skills are easy to test in theory, but get very complex depending on the level of skill a Commander wishes to evaluate. Basic</p>

Comment Category	# Comments by Branch	Specific Comments on Tests
		<p>marksmanship is simple and easy to test with standard qualification training, but it does NOT resemble the modern battlefield. Live fire: Long distance engagement, close quarters battle, and awkward shooting positions are the norm, and should be trained and evaluated whenever possible. (1), Test should be a hands on functionality test that is also tested at every promotion board for Soldiers and NCOs as well. Should not be a written only examination. (1), Who will certify the Soldiers that take this proficiency test? Who certifies them? Senior NCOs? 1SGs? CDRs? CSMs? (1)</p> <p><u>Mechanical Maintenance:</u> Concern that test may become check the block type training thereby setting up Soldiers for failure (1)</p> <p><u>Signal:</u> Test could become “pencil whipped”. If so, no value added – other than sight picture which should be in PMI (1)</p>
Test scope (4 comments)	1 Aviation 3 Infantry	<p><u>Aviation:</u> While I think that it is important that the theory of operations of marksmanship is important, I do not see the need for it to be a constant evaluation. (1).</p> <p><u>Infantry:</u> Let the marksmen (AMU) come up with this test, then let the brass at TRADOC approve it. Don't let the wrong people birth this tool. Marksmanship tests should be created by professional marksmen. (1), Outcomes based would preclude having to test for certain skills. If someone doesn't know how to change a mag from behind cover quickly they may not make the time standard, or if they do not know how to establish a good sight picture they may not be able to hit enough targets to pass. (1), The test would need to draw from standardized army material like the FMs and TMs. You would need to refine the marksmanship TM to accommodate all the necessary material for the test. (1).</p>
Concern re purpose and application (8 comments)	1 Adjutant General 1 Aviation 1 Engineer 4 Infantry 1 Signal	<p><u>Adjutant General:</u> Test seems to be like someone is checking a risk management block (1).</p> <p><u>Aviation:</u> Test is just something anyone could study and learn in order to pass (1).</p> <p><u>Engineer:</u> With a written test you are just making sure people can read and retain. For marksmanship nothing is better than actually going to the range and firing your weapon under different circumstances. if you want Soldiers to fire better implement stress tests with bombs and music in the back ground after they have already qualified --- simulate actual battle. (1).</p> <p><u>Infantry:</u> I like the idea of a marksmanship skills proficiency test, but have no confidence in the Army's ability to create something that would actually be value added. I believe it would become so mired by the</p>

Comment Category	# Comments by Branch	Specific Comments on Tests
		<p>bureaucracy, with every single person trying to leave their mark on it that it would add nothing to the Army other than NCOER/OER bullets. The EIB is already adding a weapons proficiency test, so this might become redundant. (1), Marksmanship Skills test should go into OERs/NCOERs, at least for combat arms units. Officers and Senior NCOs will pay more attention to marksmanship if their promotion depends on it. Won't have senior level leadership embarrassing themselves in front of privates by loading magazines in backward on a range for example. (1), Quit trying to relax the standards or get away from it. (1), Skills proficiency should increase over a Soldier's career, whether it is knowledge or practical application. Marksmanship is only one pillar of a holistic approach consisting of Mindset, Marksmanship, Manipulations and Individual Tactics. Until recently, there was no doctrinal definition of the word "Marksmanship"...changing language changes understanding. There should be attributes of gunfighter fitness; efficiency, accuracy & knowledge. These things should be repeatedly trained, tested and evaluated to foster confidence and competence. (1).</p> <p><u>Signal</u> : A "gunnery" type test is not necessary for all Soldiers. 13F, 11C, 13B, 19K and others already have these systems in place, where they must certify on their casualty producing systems (1).</p>
Unintended consequences (1 comment)	1 Armor	<p><u>Armor</u>: The M4 is the SM's main weapon and to make a SM have to qualify by passing a GST could damper the Troops readiness status, also to include allowing those SM who are not too proficient to go to ranges and be able to fire helps them improve their skills, so to take away that ability due to a GST would hurt the SM progression on being proficient at live fire techniques (1).</p>
Soldier proficiency (3 comments)	1 Armor 1 Aviation 1 Engineer	<p><u>Armor</u>: There's so much more that a Soldier should learn about marksmanship than what is currently being taught. There are thousands of Soldiers now that don't know the first thing about marksmanship and could <i>not</i> zero or qualify with a weapon if their life depended on it. Yet the army retains them (1).</p> <p><u>Aviation</u>: I agree with the testing as long as the Soldiers get the training they need. Currently in most units Soldiers are not. (1).</p> <p><u>Engineer</u>: Noncombat MOSs need to focus on consistent weapons training / qualifying, and not on unnecessary taskings that don't improve overall Soldier readiness and combat readiness. (1).</p>
Reasons for not Giving a Marksmanship Proficiency Test: 28 Total Comments		
Covered in PMI	1 Air Defense	<u>Air Defense Artillery</u> : Semipointless. Already have PMI

Comment Category	# Comments by Branch	Specific Comments on Tests
or BCT (13 comments)	Artillery 2 Engineer 2 Field Artillery 4 Infantry 2 Mechanical Maint 2 Military Police	<p>before attending a range & unit NCOs should be training Soldiers on these skills, so do not need to test. Most of it is pretty general knowledge (1)</p> <p><u>Engineer:</u> Most of the tasks are skill level 1 taught in BCT. The rest should be covered in the PMI prior to going to any range. This is redundancy, good leaders are already doing these tasks, bad leaders will just check the block. The end effect is wasted money and feel good training, in the end nothing changes. A solid marksmanship strategy is a result of good leadership. (1), Not test because shooting is a basic Soldier skill that was supposed to be tested in Basic training. Improving weapon knowledge should be done at arrival to unit but not as a test. It is Leaders' responsibility to ensure Soldiers are up to speed with weapons; not a test (1)</p> <p><u>Field Artillery:</u> Should be left up to the Soldiers' NCO to insure that he or she is able to place their assigned weapon into operation. To add to this requirement to the requirements already in place would have very little training value (1), Units should be conducting most of this training wo/ a test in place (1).</p> <p><u>Infantry:</u> Implementing this test is not necessary as long as all of the above topics are covered in unit's marksmanship instruction and training. Most of those topics are covered regularly, with the exception of solid information on bullet trajectory and zeroing at 25m for a 300m battlesight zero. (1), Should perform these tasks, but should not be a test (1), The test is just introducing more paperwork and hand jamming into an organization already drowning in it. Good units will conduct this training on their own. Army doctrine can best serve leaders by making this training easy and readily available. Lay out the classes or PMI in the FM and leave it at that. Good leaders will find it helpful, bad leaders will continue to perform sub-standard and can be identified as not conducting to standard classes. Making a skills proficiency test just creates more paperwork and headache for line units. (1), We already have PMI and it covers everything that was listed in the previous questions. Just make the leaders do their job instead of making up some sort of bureaucratic check list and actually give the lower level leadership some extra time to train their Soldiers appropriately instead giving them a multitude of pointless taskings. (1).</p> <p><u>Mechanical Maintenance:</u> Test can only prove if you can do something right. With proper training and integrity do not need a test (1), Those are all things that you teach your Soldiers before they go to a range. do not see a need</p>

Comment Category	# Comments by Branch	Specific Comments on Tests
		for test to go along with the normal training a unit conducts. (1). <u>Military Police:</u> Do not believe a test should be used because of lack of knowledge. It is the Leaders' job to ensure that their Soldiers become proficient. (1), I don't see the purpose in having a specific test for marksmanship skills. Most items listed in the previous questions are tasks from Warrior Tasks and Drills Skill level one, which should be tested on already. (1).
Need to be on range (8 comments)	3 Ammunition 1 CBRN 1 Engineer 2 Infantry 1 Mechanical Maint	<u>Ammunition:</u> Test cannot replace range time. Range time needs to be more critical. Mental knowledge is important but cannot replace live fire conducted on regular basis (1), Doesn't annual qual count as a marksmanship test? (1), Focus on training not on test (1) <u>CBRN:</u> I do not think a test is appropriate. The need lies with the ability to be on a range often. The more time a Soldier gets with his/her weapon, the more proficient the Soldier can get. Don't pull the weapon out twice a year and say "you need to qualify." Pull the weapon out more often and give more chances for Soldiers to handle their weapon in a firing situation. Practice makes perfect, but if no practice exists where can perfection come from? (1) <u>Engineer:</u> Most Soldiers have a hard time as it is, adding more skills for them to be tested on won't help them. I believe that if more classes and range opportunities were offered for all Soldiers it would improve their marksmanship skills. (1) <u>Infantry:</u> How about we worry about being supplied with more ammo; NCOs will do the rest. Support MOSs should be supplied with a minimal amount, combat MOS with the most. (1), Many Soldiers good at paper tests, but critical issue is when Soldier must apply these skills. Rather have a Soldier who can move & shoot than one who can tell me what FM covers M4 statistics (1). <u>Mechanical Maintenance</u> Ability to fire more important than the test on equipment (1).
Insufficient time/waste of time (6 comments)	1 Air Defense 1 Ammunition 2 Armor 1 Electronic Maint 1 Transportation	<u>Air Defense Artillery:</u> Only shoot once a year. Waste of time to have this test, if do not train on it. (1) <u>Ammunition:</u> Do not need any more check the block courses; units have been overloaded; takes away from productive training (1) <u>Armor:</u> Hard enough to get privates to shoot BRM wo/ adding this test (1), Think it is overkill. As long as a PFC or SPC knows what will happen when he effectively engages his targets, it will be fine. This is a layer of pointlessness that will take away from training time. If Soldiers are interested, they will research on their own/talk to NCOs and learn round trajectory, etc. (1).

Comment Category	# Comments by Branch	Specific Comments on Tests
		<p><u>Electronic Maintenance</u>: Do not see how inserting any changes would help (1).</p> <p><u>Transportation</u>: The current rifle marksmanship qual requires Soldiers to use their individual weapon. Unless there is an Army wide problem with fratricide or negligent discharges, I see no need to take time away from other training and ongoing missions to train Soldiers on skills they should already know or train Service Support Soldiers to be Snipers. (1)</p>
Other (1 comment)	1 Infantry	<p><u>Infantry</u>: I checked no because it should not be something that is done at an NCOES. This should all be required and recorded at a company/battalion level (<i>misunderstood question—test was for unit not NCOES</i>) (1)</p>
Trainer Concerns and Issues: 22 comments from 22 leaders (Most comments related to training skills, not testing, but both are related)		
Train the trainer - Leader subject matter knowledge is often weak / information should be accurate (16 comments)	3 Armor 1 CBRN 1 Engineer 6 Infantry 3 Mechanical Maint 2 Military Police	<p><u>Armor</u>: Training is good idea; problem is that leadership does not know how to conduct tasks themselves (1), In my experience much training is based on hearsay, not fact – myth and lore surround the zeroing of the ACOG. Many E5s do not understand fundamentals of marksmanship & are certainly not in a position to instruct lower ranking Soldiers (1), Must train NCOs first obviously, & train them to standard 1),</p> <p><u>CBRN</u>: Ensure the test items are standardized. NCOs make up information that is not accurate. Makes for bad Soldiers. (1)</p> <p><u>Engineer</u>: Include more advanced series of classes in WLC, so NCOs are school trained and competent. This information will likely be too much for the basic Soldier to handle early on. (1)</p> <p><u>Infantry</u>: Education pilot program necessary to get senior ranks familiarized with marksmanship terminology, terms, and understandings e.g. ballistics, pictures identifying malfunctions, or proper sight picture alignment, trajectory are necessary. Video clips of immediate action drills, magazine changes and proper body positions are necessary for uniform standard (1), Good addition but need certified instructors to do this (1), I think this idea is great, however the most important piece would be the proper blocks of instruction to ensure that Soldiers are actually receiving this type of information from their leaders. I personally believe all of these skills are critical, however I highly doubt that the average Soldier receives the proper levels of instruction that would ensure success on such tests. The instruction and courses are the critical part, in my opinion. (1), If there is going to be a Marksmanship skills proficiency test it needs to be taught</p>

Comment Category	# Comments by Branch	Specific Comments on Tests
		<p>in the NCOES at all levels - WLC, ALC and SLC. The Army's marksmanship priorities and philosophy are out of date and need to be completely revised. (1), Instructor certification for small arms (1), There is a huge problem in the infantry --- Soldiers do not understand their weapons beyond being able to group/zero at 25m and qualify on a 300m range. This is especially true of newer optics and lasers. Even relatively senior NCOs have many different "opinions" on, for example, how to properly mount a PEQ-15. We eventually developed a BN SOP to make sure this was all done correctly, but it really should be standard knowledge for 11 series Soldiers. (1)</p> <p><u>Mechanical Maintenance:</u> Marksmanship skills should be for everyone who handles weapons. I have seen people in higher ranks who do not know anything about their weapons. How can they train anyone on the weapons if they don't know themselves? I think It should be known if a person does not know how to use their weapon. I don't want them to be the one "covering my back." (1), Many Soldiers do not know the correct way to shoot and their NCOs don't know marksmanship. Therefore Soldiers always shoot bare minimum (1), Train the NCO Corps from top down. Having a fellow NCO or SR NCO conduct optics training when they have never attended such advanced training and therefore relies on basic weapons training confuses the Soldiers (1).</p> <p><u>Military Police:</u> Leaders should be the first to be evaluated. Most leaders have lost the edge that they had over their Soldiers. You cannot train a Soldier if you do not possess the skill yourself. (1), Many Soldiers go off what others tell them or rely on others to do the work for them. This would force leaders to look up these tasks to become well rounded. (1).</p>
Need skill in how to train (4 comments)	1 Armor 1 Field Artillery 2 Infantry	<p><u>Armor:</u> We need to train our leaders on the new way of doing things. Not only train them how but show them why it is a better way. The information is already out there by the NCO corps is refusing to integrate it due to lack of knowledge. Marksmanship is paramount (1).</p> <p><u>Field Artillery:</u> Army teaches how to shoot but not how to be a better shooter, need more advanced way of teaching skills (1)</p> <p><u>Infantry:</u> Being able to shoot is easy but being able to teach others is the hard part. Too many NCOs know nothing about the weapon system that they are assigned, but can still go out and shoot 23/40. There was a time when NCOs knew weapon systems, but now it is like a game to them (1), Mandatory training for NCOs. Some NCOs will act like they know how to train but they do not</p>

Comment Category	# Comments by Branch	Specific Comments on Tests
		(1).
Master trainer (1 comment)	1 Mechanical Maint	<u>Mechanical Maintenance</u> : Every unit should have a master gunner, combat MOS or not. Have that person engaged in constructing a training calendar and stick to it. Shooting is part of what we do at one point or the other. Train Soldiers instead of wasting time on pointless details. (1)
Crew-served wpns training (1 comment)	1 Transportation	<u>Transportation</u> : Most Soldiers and Leaders assigned to operate and supervise crew served weapons do not understand Machine gun theory, ballistics, range finding, how to properly emplace a machine gun or use its optics. (1)

Table H7 summarizes the number of leader comments by branch in Table H6. Branches with fewer than 20 individuals are not summarized. However, Military Intelligence and Signal branches are reported separately.

Table H7

Number of Leader Comments on Their General Reactions to the Skills Proficiency Test (Major Categories for Question R6)

Branch	Posi- tive	Imple- ment	Knowledge Test	Other Gen Reactions	Concerns	Not Give	Trainer	Total
Air Defense	0	0	0	0	0	2	0	2
Ammunition	3	0	0	2	4	4	1	14
Armor	7	3	3	8	2	2	3	28
Aviation	4	3	1	2	3	0	0	13
CBRN	1	3	3	0	0	1	1	9
Engineer	5	2	2	9	2	3	1	24
Field Artillery	7	5	0	4	2	2	1	21
Infantry	3	7	8	12	12	6	8	56
Mech Maint	4	8	1	6	1	3	1	24
Military Police	8	1	3	1	0	2	2	17
Quartermaster	5	2	2	0	0	0	0	9
Transportation	3	0	0	3	0	1	1	8
Signal	0	0	1	1	2	0	0	4
Military Intell	0	0	0	0	0	0	0	0

Detailed Comments

Cited below are the full comments made by selected leaders. These comments were paraphrased in the preceding material, but are included here to present a more complete picture of the leaders' perspectives on a Marksmanship Skills Proficiency Test. Some comments focus on training not testing.

Positive Reactions

Adjutant General

--Properly and effectively using a rifle is a basic fundamental skill in any military capacity. All Soldiers should know the basics and advanced techniques of a M4/M16 at a bare minimum. An individual should be trained thoroughly on any weapon assigned to them. Why should anyone be told carry a firearm at all times while deployed but only be expected to know how to load and fire. This kind of thought process sounds like someone is simply checking a risk management block.

Ammunition

--Based on my experiences, I believe that support personnel especially will benefit from a proficiency test. As a former 11B, I am very comfortable qualifying with almost any weapon. The majority of Soldiers and NCOs, for that matter, that I've encountered since crossing over to support are not. I think that at the very least this test will not hurt anything and can only help.

--Marksmanship training, as well as First Aid/Buddy Aid, should take priority over all other training for Soldiers on the Road To War to hostile areas. Map Reading and Land Navigation should be a close second. Although important, this should take high precedence over Suicide Prevention, Equal Opportunity, and any other training that could be performed online or at an earlier or later date. Allocations and resources for refinement and retraining should be highly considered with Unit Planning. Our enemies are training.

Armor

--Marksmanship is one of the most important jobs of Scouts and Infantry Soldiers, not enough is being done to instill the knowledge and employment of different weapons systems. We go with set "crews" which means gunners are gunners and drivers are drivers. And while this is important, it causes complacency and marksmanship is a perishable skill.

--I believe that skill tests are a great idea. I have been told of SQT's from years prior to the GWOT, and believe that a yearly test on basic MOS skills by level would be a great asset to NCO's and officers. It should be a requirement to not only be promoted but to continue service. An extensive amount of experience from deploying CAN HELP make a great leader or Soldier. However not being able to apply it, or not understanding basic skills for your skill level, hinders unit readiness, training time when in the field, and holds up GOOD SOLDIERS AND LEADERS, from being able to progress.

Aviation

--I feel we are falling away for this subject in some units who do not go outside the wire. I went from an AVN company to a BCT -- totally different, some sort of a test is a good idea. Most Joes have trouble keeping the optics secured to their weapon getting back to basics would be beneficial

Engineer

--This type of Marksmanship test would be most beneficial to non-maneuver units. I previously worked in a Special Troops Battalion. The Engineers constantly had to run the battalion ranges and PMIs because these support units were horrendous at Marksmanship. Not only were they terrible shooters, but they didn't know how to zero their rifles, clear weapons properly, and fix malfunctions. This type of proficiency test MUST be MANDATED throughout the ENTIRE Army. It is not the maneuver units that have trouble with this, but those units that shoot only annually

--I think it should be left to just basic questions such as effective range, point and area target and the four basic fundamentals of shooting, because a Soldier right out of basic training needs to start with just the basics and practice them before he or she moves on to anything more difficult like minutes of angle and things like that. I do think maybe some sort of knowledge based test would be a good thing though.

--Marksmanship is a skill lagging behind in today's army with the emphasis being pulled away from the individual Soldier in favor of other resources. Each Soldier needs to be able to effectively engage those threats that stand in the way of his mission, and against himself and his fellow Soldiers. I have seen far too many times the grunt infantry Soldier not correctly identifying his target and engaging friendly troops. The lack of effective fires on the grunt's part have been the only reason blue on blue casualties did not occur. Marksmanship needs to be taught and emphasized at the Soldier level.

Field Artillery

--The test is a great idea. I believe it should be focused on functions, clearing procedures, assembly disassembly and correct forms for firing i.e.; prone, kneeling and standing. I also think proper ways of firing using the environment around you i.e.; corners, debris and windows.

Infantry

--The previously mentioned skills under consideration in a new test are perishable, thus, any training and testing which places emphasis on these skills is a good idea and forces emphasis from the command. The daily optempo often precludes a unit's ability to engage in non-mandatory training; therefore, making this a mandatory and testable event prevents us as leaders from allowing it to fall off the plate.

--Outcomes based would preclude having to test for certain skills. If someone doesn't know how to change a mag from behind cover quickly they may not make the time standard, or if they do not know how to establish a good sight picture they may not be able to hit enough targets to pass.

--There is a huge problem in the infantry that Soldiers do not understand their weapons beyond being able to group/zero at 25m and qualify on a 300m range. This is especially true of newer optics and lasers. Even relatively senior NCOs have many different "opinions" on, for example, how to properly mount a PEQ-15. We eventually developed a BN SOP to make sure this was all done correctly, but it really should be standard knowledge for 11 series Soldiers.

--There is no way a Soldier will actually understand unless he is tested. Not only that but there is no way he will fully understand how to shoot unless he goes out to the range and shoots, not alone but with a coach.

--Too many infantrymen do not know their weapons system. They just zero and qualify with their assigned weapon then turn it back into the arms room. They don't have a complete idea what SDZ, REDs, trajectory of specific rounds. This includes the M240 and M249. All Infantrymen should be proficient with a M9 9mm as well.

--A marksmanship proficiency test should be given. However there are two different tests here, "weapon proficiency" and "marksmanship proficiency". Weapon proficiency test should be how to put an optic on

a weapon and take it off, borelight, and other such tasks. Marksmanship proficiency should be based around ability to SHOOT a weapon. Take a page from the NAVY seals and have a marksmanship test that tests shooting skill not just distance. They shoot from 10M away at a silhouette with different tasks around the silhouetted, i.e. left turn, shoot 2 rounds from M4, do a mag change shoot 2 more rounds

Mechanical Maintenance.

--A Soldier should know how to use the rifle, clean the rifle, function check the rifle, load the rifle and shoot the rifle again. Its only use is for protection in combat zones, not to test a Soldiers IQ. Any more training than how to keep that rifle fully functional in combat is useless information and will only take away time from doing more useful training.

--Soldiers in support units require more marksmanship training. They can just as easily be moved to a combat unit and when they are not being utilized for their job then they could very well be put on patrol. It is important that they are capable confident Soldiers so they will not hesitate or second guess.

Military Police

--I think it would make it easier for Soldiers to qualify if they had these basic marksmanship techniques freshly going through their heads. Like trigger squeeze and breathing.

Examples of Rationale for Not Supporting a Test

Air Defense Artillery

--I think it is semi pointless seeing as how we already have PMI's before attending a range. NCO's of the units should be training their Soldiers on these skills. It should have to be something that is tested and most of it is pretty much general knowledge.

Ammunition

--The Army does not need to make up any more check the block courses. Units have been over loaded with so many "requirements" and extra online courses that it takes away from productive training.

Engineer

--Most of the tasks are skill level 1 taught in BCT (Basic Combat Training). The rest should be covered in the PMI prior to going to any range. This is just redundancy, good leaders are already doing these tasks, bad leaders will just check the block. The end effect is wasted money and feel good training, in the end nothing changes. A solid marksmanship strategy is a result of good leadership.

Infantry

--I don't think implementing this test is necessary as long as all of the above topics are covered in unit's marksmanship instruction and training. Most of those topics are covered regularly, with the exception of solid information on bullet trajectory and zeroing at 25m for a 300m battlesight zero.

Military Police

--I don't see the purpose in having a specific test for marksmanship skills. Most of the items listed in the previous questions are tasks from Warrior Tasks and Drills Skill level one, which should be tested on already.

Transportation

--The current rifle marksmanship qualification requires Soldiers to be able to successfully use their individual weapon. Unless there is an Army wide problem with fratricide or negligent discharges I see no need to take time away from other training and ongoing missions to train Soldiers on skills they should

already know or train Service Support Soldiers to be Snipers. However, Most Soldiers and Leaders assigned to operate and supervise Crew served weapons do not understand Machine gun theory, ballistics, range finding, how to properly emplace a machine gun or use its optics.

Execution and Scope Comments

Ammunition

--There should be a more comprehensive test than the one currently given and the certification should be a practical demonstration and implementation of the basic skills need to operate in contemporary deployment environment effectively. Evaluators should be tested similarly and be proven to understand the grading criteria. Possibly E-7 and tested by MTT or Battalion Master trainer.

Armor

--The SM M4 is their main weapon and to make a SM have to qualify by passing a GST could damper the Troops readiness status, also to include allowing those SM who are not too proficient to go to ranges and be able to fire helps them improve their skills. So to take away that ability due to a GST would hurt the SM progression on being proficient at his live fire techniques.

Electronic Maintenance

--Be strict and fair, so that Soldiers are properly trained, as lives depend on this

Infantry

--A marksmanship proficiency test should not include tasks that are normally a portion of PMI i.e. bore sighting, mounting an optic, etc., but should focus on that individual's ability to operate the weapon system. Demonstrating the ability safely handle a weapon is absolutely essential, however, it is questionable whether that ability should be measured through a test or through leader oversight. The inability to properly clear a weapon, perform a malfunctions check, load, reload, etc., is indicative of a failure of the individual Soldier training model.

--I like the idea of a marksmanship skills proficiency test, but I have no confidence in the Army's ability to create something that would actually be value added. I believe that it would become so mired by the bureaucracy, with every single person trying to leave their mark on it that it would add nothing to the Army other than NCOER/OER bullets. The EIB is already adding a weapons proficiency test, so this might become redundant.

Signal

--I do not believe a "gunnery" type test should be used for all Soldiers. 13F, 11C, 13B, 19K and others already have these systems in place, where they must certify on their casualty producing systems, and rightly so.

--I think a general knowledge is sufficient on learning how to shoot. I do not think that every Soldier needs to be tested on how a bullet will fragment on impact, or take a written test on figuring out the trajectory of the bullet. I think actual use of the weapon and time on the range would demonstrate this information especially if different targets were used that displayed the effects of weapons like water jugs filled with liquid or pumpkins exploding and steel pipes for penetration purposes. I think with these demonstrated with long range shooting it will display the effects of ballistics.

Trainer Issues and Some Concerns

Armor

-- We need to train our leaders on the new way of doing things. Not only train them how but show them why it is a better way. The information is already out there but the NCO corps is refusing to integrate it due to lack of knowledge. Marksmanship is paramount.

-- The Army must train the NCOs first, obviously, and hold them to the standard, and Leaders must ensure that standard is upheld, otherwise it will turn into another check the block training.

--This test should be standardized across the Army and be an annual requirement. In my experience, a lot of training on the subject is based upon hear-say and not fact. Myth and lore surround the zeroing of an ACOG. Many E-5s do not understand the fundamentals of marksmanship and are certainly not in a position to instruct it to E4s and below.

CBRN

--Ensure that the items taught are standardized. NCOs always make up information that is not accurate. This makes bad Soldiers.

Electronic Maintenance

-- Marksmanship is a skill that must be practiced. It is up to Units and First Line Leaders to ensure that happens. Low proficiency is a direct reflection of the Leadership on one of the most fundamental Soldiering tasks. A knowledge based test would be helpful to ensure Leaders understand how to train marksmanship to their subordinates.

Engineer

-- A more advanced set of classes should be included in WLC so that NCOs are school trained and competent. This information will likely be too much for the basic Soldier to handle early on.

Infantry

-- Being able to shoot is easy, being able to teach others how to is the hard part. Too many NCOs know nothing about the weapon system that they are assigned but can still go out and shoot 23/40. It is a joke. There once was a time when NCOs knew weapon systems, but now it is like a game to them

--If there is going to be a Marksmanship skills proficiency Test it needs to be taught in the NCOES schools at all levels WLC, ALC and SLC. The Army's marksmanship priorities and philosophy is out of date and needs to be completely revised.

Mechanical Maintenance

-- Units do a check the block type training on most marksmanship training; a quick power point slide show with no hands on. This is setting up Soldiers for failure. Train the NCO Core from top down having a fellow NCO or SR NCO conduct optics training when they have never attended training and only rely on Basic weapons training confuses the Soldiers

--I think every unit should have a master gunner, combat MOS or not. Actually have that person engaged in constructing a training calendar and stick to it. Shooting is part of what we do at one point or the other. Train Soldiers instead of wasting time on pointless details.

-- Marksmanship skills should be for everyone who handles weapons I have seen people in higher ranks not know anything about the weapons how can they train anyone on the weapons if they don't know their

self and I think it should be more known if a person does not know how to use their weapon I don't want them to the one "covering my back"

Military Police

-- Many of the Soldiers that are out there go off what others tell them or rely on others to do the work for them. This would force leaders to look up these other tasks to become well rounded. I also believe that the Soldier shooting team leader should be the one zeroing that weapon not anyone else.

Other Comments Which Did Not Address the Proficiency Test

Quartermaster

--An actual assigned weapon to each SM for their whole career, NOT having an assigned weapon in each company (or having multiple assigned weapons while in a single company for more than two years). I believe it would be more productive to have a single weapon that STAYS with the SM (in the company arms room of course) for their whole career - this way there would be less chance of a weapon being reassigned or "borrowed" so someone else can get a qualification badge. If the company needed a machine-gunner/SAW/240 gunner, then the most qualified person would be chosen & temporarily assigned.

Engineer

--Have Soldiers zero WITHOUT their gear on, also qualifying WITHOUT their gear on, and finally establish a better type of qualifying WITH gear on.

Military Police

--Based on my experience, group and zero needs to go back to the "3" shot group. Regardless of your PMI, instruction and overall training, the 5 shot group is inconsistent and a waste of tax payers money. The PVTs will shoot 3 shots fairly decent, but generally "pull" or throw the last 2 shots for whatever reason. We have determined that simply using the 3 round shot group saves money, time and aggravation on group/zero day

Table H-8

Percentage of Leaders Making Additional Comments Regarding Non-live Fire Skills and Issues on Question R6 (Additional comments on Marksmanship Skills Proficiency Test)

Branch	Leaders who Commented
Branches With More Than 20 Respondents ^a	Number and Percentage
Infantry	67 (27%)
Aviation	16 (26%)
Engineer	28 (23%)
OS (Signal and Military Intelligence)	5 (23%)
Armor	38 (22%)
Ammunition	14 (19%)
CBRN	12 (17%)
Mechanical Maintenance	43 (17%)
Field Artillery	23 (16%)
Military Police	19 (14%)
Quartermaster	18 (12%)
Transportation	10 (8%)
Air Defense Artillery	2 (7%)
Branches With Less Than 20 Respondents	
Medical	1 (100%)
Multifunctional Logistician	4 (50%)
Adjutant General	1 (50%)
Electronic Maintenance	4 (36%)
Finance	1 (20%)
Civil Affairs	0 (0%)
Total (1636 respondents)	306 commented - 19%
	1330 did not comment – 81%

Note. Includes all leader branches/categories, not just the ones with more than 20 respondents. Military Intelligence and Signal combined to be consistent with categories used in body of report.

^a Ordered from high to low by percentage of leaders who made comments. Each branch percentage based on number of leaders in that branch.

Appendix I

Marksmanship Requirements by Branch

Table II
Infantry Leader Summary

Skill Set	Percentage Category, Number of Skills in Each Category, and Abbreviated Description of Skills					
	High: 80% and above		Moderate: 60% to 80% ^a		Low: Less than 60%	
	#	Description	#	Description	#	Description
Zeroing (6 skills)	4	Zero unit sight & BIS, zero at 25m, confirm at distance	0		2	Zero in gear, zero at distance initially
Firing Positions (9 skills – Positions)	9	ProneSpt, ProneUnSpt, kneel, stand, around obstacles, from windows, while moving, under stress, modify position	0		0	
Hitting Targets at Different Distances (5 distances)	4	Under 25m, 25-100m, 100 -200m, 200-300m	1	Beyond 300m	0	
Target Acquisition (6 skills)	3	Acquire targets in sector, discriminate forces, sector, hit two targets	3	<i>Hit single targets, hit three targets, shorter exposure</i>	0	
Precision firing (5 skills)	2	Moving targets, targets at other elevations	3	<i>Hit single lethal zones; Hit multiple lethal zones, adjust sight picture</i>	0	
Equipment (6 skills)	3	Fire and qual in gear, Hit w/AL-NVG	1	<i>TWS</i>	2	Mask, sling
Other (7 skills)	3-	Rapid mag change, react to malfunctions, short range skills	3	<i>Nondominant hand, Switch weapons, different fire modes</i>	1	Unaided night fire
Total # Skills	28		11		5	
# Skills: 70% - 79%			4			

^a In the Moderate category, skills marked by 70% to 79% of the Infantry leaders are in italics.

Note. Nine skills were marked by at least 90% of Infantry leaders: Zero unit sight, fire from windows/obstacles, fire under stress, hit targets at 100 to 200m, hit targets at 200 to 300m, discriminate forces (friendly, enemy, noncombatants), hit moving targets, hit with AI and NVG, rapid magazine change.

The Infantry leaders were relatively consistent in their responses, in that they saw most of the marksmanship skills as requirements for their Soldiers. There were, however, some skills which they perceived as not critical.

Table I2
Engineer Leader Summary

Skill Set	Percentage Category, Number of Skills in Each Category, and Abbreviated Description of Skills					
	High: 80% and above		Moderate: 60 to 80% ^a		Low: Less than 60%	
	#	Description	#	Description	#	Description
Zeroing (6 skills)	4	Zero unit sight & BIS, Zero at 25m, confirm at distance	1	Zero in gear	1	Zero at distance initially
Firing Positions (9 skills – Positions)	7	ProneUnSpt, Kneel, stand, around obstacles, while moving, under stress	2	<i>ProneSpt, from windows</i>	0	
Hit Targets at Different Distances (5 distances)	3	Under 25m, 25 – 100m, 100-200m,	1	<i>200-300m</i>	1	Beyond 300m
Target Acquisition (6 skills)	2	Acquire targets in sector, discriminate forces	2	<i>Hit single and two targets</i>	2	Hit three targets, shorter exposure
Precision firing (5 skills)	2	Moving targets, targets at other elevations	1	Hit single Lethal zone	2	Adjust sight picture, hit multi-lethal zones
Equipment (6 skills)	0		4	<i>Fire and qual in gear, hit w/ AL and NVG, TWS</i>	2	Sling, mask
Other (7 skills)	3	Rapid mag change, react to malfunctions, short range skills	3	<i>Switch weapons, different fire modes, nondominant hand</i>	1	Unaided night fire
Total # Skills	21		14		9	
# Skills: 70%-79%			10			

^a In the Moderate category, skills marked by 70% to 79% of the Engineer leaders are in italics.

Note. Four skills were marked by at least 90% of the Engineer leaders: Hit targets at 25 to 100m, hit targets at 100 to 200m, rapid magazine changes, react quickly to malfunctions.

Table I3
CBRN Leader Summary

Skill Set	Percentage Category, Number of Skills in Each Category, and Abbreviated Description of Skill					
	High: 80% and above		Moderate: 60 to 80% ^a		Low: Less than 60%	
	#	Description	#	Description	#	Description
Zeroing (6 skills)	3	Zero unit sight & BIS, zero at 25m	2	<i>Zero in gear, confirm zero at distance</i>	1	Zero at distance initially
Firing Positions (9 skills – Positions)	4	Kneel, stand, while moving, under stress	5	<i>ProneSpt, ProneUnSpt, around obstacles, from windows, modify position</i>	0	
Hit Targets at Different Distances (5 distances)	3	Under 25m, 25 - 100m, 100 - 200m	1	<i>200 -300 m</i>	1	Beyond 300m
Target Acquisition (6 skills)	2	Acquire targets in sector, discriminate forces	2	<i>Single and two targets</i>	2	Three targets, shorter exposure
Precision firing (5 skills)	2	Moving targets, targets at other elevations	2	Adjust sight picture, hit single lethal zone	1	Hit multiple-lethal zones
Equipment (6 skills)	0		5	<i>Fire and qual in gear, hit with AL & NVG, TWS, Mask</i>	1	Sling
Other (7 skills)	3	Rapid mag change, react to malfunctions, short range skills	4	Switch weapons, unaided night fire, different firing modes, nondominant hand	0	
Total # Skills	17		21		5	
# Skills: 70% - 90%			14			

^a In the Moderate category, skills marked by 70% to 79% of the CBRN leaders are in italics.
Note. One skill was marked by at least 90% of the CBRN leaders: hit targets from 25 to 100m.

Table I4
Military Police Leader Summary

Skill Set	Percentage Category, Number of Skills in Each Category, and Abbreviated Description of Skills					
	High: 80% and above		Moderate: 60 to 80% ^a		Low: Less than 60%	
	#	Description	#	Description	#	Description
Zeroing (6 skills)	2	Zero unit sight & BIS	3	<i>Zero at 25m, confirm at distance, Zero in gear,</i>	1	Zero at distance initially
Firing Positions (9 skills – Positions)	3	Around obstacles, while moving, under stress	6	<i>ProneSpt, ProneUnSpt, kneel, Stand, from windows, modify position</i>	0	
Hit Targets at Different Distances (5 distances)	3	Under 25m, 25-100m, 100- 200m	1	200-300m	1	Beyond 300m
Target Acquisition (6 skills)	2	Acquire targets in sector, discriminate forces	2	<i>Hit single targets, Hit two targets</i>	2	Hit three targets, shorter exposure
Precision firing (5 skills)	1	Moving target	2	Single lethal zone, targets at other elevations	2	Adjust sight picture, multi-lethal zones
Equipment (6 skills)	0		4	<i>Fire and Qual in gear, Hit with AL & NVG, TWS</i>	2	Mask, sling
Other (7 skills)	4	Rapid mag change & react to malfunctions, short range skills, switch weapons	2	Nondominant hand, different fire modes	1	Unaided night fire
Total # Skills	15		20		9	
# Skills: 70%-90%			14			

^a In the Moderate category, skills marked by 70% to 79% of the Military Police leaders are in italics.
Note. One skill was marked by at least 90% of the Military Police leaders: Switch weapons.

Table I5
Armor Leader Summary

Skill Set	Percentage Category, Number of Skills in Each Category, and Abbreviated Description of Skills					
	High: 80% and above		Moderate: 60 to 80% ^a		Low: Less than 60%	
	#	Description	#	Description	#	Description
Zeroing (6 skills)	2	Zero unit sight and BIS	2	<i>Zero at 25m, Confirm zero at distance</i>	2	Zero in gear, zero at distance initially
Firing Positions (9 skills – Positions)	4	Kneel, around obstacles, while moving, under stress	5	<i>ProneSpt, ProneUnSpt, Stand, From windows, modify position</i>	0	
Hit Targets at Different Distances (5 distances)	2	25- 100m, 100-200m	2	<i>Under 25m, 200-300m</i>	1	Beyond 300m
Target Acquisition (6 skills)	2	Acquire targets in sector, discriminate forces	2	Hit single targets, <i>Hit two targets</i>	2	Hit three targets, shorter exposure
Precision firing (5 skills)	1	Moving targets	1	<i>Targets at other elevations</i>	3	Adjust sight picture, Hit single and multiple lethal zones
Equipment (6 skills)	0		4	<i>Fire in gear, hit w AL-NVG, TWS, qual in gear</i>	2	Mask, sling
Other (7 skills)	2	Rapid mag change, Short range skills	3	<i>Switch weapons, react to malfunctions, different fire modes</i>	2	Unaided night fire, nondominant hand
Total # Skills	13		19		12	
# Skills: 70%-90%			15			

^a In the Moderate category, skills marked by 70% to 79% of the Armor leaders are in italics.

Note. No skills were marked by at least 90% of the Armor leaders.

Table I6
Field Artillery Leader Summary

Skill Set	Percentage Category, Number of Skills in Each Category, and Abbreviated Description of Skills					
	High: 80% and above		Moderate: 60 to 80% ^a		Low: Less than 60%	
	#	Description	#	Description	#	Description
Zeroing (6 skills)	1	Zero at 25m	4	<i>Zero unit sight & BIS, Confirm zero at distance, zero in gear,</i>	1	Zero at distance initially
Firing Positions (9 skills – Positions)	3	Around obstacles, while moving, under stress	6	<i>ProneSpt, Prone UnSpt, kneel, stand, from windows , modify position</i>	0	
Hit Targets at Different Distances (5 distances)	2	25 to 100m, 100 to 200m	2	<i>Under 25m, 200 to 300m</i>	1	Beyond 300m
Target Acquisition (6 skills)	2	Acquire targets in sector, discriminate forces	2	<i>Hit two targets, Hit single targets</i>	2	Hit three targets, shorter exposure
Precision firing (5 skills)	1	Moving targets	1	<i>Targets at other elevations</i>	3	Adjust sight picture, Hit single and multiple lethal zones.
Equipment (6 skills)	0		3	<i>Fire and qual in gear, hit with AI and NVG</i>	3	TWS, Mask, Sling
Other (7 skills)	1	Rapid magazine change	4	<i>react to malfunctions, short range skills, different fire modes, Switch weapons</i>	2	Unaided night fire, nondominant hand
Total # skills	10		22		12	
# Skills: 70%-90%			18			

^a In the Moderate category, skills marked by 70% to 79% of the Field Artillery leaders are in italics.

Note. Two skills were marked by at least 90% of the Field Artillery leaders: Hit targets in sector of fire, hit moving targets.

Table I7
Aviation Leader Summary

Percentage Category, Number of Skills in Each Category, and Abbreviated Description of Skills						
Skill Set	High: 80% and above		Moderate: 60 to 80% ^a		Low: Less than 60%	
	#	Description	#	Description	#	Description
Zeroing (6 skills)	2	Zero BIS, zero at 25m	2	<i>Zero unit sight, confirm zero at distance</i>	2	Zero in gear, zero at distance initially
Firing Positions (9 skills – Positions)	0		9	<i>ProneSpt, ProneUSpt, Stand, Obstacles, Under Stress, Modify Psn, Kneel, while moving, from Windows</i>	0	
Hit Targets at Different Distances (5 distances)	2	25 -100m, 100m - 200m	2	<i>Under 25m, 200 - 300m</i>	1	Beyond 300m
Target Acquisition (6 skills)	1	Discriminate forces	3	<i>Acquire targets in sector, hit single & two targets</i>	2	Hit three targets, shorter exposure
Precision firing (5 skills)	1	Moving targets	1	Targets at other elevations	3	Adjust sight picture, Hit single and multiple lethal zones
Equipment (6 skills)	0		4	Fire and qual in gear, hit with AL and NVG, sling	2	TWS, mask
Other (7 skills)	0		5	<i>rapid mag change, react to malfunctions, short range skills, Switch weapons</i>	2	Unaided night fire, nondominant hand
Total # Skills	6		26		12	
# Skills:70%-90%			12			

^a In the Moderate category, skills marked by 70% to 79% of the Aviation leaders are in italics.

Note. No skill was marked by at least 90% of the Aviation leaders.

Table I8
Mechanical Maintenance Leader Summary

Skill Set	Percentage Category, Number of Skills in Each Category, and Abbreviated Description of Skills					
	High: 80% and above		Moderate: 60 to 80% ^a		Low: Less than 60%	
	#	Description	#	Description	#	Description
Zeroing (6 skills)	1	Zero at 25m	4	<i>Zero with unit sight & BIS, confirm at distance, zero in gear</i>	1	Zero at distance initially
Firing Positions (9 skills – Positions)	1	ProneSpt	8	<i>ProneUnSpt, kneel, stand, around obstacles, from windows, under stress, while moving, modify positions</i>	0	
Hit Targets at Different Distances (5 distances)	2	25 -100m, 100 -200m	2	<i>Under 25m, 200-300m</i>	1	Beyond 300m
Target Acquisition (6 skills)	1	Acquire targets in sector	3	<i>Discriminate forces, hit single, and two targets</i>	2	Hit three targets, shorter exposure
Precision firing (5 skills)	1	Moving target	2	<i>Targets at other elevation, Single lethal zone</i>	2	Adjust sight picture, multi-lethal zones
Equipment (6 skills)	0		4	<i>Qual w gear, Fire w gear, Hit with AL-NVG, Sling</i>	2	Mask, TWS
Other (7 skills)	0		5	<i>rapid mag change, react to malfunctions, short range skills, Switch weapons, different fire modes</i>	2	Unaided night fire, nondominant hand
Total # Skills	6		28		10	
# Skills: 70%-90%			19			

^a In the Moderate category, skills marked by 70% to 79% of the Mechanical Maintenance leaders are in italics.

Note. One skill was marked by at least 90% of the Mechanical Maintenance leaders: Hit targets from 25 to 100m.

Table I9
Operations Support (Signal and Military Intelligence Branches) Leader Summary

Skill Set	Percentage Category, Number of Skills in Each Category, and Abbreviated Description of Skills					
	High: 80% and above		Moderate: 60 to 80% ^a		Low: Less than 60%	
	#	Description	#	Description	#	Description
Zeroing (6 skills)	3	Zero unit sight & BIS, Zero at 25m	1	Confirm zero at distance	2	Zero in gear, zero at distance initially
Firing Positions (9 skills – Positions)	0		6	<i>Prone UnSpt, stand, while moving, ProneSpt, Kneel, around obstacles</i>	3	From windows, under stress, modify position
Hit Targets at Different Distances (5 distances)	1	25-100m	2	Under 25m, <i>100-200m</i>	2	200-300m, beyond 300m
Target Acquisition (6 skills)	1	Acquire targets in sector	1	<i>Discriminate forces</i>	4	Single , two and three targets, shorter exposure
Precision firing (5 skills)	0		1	<i>Moving Target</i>	4	Adjust sight picture, hit single and multiple lethal zones, targets at other elevations
Equipment (6 skills)	0		1	Qualify in gear	5	Fire in gear, hit with AL-NVG, TWS, mask, sling
Other (7 skills)	0		2	React to malfunctions, <i>short range skills</i>	5	Switch weapons, rapid mag change, unaided night fire, different fire modes, nondominant hand
Total # skills	5		14		25	
# Skills: 70%-90%			7			

^a In the Moderate category, skills marked by 70% to 79% of the Operations Support leaders are in italics.
Note. No skill was marked by at least 90% of the Operations Support leaders.

Table I10
Ammunition Leader Summary

Skill Set	Percentage Category, Number of Skills in Each Category, and Abbreviated Description of Skills					
	High: 80% and above		Moderate: 60 to 80% ^a		Low: Less than 60%	
	#	Description	#	Description	#	Description
Zeroing (6 skills)	1	Zero at 25m	4	<i>Zero unit sight and BIS, , confirm zero at distance, Zero in gear</i>	1	Zero at distance initially
Firing Positions (9 skills – Positions)	0		9	<i>Kneel, Obstacles, while moving, under stress, Modify positions ProneSpt, Prone USpt, Stand, from windows</i>	0	
Hit Targets at Different Distances (5 distances)	2	25-100m, 100-200m	1	<i>Under 25m</i>	2	200-300m, beyond 300m
Target Acquisition (6 skills)	0		4	<i>Acquire targets in sector, discriminate forces, Hit single and two targets</i>	2	Hit three targets, Shorter exposure
Precision firing (5 skills)	0		2	<i>Moving targets, Targets at other elevation</i>	3	Adjust sight picture, hit single and multiple lethal zones,
Equipment (6 skills)	0		3	<i>Qual in gear, Fire in gear, hit with AL-NVG</i>	3	TWS, sling, mask
Other (7 skills)	0		5	<i>Rapid mag change, react to malfunctions, short range skills, Nondominant hand, unaided night fire,</i>	2	Switch weapons, Different fire modes
Total # of Skills	3		28		13	
# Skills: 70%-90%			16			

^a In the Moderate category, skills marked by 70% to 79% of the Ammunition leaders are in italics.
Note. No skill was marked by at least 90% of the Ammunition leaders.

Table II1
Air Defense Artillery Leader Summary

Skill Set	Percentage Category, Number of Skills in Each Category, and Abbreviated Description of Skills					
	High: 80% and above		Moderate: 60 to 80% ^a		Low: Less than 60%	
	#	Description	#	Description	#	Description
Zeroing (6 skills)	0		1	<i>Zero at 25m</i>	5	Zero unit sight and BIS, zero in gear, confirm at distance, zero at distance initially
Firing Positions (9 skills – Positions)	1	ProneSpt	3	<i>Prone UnSp, Kneel, around obstacles</i>	5	Stand, from windows, while moving, under stress, modify positions
Hit Targets at Different Distances (5 distances)	1	25m to 100m	2	<i>100-200m, 200-300m</i>	2	Less than 25m, beyond 300m
Target Acquisition (6 skills)	0		3	<i>Discriminate forces, Hit single target, Acquire targets in sector,</i>	3	Hit two and three targets, shorter exposure
Precision firing (5 skills)	0		2	<i>Moving target, adjust sight picture</i>	3	Hit single and multiple lethal zones, Targets at other elevations
Equipment (6 skills)	0		1	<i>Fire with gear</i>	5	Qual with gear, Hit with AI--NVG, TWS, Mask, sling
Other (7 skills)	0		0		7	All other skills: rapid mag change, react to malfunctions, short range skills, switch weapons, nondominant hand, unaided night fire, different fire modes
Total # Skills	2		12		30	
# Skills: 70%-90%			8			

^a In the Moderate category, skills marked by 70% to 79% of the Air Defense Artillery leaders are in italics.

Note. No skill was marked by at least 90% of the Air Defense Artillery leaders

Table I12
Quartermaster Leader Summary

Skill Set	Percentage Category, Number of Skills in Each Category, and Abbreviated Description of Skills					
	High: 80% and above		Moderate: 60 to 80% ^a		Low: Less than 60%	
	#	Description	#	Description	#	Description
Zeroing (6 skills)	0		5	<i>Zero unit sight</i> , Zero BIS, zero at 25m, zero in gear, confirm zero at distance	1	Zero at distance initially
Firing Positions (9 skills – Positions)	0		8	<i>ProneSpt, ProneUSpt, Kneel, Stand, while moving</i> , obstacles, under stress, modify position	1	From windows
Hit Targets at Different Distances (5 distances)	1	100-200m	3	<i>200-300m</i> , Under 25m, 25-100m,	1	Beyond 300m
Target Acquisition (6 skills)	0		4	<i>Acquire targets in sector</i> , discriminate forces, hit single and two targets	2	Hit three targets, shorter exposure
Precision firing (5 skills)	0		3	<i>Moving targets</i> , Hit in single lethal zone, targets at other elevations	2	Adjust sight picture, Hit in multiple-lethal zones
Equipment (6 skills)	0		2	<i>Qual with gear</i> , Fire with gear	4	Hit with AL-NVG, TWS, sling, mask
Other (7 skills)	0		4	Switch weapons, rapid magazine change, react to malfunctions, short range skills	3	Unaided night fire, different firing modes, nondominant hand
Total # Skills	1		29		14	
# Skills: 70%-90%			10			

^a In the Moderate category, skills marked by 70% to 79% of the Quartermaster leaders are in italics.
Note. No skill was marked by at least 90% of the Quartermaster leaders.

Table I13
Transportation Leader Summary

Skill Set	Percentage Category, Number of Skills in Each Category, and Abbreviated Description of Skills				
	High: 80% and above		Moderate: 60 to 80% ^a		Low: Less than 60%
	#	Description	#	Description	Description
Zeroing (6 skills)	0		4	<i>Zero at 25m, Zero unit sight and BIS, , confirm zero at distance</i>	Zero in gear, zero at distance initially
Firing Positions (9 skills – Positions)	0		0	<i>ProneSpt, Stand Prone Uspt, kneel, around obstacles, from windows, while moving, under stress</i>	Modify position
Hit Targets at Different Distances (5 distances)	0		4	<i>25-100m, 100-200m, Under 25m, 200-300m</i>	Beyond 300m
Target Acquisition (6 skills)	0		2	Discriminate forces, Acquire targets in sector	Hit single, two, or three targets, shorter exposure
Precision firing (5 skills)	0		1	<i>Moving targets</i>	Adjust sight picture, lethal zones, change elevation
Equipment (6 skills)	0		2	Qualify in gear, hit with AL-NVG	Fire in gear, TWS, Sling, mask
Other (7 skills)	0		2	Rapid mag change, react to malfunctions	Switch weapons, unaided night fire, short range skills, different fire modes, nondominant hand
Total # Skills	0		23		21
# Skills: 70%-90%			6		

^a In the Moderate category, skills marked by 70% to 79% of the Transportation leaders are in italics.

Note. No skill was marked by at least 90% of the Transportation leaders.

Table I14
Electronic Maintenance Leader Summary

Skill Set	Percentage Category, Number of Skills in Each Category, and Abbreviated Description of Skills					
	High: 80% and above		Medium: 60 to 80% ^a		Low: Less than 60%	
	#	Description	#	Description	#	Description
Zeroing (6 skills)	1	Zero unit sight	2	<i>Zero in gear</i> , zero at 25m	3	Zero BIS, confirm zero at distance, zero at distance initially
Firing Positions (9 skills – Positions)	6	ProneSpt, Prone UnSpt, kneel, around obstacles, under stress, while moving	3	<i>Stand, from windows</i> , while moving	0	
Hit Targets at Different Distances (5 distances)	1	25-100m	2	<i>Under 25m, 100-200m</i>	2	200-300m, beyond 300m
Target Acquisition (6 skills)	2	Hit single and two targets	2	<i>Acquire targets in sector, discriminate forces</i>	2	Hit three targets, shorter exposure
Precision firing s(5 skills)	0		1	Moving targets	4	Adjust sight picture, Hit in single and multiple lethal zones, targets at other elevations
Equipment (6 skills)	0		2	<i>Qual in gear, Fire in gear</i>	4	Hit with AL-NVG, TWS, mask, sling
Other (7 skills)	0		4	<i>short range skills, different firing modes, Rapid mag change, react to malfunctions,</i>	3	Switch weapons, Unaided night fire, Nondominant hand
Total # Skills	10		16		18	
# Skills: 70%-79%			10			

^aIn the Moderate category, skills marked by 70% to 79% of the Quartermaster leaders are in italics.

Note. Four skills were marked by at least 90% of the Electronic and Missile Repair leaders: Zero unit sight, hits targets from prone supported and prone unsupported positions, hit targets under stress. Results are based only 11 leaders; because of small sample, the results may not be representative of the branch as a whole.

Appendix J

Marksmanship Skill Requirements: Cluster Analyses

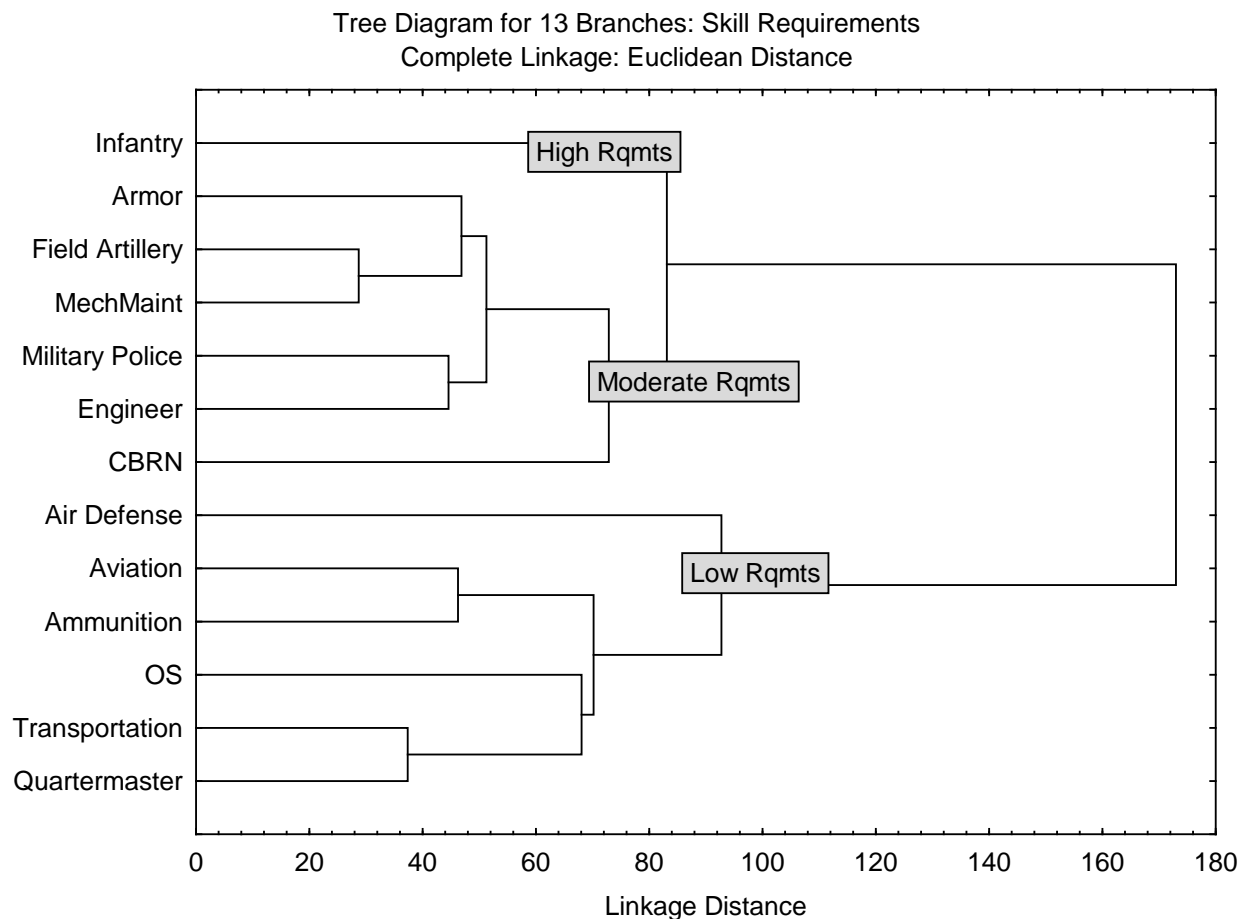


Figure J1. Hierarchical clustering of branches on skill requirements.

Overall, there were two major clusters of branches. But Infantry (Most Requirements) was distinguished from the Moderate Requirements cluster, which was composed primarily of MFE branches without Air Defense and Aviation but it included Mechanical Maintenance as well. The Low Requirements cluster was a mixture of branches from each functional category: MFE- Air Defense and Aviation; OS - Military Intelligence and Signal, and FS: Transportation, Quartermaster and Ammunition. Infantry was defined as a “unique” cluster as the Infantry leaders specified many more requirements than the other branches, and although it eventually joined the branches in the Moderate Requirements cluster, it was the last branch to do so. With regard to the Low Requirements cluster, Air Defense leaders appeared to differ from others in that cluster, as it was the last branch included in that cluster. In summary, the clusters did not correspond on a one-to-one fashion with the three functional categories; MFE branches were in all three clusters, and one FS branch was similar to most of the MFE branches.

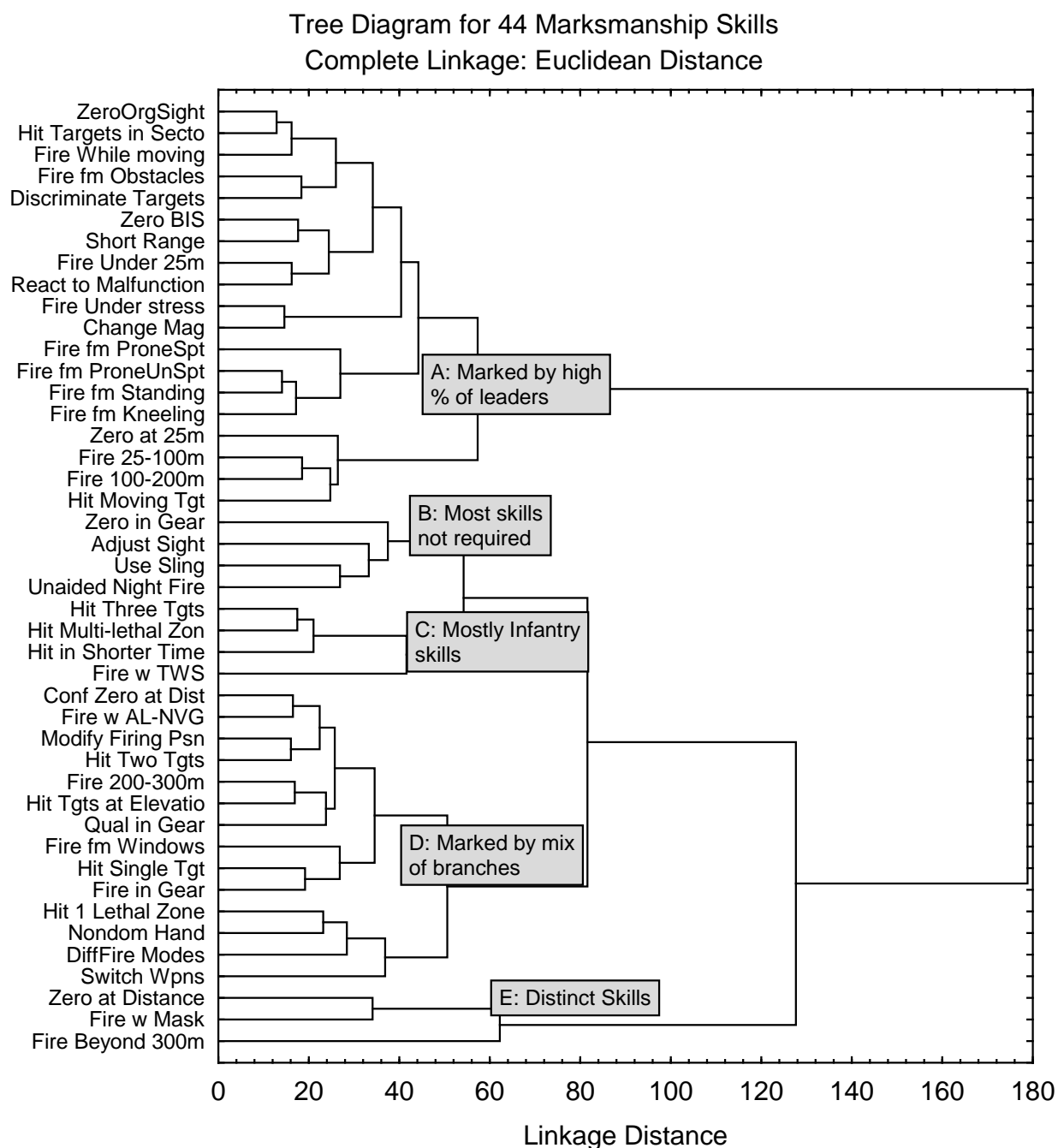


Figure J2. Hierarchical clustering of skill requirements.

Decisions regarding when meaningful clusters emerged was based on the cluster analysis plus leader responses regarding which skills were most critical for Soldiers in their branch. The descriptions used to label the clusters reflect the leader responses.

Table J1

Mean Percentages for Branch Group Combination and Skill Requirements Cited in Tables 17 through 20

Skill Cluster	Branch Group: Mean % of Leaders Marking Skills as a Requirement		
	High Requirements	Moderate Requirements	Low Requirements
Common Skill Requirements – All Branches (Table 17)	87%	81%	71%
Common to the High and Moderate Requirements Groups - 12 skills (Table 18)	73%	64%	NR (45%)
Night optics/devices break out			
--AL and NVGs	93%	74%	NR (59%)
--TWS	73%	68% (Armor, Engineer, Military Police) 60% (Field Artillery, CBRN, Mechanical Maintenance)	NR (45%)
Branch Specific Skills (Table 19)			
Infantry (7 skills)	68%	NR (55%)	NR (47%)
CBRN (1 skill – fire with mask)	NR (34%)	77% (CBRN) NR Other branches (34%)	NR (37%)
Military Police (1 skill – weapon transition)	NR (68%)	90% (Military Police) NR other branches (67%)	NR (55%)
Not Required for any Branch (Table 20)	NR (46%)	NR (53%)	NR (47%)

Notes. “NR” stands for not required for branches, and mean percent for these branches is presented in parentheses for purposes of comparison.

ALs and NVGs have wider distribution in the branches in the Moderate Requirements Group than the TWS. TWS distribution is limited to selected leader positions in Infantry, Cavalry, Combat Engineer and Military Police units.

Appendix K

Other Required Marksmanship Skills

Question S9: What other skills do you think are required of Soldiers in your branch or MOS/CMF?

Who Commented

Question S9 followed the series of checklist items which addressed 44 possible skills that the leaders could have viewed as requirements for Soldiers in their branch. As the skill list was rather exhaustive, a high percentage of additional comments on other skills was not necessarily expected. As indicated in Table K-3, only 12% of the leaders commented.

Contents of the Comments

Comments were distributed across a variety of skills, with no specific skills stressed by leaders from a given branch. Major comments were as shown in Table K1. When leaders' comments covered more than one topic, each topic was tallied separately. Thus comments from a leader could fall into more than one category. These comments were not specifically identified by MOS.

Table K1

Number of Comments in each Major Category for Question S9: Other Skills Required for Soldiers in Your Branch or MOS/CMF

Major Category	# of Comments
Weapons other than M16/M4	37
Shoot from vehicles/ use vehicles while shooting	22
Qualify and zero in gear	9
Fire under stress	9
Identify friend/foe; priority of fire	6
Training on optics	7

Summary of Major Categories

It is noted in this summary that some skills overlapped with the skills covered in the questionnaire and thus did not add additional information. Details are in Table K2.

- **Other weapons.** Comments ranged from pistol skills, crew-served weapon skills, skills on all weapons organic to unit, and a few comments on knowing enemy and NATO weapons. Comments were from different branches, not unique to one. The main theme is that the leaders perceive marksmanship training as encompassing more than just the M16 rifle /M4 carbine. Some skills were clearly related to the deployment mission.
- **Shooting from vehicles.** Comments on engaging targets from vehicles reflect that fact that in many MOSs Soldiers operate from vehicles, rather than on foot; that shooting from vehicles and variations of these skills are needed. This area was not covered in the questionnaire.

- **Partial overlap with questionnaire items.** Some comments cited in Table K1 overlapped in part with the questionnaire .

Optics: zeroing with the optic organic to your unit was cited in the questionnaire, as was hitting targets with aiming lights and thermal sights. However the questionnaire did not directly address whether a Soldier should be skilled with all of these optics/sight systems.

The questionnaire did cover discriminating between friendly forces, threat personnel and noncombatants, but determining priority of fires was not specifically addressed.

- **Skills covered in questionnaire.** Some comments were topics covered in the questionnaire, and therefore did not provide additional information. They are not cited in the tables in this appendix.

Firing under stress was a specific item in the questionnaire.

Comments on zeroing, qualifying in gear and shoot from behind barricades were skills which were thoroughly covered in the questionnaire and thus these comments did not provide new information.

Two comments were on firing with the non-dominant hand; an item which was also included in the questionnaire.

Table K2 lists specific skills cited as needed by the leaders. Following Table K2, are comments which include skills that were identified by MOS, general issues such as whether training should be Branch or MOS specific, and trainer issues.

Table K2

Summary of Comments to Question S9: Additional Skills Required by Soldiers in Their Branch or MOS

Comment Category	# Comments by Branch	Specific Comments on Other Required MOS Skills
Skill with Weapons Other than M16/M4: 37 Total Comments		
Crew-served weapons (7 comments)	1 CBRN	<u>CBRN</u> : Mounted weapon proficiency on crew served wpns (1)
	1 Engineer	
	2 Field Artillery	<u>Engineer</u> : Switch from crew-serve to primary wpn while moving (1)
	1 Infantry	
	1 Mechanical Maint	<u>Field Artillery</u> - Require each crew member to qual on M240B or M249 not just section chief (1), Controlled fire w/ crew-served wpn (1)
	1 Transportation	<u>Infantry</u> : Proficient with all crew-served wpns – most lethal wpns (1)
		<u>Mechanical Maintenance</u> : Crew served weapons knowledge (1)

Comment Category	# Comments by Branch	Specific Comments on Other Required MOS Skills
		<u>Transportation</u> : Crew-served weapons (1)
Handguns/pistols (8 comments)	1 Armor 1 Aviation 1 Engineer 1 Infantry 1 Mechanical Maint 3 Military Police	<u>Armor</u> : More handgun training (1) <u>Aviation</u> : Use pistols in more complex firing environment (1) <u>Engineer</u> : Pistol (1) <u>Infantry</u> : Pistol shooting (1) <u>Mechanical Maintenance</u> : Proficient w/ M9 as well as M4 – needed during vehicle recovery – easier to work with vehicle (1) <u>Military Police</u> : As MP – more emphasis on firing with pistol which is our primary weapon in law enforcement (1); transition from primary to secondary weapon – critical (1, Pistol training (1)
Unit weapons/ multiple weapons (18 comments)	3 Ammunition 3 Armor 1 Aviation 2 Engineer 1 Field Artillery 5 Infantry 2 Mechanical Maint 1 Quartermaster	<u>Ammunition</u> (89D): Need qual on M107 Cal50 rifle (1), Long range firing skills with .50 cal (1), Training on different weapons (1) <u>Armor</u> : Shoot more than M4 or 9mm. Shoot any weapon Infantry can (1), Basic proficiency w/ M9/M4 and focus more on tank. Scouts should have more marksmanship training. (1), Multiple weapons testing (1) <u>Aviation</u> : Familiar with more than one weapon system (1) <u>Engineer</u> : All small arms from MK19 to .50 cal (1), All weapons organic to unit-down to lowest level (1) <u>Field Artillery</u> : Qualify on every weapon system <u>Infantry</u> : Qualify on all weapons organic to units (1), Qualify w/ Mk19, M2 50 cal and AT-4 (1), Shoot all weapons (1), Shoot with different weapon systems (1), Use of M14 (1) <u>Mechanical Maintenance</u> : Fire with different weapon systems – primary and secondary (2) <u>Quartermaster</u> : Know weapons other than assigned weapon (1)
Enemy weapons (4 comments)	2 Armor 1 Engineer 1 Infantry	<u>Armor</u> : Use of enemy and NATO weapons (2) <u>Engineer</u> : Proficient w/ other wpn systems outside normal US wpns (1) <u>Infantry</u> : Load/unload primary weapon of coalition forces with which US will work (1)
Shoot from Vehicles/Use Vehicles while Shooting: 22 Total Comments		
	1 Ammunition 2 Armor 1 Aviation 2 Engineer 2 Field Artillery 2 Infantry 6 Mechanical Maint 3 Transportation 3 Military Police	<u>Ammunition</u> : Engage soft targets thru cover, while riding in vehicle (1) <u>Armor</u> : Engage targets from mounted position (tank, Bradley Cdr) (1), Shoot from top of tank or Bradley with M4 (1) <u>Aviation</u> : Shoot from vehicles (1) <u>Engineer</u> : Shoot from vehicle (1), Fire from heavy construction equipment (1) <u>Field Artillery</u> : Fire from vehicles (1), Fire while moving (not clear if on foot or from vehicle (1)

Comment Category	# Comments by Branch	Specific Comments on Other Required MOS Skills
		<u>Infantry:</u> Firing assigned weapon from vehicle platform (1), Mounted qualification tables as vehicle or crew (1) <u>Mechanical Maintenance:</u> React to getting fired at recovering a vehicle – 91MOS (1), Fire from moving vehicle (1), Shoot from moving and disabled vehicles (1), Use vehicles as cover (1), Shoot while moving (2) <u>Military Police:</u> Shoot while moving (not clear if on foot or from vehicle (2), Fire from vehicles (1) <u>Transportation:</u> Firing from inside vehicle (1), Shoot around vehicles (1), Shoot from mounted vehicles while moving (1)
Qualify and Zero in Gear: 9 Total Comments		
	1 Armor	<u>Armor:</u> Zero & qual conducted wo/ gear, then reconfirm
	1 Engineer	zero in gear and combat-oriented qual in gear (1)
	3 Infantry	<u>Engineer:</u> Do not mandate use of gear (1)
	1 Mechanical Maint	<u>Infantry:</u> Zero in gear (1), Do not zero in gear because
	1 Multif Logistician	wastes ammo and individual is not properly zeroed (1),
	2 Military Police	Shoot in gear (1)
		<u>Mechanical Maintenance:</u> Zero wo/ gear, gear for qual (1)
		<u>Multifunctional Logistician:</u> Do not need qual in gear (1)
		<u>Military Police:</u> Fire in law enforcement gear vs. combat gear (2)
Fire Under Stress: 9 Total Comments		
	1 Armor	<u>Armor:</u> Fire under stress (1)
	1 Engineer	<u>Engineer:</u> Fire under stress (1)
	4 Infantry	<u>Infantry:</u> Engage targets at end of long forced march (1),
	1 Mechanical Maint	fire under stress (1), Stress shoot after completing a 3-mile
	1 Military Police	run in body armor (1), Stress shoots are key but hard to do
	1 Quartermaster	realistically on a shoe string budget (1)
		<u>Mechanical Maintenance:</u> Fire under stress (1)
		<u>Military Police:</u> Fire under stress (1)
		<u>Quartermaster:</u> Fire under stress (1)
Skill in Identifying Friend/Foe; Determine Priority of Fire: 6 Total Comments		
	1 Armor	<u>Armor:</u> ID of targets – friendly/not friendly – hostile or not
	1 Engineer	hostile intent (1)
	1 Infantry	<u>Engineer:</u> Priority of fire (shoot guy w RPG RPK first) (1)
	2 Mechanical Maint	<u>Infantry:</u> Discriminate between threat and non-threat forces,
	1 Military Police	not limit targets to people but also equipment/vehicles to
		disable (1)
		<u>Mechanical Maintenance:</u> Target acquisition – friend/foe
		(1), Engage targets by degree of threat (1)
		<u>Military Police:</u> ID friend/foe at night (1)
Training on All Optics/Sights: 7 Total Comments		
	2 Ammunition	<u>Ammunition:</u> Know advantages and disadvantages of
	1 Engineer	thermal, night vision and daytime optics (1), Optics (1)
	1 Field Artillery	<u>Engineer:</u> Proper use of elevation and windage knobs (1)
	1 Infantry	<u>Field Artillery:</u> Train on all optics (1)

Comment Category	# Comments by Branch	Specific Comments on Other Required MOS Skills
	1 Mechanical Maint	<u>Infantry</u> : Must know iron sights (1)
	1 Transportation	<u>Mechanical Maintenance</u> : Know various optics (1)
		<u>Transportation</u> : Use of optics (1)

Skills Identified by Branch/MOS

Ammunition

- Focused on simulating standoff munition disruption (SMUD) procedures and associated skills (use of different optics/sights to identify explosive threat, use of tracers, disabling of vehicles) – 89D
- Simulate SMUD operations (89D)
- Shoot beyond 800m

Armor

- Use weapon not zeroed to you and then qualify with it,
- Long range marksmanship skills to eliminate threat beyond 300m not to replace snipers

Aviation

- Air gunnery with NVD and door gunner on aircraft

CBRN

- Train marksmanship in MOPP4
- Room clearing in MOPP4 is training requirements – marksmanship in this environment (MOS 74)

Field Artillery

- MLRS crew needs training appropriate for nonstandard missions,
- Shoot off of visual cues such as muzzle flash

Infantry

- Good understanding of zero, ballistics, and environmental effects on bullet
- Shoot beyond 500m
- Zero at distance where zero ranges don't exist (Iraq, Afghanistan)
- One-handed manipulation and shooting
- Train with wider sectors of fire than what field fire allows (300 m vs. current 30 m)
- Range estimation (2)
- Speedy reload with eyes remaining on target (2) (same as MP comment below)
- Basic gunsmithing
- Weapon maintenance (5)
- Engage multiple targets within time limits

Military Police

- Shoot-don't shoot
- Execute mag changes with eyes remaining on target (same as Infantry comment)

Whether Skills Should be MOS Specific

Comments in this category are summarized below

- Skills should not be MOS specific; everyone needs them: 2 Armor, 1 Mechanical Maintenance, 1 Medic (skills required when deployed)
- Should be trained on Infantry skills: 1 Ammunition, 1 Aviation; 2 Chemical, 1 Electronic Maintenance, 1 Mechanical Maintenance (needed in combat); 1 Quartermaster (needed in combat)
- Armor (1): Focus on tank gunnery skills which are a lost art; rifle marksmanship must be secondary. Don't force tankers to conform to Infantry standards.
- Quartermaster(1): Soldier first- MOS second

Comments that skills are not MOS specific were made by only a few leaders who commented to this question. It is noted, however, that the results from the objective questions on marksmanship skills in the questionnaire (to which everyone replied) indicated that there are branch/MOS differences.

General Comments

- More training/more time on range (1 comment per branch, total of 8 branches): Ammunition, Aviation, Quartermaster, Signal, Military Police, Field Artillery, Mechanical Maintenance; Infantry (spend more time on shooting as Infantry should be the best shooters in unit and the Army)
- Combat mindset (2 Infantry)
- Overthinking BRM and may re-invent the wheel, which typically fails. Good ideas, but extensive train-up required (1 Armor)
- Squad designated marksmanship training for all Soldiers in squad not just two Soldiers (1 Armor and 1 Engineer)

Trainers and Training Resources

Some comments related to training issues, both preparation of trainers and resources required to support training.

- Armor: Skills mentioned need to be mastered by NCOs prior to teaching Soldiers
- Infantry:
 - Ability to coach a junior shooter and to correct marksmanship errors with common sense instructions – skills gained in AMU (Army Marksmanship Unit) courses
 - Regarding training all these skills, it would be difficult, but possible.
 - All skills selected should be trained, but will require time and ammunition
- Military Police: Majority of skills mentioned in survey are impossible to train as agents are on bases without the necessary facilities to conduct the required training.

Selected Comments by Branch

As some comments were long, the comments in Table K2 were paraphrased. To more fully portray what leaders said, the complete comments from a sample of leaders are presented in this last section.

Aviation

--Using pistols in a more complex firing environment. Most of my units have not even timed the current pistol range when running it. For realistic battlefield use, training for defending a FOB and/or convoy fire are the most likely to come into play. Aviation units already practice aerial gunnery

Engineer

--Seeing as how we have gone from heavy equipment operators to combat engineers and back, and this can occur again, I think training that's realistic is best. We have Soldiers walking on the ground, expected to fire at "bad guys" but they don't receive training like that in the states.

Ammunition

--Specific to 89D, engaging targets with the M107 cal .50 rifle. The rifle is used as a standoff tool for certain EOD procedures and is an MTOE item for each response team and a qualification is currently not conducted regarding its use.

--Stand-Off Munitions Disruption (SMUD). Accurately engage soft targets through cover. Accurately engage soft targets riding in vehicles. Disable vehicles (possible VBIED) with SAF and rifle grenades. Utilize weapons optics to search for and identify possible and confirmed explosive threats. Recognize advantages and disadvantages of thermal, night vision, and daytime optics. Use of tracer and other ammunition. M107 BRM & ARM. IR and visible laser target acquisition and engagement with and without optics. Destroy/demilitarize weapons, accessories and ammunition in an emergency.

Military Police

--The majority of these skills will be impossible for the majority of agents due to being on bases without access to facilities sufficient to complete this training requirement.

Quartermaster

--I believe in "Soldier first, MOS second", so any skill that makes the Soldiers to the left and right of me more proficient should be required.

Armor

--Tankers need to focus on tank gunnery skills – it's a lost art that I've witnessed first-hand. Rifle marksmanship MUST be secondary to their primary skill set which is shooting a tank. These reforms should be applied once a year to tankers or with a specified, dismounted deployment orders. Training cycles need to reflect different priorities from the Infantry. Tankers cannot effectively "tank" at this time. They cannot keep their tanks running with field expedient measures or conduct proper maintenance. There is little institutional knowledge. Don't force Tankers to comply to Infantry standards

--Most skills have been mentioned previously. These skills would need to be mastered by NCOs prior to teaching to Soldiers

--I think that we are over thinking BRM. I agree that the training could be, and should be better. I have seen in the past, attempts at re-inventing the wheel and it usually fails, or is poorly executed. These are great ideas, though an extensive train-up would be required.

Infantry

--I believe all of these should be incorporated over time. It is important to ensure the Soldier has a firm grasp on the concept before being introduced to a new module. Realistic timelines will make this difficult. It is quite amazing how much BS needs to be completed on the average infantryman's day in garrison. Training all of these areas would be extremely difficult, but one cannot say that any of these areas should not be worked on to increase the Soldiers' capabilities.

--It's already been mentioned, but I'd emphasize incorporating tactical reload drills, speed reload drills, and ammo management (such as where to re-index partial magazines on your kit) into CQB training as a requirement...not just something leaders can teach if they feel like it.

--The mindset of gun fighting vs. just marksmanship training. The ability to fight with one's rifle is more important than hitting x number of targets.

--Close quarters battle requires tremendous respect for your weapon system and the danger is posed when handled incorrectly or ignorantly. Soldiers in my MOS require good weapon handling and positioning skill to prevent fratricide and not step into other Soldiers' sectors of fire when firing and moving.

--A full understanding of zero and ballistics, environmental consideration and effects on your bullet. The ability to properly coach a junior shooter and correct marksmanship errors with common sense instruction, all skills which can be gained from any Army Marksmanship Unit course.

--I feel that firing from behind urban barricades (i.e. vehicles, walls, windows, rubble, etc.) is a skill that units as a whole need to train more on. As a whole our Army is extremely proficient at individual marksmanship in wooded terrain. However, we are not as proficient when it comes to fighting in urban areas. Soldiers should also be trained on what constitutes cover in urban terrain. A cinder block wall will not stop 7.62mm rounds and therefore would not serve as cover. Soldiers need to know this before they go into combat.

-- Again, the Army's marksmanship philosophy is outdated. Firing from the prone is rarely done from my experience of 4 deployments to Iraq and 4 deployments to Afghanistan. Engaging targets 50m or less while standing and on the move is where the focus needs to be. Additionally, engaging further targets from 50m-200m while utilizing modified shooting positions from behind a barrier is where the focus needs to be.

Table K3

Percentage of Leaders Who Commented on Question S9 (Additional Skills Required by Soldiers in Their Branch or MOS)

Branch	Leaders who Commented
Branches With More Than 20 Respondents	Number and Percentage
Infantry	45 (18%)
Engineer	21 (17%)
Aviation	10 (16%)
Armor	25 (15%)
Military Police	18 (13%)
Ammunition	9 (12%)
Mechanical Maintenance	28 (11%)
CBRN	7 (10%)
Quartermaster	14 (10%)
Field Artillery	11 (8%)
Transportation	7 (5%)
OS (Signal and Military Intelligence)	1 (5%)
Air Defense Artillery	0 (0%)
Branches With Less Than 20 Respondents	
Medical, Multifunctional Logistician	1 (100%)
Electronic Maintenance	3 (27%)
Multifunctional Logistician	1 (13%)
Adjutant General, Civil Affairs, Finance	0 (0%)
Total (1636 respondents)	201- 12% commented 1435-- 88% did not comment

Note. Includes all leader branches/categories, not just the ones with more than 20 respondents. Military Intelligence and Signal combined to be consistent with categories used in the body of the report.

^a Ordered from high to low by percentage of leaders who made comments. Each branch percentage based on number of leaders in that branch who responded.

Appendix L

Qualification Course of Fire

Question S10: Do you think the current qualification course-of-fire, which is required of all Soldiers, should be changed in any way?

Additional information: Changes could involve different firing positions, targets distributed at difference distances, standards for marksmanship categories.

Instructions: Please indicate changes you think should be considered.

If you do not recommend any changes, please type in “none.”

Who Commented

Overall, 25% of the leaders commented. Leaders from every branch, except adjutant general (one respondent), commented on this question. No comment meant no changes were recommended. By inference, at least 75% did not recommend changes. And it is noted that not all comments suggested a change (see Table L2).

In terms of absolute numbers, the highest number of leaders who responded was from the Infantry branch (94 leaders). This number was followed by approximately 40 leaders from each of three other branches: Engineer, Armor, and Mechanical Maintenance. Approximately 30 leaders from Military Police and Field Artillery branches commented. These six branches accounted for 72% of the leaders who commented (Table L6).

Content of the Comments

Comments (total of 533) were categorized as follows:

Table L1

Number of Comments in Each Major Category for Question S10: Should the Current Qualification Course-of- Fire be Changed in Any Way?

Major Category	# of Comments
• Qualification as a baseline	61
• Qualification standards	39
• Firing positions	169
• Targetry	108
• Use of gear	24
• Magazine changes and malfunctions	30
• Realism, similarity to COE, stress	63
• Short range skills	16
• Weapon transition	8
• Other: Range facilities & equipment	15
Total	(533)

Qualification as a baseline. Three types of comments were made. Some leaders provided the rationale for supporting no change (e.g., tests the basics), while others indicated it

was a good baseline, but a more advanced course was needed as well. The latter comment was made primarily by Infantry leaders, and secondarily by Armor leaders. Infantry leaders specifically stated that a more advanced course was needed for Infantrymen. Lastly, some indicated it should be changed, but did not provide any suggestions.

Firing positions. As indicated above the largest number of comments centered on firing positions. Comments ranged from general statements regarding incorporating different or more positions to specific comments on use of barriers, standing, kneeling, and prone, as well as firing during movement. Typical comments were to include barriers or cover, add standing and remove kneeling and prone. Also these comments came from a diversity of leaders. It is noted that Infantry and Mechanical Maintenance leaders frequently mentioned use of obstacles; Mechanical Maintenance leaders also stressed standing with cover, and Infantry stressed engaging targets while moving.

Targets. Consistent with results from the check list items, including moving targets was mentioned by leaders across branches. Comments on changes in target distance were the most common. Again, consistent with the check list items, Infantry cited both short and long distances, while leaders from other branches typically did not see a requirement to shoot at 300m. Some of the Infantry leaders specifically stated a need to systematically address Soldier skill at the close-in, mid-range, and longer-range fights. Other comments were on target exposure time, making targets unpredictable (random presentation), having targetry that forces Soldiers to discriminate between friendly and enemy, and elevated targets.

Qualification standards. Most of the comments on qualification standards indicated that leaders thought standards were too easy/not sufficiently challenging (for all or for more experienced Soldiers) – either the scenario itself or the scoring procedures. Of interest, is that one Infantry leader commented on the need for two types of qualifications – one focusing on accuracy (not time) and the other adapted to the contemporary operating environment. Another acknowledged that you may have to lower standards if the scenario is made more complicated or stressful in some way. Lastly, a few comments were on the frequency of qualification and the need to enforce standards.

Use of gear. Although using gear during qualification was on the checklist, some leaders (across branches) commented on it. Of interest is that two leaders proposed two qualifications: one with gear and one without. Some leaders ($n = 7$) added comments on zeroing with gear. All the Armor and Infantry leaders (5 leaders) strongly emphasized that gear should not be used for zeroing, with one leader indicating that they had “learned not to use gear when zeroing.”

Magazine changes and malfunctions. Although the need to incorporate malfunctions and magazine changes was mentioned by a diversity of leaders, both these skills were stressed by Infantry leaders.

Realism, similarity to COE, stress. General comments were made by leaders across the branches for a more realistic scenario, one that stressed Soldiers, and/or one consistent with the threat. Mechanical Maintenance and Infantry leaders made more comments than the other

leaders. But a substantial number of these comments were also made by Armor, Military Police, Quartermaster, Engineer and Field Artillery leaders.

Short range marksmanship and other weapons. Integrating reflexive fire in qualification was cited primarily by Infantry leaders with individual comments by leaders from six other branches. Leaders from six branches also commented in the need to test Soldiers' ability to transition from the primary to secondary weapon.

Table L2 presents the comments in detail and documents which branch leaders provided comments in each category. Comments are paraphrased and /or divided among the different categories. Samples of complete comments follow Table L2.

Table L2

Comments to Question S9 by Branch/MOS– Changes to Qualification

Comment Category	# Comments by Branch	Specific Comments on Potential Changes to Qualification
Qualification as a Baseline: 61 Total Comments		
No change with some rationale provided (13 comments)	1 Air Defense Artillery 1 Electronic Maint 2 Engineer 1 Field Artillery 4 Infantry 2 Military Police 1 Multif Logistician 1 Signal	<u>Air Defense Artillery</u> : No change for ADA branch (1) <u>Electronic Maintenance</u> : No change for my MOS, but combat arms are different (1) <u>Engineer</u> : Current qualification is good (2) <u>Field Artillery</u> : No change for 13D MOS (1) <u>Infantry</u> : No opinion – what we have has worked, probably could be improved but won't find system that suits all (1), Current qual is good as baseline measurement (1), Is a good test of marksmanship fundamentals (1), Course required for all Soldiers is currently satisfactory (1) <u>Military Police</u> : No change because gives all elements needed to fire weapon correctly (1), Qual should give cdrs an idea of weapon proficiency in unit- never as benchmark for weapons training (1) <u>Multifunctional Logistician</u> : Not change as provides basic understanding of skills. Nothing is perfect so shouldn't waste time changing it, add training instead (1) <u>Signal</u> : Qual is ok as purpose is to prove you can shoot; real test is deployment (1)
Baseline, but more advanced/ challenging is needed for some Soldiers (25 comments)	6 Armor 1 CBRN 1 Electronic Maint 1 Engineer 14 Infantry 1 Mechanical Maint 1 Military Police	<u>Armor</u> : Consensus was that current qual is ok as baseline, but need more advanced qual or courses of fire as well (6) <u>CBRN</u> : Not change as baseline but need more training (1) <u>Electronic Maintenance</u> : Keep it but add more realistic scenarios (1) <u>Engineer</u> : Good for basic marksmanship but need an advanced course of fire for commander's knowledge (1) <u>Infantry</u> : Continue basic qualification but then have more challenging exercises determined by unit METL (eg.,

Comment Category	# Comments by Branch	Specific Comments on Potential Changes to Qualification
		change mags, psn) (1), Continue basic qual but add in barrier shoots, mag changes & malfunction clearances (1), Current is basic standard but Infantry qual should be more challenging (1), Enhance for 11B (1), Fine baseline but give units resources to develop and plan training (1), Measures basic conditions which are more simple than infantry shoots – switch to something like CFF (1), No change in current qual for all Soldiers but need separate test for Infantry to align with specialized shooting requirements / qual associated with other branches (Armor, Fld Artillery, SF) (1). Ok as a base but should get more complicated in further training (1), Ok for branches and MOS other than Infantry- but not difficult enough for Infantry – be like Marine Corps (1), Once base achieved then controlled pairs, chn psns, & moving targets (1), Qual ok for initial entry Soldiers but 11B don't shoot enough (1), Nice baseline but Soldier needs to be more capable than the standard (1), Tests basic skills, but not skills required in combat (1), Don't rely on basic qual to assess marksmanship- need moving & shoot, barriers, etc. (1) <u>Mechanical Maintenance</u> : No change but add some of the skills cited in survey (1) <u>Military Police</u> : If follow BRM program & follow w/ advanced training then OK (1)
Other (1 comment)	1 Infantry	Infantry: Change because people view qual as all inclusive; if Soldiers do minimum only then need to raise the minimum (1)
Recommend change but no specifics provided (22 comments)	2 Air Defense Artillery 2 Ammunition 1 Armor 1 Aviation 4 Engineer 4 Field Artillery 3 Infantry 1 Mechanical Maint 1 Quartermaster 1 Signal 2 Transportation	<u>Air Defense Artillery</u> : Yes change (2) <u>Ammunition</u> – Yes change (2) <u>Armor</u> : Yes (1) <u>Aviation</u> : Yes (1) <u>Engineer</u> : Yes (3), MOS specific (1) <u>Field Artillery</u> : Add more to it (1), Change (2), Should be MOS specific & only w 20-30 rds between multiple mag (1) <u>Infantry</u> : Change (2), Delete it (1) <u>Mechanical Maintenance</u> : Change but no recommendation (1) <u>Quartermaster</u> : Yes (1) <u>Signal</u> : Yes (1) <u>Transportation</u> : Yes (2)
Firing Positions: 169 Total Comments		
Different and/or more firing positions with no details	1 Air Defense Artillery 1 Armor 1 Aviation 2 CBRN 1 Civil Affairs 2 Engineer	

Comment Category	# Comments by Branch	Specific Comments on Potential Changes to Qualification
(25 comments)	3 Field Artillery 5 Infantry 3 Mechanical Maint 3 Military Police 1 Quartermaster 1 Signal 1 Transportation	
Different firing positions – general comments (12 comments)	3 Armor 2 Engineer 1 Field Artillery 4 Infantry 1 Finance 1 Military Police	<u>Armor</u> – Different psn available in urban env. (1); Fire from nonstandard psn(1); Prescribed psn are not always the best for situation (1) <u>Engineer</u> : Need more awkward psns beyond current (2) <u>Field Artillery</u> : Include awkward psns (1) <u>Infantry</u> : Need more real world psn (2), Add alternate firing psn for short range targets (1), Multiple shooting psn (1) <u>Finance</u> : Psns are too rigid (1) <u>Military Police</u> : Psn are too basic (1)
Positions w/barriers or obstacles (29 comments)	3 Ammunition 3 Armor 1 Aviation 2 Engineer 3 Field Artillery 8 Infantry 6 Mechanical Maint 2 -Military Police 1 Quartermaster	<u>Ammunition</u> – Add obstacles – see kneeling cmts (2), Use cover (1) <u>Armor</u> : Add more natural and man-made obstacles (1), Qualify behind a barrier when used for support (1), Kneeling from behind cover (1) <u>Aviation</u> : Fire from obstacles (1) <u>Engineer</u> : Fire thru windows and doorways (1), Use nonstandard obstacles (1) <u>Field Artillery</u> : Incorporate obstacles and barriers (3) <u>Infantry</u> : Include platforms such as windows and car hoods (1), Fire from cover (2), Change psn from barricades using standing kneeling etc. (1), Add barrier shooting (2), Should always reinforce shooting from cover, but teach prone Unsupported and imply do with cover (1), Test Soldiers running to cover choosing good psns & suppressing targets at unknown distances (1) <u>Mechanical Maintenance</u> : Fire from vehicle or building (1), Fire from cover (2); Fire across hood of Humvee (1), Use cover (1), fire from/around cover which may require nondominant hand (1) <u>Military Police</u> : Incorporate obstacles (2) <u>Quartermaster</u> : Use various types of cover/concealment
Kneeling (19 comments)	2 Ammunition 2 Aviation 2 Engineer 3 Field Artillery 3 Infantry 1 Mechanical Maint 1 Military Police 2 Quartermaster 3 Transportation	<u>Ammunition</u> : Remove kneeling and add obstacles (2) <u>Aviation</u> : remove kneeling (2), Make kneeling supported (1) <u>Engineer</u> : Remove kneeling (1), Like change to kneeling(1) <u>Field Artillery</u> : Remove kneeling (3) <u>Infantry</u> : Remove kneeling and change to sitting. If do kneeling, do it around cover; make it a decision-task where Soldier decides on firing psn (1), Remove kneeling

Comment Category	# Comments by Branch	Specific Comments on Potential Changes to Qualification
		and replace with standing supported (1), Kneeling should be aggressive and passive (1) <u>Mechanical Maintenance</u> : Remove kneeling because of Soldiers on profile – use standing instead (1) <u>Military Police</u> : Prone and kneeling are redundant (1) <u>Quartermaster</u> : Remove kneeling (2) <u>Transportation</u> : Remove kneeling (3)
Standing (30 comments)	2 Ammunition 3 Armor 1 Electronic Maint 4 Engineer 3 Field Artillery 4 Infantry 7 Mechanical Maint 2 Military Police 1 Quartermaster 2 Transportation	<u>Ammunition</u> : Add standing (2) <u>Armor</u> : Add standing (3) <u>Electronic Maintenance</u> : Add standing (1) <u>Engineer</u> – Add standing (4) <u>Field Artillery</u> : Add standing (3) <u>Infantry</u> : Add standing (4) <u>Mechanical Maintenance</u> : Add standing with cover (7) <u>Military Police</u> : Add standing (2) <u>Quartermaster</u> : Add standing (1) <u>Transportation</u> – Add standing(2)
Prone (11 comments)	1 Armor 4 Engineer 3 Infantry 1 Mechanical Maint 2 Signal	<u>Armor</u> : Remove prone USpt (1) <u>Engineer</u> : Remove PS and PUS - are outdated (1), Remove prone supported (2), Remove prone (1) <u>Infantry</u> : Remove prone supported definitely (1), Remove prone (1), Against prone supported (1) <u>Mechanical Maintenance</u> : Remove prone (1) <u>Signal</u> : Remove prone unsupported (2)
Positions involve movement (30 comments)	3 Air Defense Artillery 1 Ammunition 1 Armor 1 Aviation 2 CBRN 2 Engineer 4 Field Artillery 10 Infantry 2 Mechanical Maint 2 Military Police 1 Quartermaster 1 Transportation	<u>Air Defense Artillery</u> : Move by fire (1); Move to different location (1), Shoot while moving (1) <u>Ammunition</u> : While moving (1) <u>Armor</u> : Fire after move to different cover (1) <u>Aviation</u> : Move and shoot from cover (1) <u>CBRN</u> : Fire from moving vehicle (1); Move between psn (1) <u>Engineer</u> : Fire while moving (1); Move to different psn (1) <u>Field Artillery</u> : Fire while moving (4) <u>Infantry</u> : Add a movement lane (1), Discourage engaging targets while maneuvering as engaging to destroy differs from engaging to suppress (1), Engage while moving (6), Engage while moving in all terrains to force Soldiers to control breathing and make decisions (1), Move from psn to psn (1) <u>Mechanical Maintenance</u> : Fire under movement (1), Engage targets while taking cover (1) <u>Military Police</u> : Fire while moving (1). Need course of fire that includes moving and shooting (1) <u>Quartermaster</u> : Move while firing with less emphasis on prone (1) <u>Transportation</u> : Change firing points
Other	1 Ammunition	<u>Ammunition</u> : Add sitting (1)

Comment Category	# Comments by Branch	Specific Comments on Potential Changes to Qualification
positions (6 comments)	1 Armor 1 Aviation 1 Engineer 1 Field Artillery 1 Infantry	<u>Armor</u> : Shooter elevated (1) <u>Aviation</u> : Fire from mtd psn (1) <u>Engineer</u> : No firing from foxhole (1) <u>Field Artillery</u> : Fire from gunners hatches of vehicles (1) <u>Infantry</u> : Add alternate psn for short range targets (1)
Scenario description (4 comments)	1 Armor 1 Engineer 1 Infantry 1 Transportation	<u>Armor</u> : 4 psn with 10 rounds each -stand supported, kneeling supported, kneeling unsupported, & prone unsupported, requiring Soldier to reload and change psn w/ 8 seconds (1) <u>Engineer</u> : Orient toward shooting from towers, moving vehicles, and standing supported (1) <u>Infantry</u> : Psn should be scenario-based (1) <u>Transportation</u> : Realistic scenario of standing, kneeling & obstacle training better evaluated in gear (1)
Training Comments (3 comments)	1 Aviation 1 Field Artillery 1 Multif Logistician	<u>Aviation</u> : Need instruction on proper positions (1) <u>Field Artillery</u> : Do not change qual, but Soldiers need to tryout different positions (1) <u>Multifunctional Logistician</u> : Fix ranges first (not all fixed targets, include obstacles, etc., so positions can be modified, then firing positions (1)
Targets: 108 Total Comments		
Include Moving Targets with no details (24 comments)	2 Ammunition 2 Armor 2 Aviation 1 Engineer 1 Field Artillery 9 Infantry 5 Mechanical Maint 1 Military Police 1 Transportation	
Include Moving Targets with Details (8 comments)	2 Armor 1 Aviation 3 Infantry 1 Quartermaster 1 Transportation	<u>Armor</u> : Moving targets added as a 4 th iteration after kneeling (1), At least one moving target between 50 and 175m (1) <u>Aviation</u> : Moving targets definitely in the 50 to 100m range (1) <u>Infantry</u> : Moving targets at closer distances (1); moving targets at different distances (1), Moving targets not just 1 or 2 but a significant part of qual (1) <u>Quartermaster</u> : Consider current trends in targetry, e.g., moving targets, multiple targets, distant targets (1) <u>Transportation</u> : Moving target at 175m (1)
Target Distance (43 comments)	3 Ammunition 3 Armor 3 CBRN 1 Electronic Maint 4 Engineer 2 Field Artillery 1 Finance	<u>Ammunition</u> : Longer distances (1), Include additional area target from 800 to 1000 m because hostile forces engage us in volume from distances greater than 300m (1), Close range targets (1) <u>Armor</u> : Longer distance targets (1), Remove 250 and 300m and replace w engaging targets from standing psn or with stress fire (1), Add 400m target (1)

Comment Category	# Comments by Branch	Specific Comments on Potential Changes to Qualification
	13 Infantry 5 Mechanical Maint 1 Military Intelligence 1 Civil Affairs 3 Quartermaster 3 Transportation	<p><u>CBRN</u>: Do not exceed 200m (1), Many different distances (2)</p> <p><u>Electronic Maintenance</u>: Unrealistic to engage targets beyond 200m (1)</p> <p><u>Engineer</u>: Targets within 300m ok for discrimination purposes as used by small kill teams or fixed position but stress less than 200m prior to deployment to situations such as Iraq (1), Different distances (2) , Targets at further distances – new order, fire at multiple target w/ time limit and firing order where Soldiers move toward enemy (1)</p> <p><u>Field Artillery</u>: Less than 200m (1), Longer distances with optics (1)</p> <p><u>Finance</u>: Eliminate 300m as Soldiers are told to ignore them and to save rounds for other targets (1)</p> <p><u>Infantry</u>: Base qual on distance – close-in, mid, and longer fight (2), Unknown distances (1), Shorter and longer distances (1), Increase distance beyond 300m (1), More at 100 and 200m and less at 300m (1), Shorten the distance (1), Not sure of 300m requirement (1), Make two qualifications –current plus distance qual where accuracy is stressed over time (1), At least one target at max effective range of weapon (1), Targets up to 500m (2), Different distances (1)</p> <p><u>Mechanical Maintenance</u>: 100 to 200m range (1), Remove 200 and 300m because Snipers engage at these ranges, but if leave in then give Soldiers better optics (1), Shorter ranges (1), Some targets beyond 300m (1), Targets at different distances (1)</p> <p><u>Military Intelligence</u>: Eliminate targets beyond 200m with 250 and beyond for advanced training (1)</p> <p><u>Civil Affairs</u>: Targets at different distances (1)</p> <p><u>Quartermaster</u>: More distant targets (1), More short range targets (1), Different distances (1)</p> <p><u>Transportation</u>: Eliminate 300m because can't hit wo/ a scope (1), Targets beyond 300m (1), Different distances (1)</p>
Targets too predictable (7 comments)	1 Armor 1 CBRN 1 Engineer 3 Infantry 1 Quartermaster	<p><u>Armor</u>: Targets should not be same every time as Soldiers memorize them and anticipate targets rather than react (1)</p> <p><u>CBRN</u>: Should be random sequence as targets are too predictable use a random number generator (1)</p> <p><u>Engineer</u>: Change target distance so less predictable (1)</p> <p><u>Infantry</u>: Randomize target presentation (1), Randomize targets to reduce gaming and ambushing targets. If spotters are calling next target before up, then quit the faking and go to AltC (1), Target hit requirement should be random (1)</p> <p><u>Quartermaster</u>: More unpredictable targetry (1)</p>
Exposure	2 Armor	<u>Armor</u> : Multiple timed targets under stress (1), Shorter

Comment Category	# Comments by Branch	Specific Comments on Potential Changes to Qualification
time (6 comments)	2 Infantry 2 Military Police	exposure on targets within 100m (1) <u>Infantry</u> : Decrease time to engage for longer targets as well as others to make more challenging (1), Shorter exposure time (1) <u>Military Police</u> : Target exposure is too long and at known distances (1), Different exposure times (1)
Target Discrimination (5 comments)	1 Armor 1 Engineer 1 Military Police 1 Multif Logistician 1 Quartermaster	<u>Armor</u> : Include friendly and enemy targets (1) <u>Engineer</u> : Scan under pressure & distinguish hostile from nonhostile, currently all targets are hostile & Soldiers only react to that (1) <u>Military Police</u> : Include civilians - require Soldiers to identify targets before firing (1) <u>Multifunctional Logistician</u> : Have targets of different colors for discrimination purposes (1) <u>Quartermaster</u> : Mix friendly and enemy targets (1)
Other comments (12 comments)	2 Armor 2 Aviation 1 CBRN 1 Engineer 5 Infantry 1 Mechanical Maint 1 Military Police 1 Multif Logistician 1 Transportation	<u>Armor</u> : Elevated targets (1), Elevation changes (1) <u>Aviation</u> : Use metal targets to can hear hits (1), More targets and rounds to continue firing like M9 firers (1) <u>CBRN</u> : Use different size targets and target areas (1) <u>Engineer</u> : Include multiple targets (1) <u>Infantry</u> : More targets with defense lanes with more distant targets engaged from supported psns and offense lanes with closer targets, faster exposure, movement and less supported psns (1), Targets more widely dispersed and at different distances (1), Fire at different elevations (1), Fire until target does down - not use round count to grade but time to kill instead (1), Fire at different elevations (1) <u>Mechanical Maintenance</u> : Two part test with known distance and Close quarter combat (1) <u>Military Police</u> : Multiple targets that require multiple hits to fall (1) <u>Multifunctional Logistician</u> : Range terrain should replicate operational environment (1) <u>Transportation</u> : Targets that mimic height and width of person (1)
Qualification Standards: 39 Total Comments		
Standards too easy (27 comments)	1 Ammunition 1 Armor 2 CBRN 3 Engineer 3 Field Artillery 9 Infantry 5 Mechanical Maint 1 Medical 2 Military Police 1 Quartermaster 1 Signal	<u>Ammunition</u> : Increased difficulty of any kind would be an improvement (1) <u>Armor</u> : Course not difficult for many; Soldiers shoot until get a GO – then leave range without using correct marksmanship techniques. (1) <u>CBRN</u> :– Change standards (1), Too predictable (1) <u>Engineer</u> : New standards for categories (1), Qual shouldn't be so predictable (1), Woefully low standard – Soldier should engage at least 75% of targets – 23 of 40 not adequate (1) <u>Field Artillery</u> : Lower the score for qual but raise it for

Comment Category	# Comments by Branch	Specific Comments on Potential Changes to Qualification
		<p>expert (1), More challenges that can't be memorized (1), More challenging & indepth as current qual does not challenge them to be proficient (1)</p> <p><u>Infantry</u>: Higher accuracy standards than hit/miss on E-type targets e.g., smaller target or precise shot placement (1), Incorporate target lethal hits (1), Make more complex and difficult even if we accept lower % of hits as qual standard (1), Score hits on basis of quality (eg, chest vs left hand) (1), Stress accuracy – specific engagement zones on target vs. hit/miss and time limits that test Soldiers (1), Time qualification starting with standing to prone & include mag change (1), Should change to a stress qualification scenario and then cutpoint for qualification could be a little lower, e.g. expert at 34 (1), 3 phases based on target distance (long fight, mid- fight and CQB as today's qual doesn't meet these needs & CQM is familiarization (1), Two quals – one where accuracy is more important than time and one similar to current but adapted to COE yet add elements similar to Combat Field fire (1)</p> <p><u>Mechanical Maintenance</u>: Raise standard for marksman to 25 & expert to 37 (1), Change standards (1), Change to everyone gets out of their comfort zone (1), Should be more challenging to handle and fire weapons (1), Should be short range marksmanship course stds (1)</p> <p><u>Medical</u>: Too easy to get expert (1)</p> <p><u>Military Police</u>: Qual becoming too repetitive & not a challenge for more experienced firer; should have different levels (1), More stringent standards (1)</p> <p><u>Quartermaster</u>: Train to real world standards (1)</p> <p><u>Signal</u>: Too easy (1)</p>
Frequency of qualification (4 comments)	1 Armor 1 Aviation 1 Field Artillery 1 Military Police	<p><u>Armor</u>: More qualifications during the year (1)</p> <p><u>Aviation</u>: Should fire 2 to 3 times per year (1)</p> <p><u>Field Artillery</u>: Should be monthly (1)</p> <p><u>Military Police</u>: Qualify more often (1)</p>
Enforcement (6 comments)	2 Engineer 2 Mechanical Maint 1 Military Police 1 Transportation	<p><u>Engineer</u>: If can't qualify with assigned weapon, then should be discharged from Army. Soldiers shoot many times & don't qualify yet are deployed (1), Yes needs to be standardized, not based on how many rounds we have (1)</p> <p><u>Mechanical Maintenance</u>: Uniform across Army not dependent on installation manager (1), Soldiers that don't qualify should be retrained until can qualify; don't let Soldiers slide by who can't qualify (1)</p> <p><u>Military Police</u>: More strict penalty for failure to qualify (1)</p> <p><u>Transportation</u>: Apply and enforce standard for range ops (1)</p>

Comment Category	# Comments by Branch	Specific Comments on Potential Changes to Qualification
Other (2 comments)	1 Ammunition 1 Multif Logistician	<u>Ammunition</u> : Shooting at paper targets is not the train as you fight concept (1) <u>Multifunctional Logistician</u> : Fix the ranges first, then scoring (1)
Gear: 24 Total Comments		
Gear and qualification (17 comments)	1 Air Defense 1 Ammunition 1 Armor 1 Engineer 5 Infantry 4 Mechanical Maint 2 Military Police 1 Quartermaster 1 Signal 2 Transportation	<u>Air Defense</u> : No gear- fire in ACU (1) <u>Ammunition</u> : No gear for qual, use gear in field fire (1) <u>Armor</u> : No gear for qual (1) <u>Engineer</u> : Full gear not necessary if just qualify and not trying to simulate combat (1) <u>Infantry</u> : Qual in gear (3), Requires too much command approval to shoot wo/ gear; observed Soldiers repeatedly fail to qual when in gear and was clear they needed to learn to shoot first, (1), First - qualify wo/ gear & w/ iron sights; then add second qual w/ gear & optics (1) <u>Mechanical Maintenance</u> : Fire without gear (2), Courses of fire with gear are important, but not part of crawl or walk phase of training (1), Need to change up the gear on the course (1) <u>Military Police</u> : High stress after running in gear (1), No gear (1) <u>Quartermaster</u> : Qualify with and without gear (1) <u>Signal</u> : Redesign IBA to help Soldiers raise head when aiming (1) <u>Transportation</u> : Qual with gear is nothing but a moral and confidence killer – build confidence before making it difficult to shoot 34+ (1), Gear for qual (1)
Gear and zeroing (7 comments)	2 Armor 3 Infantry 1 Mechanical Maint 1 Transportation	<u>Armor</u> : No gear for zeroing – never (2) <u>Infantry</u> : No gear for zeroing (2), Have learned not to use gear when zeroing (1) <u>Mechanical Maintenance</u> : Zero in battle rattle (1) <u>Transportation</u> : No gear for BRM training and zero
Magazine Changes and Malfunctions: 30 Total Comments		
Add Magazine changes (20 comments)	1 Ammunition 2 Aviation 1 Engineer 1 Field Artillery 7 Infantry 5 Mechanical Maint 2 Quartermaster 1 Transportation	<u>Ammunition</u> : Mag change (1) <u>Aviation</u> : Change mag and continue firing like M9 (1); Change mag at random intervals (1) <u>Engineer</u> : Mag change (1) <u>Field Artillery</u> : Change mags (1) <u>Infantry</u> : Add change mags (7) <u>Mechanical Maintenance</u> : Add quick mag change (4), Mag change when shooting on lane with obstacles (1) <u>Quartermaster</u> : Quick mag change (1), Insert timed mag change (1) <u>Transportation</u> : Include mag change (1)
Add clearing malfunctions (10 comments)	1 Ammunition 1 CBRN 1 Engineer 7 Infantry	<u>Ammunition</u> : Clear malfunctions (1) <u>CBRN</u> : Malfunction drill (1) <u>Engineer</u> : Malfunction while firing under stress (1) <u>Infantry</u> : Insert malfunctions (via dummy rounds) in

Comment Category	# Comments by Branch	Specific Comments on Potential Changes to Qualification
		current qual (7)
		Realism: 64 Total Comments
More realistic; closer to COE, more stress (64 comments)	3 Ammunition 8 Armor 1 Aviation 2 CBRN 5 Engineer 4 Field Artillery 12 Infantry 15 Mechanical Maint 1 Medical 1 Military Intelligence 6 Military Police 5 Quartermaster 1 Transportation	<p><u>Ammunition</u>: More realistic-like combat (1), Stress situations for 89D (1), One round rarely used to take down enemy (1)</p> <p><u>Armor</u>: Relate to COE (2), More realistic (1), Stress shooting (2), Elevation shooting (2), Change completely – too relaxed (1)</p> <p><u>Aviation</u>: Current qual is obsolete & ineffective, every Soldier s rifleman and therefore needs to understand wpn & engage targets under dynamic and stressful conditions (1)</p> <p><u>CBRN</u>: Replicate the battlefield (1), Environment tailored to MOS scenario based [cooks inside tent to qualify, medics in hospital env (1)</p> <p><u>Engineer</u>: Adapt to the war we are preparing to fight (1), Make more combat focused (1), Add stress fire (3)</p> <p><u>Field Artillery</u>: Include battlefield noises during qual (1), More realistic (1), More stress (2)</p> <p><u>Infantry</u>: Combat focused not time focused (2), Combat related – more stressful (2), More realistic conditions with physical stress and more elements of combat field fire (1), Train and test skills used in combat--when deployed never used techniques I was taught (instead - running, standing shooting thru windows, buildings, vehicles, etc.), (1) Add stress shooting (1), Change as qual doesn't test proficiency but ability to hit stationary targets (1), Add weak side shooting (1), Shoot with nondominant hand (1), Focus on urban terrain (1), Simulate combat with more stress (1)</p> <p><u>Mechanical Maintenance</u>: Fire under stress-night fire (1), Exposure to stress (1), Make like combat (1), More pressure (1), More realistic (2), More warfighting scenarios (2), Realistic more like what presented in combat zone to maximize transfer (1), Stress during firing (1), Train as you fight vs paper targets (2), More scenarios in qual (1), Need to be more proficient particularly as we downsize the force (1), Night fire (1)</p> <p><u>Medical</u>: Change in more way than one – e.g., stress shooting, ready-up drills (1)</p> <p><u>Military Intelligence</u>: More realistic (1)</p> <p><u>Military Police</u>: Any change to increase Soldier proficiency in varying combat zones, but also focus on basics (1), Change to meet COE (1), Qual should evolve with COE (1), Fire under stress (2), Change as we are no longer in the 1990s (1)</p> <p><u>Quartermaster</u>: More realistic (2), Reflect future battles (1), All Soldiers need to train & fight like Infantry, all</p>

Comment Category	# Comments by Branch	Specific Comments on Potential Changes to Qualification
		work outside of job when deploy [been deployed 4 times] (1), Engage urban targets (1) <u>Transportation</u> : Make more challenging (1)
Short Range Skills: 16 Total Comments		
Short range skills (16 comments)	1 Ammunition 2 Armor 1 CBRN 3 Engineer 7 Infantry 1 Mechanical Maint 1 Military Police	<u>Ammunition</u> : Reflexive fire (1) <u>Armor</u> : Reflexive fire (2) <u>CBRN</u> : Add CQM with reflexive fires (1) <u>Engineer</u> : Add walking short range reaction phase (1), reflexive fire for targets greater than 25m (1), Rapid fire (1) <u>Infantry</u> : Add CQM (5), Include SRM (1) Short range defensive skills for all MOS (1) <u>Mechanical Maintenance</u> : Add reflexive fire (1) <u>Military Police</u> : Close combat shooting (1)
Incorporating Other Weapons: 8 Total Comments		
Weapon transition (8 comments)	2 Aviation 2 CBRN 1 Engineer 2 Field Artillery 1 Infantry	<u>Aviation</u> : Everyone does not have M4/M16- some have M9 and M240H- incorporate these weapons (1), Transition from primary to secondary wpn with reloading (2) <u>CBRN</u> : More weapon systems (1), Transition fire (1) <u>Engineer</u> : Transition from primary to secondary weapon (1) <u>Field Artillery</u> : Add qual courses with M9 to all Soldiers & leaders regardless of tank (need secondary wpn) (1), Possibly add change to secondary wpn (1) <u>Infantry</u> : Transition between primary & secondary wpn (1)
Other: 15 Total Comments		
Trainer/ quality of training comments (2 comments)	2 Aviation	<u>Aviation</u> : Better course with well-qualified instructors that really care about marksmanship rather than just checking the block (1), Have professional trainers give classes until meet a standard (1)
Range Facilities (5 comments)	2 Engineer 1 Field Artillery 2 Quartermaster	<u>Engineer</u> : Better maintenance of firing ranges -- replace plastic targets so no holes for bullets(1), Updated range system scoring equipment (1) <u>Field Artillery</u> : Change targets so don't shoot at swiss cheese (1) <u>Quartermaster</u> : Better range maintenance – targets malfunction and terrain has shifted (1), Unit ranges should be deeper to allow different forms of marksmanship training (1)
Other – equipment related (8 comments)	2 Armor 1 Engineer 1 Infantry 1 Military Police 2 Quartermaster 1 Signal	<u>Armor</u> : All should shoot with same type of sight (1), Require all shoot with iron sights (1) <u>Engineer</u> : Shoot with nondominant hand (1) <u>Infantry</u> : Should be like law enforcement qualification (1) <u>Military Police</u> : Comments were a critique of the problems with M9 pistol qualification (1)

Comment Category	# Comments by Branch	Specific Comments on Potential Changes to Qualification
		<u>Quartermaster</u> : Consider changes when Army allows 92M to carry side arms during deployment (1), Scenarios similar to those used by civilian law enforcement (1)
		<u>Signal</u> : Signal MOS does not require as much marksmanship training as combat arms (1)

Note. Leader comments can fall into more than one category or subcategory.

Tables L3 through L5 summarize the number of leader comments (presented in Table L2) in major categories by branch. In these tables, the Signal and Military Intelligence branches are reported separately. Other branches with fewer than 20 individuals are not included. The tables summarize comments for using current qualification as a baseline, firing positions for qualification, and targetry.

Table L3

Number of Leader Comments Regarding Qualification Course as a Baseline

Branch	No change w rationale	Baseline but more advanced for some	Recommended change but specifics not given	Other
Air Defense	1	0	2	0
Ammunition	0	0	2	0
Armor	0	6	1	0
Aviation	0	0	1	0
CBRN	0	1	0	0
Engineer	2	1	4	0
Field Artillery	1	0	4	0
Infantry	4	14	3	1
Mech Maint	0	1	1	0
Military Police	2	1	0	0
Quartermaster	0	0	1	0
Transportation	0	0	2	0
Signal	1	0	1	0
Military Intell	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

Table L4
Number of Leader Comments on Major Firing Positions

Branch	Different or More	Different w cmts	Barriers	Kneel	Stand	Prone	With Movement
Air Defense	1	0	0	0	0	0	3
Ammunition	0	0	3	2	2	0	1
Armor	1	3	3	0	3	1	1
Aviation	1	0	1	2	0	0	1
CBRN	2	0	0	0	0	0	2
Engineer	2	2	2	2	4	4	2
Field Artillery	3	1	3	3	3	0	4
Infantry	5	4	8	3	4	3	10
Mech Maint	3	0	6	1	7	1	2
Military Police	3	1	2	1	2	0	2
Quartermaster	1	0	1	2	1	0	1
Transportation	1	0	0	3	2	0	1
Signal	1	0	0	0	0	1	0
Military Intell	0	0	0	0	0	0	0

Table L5
Number of Leader Comments on Targetry

Branch	Moving No Details	Moving w Details	Target Distance	Too Predictable	Exposure Time	Target Discrim- ination	Other
Air Defense	0	0	0	0	0	0	0
Ammunition	2	0	3	0	0	0	0
Armor	2	2	3	1	2	1	2
Aviation	2	1	0	0	0	0	2
CBRN	0	0	3	1	0	0	1
Engineer	1	0	4	1	0	1	1
Field Artillery	1	0	2	0	0	0	0
Infantry	9	3	13	3	2	0	5
Mech Maint	5	0	5	0	0	0	1
Military Police	1	0	0	0	2	1	1
Quartermaster	0	1	3	1	0	1	0
Transportation	1	1	3	0	0	0	1
Signal	0	0	0	0	0	0	0
Military Intell	0	0	1	0	0	0	0

Complete Comments: Sample

A sample of complete comments is provided to illustrate some of the major categories. Some of the more detailed responses such as those in this section were either paraphrased or divided across the categories in Tables L1 and L2.

Realism and Stress

Ammunition

--The current BRM is a significant step in the right direction. Unfortunately, many enemy forces are engaging us in volume from ranges much greater than 300 meters. I recommend considering a mandatory additional Area Target Qualification from 800M-1000M with the M4 Carbine.

-- Yes the entire course needs to be preceded by basic marksmanship training. Also the course is not applicable to real life moving, one shot rarely takes down an enemy, magazine retention slows down engaging the enemy, there are quicker more effective ways to clear malfunctions than the army currently teaches, basic skills such as ensuring all Soldiers magazines are ready to be used are not taught, i.e. brass to the grass.

Mechanical Maintenance

--Qualification ranges should be geared toward what we deal with in a combat zone, not timed and at random intervals would keep our skills sharper. I think it would really show us where we stand; it is too easy to shoot at a target that is timed and out in the open. Many Soldiers can qualify here in the states but can not do the same under pressure and in the real deal environment

Multifunctional Logistician

--Yes change is needed. Fixed targets from 10M to 300M looking down hill at most ranges are not realistic. We have learned that past and future enemy will not pop up in the open for 3-5 seconds. Ranges should replicate the operating environment. Buildings, vehicles, rocks, trees, obstacles, multiple targets, all real world scenarios. First fix the range then we will go into firing positions and scoring.

Infantry

--All of the changes mentioned in the survey I would add as these are realistic and any time a Soldier handles his weapon it is good for him. In general, I would add movement to current qualification course of fire. A Soldier should be moving and bounding between cover as he fires on moving or stationary targets in both urban and rural terrain. This will add both realistic stress and will hopefully instill more aggressiveness in the individual Soldier, but will force him to control his breathing and make decisions. He will not know what target array will pop up next.

-- The standards should be changed to allow for unexpected weapons malfunctions and magazine changes. Firing positions should be scenario based and targets should be more widely dispersed and at different elevations.

Field Artillery

--YES. Look at the civilian sector type training that integrates barriers, changing magazines, movement, and awkward positions at varying ranges. We are not in the cold war anymore.

Military Police

-- The battle field has changed and so also is the positioning of the battlefield friendlies and targets. I would recommend changing the entire firing range and incorporating civilians on the battle field concept where some targets replicate civilians and the Soldier is forced to identify targets before engagement.

CBRN

--The environment. Why take cooks to an outside range to qualify. If they are deployed and inside of a kitchen, let's put them to the test inside of their element. Let's have a scenario based training where MOS can actually challenge their self inside of their element. Medics firing in a hospital environment where possible enemy enter a patient filled location. Maybe the medics take the shot or maybe they don't depending on the presence and safety of friendly patients.

Standards

Engineer

--I don't think anything should be changed. However I think that Soldiers who cannot qualify with their assigned weapon should be chaptered from the Army. I have seen way too many Soldiers shoot at a range all day long with some of the best instructors and still not qualify with the assigned weapon given to them. Then they go to multiple ranges and still not qualify. Then they end up deploying and never qualified. It's dangerous!!

Infantry

--Yes, I believe that the course of fire should be made more complicated and difficult, even if this means we must accept a lower percentage of hits as our standard for qualification

--Yes, but only because people look at the current requirement to zero and qualify as being totally inclusive to marksmanship training. If people are going to do the minimum, then we need to raise the minimum.

Comments on Gear

Infantry

-- I do think all Soldiers should qualify SLIK with iron sights. And a second qualification with combat gear and optics.

-- I think the current qualification course is good. It's a good baseline measurement for all Soldiers of their ability to shoot. I think too many rush into it though and I think that marksmanship should be taught in phases of restrictive gear. Soldiers should be free to first learn to shoot without the hindrance of body armor and a helmet. We have kind of understood this in zeroing. However firing without a helmet or body armor requires way too much approval. Too often I've seen Soldiers repeatedly fail to qualify when it's obvious they need to first learn to shoot, then add gear.

Transportation

--APPLY and ENFORCE THE ARMY STANDARD FOR RANGE OPERATIONS. Trying to qualify with all the battle rattle is nothing but a morale and confidence killer. Let the Soldiers AT LEAST build confidence in their shooting ability before making it next to impossible to shoot 34+

--Basic zero and marksmanship should be performed out of gear, while effective performance evaluation of standing, kneeling and obstacle testing should be practiced and performed in gear. BRM

familiarization and proficiency testing on the individual weapon system is more effective when not wearing gear in the prone supported and unsupported positions, while realistic scenario of standing, kneeling and obstacle training can be better evaluated when the individual is in Gear.

Target Distance and Positions

Armor

--Currently the 300m and 250m targets should be removed from the firing and replaced with 10 targets - either standing fire or a stress fire because there are not that many shooting opportunities that you would have to engage the enemy at these distances. But there are more instances that you would have to shoot from a standing position or have to place rounds properly on target in a stressful situation that most personal cannot accomplish proficiently at this time due to a lack of practice

Aviation

--Aviation Soldiers don't need the kneeling fire position, the kneeling training is good however I can't think of a time it would be needed. As a crewmember I fire from behind obstacles and if worse came to worse I would have to shoot and move on moving targets

Electronic Maintenance

--Targets at ranges beyond 200 meters are unrealistic for Soldiers to effectively engage. Advanced Marksmanship should include those targets, along with the trajectory and correction for weather conditions.

Field Artillery

-- Qualifying should only be done at a set distance that is MOS specific, and should only be done with 20-30 rounds between multiple magazines.

-- Firing positions that include a cover system, running from cover to cover, and firing right after dismounting a vehicle.

Engineer

--Targets should be at further distances. A new firing order should be implemented in which there is a specified time and all targets up until hit and Soldiers rapid fire until end of time limit. Also firing order in which Soldiers are moving toward enemy.

-- I believe the 300 meter target is just there so we can award fairly from Marksmanship to Expert, but is not likely to engage a target that far in combat; Unless you are in a SKT {small kill team} or a set up firing position. My point is that we can keep it for qualification purposes but focus more on the 200 and less meters before deployment.

Infantry

--Yes, there was NEVER a time while deployed that I had to fire my weapon the way the Army taught me. I was always running, standing, shooting through windows, building, and vehicles. The Army needs to teach all of this and train hard on it.

Transportation

--Eliminate 300M target range. No one has a prayer of hitting a target in a combat situation at that distance without a scope. Make the qual range more challenging from an action standpoint. Incorporate magazine changes. All stances should be UN supported and STANDING should be added. OR.... scrap it all, START OVER, AND JUST COPY THE MARINE CORPS!!! Those guys can SHOOT and do so consistently WELL!

Targetry Plus

Infantry

--Targets should be randomized per iteration to cut down on gaming and ambushing the target. The point of a pop up is that the shooter has to detect and then engage. If a spotter calls the next target before it comes up, well let's quit faking the funk and just fire alt-C.

-- Incorporate targeting lethal hits, versus merely having the round impact the target. Incorporate transitioning drills between primary and backup weapon (i.e. pistols). Incorporate shooting while on the move.

-- Should have specific engagement zones on targets instead of hit and drop targets that are current. Should increase engagement distance from current 300m to further distance, stress accuracy. Short range qualification lacks in alternate firing positions, adhere to a time limit that tests a candidate.

More Than One Qualification: Infantry Responses - A Second or More Difficult Qualification

Infantry

--I believe one of the most important things we can improve is shooting at longer ranges. Different firing positions need to be tested. We teach prone unsupported firing positions when that would imply that you are shooting without cover. We should always reinforce the idea of using and shooting from cover and how to do so effectively and accurately. There needs to be multiple qualifications. A distance qual where accuracy is stressed over time. Then a skill qual similar to the current course of fire but adapted for the modern battlefield with barrier shoots, mag changes, malfunction clearances.

-- I think that it is a good qualification course for other branches and MOS's, but that it is not nearly difficult enough for Infantry branch. It should more resemble the Marine Corps standards, and include moving targets at different distances.

-- That one is the basic standard. Infantry Soldiers should have a much higher level of capability and skill-set in weapon usage and tactics and as such, any additional marksmanship and weapon training is a welcome addition to my Soldier's capabilities

-- The current qualification for ALL Soldiers should not initially change. There should be a separate test for infantry Soldiers, however, that will engage the enemy in multiple ways primarily with small arms fire. I find it strange that all other branches that engage the enemy with direct and indirect fires, including Armor, Artillery, and Special Forces, have their own qualifications for the specialized shooting skills unique to them, but the infantry does not.

-- Once initial qualification is complete; range operations should consist of firing from alternate positions, changing mags, having short mags, etc. Engaging targets while maneuvering should not be

encouraged. Engaging targets to destroy is different from engaging targets to suppress. This should be determined by METTTC and the T & P given to a unit.

Redesign of Qualification Course

Infantry

--More targets. Break qual down into defense and offense lanes. Defense lanes have longer ranges and more supported positions. Offense lanes have shorter ranges, faster exposure and movement to different, less supporting positions

-- All of them, time needs to decrease for the longer targets, requiring Soldiers to speed up the process of acquiring, shooting and scanning. Next the program itself should be set up to randomize the targets every time. Being able to memorize exactly what target comes up next is not helping anyone. Each lane should have the ability to pop up specific targets at random, but the outcome remains the same throughout all the lanes. Now shooting from the prone during qualification is almost outdated, Combine BRM and ARM together. Changing positions from barricades to standing, prone, kneeling, etc.

-- Targets should not go down with one hit, but should require random number of multiple hits. Soldiers should fire until the target goes down. Round count should not be used as grading criteria, but rather time to kill the target.

- Course must include moving targets, not just one or two but a significant portion should be moving targets.
- Course must require Soldier to move and to engage targets while moving.
- Course must incorporate non-dominant shooting and multiple shooting positions.
- Course must involve magazine changes and malfunctions.

Table L6

Percentage of Leaders Who Commented on Question S10 (Changes to Qualification)

Branch	Leaders Who Commented
Branches With More Than 20 Respondents ^a	Number and Percentage
OS (Signal and Military Intelligence)	9 (41%)
Infantry	94 (38%)
Engineer	42 (36%)
Aviation	18 (29%)
Air Defense Artillery	7 (26%)
Armor	43 (25%)
Military Police	33 (24%)
Field Artillery	34 (24%)
CBRN	16 (23%)
Ammunition	16 (22%)
Mechanical Maintenance	49 (19%)
Quartermaster	23 (16%)
Transportation	15 (11%)
Branches With Less Than 20 Respondents	
Medical	1 (100%)
Civil Affairs	1 (50%)
Multifunctional Logistician	3 (38%)
Electronic Maintenance	4 (36%)
Finance	1 (20%)
Adjutant General	No comments
Total (1636 respondents)	409 commented - 25%
	1227 did not comment – 75%

Note. Includes all leader branches/categories, not just the ones with more than 20 respondents. Military Intelligence and Signal combined to be consistent with categories used in body of report.

^a Ordered from high to low by percentage of leaders who made comments.

Appendix M

More Complex Course-of-Fire

Question S11: Do you think a more complex marksmanship course of fire (more complex than qualification) should be required of Soldiers in your branch or MOS/CMF?

(If you think a more complex course is a good idea, indicate the core skills you think are important. If you think a more complex course is not needed, please type “no.”)

Question S11 on a more complex course of fire was preceded by a question regarding whether qualification should be changed. In that question examples were cited to give leaders an idea of what was meant by changes (different firing positions, targets at different distances, standards). It appears that some leaders referred to some of these possible changes when answering Question S11 on a more complex course of fire.

Who Commented

As indicated in Table M3 (which reflects the number of leaders with positive answers including just “yes” with no elaboration and eliminates all others), 33% of all the 1636 leaders taking the questionnaire responded affirmatively. The highest positive response rate within a major branch was Infantry (56%) and the lowest was Transportation (14%).

Contents of the Comments

Not all responses were considered valid, as some comments were irrelevant and others did not reflect either a positive or negative response (e.g., “none” or “na”). Valid responses were provided by 75% (1232 of 1636) of the leaders; they directly answered the question either positively or negatively. Considering this 75%, less than half the leaders indicated that a more complex course of fire was needed (548 of 1232 or 45%), while more than half indicated it was not needed (684 of 1232 or 55%). The major categories used to classify the positive comments are in Table M1 with details in Table M2. The few comments that explained reasons for why a “more complex course of fire” is not needed follow Table M2.

When comparing the positive vs. negative responses within each branch, clear differences emerged among the branches regarding the need for a more complex course of fire. The basic pattern is presented in Table M1 below with only one branch, Infantry, where substantially more leaders (27%) thought more complex course was required. In only two other branches did proportionately more leaders think a more complex course-of-fire was needed (Armor and Engineer). Clearly leaders in some branches did not think complex course-of-fire was required (e.g., Air Defense Artillery, Quartermaster and Transportation).

The percentages in Table M1 do not add to 100% for each branch because some leaders’ answers were not responsive to the question. If all the nonresponsive comments were considered as indicating a more complex course was not required (in addition to the negative comments), the only branch where proportionately more leaders favored a more complex course was Infantry.

Table M1

Leader Preferences for a More Complex Course of Fire: Percentages Indicating Required vs. Not Required

Branches Where Proportionately More leaders Said More Complex Course-of-Fire was Required				Branches Where Proportionately More Leaders Said More Complex Course was Not Required			
Branch	Required %	Not Required %	Difference % (Req minus Not Req)	Branch	Required %	Not Required %	Difference % (Not Req minus Req)
Infantry	56	29	27	CBRN	43	39	4
Armor	42	32	10	Military Police	38	33	5
Engineer	41	36	5	Aviation	40	34	6
				Mech Maint	41	28	13
				Ammunition	45	27	18
				Field Artillery	46	27	19
				OS	50	27	23
				Air Defense	55	22	33
				Quartermaster	57	17	40
				Transportation	56	13	43

Note. The Required and Not Required percentages do not add to 100% for each branch as some leaders were nonresponsive to the question or their response was ambiguous (e.g., said “none”).

Some positive leader responses reflected more than one category. Therefore the total number of comments in Table M2 (604) is greater than the number of leaders (548) cited in Table M5.

Table M2

Number of Positive Comments in each Major Category for Question S11: More Complex Course-of-Fire

Major Category	# of Comments
General Comments	(309)
• Positive	285
• Dependent on Conditions	24
Specific Recommendations	(295)
• Different Firing Positions	61
• Fire under Stress	39
• Shooting and Moving	37
• Change Magazines and/or Correct Malfunctions	32
• Moving Targets	26
• Short Range Marksmanship/Reflexive Fire	23
• Targets that allow Discrimination between Friend and Foe	21
• Long Range Marksmanship	10
• Transition Firing	10
• Integration of Firing Positions and Shooting and Moving	8
• Other Target Issues	8

Major Category	# of Comments
• Use Nondominant Hand	8
• Other	12

Summary of the Major Comments

General Positive Comments

The majority of the comments (70%) were simply “yes,” while other comments provided the rationale for a more complex course and provided insights into the leaders’ thinking on this issue. Leaders from 16 branches responded with 25% of the comments from Infantry leaders, 17% from Mechanical Maintenance leaders, and 8% each from Armor, Engineer, Field Artillery, and Military Police leaders. The comments in this category often reflected the integration of multiple skills and could not be easily placed into distinct categories. Other comments were more generic describing the perceived benefits of a more complex course.

There was no consensus regarding whether such a course should simply be required training or whether it should be part of a qualification or tested event. In addition, some leaders thought it should be a requirement for all Soldiers, while some, particularly Infantry, stressed the importance of a more complex course for their branch. Other comments indicated a more complex course of fire was a good approach, but that emphasis on the basics and fundamentals is still needed as Soldiers progress in their marksmanship training.

Some comments indicated how a more complex course would positively impact skills and confidence. Examples from Table M3 are:

Ammunition

-- Yes, the more training and higher level of difficulty the better marksman the Army will have as a whole

Armor

--Yes, will increase confidence and ability

CBRN

-- Put Soldiers into situations that are unpredictable. It will help them become more comfortable/ familiar weapon. There are some individuals that I do not trust having a weapon around me other than a firing range. Not because I do not trust them as a person, I just don't believe they understand the full capabilities of their weapons, and honestly, I think some are intimidated by their weapons.

Engineer

--Yes, should be required of all Soldiers

Mechanical Maintenance

--Yes, my MOS and for all MOS/CMF

--Yes, I do think they should be more complex and truly test our skills. NO one takes the ranges we go to here very seriously. It is nothing more than go out and get it done.

Military Police

--Essentially we need more advanced firing skills, from top to bottom

Many comments clearly reflected the impact of being deployed on the leader's perception regarding the importance of marksmanship skills. Leaders commented on the unpredictability and complexity of conflict with a more complex course providing better training for those situations; the more likely the Soldier is to survive. Leaders from non-Infantry branches indicated that their Soldiers need to possess Infantry skills because combat assignments were not always MOS-specific. Infantry leaders stressed that their Soldiers needed to be very skilled and a more complex course was needed to gain those skills. Example comments from Table M3 are given next.

Ammunition

--Yes because Soldiers are often in positions not relevant to their MOS

Aviation

--Yes, the more comfortable you are with your weapon, the more confident you feel that you will survive.

CBRN

--Yes because the modern day battlefield is now a combination of conventional and asymmetric threats. Support MOSs need to be able to clear LOCs instead of tying down maneuver assets for rear security. The proficiency will also save lives and instead of units carrying out missions that spent only 9 months to train on nonMOS tasks such as a FA unit becoming motorized infantry

Engineer

-- More complex can only help. Simple situations don't exist very often in combat; therefore we should train complex situations

-- Believe a complex course is good idea because it teaches Soldiers how to fire under different conditions. In the battlefield you can use those tactics to survive

Infantry

--An advanced qualification course would be a great tool for the commanders to use for training. A standardized advanced qual that would implement a lot of the aforementioned skills would pay dividends to the infantry Soldier in a fight.

--Being Infantry, shooting while moving, distinguishing between friendly and enemy, and shooting inside of rooms is important. At least in the 11B MOS, that should be included in our Qualification course. CQM, heavy weapons, 9m, all should be in Individual core task lists. The battle field is covered in variables that alter how Soldiers will have to shoot, we need to be able to allow the Soldiers to practice first in that same environment. I believe that in this aspect we have become risk adverse, making the more complex courses we use too easy.

--Yes, being able to adapt to different situations that combat brings to you and being able to overcome and destroy the enemy under unusual circumstances that some training can't give you

--Yes, for Infantrymen using a rifle is their job. They must be trained to be experts, through stress and repetition, not check the block training we currently utilize.

--Yes, Soldiers will not be firing qualification ranges while in combat

Military Police

--Yes, it needs to meet the challenges of war

Multifunctional Logistician

--A complex course should include sudden engagements; Soldiers in current combat conditions must often make a snap decision on someone that went from being a non-combatant to a combatant. A decision like that is life altering, especially if the Soldier gets it wrong. Soldiers should be trained on that situation so they can make the best decision possible without recrimination.

Quartermaster

--Too many logistical/support personnel have been in "infantry scenarios"; give the best training to all and have the same standard of training to all... this way we could remove the less able from the ranks

Transportation

-- Yes to keep us engaged in the importance of firing our weapons in real-life situations

Other positive comments reflected considerations regarding logistical issues and support.

Armor

--Yes, if leadership can properly implement

Infantry

--Any additional marksmanship training has benefits as long as it has quantifiable standards
--Yes, but until we can manage administrative issues, to the average Soldiers it will be difficult to proficiently train the whole concept
--Need a reward when completed (e.g, ASI or special badge)
--Yes, combat is pretty dam complex. The only way I think the Army leadership is going to pay more attention to individual marksmanship is if it becomes intensive and complex. Treat individual marksmanship like a full-on stabilized gunnery with BCT/BN effort.
--Yes. The combat field fire appears to be promising. However, small arms range availability is always an issue and such an event seems as if it would be constrained by limited resources.

Military Police

--Yes, however it could be difficult to incorporate such a change into a schedule.

More Complex Course under Certain Conditions

The primary reasons, from leaders from 9 branches, for placing conditions on whether or when a more complex course should be executed were:

- MOS determines appropriateness. Soldiers in some MOSs/branches typically do not need higher levels of skill because of their typical duty positions (e.g., Armor (19K MOS), Aviation, CBRN, Field Artillery). On the other hand, Infantry and combat arms Soldiers need this course.
- Should be required when needed ---for deployment and/or when assigned to a maneuver unit (comments by CBRN and Infantry leaders), not efficient use of resources for some MOS (Infantry leader comment)
- Emphasis should be on basic marksmanship skill proficiency before implementing something more complex (comments by Aviation, CBRN, Engineer, and Transportation leaders)

- Not required per se but should be a training opportunity (if score above a certain level in qualification) (Transportation leader comment)

Specific Skills Recommended

Most of the specific skills recommended are relatively obvious from the subheaders in the first column of Table M2. In general, the skills recommended were consistent with the leaders' comments regarding deployment training. The need for training in different firing positions than those used in the current qualification was cited by leaders in 12 branches and was the most frequently cited skill (21% of the comments). Firing under stress, shooting and moving, and changing magazines/correcting malfunctions were three other skills; each constituting 12% of the comments. Shooting at moving targets, short range marksmanship skills and discriminating friend from foe were each mentioned less frequently; each constituting 8% of the comments. These six skills were typically cited by leaders from 10 branches, indicating recognition of their importance for different MOSs/branches.

- **Different positions.** Some leaders simply commented on the importance of firing from positions that differed from those in qualification. Using various types of barriers and cover, including vehicles, was clearly the most frequent comment. Leaders also commented on the need to be proficient in firing while moving or during movement, and a few comments integrated firing during movement with being able to use barriers or cover.
- **Moving targets; discriminate friend/foe, shooting while moving, short range and long range marksmanship.** Comments on the need for moving targets and targets that allow the firer to discriminate between friend/foe or combatant/noncombatant imply a need to upgrade range facilities. To meet short range and long range marksmanship requirements could also require range upgrades or modifications. Training Soldiers to shoot while moving raises issues of range safety.
- **React to malfunctions, change magazines, firing with non-dominant hand, and switch from primary to secondary weapons.** Training these skills in a more complex course of fire is not resource intensive.
- **Firing under stress.** There are many ways of training this skill. Also what is stressful for some individuals is not for others. Comments in this category are consistent with the recommendations made for pre-deployment training.

Table M3 details the comments made by the leaders to question S11 on a more complex course of fire.

Table M3

Summary of Positive Comments to Question S11 on More Complex Course (Do You Think a More Complex Marksmanship Course-of-Fire (More Complex Than Qualification) Should be Required of Soldiers in Your Branch or MOS/CMF?)

Comment Category	# Comments by Branch	Specific Comments on More Complex Course of Fire
General Responses: 309 Total Comments		
Positive (285 comments)	2 Air Defense Artillery	<u>Air Defense Artillery</u> : Yes (2)
	9 Ammunition	<u>Ammunition</u> : Yes (6), More complex course is great idea.
	30 Armor	Perhaps additional training where NCOs and Officers can attend and bring instruction to unit level (1), Yes because Soldiers are often in positions not relevant to their MOS (1), Yes, the more training and higher level of difficulty the better marksman the Army will have as a whole (1),
	8 Aviation	<u>Armor</u> : Yes (24), In my opinion, having the ability to accurately engage targets rapidly will increase the overall marksmanship program. Down range we do not always have the option to lay in the prone or take a knee. I believe we should be trained in an environment that reflects the area we will be serving overseas. (1), Retain basic qualification course-of-fire and progress through more advanced marksmanship for base-line qualification. For example, complete initial BRM qualification with M16/M4 then move on to an ARM or reflexive fire range for unit qualification. (1), Yes, more complex course is needed to be taught (1), Yes will increase confidence and ability (1), Yes if the leadership can properly implement it (1), Yes, course of fire should give Soldier ability to engage targets at short range of 25 yards and to maximum effective range of a specific combat optic (1)
	11 CBRN	<u>Aviation</u> : Yes (6), I think a more complex course is necessary (1), Yes the more comfortable you are with your weapon, the more confident you will feel that you will survive. The more bullets you send down range, the more comfortable you will feel (1)
	2 Electronic Maint	<u>CBRN</u> : Yes (8), Yes, a great idea (1), Put Soldiers into situations that are unpredictable. It will help them become more comfortable/ familiar weapon. There are some individuals that I do not trust having a weapon around me other than a firing range. Not because I do not trust them as a person, I just don't believe they understand the full capabilities of their weapons, and honestly, I think some are intimidated by their weapons. (1), Yes because the modern day battlefield is now a combination of conventional and asymmetric threats. Support MOSs need to be able to clear LOCs instead of tying down maneuver assets for rear security. The proficiency will also save lives and instead of units carrying out missions that spent
	23 Engineer	
	21 Field Artillery	
	1 Finance	
	74 Infantry	
	48 Mechanical Maint	
	1 Medical	
	2 Military Intelligence	
	24 Military Police	
	2 Multif logistician	
	14 Quartermaster	
	6 Signal	
	9 Transportation	

Comment Category	# Comments by Branch	Specific Comments on More Complex Course of Fire
		<p>only 9 months to train on nonMOS tasks such as a FA unit becoming a motorized infantry. (1)</p> <p><u>Electronic Maintenance:</u> Yes (1), Yes for all branches and all MOS (1)</p> <p><u>Engineer:</u> Yes (16), Believe a complex course is good idea because it teaches Soldiers how to fire under different conditions. In the battlefield you can use those tactics to survive (1), Good idea as long as it's the same across the board. If I have to do it, so should any other Soldier assigned to the same weapon. If I should have to do it, cooks should have to do it. MOS specific qualifications, in my opinion, seem almost discriminative. If my MOS needs additional training, it should be additional training, not qualification (1), More complex can only help. Simple situations don't exist very often in combat; therefore we should train complex situations (1), Required but not graded (1), Yes, more complex and intensive exercises (1), Yes, should be required of all Soldiers (1), Yes we should continue to retrain "basic" skills that are overlooked at times. An all encompassing proficiency test would be a good check on the capabilities of Soldiers (1).</p> <p><u>Field Artillery:</u> Yes (18), More complex training should be available, while leaving current qual the same (1), Yes, all Soldiers should be able to fill the roles of Infantry if needed (1), Yes, I think what we have now works for the basics, but things such as changing magazines and immediate action should be integrated into a type of "combat" test. We have a PT test, why not develop a shooting/combat type of certification. It would make us a much better fighting force. (1)</p> <p><u>Finance:</u> Yes (1)</p> <p><u>Infantry:</u> Yes (42), 18-series Soldiers must complete the Special Forces Advanced Urban Combat Course almost always as pre-mission training prior to a combat deployment. Failing this course carries a very real threat of removing a Soldier from an ODA. I agree with this method, as it is a difficult course and is intended to provide that complex qualification needed of any Special Operations Soldier. (1), Advanced marksmanship rather than just shooting at 40 pop up targets. Infantrymen should be expert marksman. (1), An advanced qualification course would be a great tool for the commanders to use for training. A standardized advanced qual that would implement a lot of the aforementioned skills would pay dividends to the infantry Soldier in a fight. (1), Being Infantry, shooting while moving, distinguishing between friendly and enemy, and shooting inside of rooms is important. At least in the 11B MOS, that should be included in our Qualification course. CQM, heavy weapons, 9m, all should be in Individual core task lists. The battle field is covered in variables that alter how Soldiers will have to shoot. We need to be able to allow the Soldiers to practice first in that</p>

Comment Category	# Comments by Branch	Specific Comments on More Complex Course of Fire
		<p>same environment. I believe that in this aspect we have become risk adverse, making the more complex courses we use too easy. (1), Yes, simulate a combat environment (1), I believe that a more complex course of fire is required, but it will be integrated in our own training tailored to our mission. The qualification should be more difficult and provide the baseline for all future training. (1), I think a more complicated course of fire should replace our current qualification. Specifically, engaging a target multiple times to kill, moving from firing positions to different locations and alternate positions (standing, kneeling, prone), as well as engaging targets effectively past 300m. (1), I think it should be an internal training event (1), It should be more complex and there should be a reward for those who qualify – maybe get a different badge other than expert (1), it is needed (1), it should be the same for all Soldiers (1), Of course, any additional marksmanship training benefits the Soldiers as long as it has quantifiable standards (1), The basics – many Soldiers forget the basics, and they need more advanced training as well (1), Yes needed for Infantry (1), Yes, for an Infantryman using a rifle is their job. They MUST be trained to be experts, through stress and repetition, not check the block training as we currently utilize (1), Ideally this goes for all Soldiers (1), Yes, the course of fire needs to be adopted to the modern battlefield (1), Yes, being able to adapt to different situations that combat brings to you and being able to overcome and destroy the enemy under unusual circumstances that some training can't give you (1), Yes, but again until we can manage and negate the BS rolling down hill, to the average Soldier it will be difficult to proficiently train the whole concept (1), Yes, but it should not be a punitive event, but rather a building event designed to build proficiency and increase skills, successful completion of which should result in reward i.e. ASI (1), Yes, but train up is necessary (1), Yes, but units do it anyways. Again, let units train their Soldiers and don't micromanage at the HQDA level (1), Yes, if basic individual weapons qual does not change, there should be a more complex course of fire required for Infantry Soldiers (1), Yes it should involve more than the current positions that are a part of Army doctrine to reflect real world engagements and scenarios (1), Yes, Soldiers are taught the basics when it comes to marksmanship, which is good as Soldiers need to master the basics before they move on; however, we need to provide a course for the next level of marksmanship which will teach Soldiers advanced skills and will thus make them better marksmen. (1) Yes, Soldiers will not be firing qualification ranges while in combat (1), Yes, start like we are supposed to: BRM, ARM, CQB (1), Yes, combat is pretty dam complex. The only way I think the Army leadership is going to pay more</p>

Comment Category	# Comments by Branch	Specific Comments on More Complex Course of Fire
		<p>attention to individual marksmanship is if it becomes intensive and complex. Treat individual marksmanship like a full-on stabilized gunnery with BCT/BN effort. (1), Yes, keep the basics simple; however elevating the marksmanship criteria/demands is a must – especially of Infantrymen. (1) Yes. The combat field fire appears to be promising. However, small arms range availability is always an issue and such an event seems as if it would be constrained by limited resources. Highly competent marksman are developed over time through a combination of mastery of the fundamentals of marksmanship, muscle memory of essential activities (correcting malfunctions, reloading), and practical application on the range. In essence, units need to conduct PMI (and have the time to do so) and put bullets down range. (1), Yes! The ability to group, zero, and hit multiple targets at unknown distances are skills lost! Hone these skills and the rest will fall inline. However, a better qualification course would be necessary in order to develop a more confident shooter, and accurate shooter. Focus on principles, and fundamentals as the AMU and AWG and CAT-C provides. (1), Yes, it should involve more than current positions that are a part of Army doctrine to reflect real world engagements and scenarios. Should stress accuracy, distance shooting, short distance, multiple targets at varying distances and timed shooting (1), Yes holistic approach evaluating many things besides just hitting targets, moving targets. Infantry should get a bit of extended range engagements, and more repetitions of short range fighting skills, as well as learn that there is a psychological comfort from firing... but it doesn't mean you are actually accomplishing anything .I aim more, hit more, shoot less (1), I view the ability to fully understand the weapon as important. This means that tasks such as functions checks, boresighting, bullet trajectory, etc. should be included in a course of fire (1)</p> <p><u>Mechanical Maintenance:</u> Yes (37), Yes, 91E will leave the wire if in a S&R section and wrecker qualified (1), Yes for my MOS, but also for all MOS/CMF (2), Yes make for better marksmen and more lethal force,(1), Yes, in basic training (1), Yes more war-fighting scenarios (1), Yes, simply because we are Infantry first and we need to know how to do more than just putting bullets down range (1), Yes, the harder the better (1), Everyone should be trained almost the same way. For my MOS, we probably won't see a lot of direct combat action close to the enemy like the infantry, but still knowing some of the techniques that are taught and to get those maneuvers down to muscle memory would be helpful for the combat support MOS's as well. More types of MOUT training, and maybe close quarter combat would be helpful (1), Challenging situations, not just qualification (1), Yes I do think they should be more</p>

Comment Category	# Comments by Branch	Specific Comments on More Complex Course of Fire
		<p>complex and truly test our skills. No one takes the ranges we go to here very seriously. It is nothing more than go out and get it done (1).</p> <p><u>Medical</u>: Yes (1)</p> <p><u>Military Intelligence</u>: Yes (2)</p> <p><u>Military Police</u>: Yes (14), Essentially we need more advance firing skills, from top to bottom changes (1), It is a good idea because Soldiers only fire in position and are not placed under stress. Soldiers learn the order of targets on a range. This allows Soldiers to experience combat environments since combat is not predetermined (1), It shouldn't be dictated by higher, but Yes for my MOS I agree there should be (1), Yes, because being an MP we need more stress fires (1), Yes, however, it could be difficult to incorporate such a change into a schedule (1), Yes, it needs to meet the challenges of war (1), Yes, simply because that means we would train on it more if it was a qualification (1), Yes, if your job requires these skills, it should be tested (1), Yes, as Soldiers skills develop (1), Yes Soldiers should be capable of qualifying on courses that include additional obstacles, movement, stress shoots, and potentially moving/timed exposure targets (1)</p> <p><u>Multifunctional Logistician</u>: Yes (1), A complex course should include sudden engagements. Soldiers in current combat conditions must often make a snap decision on someone that went from being a non-combatant to a combatant. A decision like that is life altering, especially if the Soldier gets it wrong. Soldiers should be trained on that situation so they can make the best decision possible without recrimination. (1)</p> <p><u>Quartermaster</u>: Yes (11), Ever changing threat, better marksmanship is needed (1), Too many logistical/support personnel have been in "infantry scenarios"; give the best training to all and have the same standard of training to all. This way we could remove the less able from the ranks (1), Yes, I have noticed that the Soldiers are less proficient at shooting when coming to the units. Shooting is a big part of being a Soldier, so we should put more emphasis on it. There is more to shooting than just pointing and pulling a trigger (1)</p> <p><u>Signal</u>: Yes (6)</p> <p><u>Transportation</u>: Yes (8), Yes to keep us engaged in the importance of firing our weapons in real-life situations (1)</p>
Dependent on Conditions (24 comments)	2 Armor 3 Aviation 6 CBRN 2 Engineer 3 Field Artillery 7 Infantry 2 Mechanical Maint 2 Quartermaster	<p><u>Armor</u>: For 19D Soldiers I believe it should be. For 19K Soldiers, believe the current standards are sufficient (1), I do not think "requiring" another course may be the right answer, but other courses in a Small Arms Marksmanship program should be available (i.e. standing fire like the Marine Corps, qualifications in Urban environment, qualifications at elevation). This will provide the Army flexibility to train for specific Operating Environments without a unit having to build</p>

Comment Category	# Comments by Branch	Specific Comments on More Complex Course of Fire
	2 Transportation	<p>a program, earn trust for that program, then communicate it well enough to get proper resources.(1)</p> <p><u>Aviation:</u> Before making it more complex, Aviation Soldiers need more time at the ranges. When we go it becomes a check the block event. People are hurried through and sent on their way. Need to become more proficient at the courses and skills we have before adding another course (1), Maybe not more complex, but we need more time at the range (1), Yes, but a single course will not fit every MOS. Aviation, Infantry or admin MOS do not require the same level of skills for example (1)</p> <p><u>CBRN:</u> Yes, more complex course is fine, but a more detailed course with more emphasis on fundamentals is probably needed more (1), Good for training, but don't feel should change current qualification (1), I would love a course like this, but don't feel it will be beneficial to chemical Soldiers unless they are assigned to combat units ,e.g, special forces (2), If there is added importance to accurate firing, then yes, there needs to be a lot more done with the current qualification process (1), Not a more complex course, just implement these proficiency training ideas into a range qualifying week or maybe a month to meet or exceed commander's intent</p> <p><u>Engineer:</u> More skills introduced but only after Soldiers become more proficient at the basics, most are not (1), Keep it simple at first, then a moderate course, then an advanced course (1)</p> <p><u>Field Artillery:</u> More so toward the MOSs that would use these skills in combat more (1), Yes for deploying units or additional training (2)</p> <p><u>Infantry:</u> For two- to three-year Soldiers who are about to be team leaders. They will pass their knowledge on to their Soldiers (1), Don't feel it should be required, however highly encouraged for deploying units (1), Most units already do this when we get past qualification. I also believe the big Army needs to stay out of small unit training; this is where problems begin (1), No not needed but should be implemented by the unit as additional training for combat readiness (1), Yes, but only for actual combat arms Soldiers. for others it would be a waste of resources (1), Yes, specifically for Infantry and other maneuver battalions (1), You could have a complex course in addition to what is already there as long as it is separate. The focus should still be put on the zero and basic qualification prior to moving to a more complex course (1)</p> <p><u>Mechanical Maintenance:</u> It is an idea; whether good or bad I'm not sure. But a more combat skills course of fire could only improve us as long as we are serving in such combat environments (1), Unit should tailor training to the missions , e.g., TRADOC does minimum qual, Airborne unit requires</p>

Comment Category	# Comments by Branch	Specific Comments on More Complex Course of Fire
		<p>more (1)</p> <p><u>Quartermaster</u>: Would not say required, but rather give the opportunity to train on it and get the understanding of the objective of the training (1), More complex, hot, but it does need to be modified to go with the current times (1)</p> <p><u>Transportation</u>: I think we need to get better with the current one before jumping into a more complex one (1), Yes, I do think that it is good, but make it as an option rather than a requirement – base the ability to take the course if the qualification score is above a certain level (1)</p>
Specific Skill Recommendations for a More Complex Course: 295 Total Comments		
Different Firing Positions (61 comments)	8 Armor 2 Aviation 3 CBRN 8 Engineer 3 Field Artillery 1 Finance 17 Infantry 7 Mechanical Maint 2 Military Police 4 Quartermaster 1 Signal 5 Transportation	<p><u>Armor</u>: Firing from cover (1), Firing from different positions (elevated, from a window, below a car, etc.) and at different targets from different perspectives (on a rooftop, in a car, etc.) should be included. The important thing to note is that this type of training should be considered advanced training and perhaps be a train the trainer for NCOs to teach the lower enlisted. (1), Firing from multiple positions vat various distances and firing from or behind obstacles (1), Firing from barricades (2), More body positions. Soldiers don't fight in three positions; fire in the urban prone (1), Shoot from behind barriers (1), Soldiers should be shown hot to fire in situation they would experience in combat – shooting from a window, behind a vehicle, while moving to cover and while standing (1)</p> <p><u>Aviation</u>: Shooting with obstacles (1), More firing positions (1)</p> <p><u>CBRN</u>: Multiple firing positions (1), Firing from “nonstandard” positions (1), Throughout my years spent down range, I have learned on my own through personal experiences and training myself how to negotiate obstacles in regards to firing upon enemy and annotating on objectives. With more training about these particular events, it would give us a great tool for success prior to deployments (1)</p> <p><u>Engineer</u>: Fire from cover (1), Alternate firing positions (1), Change positions during course of fire, from prone to kneeling to standing (1), Firing from behind vehicles, windows, etc. (2) More realistic positions (i.e., behind things when firing) (1), Use cover (1), Shooting from a tower engaging multiple targets (1)</p> <p><u>Field Artillery</u>: Fire from vehicle (1), Stand, shoot from obstacles, windows, vehicles, man-made objects (1), Yes as a 13R we place in the radar in different types of terrain. It would benefit us to be able to fire around different types of cover. The additional skills would allow us to better secure our site for security. Also being able to fire at enemies at different elevations. (1)</p> <p><u>Finance</u>: Use different barriers (1)</p> <p><u>Infantry</u>: Different positions (4), Different shooting positions behind barriers/obstacles (walls, corners, windows) (4),</p>

Comment Category	# Comments by Branch	Specific Comments on More Complex Course of Fire
		<p>Important core skills are firing positions relevant to the current scope of operations (1), Shoot from cover and concealment (1), Nonstandard firing positions (1), Standing, behind cover (1), Shooting from around obstacles in combat gear (1), Soldiers should be trained on real world engagements. These engagements many times are behind protective barriers that do not allow Soldiers to be in proper stance (1), Yes, skill such as magazine changes and malfunction clearances as well as the proper use of cover not only improve weapons proficiency and Soldiers lethality, but will also help to increase their safety on the battlefield (1), Alternate firing positions; firing from cover (1), Think all Soldiers should fire from different positions behind walls and in windows on the qualification test (1)</p> <p><u>Mechanical Maintenance:</u> Engage targets while kneeling behind cover (1), Fire from barricades (2), Fire from different positions (1), In place of standing add firing from behind an obstacle (1), Return fire using cover (1), Standing supported and unsupported, kneeling supported (1)</p> <p><u>Military Police:</u> Fire in obscured vision and unnatural positions (1), Firing with barricades (1)</p> <p><u>Quartermaster:</u> Ability to find cover (1), Standing firing (1), Shooting from different body positions and cover positions (1), Yes change – you are not going to be in the prone all the time (1)</p> <p><u>Signal:</u> Fire behind objects (1)</p> <p><u>Transportation:</u> Use vehicle as cover while dismounted (1), Firing from prone supported and unsupported, kneeling, standing, Using cover and fire from moving vehicles (1), Fire in and round vehicles (1), 88Ms should be required to qualify while in a moving vehicle (1), Modify firing positions to take advance of man-made objects, e.g., firing under a car (1)</p>
Shooting and Moving (37 comments)	1 Air Defense Artillery 3 Ammunition 3 Armor 3 Aviation 1 CBRN 6 Engineer 4 Field Artillery 10 Infantry 3 Mechanical Maint 2 Military Police 1 Transportation	<p><u>Air Defense Artillery:</u> Shooting on the move from different positions (1)</p> <p><u>Ammunition:</u> Movement when firing with team (1), movement drills (1), Shoot and move (1)</p> <p><u>Armor:</u> Fire on the move (1), Firing on the move (1), Shooting and moving (1)</p> <p><u>Aviation:</u> Course that incorporates shooting while moving (1), Movement fire drills (1), Light movement forward with lateral moving targets , not stopping in Soldiers' progression forward (1)</p> <p><u>CBRN:</u> Move between positions (1)</p> <p><u>Engineer:</u> Fire while moving (4), Bounding movements while actually engaging (1), Run through course of complicated firing position and actually run through situations (1)</p> <p><u>Field Artillery:</u> Fire while moving (2), Movement while under fire and returning fire while moving (1), Soldiers should be able to shoot and move for qualification (1)</p>

Comment Category	# Comments by Branch	Specific Comments on More Complex Course of Fire
		<u>Infantry</u> : Engage/fire on the move (9), Hit target while moving and shooting is a core skill (1) <u>Mechanical Maintenance</u> : Fire while moving (3) <u>Military Police</u> : Firing while moving (2) <u>Transportation</u> : Engage targets while moving (1)
Integration of Firing Positions and Shooting while Moving (8 comments)	1 Armor 1 CBRN 4 Infantry 2 Military Police	<u>Armor</u> : A course that requires Soldiers to engage while closing distance, engage from behind makeshift cover, and engage around obstacles while discriminating between multiple targets would be ideal. (1) <u>CBRN</u> : Weapon control while moving, ability to quickly assume an efficient position that provides maximum personal cover and engage targets effectively, the ability to engage targets from other than a prepared and comfortable position (1) <u>Infantry</u> : Multiple hits per certain targets, a movement range where a Soldier has to move from one position to another on the course and fire from behind different types of cover (1), Shooting at timed targets of various distances, from around or behind cover while moving (1), Yes --with mag changes, moving between shooting locations to different barriers and shooting positions--prone supported, kneeling, resting on a barrier (1), We should have to engage while moving, behind cover, and engage moving targets (i.e., integrate realistic urban operations (1) <u>Military Police</u> : Shoot at multiple and moving targets from different positions (1), Firing while moving and incorporating a backdrop of a shoot- no shoot scenario (1)
Moving Targets (26 comments)	1 Ammunition 1 Armor 3 Aviation 3 Engineer 2 Field Artillery 9 Infantry 3 Mechanical Maint 2 Military Police 1 Quartermaster 1 Signal	<u>Ammunition</u> : Just shooting at popup targets and incorporating moving targets will give Soldiers a more battlefield reality (1) <u>Armor</u> : Moving targets (1) <u>Aviation</u> : Moving targets (3) <u>Engineer</u> : Engage moving targets (2), Should use same ranges that are used by FBI with moving targets. If the enemy was firing they would be moving most of the time to avoid being hit (1) <u>Field Artillery</u> : Moving targets (1), Yes. When we deploy and engage hostiles, we aren't always going to be shooting at a target sitting in front of us, sitting at our height. (1) <u>Infantry</u> : Core skill required – hit a moving target (2), Firing at moving targets or partly concealed (1), Moving targets (3), Lateral moving targets (1), The infantry could benefit from a mandatory moving target qualification. The course should test the Soldier's ability to rapidly identify and engage moving targets from 50 to 200m. The Soldier should be required to change positions (prone, kneeling, standing) after each engagement during the qualification with no additional time allowance given to change positions or change magazines. There should be two total magazine changes required however, round count in each magazine should be random so the Soldier

Comment Category	# Comments by Branch	Specific Comments on More Complex Course of Fire
		is caught by surprise and forced to quickly change magazines. (1), Soldiers engage threats that are not stationary at a known distance often in combat (1) <u>Mechanical Maintenance</u> : Engage moving targets (2), Engage moving targets at different elevations from oneself (1) <u>Military Police</u> : Engage moving targets (2) <u>Quartermaster</u> : Engage moving targets (1) <u>Signal</u> : Moving targets (1)
Targets that Allow Discrimination Between Friend and Foe (21 comments)	5 Armor 2 Aviation 1 CBRN 5 Infantry 2 Mechanical Maint 4 Military Police 1 Quartermaster 1 Signal	<u>Armor</u> : Multiple targets distinguish friend-foe (1), Target identification with four different color/shape targets (1), Would make the army as a whole better if personnel could identify proper targets and destroy them rapidly without collateral damage (1), Target identification (1), realistic ranges that simulate the terrain and multiple forces (friendly/civilian/enemy) on the battlefield (1) <u>Aviation</u> : Target recognition (1), Enemy weapons identification (1) <u>CBRN</u> : Target discrimination (1) <u>Infantry</u> : Target discrimination under stress shoot (1), Target discrimination is an important core skill (2), Target recognition/discrimination (2) <u>Mechanical Maintenance</u> : Detect friendly (1), Differentiate between friendly and enemy (1) <u>Military Police</u> : ID friend-foe (1), Eliminate threat without hurting civilians (2), Identify friendly forces (1) <u>Quartermaster</u> : Enemy/friendly recognition by time through popup targets (1) <u>Signal</u> : Target discrimination
Other Target Issues (8 comments)	2 Armor 1 Aviation 3 Engineer 1 Mechanical Maint 1 Military Police	<u>Armor</u> : Combat related – moving targets, close targets less exposed, unexpected targets pop up (1), More combat ranges, i.e., shoot lanes where you line up and run through a course where you engage multiple targets at different ranges using different styles of shooting at each firing point (1) <u>Aviation</u> : Pop-up target course (1) <u>Engineer</u> : If you are used to seeing the same target, either on paper zero target or standard pop-up targets, it gets to be routine. You have to challenge Soldiers with different looks and different conditions (1), Rapidly engaging targets (1), Timed obstacle courses with live-fire targets that may present themselves at a moments' notice (1) <u>Mechanical Maintenance</u> : Engage multiple threats –vehicles and vehicle based threats (1) <u>Military Police</u> : Engage multiple targets (1)
Fire under Stress (39 comments)	3 Ammunition 9 Armor 2 Aviation 3 CBRN 1 Electronic Maint	<u>Ammunition</u> : Fire under stress (3) <u>Armor</u> : Shoot under stress (5), They need to include more stress shoots. With stress, Soldiers are made aware of different life scenarios and it makes them more well-rounded Soldiers (1), Yes CQM and stress shoots have helped me learn how to

Comment Category	# Comments by Branch	Specific Comments on More Complex Course of Fire
	4 Engineer 1 Field Artillery 10 Infantry 4 Mechanical Maint 2 Military Police	<p>calm my breathing down before I take a shot. (1), Yes, a stress shoot should be involved, Running and other exercises should be conducted to try and simulate combat; running from position to position, climbing hills/mountains (as in Afghanistan), etc. (1), Yes, being able to adapt to stress and assault the course effectively (1)</p> <p><u>Aviation</u>: Reloading skills (2)</p> <p><u>CBRN</u>: Shoot under stress (3)</p> <p><u>Electronic Maintenance</u>: Stress firing should be required after completing zero and standard qualification and reflexive fire. All Soldiers should be tested the same, regardless of their MOS/CMF (1)</p> <p><u>Engineer</u>: Fire under stress (3), Yes, calm, firing is ok for qualifying but to be a better shooter there should be a stress shoot (1)</p> <p><u>Field Artillery</u>: Stress shoots (1)</p> <p><u>Infantry</u>: Fire under stress (6), More stress fires in coordination to opposite hand (1), Give the individual a stressful environment to shoot in – have explosions going off around him to try to take away his ability to concentrate and you will be able to see how a particular Soldiers will react in a real situation (1), Able to move and shoot under stress (1), Being able to shoot under stress with and without barriers (1)</p> <p><u>Mechanical Maintenance</u>: More stress_fatigue (1), Stress fire (3)</p> <p><u>Military Police</u>: Stress fires (1), Fire under pressure (1)</p>
Change Magazines and/or Correct Malfunction (32 comments)	2 Ammunition 2 Armor 1 Aviation 1 CBRN 3 Engineer 2 Field Artillery 13 Infantry 4 Mechanical Maint 1 Military Police 1 Multif Logistician 2 Quartermaster	<p><u>Ammunition</u>: Change mag in movement (1), React to weapons malfunctions (1)</p> <p><u>Armor</u>: Change mag /correct malf (1), Mag changes (1)</p> <p><u>Aviation</u>: Malfunctions (1)</p> <p><u>CBRN</u>: Malfunctions (1)</p> <p><u>Engineer</u>: Correcting malfunctions and changing magazines under pressure (1), Having to change magazines and clear malfunctions while firing (1), Rapid mag chg (1)</p> <p><u>Field Artillery</u>: Change mag and immediate action (1), Reloads (1)</p> <p><u>Infantry</u>: Malfunction corrections and rapid magazine changes (6), Reloads/Malfunctions (1), Malfunction drills (1), Magazine changes under duress (1), Quick magazine change (2), Magazine changes and correcting malfunctions should be core skills (1), Work with buddy team to cover each other during malfunctions and mag changes (1)</p> <p><u>Mechanical Maintenance</u>: Change magazines while in contact (2), React to a malfunction (1), Quick reload (1)</p> <p><u>Military Police</u>: Magazine changes while keeping eye on target (1)</p> <p><u>Multifunctional Logistician</u>: Correct malfunction, reload magazine (1)</p>

Comment Category	# Comments by Branch	Specific Comments on More Complex Course of Fire
		<u>Quartermaster</u> : Mag change, combat reload (1), Reload while qualifying (1)
Short Range Marksman-ship/ Reflexive Fire (RF) (23 comments)	1 Ammunition 7 Armor 1 Aviation 1 Engineer 1 Field Artillery 5 Infantry 2 Mechanical Maint 1 Military Intelligence 3 Military Police 1 Civil Affairs	<u>Ammunition</u> : Reflexive Fire (1) <u>Armor</u> : Add a short-range marksmanship requirement (1), Include close quarters range as a separate qualification prior to deployments (1), CQM – no reason to hit anything 300m or more away. The furthest you’ll normally fight the enemy is within 100-200m range (1), Precision close quarter marksmanship (1), SRM (1), CQM (1), Yes, engaging multiple targets at short distance (i.e., dismounts approaching a vehicle in an urban area that would limit vehicle-mounted weapons (1), <u>Aviation</u> : Reflexive fire (1) <u>Engineer</u> : Reflexive fire (1) <u>Field Artillery</u> : Reflexive fire (1) <u>Infantry</u> : CQB (2), Close quarters marksmanship (1), Soldiers should be able to accurately place rounds on targets out to 200 meters; most fire fights happen from this distance and closer. The M4 does the range to hit beyond this but the average Soldier does not have the skill, i.e., let the machine guns and snipers engage at ranges beyond 200m (1), Course of fire should give the Soldier the ability to engage targets at a short range of 25yards (1) <u>Mechanical Maintenance</u> : Reflexive fire (1), Close quarters (1) <u>Military Intelligence</u> : Absolutely! Reflexive Fire should be taught to all Soldiers in all MOSs and should be incorporated just as much as the current qualification. We currently only train every Soldier for a fight at a distance, while not preparing them for target discretion and the close quarters battle which is equally important. (1) <u>Military Police</u> : Reflexive fire (3) <u>Civil Affairs</u> : Reactive fire (1)
Long Range Marksman-ship (10 comments)	1 Ammunition 5 Armor 3 Infantry 1 Transportation	<u>Ammunition</u> : Long range and precision accuracy (1) <u>Armor</u> : Long distance firing out to 600 meters (1),_acquiring targets at long distances (1), For scouts a complex course is needed but I believe it should involve longer distance and incorporate optics such as thermal (1), Long range marksmanship (2) <u>Infantry</u> : Engage targets at ranges greater than 300m (1), Engage targets at max effective ranges of all weapons systems for qualification (1), Course of fire should give the Soldier the ability to engage targets out to the maximum effective range of a specific combat optic (1) <u>Transportation</u> : Hit targets at extended distances beyond 300m (1)
Use Non-dominant Hand (8)	1 Ammunition 2 Armor 4 Infantry 1 Mechanical Maint	<u>Ammunition</u> : Shooting with nondominant hand, loading an shooting with one hand (1) <u>Armor</u> : Off hand shooting (1), Fire with non-dominant hand (1)

Comment Category	# Comments by Branch	Specific Comments on More Complex Course of Fire
comments)		<u>Infantry</u> : Off-hand shooting (1), Alternate hand firing (1), Reaction side shooting and dominant side shooting (1), Use nondominant hand (1) <u>Mechanical Maintenance</u> : Fire with nondominant hand (1)
Transition Firing (10 comments)	1 Ammunition 1 Armor 2 Aviation 3 Military Police 2 Infantry 1 Quartermaster	<u>Ammunition</u> : Switching from primary to alternate weapon (1) <u>Armor</u> : Ability to change from primary to secondary weapons (1) <u>Aviation</u> : Transition skills (2) <u>Military Police</u> : Shoot and transition between weapons (3) <u>Infantry</u> : Transition from primary to alternate weapon system (2) <u>Quartermaster</u> : Switching from primary to secondary weapon (1)
Other (12 comments)	4 Armor 2 CBRN 3 Infantry 1 Mechanical Maint 1 Military Police 1 Quartermaster	<u>Armor</u> : Add a night fire with optics requirement (1), Multiple engagements in a timed situation (2), Short ranges for smaller caliber weapons such as 9mm, then longer ranges for high powered weapons such as m25, M14, M107, M110. Make a range or course that uses all these weapons while moving from point to point behind man-made and natural objects (1) <u>CBRN</u> : Fire with gear (1), Firing a weapon while in protective mask (at a minimum), preferably MOPP4 (1) <u>Infantry</u> : High angle firing (1), Night fire (1), As we look at levels of shooters we identify 4 separate levels --- 0 the basic trainee, 1 the new Soldier can hit the target, 2 the seasoned Soldier and team leader can hit a spot on the target, 3 senior team leaders and squad leader can teach 0 and 1 to do their task, 4 post squad leader and PSG master of skill and foundation and can teach and train marksmanship coaches and are a full marksmanship instructor. We need an instructor granting body within the Army to give level 4's an SQI or SSL. (1) <u>Mechanical Maintenance</u> : Yes, have 2 different ranges – one that is the normal popup targets and the second with moving targets of 200m and below including friendly forces (1) <u>Military Police</u> : Engaging multiple targets (1) <u>Quartermaster</u> : Hit three or more timed targets in sector of fire; hit shorter exposure times than in current courses of fire (1)

Table M4 summarizes the number of leader comments in major categories (at least 20 comments) by branch on specific skill recommendations for a more complex course-of-fire (reference Table M3). In this table, the Signal and Military Intelligence branches are reported separately. Other branches with fewer than 20 individuals are not included.

Table M4
Number of Leader Comments on Qualification Course as a Baseline

Branch	Different Firing Positions	Shooting & Moving	Moving Targets	Target Discrimination	Fire under Stress	Change Mags/ Mal-function	SRM	Total
Air Defense	0	1	0	0	0	0	0	1
Ammunition	0	3	1	0	3	2	1	10
Armor	8	3	1	5	9	2	7	25
Aviation	2	3	3	2	2	1	1	14
CBRN	3	1	0	1	3	1	0	9
Engineer	8	6	3	0	4	3	1	25
Field Arty	3	4	2	0	1	2	1	13
Infantry	17	10	9	5	10	13	5	69
Mech Maint	7	3	3	2	4	4	2	25
MP	2	2	2	4	2	1	3	16
Quartermaster	4	0	1	1	0	2	0	8
Transportation	5	1	0	0	0	0	0	6
Signal	1	0	1	1	0	0	0	3
Military Intell	0	0	0	0	0	0	1	1

Note. Abbreviations. MP stands for Military Police; SRM stand for short range marksmanship

Reasons for Negative Responses

A total of 676 leaders said “No” and an additional 8 leaders elaborated on their reason for “No” – making a total of 684. The primary reasons for opposition to a more complex course of fire were lack of range resources, Soldiers not prepared for greater complexity, and not needed for wartime mission. The specific reasons were:

Air Defense Artillery

- Completely unnecessary
- Not for our wartime missions

Engineer

- I think the Army is not ready for a more complex course
- No, some Soldiers have a hard enough time with basics. Let competent NCOs conduct ARM training for Soldiers who have qualified with their assigned weapons

Field Artillery

- No, complexity and critical thinking comes with more and more training which is something we do not have. When Soldiers become proficient with the standards (basics) then we could probably incorporate scenarios with complex and critical thinking situations

Military Police

- Not necessarily because we do have law enforcement specific ranges

--We have to qualify every quarter with an M11 and MP5. We have to do this at a civilian gun range which we have a limited amount of time and pay \$300 in taxpayer funds each visit because Fort Belvoir has no weapon ranges and we are not a tenant unit on Quantico. All of this is good for a BCT on Fort Bragg with money and access to training ranges, but before any change of this sort is implemented we have to look at the impact across the entire Army. The Army training system is broken and needs fixing, but adding more requirements to units is definitely not the answer.

Multifunctional Logistician

--Ranges need to match combat exp. Do not have the ranges to match what I have seen over the last 10 years. Therefore, trainers and combat veterans cannot fully mentor Soldiers because of unrealistic training

Table M5

Percentage of Leaders who Commented on Question S11 With Other than a “No” or “None” or Irrelevant Response (Do You Think A More Complex Marksmanship Course-of-Fire [More Complex Than Qualification] Should be Required of Soldiers in Your Branch or MOS/CMF?)

Branch	Leaders who Commented Positively
Branches With More Than 20 Respondents ^a	Number and Percentage
Infantry	138 (56%)
Engineer	50 (41%)
OS (Signal and Military Intelligence)	9 (41%)
Armor	72 (42%)
CBRN	28 (39%)
Aviation	21 (34%)
Military Police	45 (33%)
Mechanical Maintenance	73 (28%)
Ammunition	20 (27%)
Field Artillery	39 (27%)
Air Defense Artillery	20 (22%)
Quartermaster	25 (17%)
Transportation	18 (14%)
Branches With Less Than 20 Respondents	
Medical	1 (100%)
Civil Affairs	1 (50%)
Adjutant General	1 (50%)
Multifunctional Logistician	3 (38%)
Finance	2 (40%)
Electronic Maintenance	4 (36%)
Total (1636 respondents)	556 commented – 34% 1080 did not comment – 67% Of the 556, 8 were elaborations on a “no” response, making for 548 favorable responses or 34% of the total 1636.

Note. Includes all leader branches/categories, not just the ones with more than 20 respondents. Military Intelligence and Signal combined to be consistent with categories used in body of report. Includes all comments

^a Ordered from high to low by percentage of leaders who made comments. Each branch percentage based on number of leaders in that branch who responded to the questionnaire.

Appendix N

Additional Comments on Marksmanship Training and Resourcing Marksmanship Training

Question S13: Please use this space for any other comments you have about the training of and resourcing the training of marksmanship skills in units

This question was the last question in the questionnaire, and was included to allow leaders to comment on any aspect of the training of marksmanship skills and resourcing of marksmanship training in units which they felt had not been covered in the other questions. Although a diversity of comments was expected, the response rate was not expected to be high.

The immediately preceding question was on the value of a system like LOMAH for training. When answering the last question, some leaders mistakenly interpreted it as pertaining to LOMAH. The immediate preceding question only required a “Yes” or “No” response regarding whether a range immediate feedback system would be beneficial. The LOMAH-related question was as follows:

S12. Would a system which provides immediate feedback on the location of each target hit and miss to the firer at the firing line be beneficial for zeroing and training marksmanship skills?

Additional information: Such a system would provide more than the usual “hit/miss” feedback. It would graphically show the firer where the target was hit (e.g., head shot, center of mass) as well as the location of misses relative to the target (e.g., to the right or left of target, high right of target). It could also be calibrated to score hits within designated areas on a target (e.g., for zeroing at different distances). Because the feedback would be presented at firer’s position on the firing line, firers would not need to walk down range during zeroing.

Instructions: Check “yes” or “no” regarding whether you think such a system would be beneficial. Yes No

Who Commented

Only 11% of the leaders commented. Within the branches, Infantry leaders provided the most comments (23%). However, only 5% of leaders within the Quartermaster and Transportation branches commented (see Table N3).

Content of the Comments

As shown in Table N1 the major topics covered were: use simulators primarily the EST 2000, qualification, resourcing of ammunition, management of time and resources by unit leadership, reactions to the possibility of a location of miss and hit system (LOMAH) on live-fire ranges which was cited in the prior question, and marksmanship trainer issues. Lastly there were some comments that focused on a specific MOS or were unique comments. They are presented after Table N2.

Table N1

Number of Comments in Each Major Category for Question S13: Any Other Comments You Have About the Training of and Resourcing the Training of Marksmanship Skills in Units

Major Category	# of Comments
Marksmanship Simulations	(19)
• Positive Reactions	4
• Mixed Reactions	6
• Negative Reactions	9
Qualification	(12)
Resources and More Training	(45)
• Ammunition	28
• Management of Time and Resources	17
Comments That Referenced Prior Question (S12) on a Location of Miss and Hit (LOMAH System on Marksmanship Ranges	(44)
• Positive Responses	30
• Mixed Responses	9
• Negative Responses	5
Trainer Issues	(7)

Summary of Major Comments

Marksmanship Simulators. There were fewer positive comments than negative or mixed (positive and negative) to the use of simulators. Of interest, is that both positive and negative comments were applied to the EST 2000, which was the most commonly cited simulator.

Qualification. Some comments were that qualification was a check-the-block type training or that the only time the unit went to the range was to qualify and more training was needed. A few comments indicated that Soldiers repeatedly fired qualification yet failed to qualify, with no opportunity for follow-up training to remedy this deficiency or no consequences for failing to qualify.

Resources and More Training.

Ammunition: The need for increased ammunition was from several branches ($n = 7$) with the largest percentage (43%) from Infantry leaders. All leaders voiced concerns that insufficient ammunition results in insufficient training (Soldiers not really proficient with weapon, do not know how to put effective rounds on targets, need to learn skills without worrying about qualifying). For some, current ammunition allocations means that they only go to the range to qualify. One leader commented on what he had observed when ammunition was reduced, specifically when training time and/or resources were reduced, the proficiency of his Soldiers suffered.

Management of time and resources: The largest percentage of responses in this category was from Infantry leaders (59%) which focused on the need to improve marksmanship training by setting priorities. To illustrate, one Infantry leader comment was:

-- There is probably no other skill in the Army that gets more lip service and less real action than marksmanship training. Commanders always emphasize marksmanship training, then fail to allocate necessary training time within their calendars. There is also a culture of acceptance for Soldiers that do not meet even the initial requirements for marksmanship training as units get impatient with Soldiers who struggle. Once these Soldiers fail, their chain of command often fails to re-train them. It is a culture that needs to change.

Other leaders also commented on the need to make marksmanship training a priority, with other taskings often taking priority. Priorities were viewed as particularly important for those leaders who recognized the potential for cuts in resources with future budget cuts.

LOMAH. The majority (68%) of the comments (from 9 branches) were positive; this included leaders who had used LOMAH in the past. Positive comments from Infantry leaders constituted 40%. Mixed responses typically indicated LOMAH is a good training capability but had concerns regarding cost, system reliability, or adequacy of the technology.

Trainer Issues. Comments acknowledged that good trainers were critical to marksmanship training, and leaders did not feel there was a solid training solution to this problem. Several recommended the US Army Marksmanship Unit Mobile Training Team as a solution.

Table N2

Summary of Comments to Question S13: Additional Comments on Training and Training Resources

Comment Category	# Comments by Branch	Specific Additional Comments
Marksmanship Simulations: 19 Total Comments		
Positive Reactions (4 comments)	1 Armor 1 Aviation 1 Field Artillery 1 Infantry	<u>Armor:</u> Conduct training using either paint ball or simmunitions (1) <u>Aviation:</u> Could use an EST training at JBLM (1) <u>Field Artillery:</u> More EST trainers (1) <u>Infantry:</u> Every installation should use the EST because it can show you exactly the faults each shooter has when shooting (1)
Mixed Reactions (6 comments)	1 Aviation 1 Infantry 2 Mechanical Maint 2 Quartermaster	<u>Aviation:</u> It's pretty good in most units, but it could be much better. Here at school on Ft. Eustis the EST training we went through was jaw dropping good. I wasn't aware the EST was that capable (1) <u>Infantry:</u> EST2000 is a great marksmanship trainer. highly unused and when used isn't used properly. This tool provides that digital feedback of where the shot strikes the target and more importantly, shows all the functions of the shooter when they fire the rifle. breathing, movements, wiggle, and jerking.(1)

Comment Category	# Comments by Branch	Specific Additional Comments
		<p><u>Mechanical Maintenance</u>: EST – good tool for learning but not for qual (1), EST helpful but should not replace live fire (1)</p> <p><u>Quartermaster</u>: EST is a great system, but scenario need to be updated (1), The Army has a simulator called the “Weaponer”. It works great; units just have to use it correctly and often. (1)</p>
Negative Reactions (9 comments)	1 CBRN 3 Infantry 4 Mechanical Maint 1 Military Police	<p><u>CBRN</u>: There is no need to computerize everything; you are making Soldiers lazy mentally and physically (1)</p> <p><u>Infantry</u>: Do not replace real shooting with a video game version (1), First off the EST is garbage... It’s not their weapon therefore it will all adjust. If we can get a system where they attach their personal weapon to it and practice zeroing the individual will have more confidence in himself and his weapon when it comes time to go shoot. (1), While in SLC I have spoken to conventional Army PSG and their utilization of using a computerized marksmanship training simulator. The Army needs to scratch this so called "simulation". Because end of the day it is only a simulation. Dry fires and actually shooting and seeing your target feedback on paper is where the most value of training will be gained.(1)</p> <p><u>Mechanical Maintenance</u>: EST is not that great of a tool, simply because is not as accurate as it should be. Also feel that the technology in the EST is out of date (1), More range training instead of EST (2), Do not use EST for qual (1),</p> <p><u>Military Police</u>: Do not believe an EST environment gives that feel of shooting live rounds down range. If could pull targets from downrange to show the Soldier that is one thing, but not sacrificing the actual shooting. EST being training aid or not, I do not believe it does true justice as it continues to malfunction not allowing true feedback but an estimate. (1)</p>
Qualification: 12 Total Comments		
(12 comments)	1 Armor 1 Engineer 7 Mechanical Maint 1 Medical 1 Military Police 1 Signal	<p><u>Armor</u>: I do not believe we should replace the current system for basic qualification, however adding the training for pre-qualification and the advanced precision and close combat fire training to a post qualification training schedule would be greatly beneficial to the force. (1)</p> <p><u>Engineer</u>: I think Soldiers who cannot qualify at least the 2nd time with their weapon need to be put out of the Army. I have watched time after time Soldiers expend rounds trying to qualify 4 and 5 times in a day and still leave the range unqualified. It’s a waste of ammo for other Soldiers to use at other types of ranges. (1)</p> <p><u>Mechanical Maintenance</u>: Qualifying in a unit has become a check the block situation. no additional training what so ever. Soldiers do not qualify and are sent back to the unit, also Soldiers barely qualify and then they kicked out of the range,</p>

Comment Category	# Comments by Branch	Specific Additional Comments
		<p>another issue is money, always money, never have enough rounds to fire additional times to even qualify if you are still not within standards. (1), Units should qual with iron sights then optics, not either. Soldiers should be familiar with all optics but qualified on primary optic and iron sights (1), I just think any additional training besides the semi-annual qual on the M16/M4 should be added (1), Mobile training teams to maintain integrity of marks qual (1), More than just qual twice a year (1), Marksmanship is a skill that most Soldiers never master very well because the only time we go to the range is to qualify. The last time I checked, everyone in uniform is an Infantryman first when in combat, but we don't have the marksmanship skills needed to perform when we need to because of the lack of trigger time.(1), We need to be more as if we are in the fight. I would like to see more training done like we fight it is too easy to get 37 or better at the ranges we go to now. Make the courses more to where you need to challenge and apply yourself (1)</p> <p><u>Medical</u>: Have seen some guys go through shooting to qualify 10 times until they finally hit enough targets to qualify. People need to learn how to qualify once with at least iron sights before they try to add an optic of any type. Some in units don't know the proper way to sight in all the cool guy optics and accessories like lasers.(1)</p> <p><u>Military Police</u>: In TRADOC units (MP OSUT), not sufficient ammo to conduct qual (1)</p> <p><u>Signal</u>: Should zero and qual every 3 months (1)</p>
Resources: Ammunition and More Training: 45 Total Comments		
Ammunition (28 comments)	1 Ammunition 4 Armor 5 Engineer 3 Field Artillery 12 Infantry 2 Quartermaster 1 Transportation	<p><u>Ammunition</u>: The current lack of training and resources for marksmanship skills in units is devastating to us. More rounds expended in combat means fewer rounds expended in combat. Fewer rounds expended in combat mean fewer friendly/HN casualties, a smaller logistics load and smaller expenses for unneeded deaths. (1)</p> <p><u>Armor</u>: Conducting these training events would require more ammunition than my unit was allowed (1), Funding for additional ammunition (1),</p> <p>I think the best improvement to current marksmanship is simply more. More PMI, followed by more range time. The more Soldiers fire in a controlled setting with proper instruction and coaching the better the Soldiers will be at firing. The more types of ranges/engagements Soldiers are exposed to the better the experience and preparation. Simply going to the qualification ranges twice a year is nowhere near enough to stay up on marksmanship training. All Soldiers should be firing live rounds in some fashion at least once a month. even more if in combat arms.(1), More real bullets and more range time equals better trained Soldiers (1)</p>

Comment Category	# Comments by Branch	Specific Additional Comments
		<p><u>Engineer</u>: More ammo and more range time – always beneficial (1), More ammunition needs to be allocated for Soldiers to become comfortable firing the weapon in the first place without worrying about where the bullets are going (1), More supply of ammo, more practice (1), More time and more ammo (1), The STRAC generally advises a lower amount of ammunition that is needed (which a lot of people reference before they order ammunition for a qualification exercise). Especially for non-maneuver units. Therefore the unit commanders have a much harder time achieving the necessary percentage requirement for their unit's readiness.(1)</p> <p><u>Field Artillery</u>: Soldiers need more time on the range versus spending time in classes on rape, etc. Leaders need to find a balance when determining what skills their unit lacks (1), Units should be allowed more time on ranges, not just once a year to check to block but once a quarter (1), Would need to have more ammo allocated for a bi-monthly just free shooting ranges so Soldiers can get to know the weapons and sights without having to worry about qualifying (1)</p> <p><u>Infantry</u>: Fire more KD courses (1), For infantry, you don't need a platoon of snipers. You need a platoon that can effectively destroy or neutralize a target without expending all their ammunition. In a firefight, all the technical knowledge goes out the window. All that matters is knowing how you shoot. Inundating Soldiers with too much knowledge is not productive. Instead, get them out on the range more, shooting in unfamiliar circumstances so they REALLY know how to manipulate that weapon system. Infantry should be going to the range at least once a month. (1), Keep us on ranges. Shooters need to shoot period (1), More ammo needs to be allocated to marksmanship training. LFXs are sexy and look good, but we should not dedicate tons of ammo to these exercises if the marksmanship training prior is being raided for ammo. Being able to fire and maneuver as a unit is important but that can be trained either dry or with blanks. Putting effective rounds on target can only be trained with real bullets. The only thing live rounds add to training is loud noises. We can accomplish that with blanks. With upcoming budget cuts and resourcing issues leave the live ammo for marksmanship training. (1), Upcoming budget cuts and resourcing issues – leave the live ammo for marksmanship training (1), More ammo to shoot and more range access (1), More ammo (1), More time and resources must be given for marksmanship. Soldiers should be shooting at least once a week (1), Future time must be spent on shooting (1), Shoot, shoot, shoot – the Infantry needs to shoot more (1), We need more ammo and range time (1), If you are training appropriately, you need bullets and will need</p>

Comment Category	# Comments by Branch	Specific Additional Comments
		barrels and parts for rifles that should be getting worn out due to the amount of firing that must be done. If this isn't a priority, then we are tying our hands behind our backs. (1) <u>Quartermaster</u> : Marksmanship is a key Soldier skill. Most are not proficient enough with these weapons due to lack of exposure (1), More often, more complex (1) <u>Transportation</u> : More trigger time for guard units (1)
Management of time and resources (17 Comments)	1 CBRN 1 Engineer 10 Infantry 2 Mechanical Maint 1 Mil Intelligence 1 Military Police 1 Quartermaster	<u>CBRN</u> : Marksmanship takes a back seat in my TDA, reserve, and guard unit due to redundant Major Command and Army policies resulting in repeated training on the same topics over and over with little time for marksmanship left. Many topics like SHARP, EO, and suicide need to be addressed but not once per quarter. All the training in the world will not make leaders actually act, only holding them accountable will (1) <u>Engineer</u> : Ability to take a squad to the range at a time instead of whole platoon or battalion (1) <u>Infantry</u> : Additional time for advanced marksmanship training (1), The STRAC needs to be pushed more on the officer side of the house, most Leaders do not use this for training plans, and consider that it is an ammo document; when in fact it is not, and its basic purpose is to outline what commanders must do in their respective organizations (1), Priority should be placed on achieving the basics at ranges 10-300 meters, under stress. Most of what we do incorporates these basics, it just needs to be combined with physical stress, and blended together better to maximize training time use.(1), Stop coming up with gee-whiz bang simulators for basic rifle marksmanship and land nav and other things like that. Light infantry need more time and ammo on the range. Also, civilian range control needs to calm down and let commanders assume risk in their training plans. The Army should not be having civilians dictate our training. We know what's best, not retired whoever. Reduce unnecessary paperwork for range control, give us ammo, and let us train. (1), There is probably no other skill in the Army that gets more lip service and less real action than marksmanship training. Commanders always emphasize marksmanship training, then fail to allocate necessary training time within their calendars. There is also a culture of acceptance for Soldiers that do not meet even the initial requirements for marksmanship training as units get impatient with Soldiers who struggle. Once these Soldiers fail, their chain of command often fails to re-train them. It is a culture that needs to change.(1), My unit promotes people too fast without them first knowing properly how to use a weapon or optic, thus not allowing the Soldiers to know how to as well. Part of a promotion board should include ranges where you

Comment Category	# Comments by Branch	Specific Additional Comments
		<p>demonstrate proficiency with each weapon you will control at the team leader level. (1), I have encountered many senior leaders in the Army who are unwilling to change their training techniques and adapt to updated methods. Until our senior leaders are willing to let junior leaders go out and train Soldiers without micromanaging them and requiring constant reporting, we will continue to be hamstrung by outdated methods. (1), It's not "marksmanship." It is the martial art of fighting with small arms, which is a career long pursuit that encompasses much more than just the fundamentals of marksmanship. Much can be done with just changes in philosophy, changes in understanding and education...even with current resources. Simulations get a lot of praise, however repetitive dry practice transitioning to live fire would create a vast improvement on its own, probably a bigger improvement than a great simulator, but no investment in the Soldiers' personal software. Our problems are those of priorities and understanding.(1), Marksmanship training is only as good as the time, standards and resources the units commander prioritizes for his men. This has to come from the top down in order to be changed. (1), My Rangers were trained to standard when we had the time and resources available to conduct the training. When training time is cut into for taskings or resources (land/ammo/time) is not available, then the proficiency of my Rangers suffered. Soldiers will be better trained when their leaders have the time and resources to train them. There is no secret qualification course or gunnery table that will solve the marksmanship problems. Additionally, with the budget issues, I realize that we are trying to figure out a way to do "more" with "less" however marksmanship requires trigger time. (1)</p> <p><u>Mechanical Maintenance:</u> Support Soldiers should be given most of the same weapons training that Combat Arms Soldiers receive, as many support Soldiers have been in or could be in a position to engage the enemy. (1), There is almost no time to advance in marksmanship. Missions to support the country and or post come up all the time. There should be a system in place, where you can just go to a range where personnel are assigned to those ranges who are qualified to run them and hand out ammo. Going twice to the range a year is checking the block. (1)</p> <p><u>Military Intelligence:</u> We should drastically reallocate our training resources such that all Soldiers are proficient in their assigned weapon. However, since that won't happen, we should prioritize range time and ammunition for infantry and cavalry units. Other training should still be 10 level tasks, including boresighting optics, reloading under stress, dry-</p>

Comment Category	# Comments by Branch	Specific Additional Comments
		firing, etc. (1) <u>Military Police</u> : Allow commanders and units to have more flexibility in conducting "realistic" weapons training. Training with simunitions should be given more funding as weapons proficiency is better tested when an enemy combatant is shooting back. (1) <u>Quartermaster</u> : Train with primary and secondary weapon (have seen multiple people actually have a weapon assigned while in Iraq/Afghanistan they had no training on, no idea how to use properly, not qualification on and no knowledge of how to load/function check/clear!!) (1)
Comments Referencing Prior Question (S12) on a Location of Miss and Hit (LOMAH) System on Marksmanship Ranges: 44 Total Comments		
Positive Response (30 comments)	3 Armor 4 Aviation 2 CBRN 4 Engineer 12 Infantry 1 Mechanical Maint 2 Military Police 1 Multif Logistical 1 Transportation	<u>Armor</u> : I have used the immediate feedback ranges and they are amazing. Please more of them (1), Squad/team leaders should be able to see where every shot fired at a range hit the target to enable them to identify and correct Soldiers' deficiencies (1), Using the hit and miss system is good (1) <u>Aviation</u> : You need to be able to see where you missed on your own and correct it, not have somebody tell you – there might not be someone next to you all the time (1), Targets that provide feedback such as metal targets (1), Suppression fire can be just as useful as a hit (1), This is a good idea. Walking downrange can take up valuable firing time (1) <u>CBRN</u> : I believe seeing where your rounds hit give a firer a chance to see their mistakes and adjust during qualification. In turn a Soldier who may not qualify may do so after adjustments. Better methods of qualifying would give each Soldier more round to get familiar with their weapon and may reduce in the long run the amount of rounds used, it may also save the Army funds that it can use somewhere else. (1), Use of a marksmanship book while firing will help with this. This would be easy to employ on a KD course (1) <u>Engineer</u> : Correcting fires immediately will help stop continued mistakes in the future (1), Do that; it would shorten range time. Eliminate the confusion of "Where'd your other round go" or "What group does this hit belong to." Yeah, totally do that one. (1), I feel we do have a system that provides immediate feedback to the firer; it is digital. We need to use the virtual systems available and more live training to develop marksmanship skills. Training for skills does not necessarily need to reflect combat scenarios; although, that training is needed additionally. (1), Not having to move down range to check targets during zeroing would be very beneficial and save a lot of time for the units on the zero range. There is also the option to know if a Soldier pulled a round and exactly what round that was.(1) <u>Infantry</u> : All units should have location of miss and hit

Comment Category	# Comments by Branch	Specific Additional Comments
		<p>ranges (1), Gives the Soldier an idea of his personalized shooting techniques and ways he can adjust to fix his errors (1), Don't call me liberal, but if we could come up with a relatively inexpensive device to give real time, down range feedback on long distance ranges, or even zero ranges, the training time for each individual Soldier could be reduced meaning that each individual Soldier could get more training. MORE BANG FOR YOUR TRAINING BUCK. Pays dividends to individuals, units, Army. (1), I am currently a Drill Sergeant, and using LOMAH is where I am able to make the most of the shooters time worth it. It cuts back on down time and provides me immediate feedback so I can check after each round if need be. 25 meter zero needs to go away, or at least use LOMAH for BRM 4 and BRM 5. (1), By having Soldiers evaluated on hits to lethal zones rather than just miss, it will improve accuracy (1), LOMAH ranges are very useful in BRM, but are very limited in quantity on the post where I have been stationed (1), LOMAH ranges help give Soldiers the best feedback (1), Knowing where the round goes is good, but another component to try and add would be where the shooter was with his trigger finger, trigger pull, nose placement, butt placement, and making sure these positions don't change from one zero to the next. (1), Steel targets are great feedback and are under-utilized for safety/environmental reasons (1), The EST currently provides that feedback, and if that concept would be available on a live –fire range it would be very beneficial (1), The LOMAH range is very beneficial and needs to be incorporated at all military posts, the 25m zero is outdated. I want to see what I'm hitting at distance and zero beyond the 25m zero line (1). The use of a known distance zero range that can also give you feedback, i.e., LOMAH (1)</p> <p><u>Mechanical Maintenance</u>: Immediate feedback would be a great thing to have (1)</p> <p><u>Military Police</u>: Immediate feedback would be extremely beneficial, especially for our young Soldiers who are in a “video game” generation (1), Yes so that you could see what you are doing wrong. Like if you are up and down when breathing or left to right with trigger squeeze (1)</p> <p><u>Multifunctional Logistical</u>: A system which determines hit or miss while on the firing line would be very beneficial to the shooter....they can immediately understand and make corrections on the spot. (1)</p> <p><u>Transportation</u>: Metal targets are more beneficial than paper targets. Hearing your target goes down lets you know immediately that you are doing it right or wrong (1)</p>
Mixed Response	1 Ammunition 1 Armor	<u>Ammunition</u> : Although a system previously mentioned could be a great asset for refinement of skills, I highly encourage

Comment Category	# Comments by Branch	Specific Additional Comments
(9 comments)	3 Infantry 2 Mechanical Maint 2 Military Police	<p>beginner level firers to take the walk to see their results until they become more seasoned. A coach with a simple spotting scope would suffice for the basic and novice firers, at first, as long as the amount of time and rounds sent down range are drastically increased. This should be a monthly even at a minimum for a deployable EOD Unit. When you go from setting up demo on an IED to an immediate engagement with multiple enemy in preset firing positions, you really want to be lethal. (1)</p> <p><u>Armor:</u> The idea about graphically depicting where the shots will hit is great but instincts tell me this will be expensive and not work. Many sensors fail to work. EST 2000 is a great training tool but it cannot replace live range time because of this. It's going to overcomplicate range operations and I suspect that we'll go back to 25m known distances with the walk up occurring. A great idea IF IT WORKS. Test it on one range for over two years to see if it works. There is no need to rush to failure on this development. (1)</p> <p><u>Infantry:</u> A system that would immediately inform the shooter of the type of hit... Awesome idea, but there are better ways to allocate military funds. This idea can/should be implemented into the EST2000 and when conducting live fires, the traditional method of checking targets after the range is perfectly acceptable. Perhaps targets that reveal damage or do not pop back up after a lethal hit. (1), All in all I think that it is a lack on the leadership not knowing how to use the resources that they have properly giving the downrange feedback needed. You do not always need a LOMAH range; a KD range with a target detail works just as fine. (1), Immediate feedback for firers is a double edged sword. Firers may begin to use kentucky windage to adjust their firing rather than fix their fundamentals. A system that gives immediate feedback to the coach would be much more beneficial, as this would negate the walk down-range while not letting the firer adjust on his own without the results interpreted by an expert. Immediate direct feedback should only be used with very experienced shooters. (1)</p> <p><u>Mechanical Maintenance:</u> EST uses this information, but I can't think of a way on how it would be cost effective to use it in a 300 meter target unless it is similar to the USMC by having Soldiers lower the target behind a berm and wave a flag or use a radio for feedback. (1), If updated optics – Soldiers can view aero hits through ACOG without going down range (1),</p> <p><u>Military Police:</u> Resourcing such as project is the biggest hurdle, especially with sequestration (1), Regarding the use of assessing based on where a target is hit, priority should be made on ensuring systems are good enough and well enough</p>

Comment Category	# Comments by Branch	Specific Additional Comments
		maintained to record every hit first before advancing to more detailed technology. It is a good concept, but in execution if the technology does not work as it is designed to it will not provide the anticipated training effect (1)
Negative Response (5 comments)	2 Air Defense Artillery 1 Armor 2 Infantry	<p><u>Air Defense Artillery</u>: Feedback takes away from the hands-on portion. Hands on is how most Soldiers remember things (1), With the finance restraints going on right now and the lessening of combat, we should be worrying about other things. TA is already been cut and now we are going to spend money and time on this? Training is important but we have proven to be the best Army in the world already. Let's put our time, money and effort on doing something else. (1).</p> <p><u>Armor</u>: A feedback system isn't necessary because you can do that with binos. No need for anything new (1)</p> <p><u>Infantry</u>: Giving this to Soldiers would not help. Instead if actually getting a proper zero they would adjust point of aim. Seen it before when a Soldier walks to target. This would be not different (1), The funds required to develop such a system (which only trains the individual Soldier) would be better spent on resourcing range time for units which allows for multi echelon training. Even simple ranges train leaders at all levels. (1)</p>
Trainer Issues: 7 Total Comments		
7 Comments	4 Infantry 2 Field Artillery 1 Transportation	<p><u>Infantry</u>: The ability for a unit like the Army Marksmanship unit to make and produce Army marksmanship Instructors is the key piece of foundation and marksmanship continuity we as war fighters are missing. Giving the AMU the ability to build and teach an SQI or SSI course would greatly improve the Army's overall marksmanship capability and lethality. This foundation already exists in the AMU's Instructor Training Group, they pull marksmanship information from the world's best shooters and can relate it to a combat mindset and teach the war fighter. (1), Training the trainers is the biggest shortfall. Resources (land and ammo) is the second.(1), Units should have a designated marksmanship NCO. It should be an MTOE position. (1), Use the Army Marksmanship Unit to send MTT teams to train the trainers.(1),</p> <p><u>Field Artillery</u>: The Army should design a mobile training solution. Having flexibility would offer greater chances of training if training could come to you (1), Use the Army Marksmanship Unit (1)</p> <p><u>Transportation</u>: Most Soldiers show they have no basic foundation to work with. Additionally most NCOs have no training, experience or ability to identify and correct a Soldier's poor shooting skills. NCOs should receive formal training to identify poor fundamentals of marksmanship by qualified instructors as a part of NCOES the way the army</p>

Comment Category	# Comments by Branch	Specific Additional Comments
		used to train NCOs back in the BNCOC/ANCOC days. Performance oriented training was the standard, not on line classroom Powerpoint. (1)

Specific MOS Comments

Ammunition

--The 89Ds working in the field are all combat support and work in seriously austere environments with often limited support. We should be expected to demonstrate effectiveness.

Aviation

--In Aviation I believe that we should be trained on the M9 as a primary weapon, the M4 as our secondary and any other weapon that we might use while performing in flight at the different door positions.

Quartermaster

--Learn to react from a vehicle (seated and not a driver), how to react correctly when a passenger in the back of a multi-passenger armored vehicle

Comments on Topics Not Under the Major Categories in Table N2

The comments were on zeroing, shot group size, equipment, range targetry, and need for expertise

Ammunition

--There are a lot of resources both in the private sector and in other branches of the military that would be beneficial for the army to adapt to their own need. Also something that would assist Soldiers in weapons training would be to teach about mindset and violence of force when confronting an enemy.

Armor

--It all needs to be updated and improved, from the targetry to the diversity of the qualification tables to the weapons

--The Army needs to come up with targetry that moves. Current ranges do not reflect this. The enemy does not stand there and let you shoot him.

--Soldiers are not as proficient as they were 10 years ago.

--As an NCO I feel there can and should be more advanced shooting classes and ranges for all MOSs. The reason is we don't know what the nation's next conflict will be and we need to be prepared for the worse.

CBRN

--Please see the Special Forces Advanced Recon and Target Analysis and Exploitations Techniques Course for a good POI

Engineer

--No combat gear

--On down range feedback, 3 round shot groups should be used and then reviewed. Once isn't enough and more than 3 allows for too much variation in firer.

--Training Soldiers properly, takes time and takes money, I understand that. But some skills are necessary to the effective fighting force. We cannot short change marksmanship. Doing so ensures an unprepared army and an under protected nation.

Field Artillery

--The Army's lack of marksmanship standards are degrading the combat efficiency of its force as a whole. A revamp of the marksmanship program is something that has been needed for some time.

Infantry

--Ensure you're still teaching to zero at the correct distance. For instance, the ACOG does not zero accurately at 25m.

--All zeroing should be done without combat gear in order to get the Soldier confident in the weapon as a "tool" first. Once the weapon is zeroed and the Soldier is confident in it then all qualify. ARM and other skills should be done in full combat gear to train the Soldier in how to integrate the rifle in the "system". Too many rounds are wasted because leaders insist Soldiers zero in combat gear and the Soldier never gains confidence in the weapon. Only with the confidence in a zeroed weapon can a Soldier make improvements to his integrated "system" i.e. body position, helmet adjustment.

--This is essential and would make for a more rounded and proficient Soldier on the battlefield. Rather than designating these tasks only for more experienced special operations units, pass it down to all Soldiers so it can make a stronger, focused, and ready for battle Army.

Mechanical Maintenance

--Train more as the USMC does for marksmanship

--Fort [X] has a great range run by civilians. I think all ranges should be run by civilians which are always open where you can take your Soldiers as a squad element and concentrate on the weaker Soldiers. As Soldiers I mean all ranks.

--The units have not updated weapons training to reflect updated optics, thermals and NVG equipment.

--Fix the broke system. Anyone can shoot a target why'll not moving. And not being stressed. The heat of battle should be the test.

Medical

--Needs to be more stress when having to shoot a weapon and not just lying on the ground and taking your time. Going back to the basics is what they need to do and not worry about playing road warrior 1050. Carrying patients while shooting, shooting with a rucksack on, firing to suppress an enemy. Fire weapon not assigned to them and see how well they can adjust.

Military Police

--It will be difficult to train Soldiers to the level of expertise and lethality we want.

--With all the requirements in AR 350-1, throwing more training requirements at small units is not the correct way to go about it. The more requirements that are placed on a unit, the lower the quality of the training will be provided to ensure the unit has sufficient time to complete all their other requirements. Not all units in the Army are Infantry, some have a mission to conduct when in Garrison which is more demanding than in a deployed environment.

Multifunctional Logistician

--Three shot groups for zeroing is not an indication of the weapon's zero. The Army would save time and money if the Soldier took one shot, stood up, laid down, took one shot, stood up, laid down, took one shot....etc. for ten shots total. This gives a statistically significant zero of the weapon and only one adjustment to the sights needs to be made after finding the center of the shot group in relation to the center of the zero target. Also, the zero target should be a bench rest type target, not a silhouette.

Quartermaster

--We have been very much involved in just putting in numbers and have neglected putting time and effort in proficiency of skills. Like how a pilot puts in flying time to get proficient to their skills. Before I joined I got on a Army truck that made me experience EST. What I am trying to say is we need this kind of exposure. With the draw down...we need to expose new Soldiers with no deployment experience to train on proficiency not just qualify.

Table N3 presents the percentage of leaders within each branch who commented on Question S13.

Table N3

Percentage of Leaders Who Commented on Question S13: Additional Comments on Marksmanship Training and Resources

Branch	Leaders who Commented
Branches With More Than 20 Respondents ^a	Number and Percentage
Infantry	56 (23%)
Air Defense Artillery	4 (15%)
Engineer	16 (13%)
Aviation	7 (11%)
Armor	19 (11%)
CBRN	7 (10%)
OS (Signal and Military Intelligence)	2 (9%)
Military Police	11 (8%)
Mechanical Maintenance	19 (7%)
Field Artillery	10 (7%)
Ammunition	5 (7%)
Quartermaster	8 (6%)
Transportation	7 (5%)
Branches With Less Than 20 Respondents	
Medical	1 (100%)
Multifunctional Logistician	3 (38%)
Finance, Civil Affairs, Adjutant General, Electronic Maintenance	0 (0%)
Total (1636 respondents)	175 commented – 11% 1461 did not comment – 89%

Note. Includes all leader branches/categories, not just the ones with more than 20 respondents. Military Intelligence and Signal combined to be consistent with categories used in body of report. Includes all comments

^a Ordered from high to low by percentage of leaders who commented. Each branch percentage based on number of leaders in that branch who responded to the questionnaire.

Appendix O

Acronyms

ACOG	Advanced combat optic gunsight
AIT	Advanced individual training
AKO	Army Knowledge Online
AL	Aiming light
ALC	Advanced Leader Course
ANCOC	Advanced Noncommissioned Officer Course
ARFORGEN	Army Force Generation
ARI	Army Research Institute for the Behavioral and Social Sciences
ARM	Advanced rifle marksmanship
AWG	Asymmetric Warfighting Group
BIS	Back-up iron sight
BNCOC	Basic Noncommissioned Officer Course
BRM	Basic rifle marksmanship
BT	Basic training
CAC-CALL	Combined Arms Command – Center for Army Lessons Learned
CBRN	Chemical, Biological, Radiological and Nuclear
CCO	Close combat optic
CCC	Captains Career Course
CFF	Combat Field Fire
CMF	Career Management Field
CoE	Center of Excellence
CQB	Close quarters battle
CQC	Close quarters combat
CQM	Close quarters marksmanship
DA	Department of the Army
DoD	Department of Defense
DOTD	Directorate of Training and Doctrine
EST	Engagement Skills Trainer
FORSCOM	Forces Command
FM	Field Manual
FS	Force sustainment
HRC	Human Resources Command
IET	Initial Entry Training
KD	Known distance
LFX	Live fire exercise
LOMAH	Location of Miss and Hit

LRM	Long range marksmanship
MCoE	Maneuver Center of Excellence
MFE	Maneuver Fires and Effects
MLARM	Mountain Leaders Advanced Rifle Marksmanship
MOS	Military occupational specialty
MOUT	Military operations in urban terrain
NCO	Non-commissioned officer
NVG	Night vision goggle
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
OS	Operations Support
PMI	Preliminary marksmanship instruction
RCO	Rifle combat optic
SDM	Squad designated marksman
SLC	Senior Leader Course
SMUD	Simulating standoff munition disruption
SRM	Short range marksmanship
STRAC	Strategies in Training Commission
TADSS	Training aids, devices, simulators and simulations
TRADOC	Training and Doctrine Command
TWS	Thermal weapon sight
USAMU	United States Army Marksmanship Unit
WLC	Warrior Leader Course