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Infantry and Weapons Company Guide to Training Aids, Devices, Simulators, and Simulations

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HEADQUARTERS, DEPARTMENT OF THE ARMY

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Infantry and Weapons Company Guide to Training Aids, Devices, Simulators, and Simulations

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Preface

This circular provides leaders with information about and training guidance for using training aids, devices, simulators, and simulations (TADSS) in support of the Infantry rifle and weapons company. It also describes how leaders may use TADSS to support specific training events. It follows the doctrine in FM 7-0 and FM 7-1 and complements the IBCT combined arms training strategy (CATS). Finally, it provides TADSS training programs for use by the Infantry company leader (DA Pamphlet 350-9 provides additional TADSS information):

- Chapter 1 explains how TADSS work within the Army's training infrastructure by showing how Infantry company leaders can use the IBCT CATS to support their unit training strategy.
- Chapter 2 contains examples of how TADSS are used.
- Chapter 3 describes the TADSS, and their capabilities, limitations, recommended training strategies, and supporting references.
- Each appendix provides a matrix that links tasks to TADSS and that support the Infantry CATS, from mortar section to company.

This publication applies to the Active Army, the Army National Guard (ARNG)/Army National Guard of the United States (ARNGUS), and the United States Army Reserve (USAR) unless otherwise stated.

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Uniforms shown in this manual were drawn without camouflage for clarity of the illustration.

Unless this publication states otherwise, masculine nouns and pronouns may refer to either men or women.

Introduction

Today's broad range of missions and the unpredictable nature of the contemporary operational environment (COE) cause personnel turbulence, high operating tempo (OPTEMPO), and new equipment and systems. Time is an inflexible resource—there is never enough, and it cannot be increased.

Leaders improvise with the resources at hand, exploit opportunities, and accomplish the mission within the commander's intent. They achieve combat readiness by effectively using TADSS for realistic and challenging training. Identifying and integrating TADSS supports the *crawl-walk-run* training approach.

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Chapter 1
Overview

Training aids, devices, simulators, and simulations (TADSS) provide realistic training conditions in simulated environments. FM 7-1 defines TADSS as a general term including training instrumentation systems; tactical engagement simulation systems (TESS); battle simulations; targetry; training-unique ammunition (TUA); dummy, drill, and inert munitions; casualty assessment systems; graphic training aids (GTAs); and other training support devices. Effective use of TADSS helps leaders ensure that battle-focused training is realistic and challenging. TADSS should be considered and used in each phase of the Army training management cycle to assist leaders create the proper training conditions. TADSS reduce use of expensive equipment and thus lengthen their effective lives. They also save OPTEMPO dollars, are safer than real equipment, allow repetitive training in different situations (varied conditions), and protect the environment.

TYPES AND CATEGORIES

1-1. There are four types of TADSS and two categories of TADSS. Use of the terms "types" and "categories" is important only because it provides a way to distinguish between the two sets into which TADSS may be grouped:

TYPES

1-2. The four types of trainers derive from the acronym itself and include the following. Some TADSS fall cleanly into one, while others may belong to two or more:

- Training aids.
- Training devices.
- Simulators.
- Simulations.

CATEGORIES

1-3. TADSS are also categorized as to whether they support a system or not. Table 1-1 lists all of the TADSS covered in this book alphabetically and identifies each by category.

System

1-4. System TADSS are designed for use with one or more systems, items of equipment, subassemblies, or components. The TADSS may support training tasks at any level, that is, individual, crew, collective, or combined arms. System TADSS may also be standalone, embedded, or appended.

Nonsystem

1-5. Nonsystem TADSS support non-system-specific and other military training.

Table 1-1. Categories and training supported.

Training Device	Category		Training Supported
	System	Nonsystem	
Advanced Bradley Full-Crew Interactive Simulator Trainer	X		BFV crew gunnery
America's Army		X	Individual and squad collective
AN/TDQ-T1 RADIAC Trainer	X		AN/PDR-56F RADIAC Meter
AN/TDQ-T2 RADIAC Training Set	X		AN/PDR-56F RADIAC Meter
Antitank Guided Missile Vehicle Basic Skills Trainer	X		ATGM gunnery
Ashley Targets	X		Close Quarter Combat
AT4 Field Handler Trainer	X		M136 AT4 non-firing tasks
ATGM Vehicle Basic Skills Trainer	X		Stryker ATGM gunnery
Bradley Advanced Training Systems	X		M2A3 BFV gunnery
Call-for-Fire Trainer		X	Observed indirect fire tasks
Casualty Simulation Kit		X	Combat lifesaver tasks
Chemical Agent Monitor Simulator	X		Chemical Agent Monitor
Close Combat Mission Capability Kit		X	Close quarters combat (M9,M4,M16,M249)
Close Combat Tactical Trainer		X	Collective maneuver training
Common Driver Trainer	X		Stryker Driver Training (all variants)
Conduct of Fire Trainer-Enhanced	X		M2A2/ODS BFV gunnery
Engagement Skills Trainer 2000		X	Small arms marksmanship/rules of engagement
Full Spectrum Command		X	Company tactical decisionmaking
Full Spectrum Leader		X	Platoon leadership
Full Spectrum Warrior		X	Small unit operations
Homestation Instrumentation Training System		X	Collective force-on-force
Human Urban Targets		X	Close quarters combat (live fire)
Infantry Moving Target Carrier		X	Small arms marksmanship (live fire)
Infantry Rifle Fire Simulator		X	React to direct fire
Infantry Target Mechanism		X	Small arms marksmanship (live fire)
Intravenous Therapy Trainer		X	Combat lifesaver tasks
Javelin Basic Skills Trainer	X		Javelin gunnery
Javelin Field Tactical Trainer	X		Javelin force-on-force, force on target
Javelin Missile Simulation Round	X		Javelin non-firing operations
Joint Land Component Constructive Training Capability		X	Constructive (battalion and above)
Laser Marksmanship Training System		X	Small arms marksmanship
Location of Miss and Hit		X	Small arms marksmanship (live fire)
M141 Atomic Explosive Simulator		X	Reaction to nuclear attack
M141 BDM Field Handler Trainer	X		M141 BDM non-firing operations
M15 Aiming Card	X		M16 Rifle, M4 Carbine marksmanship
M16 Sighting Device	X		M16 Rifle, M4 Carbine marksmanship
M172 Dummy Round	X		M2 BFV 7.63-mm tasks
M18A1 Claymore Mine Kit, Inert	X		M18/M18A1 Claymore Mine
M19 Blank Firing Adapter Gun	X		M2 Machine Gun, force on force
M190 LAW Subcaliber Training Device	X		M191 LAW marksmanship
M2 Machine Gun Sighting Bar	X		M2 MG marksmanship
M2 ODS Tabletop Full-Fidelity Trainer	X		M2 ODS BFV gunnery
M21 Antitank Practice Mine	X		M21 AT Mine operations
M256 Chemical Detection Training Kit	X		M256 detector kit tasks

Table 1-1. Categories and training supported (continued).

Training Device	Category		Training Supported
	System	Nonsystem	
M287 Subcaliber Tracer Trainer	X		M136 AT4 marksmanship
M67 Practice Hand Grenade	X		M67 Hand Grenade tasks
M794 Dummy Round	X		M2 BFV 25-mm tasks
M81 Simulation Detector Unit	X		M43A1 Chemical Detector operations
M9 Air-Operated Pistol	X		M9 Pistol quick fire marksmanship
M9 Simulator, Projectile, Airburst, Liquid		X	Chemical detection and decontamination
Machine Gun Sighting Bar	X		M240B MG, M249 MG marksmanship
Mannequin, Head and Torso, CPR Training		X	Combat lifesaver tasks
Mark I Nerve Agent Antidote Training Kit	X		MK I Nerve Agent Antidote Injector tasks
MGS Interim Deployable Advanced Gunnery Training System	X		Stryker MGS gunnery
MK19 GMG Target Engagement Simulation	X		Stryker Mk19 gunnery
MK19 Tactical Engagement Simulation	X		MK19 Grenade Machine Gun, force on force
Multiple Integrated Laser Engagement System		X	Individual and collective force-on-force/target
Nonlethal Capability Set		X	Individual and collective nonlethal operations
Precision Gunnery System	X		BFV force-on-force and gunnery
Rapid Decision Trainer		X	Troop leading procedures
Recognition of Combat Vehicles		X	Target recognition
Remote Target System		X	Maneuver force-on-target
Resuscitation Training Mannequin		X	Combat lifesaver tasks
Riddle Sighting Device	X		M16/M4 marksmanship
Rifle-holding Device	X		M16 marksmanship
Selective Lightweight Attack Munitions Trainer		X	M320 SLAM operations
Self-Directed Learning Internet Module ES2 System	X		Every Soldier a Sensor tasks
Sighting Target		X	M240B, M249 machine gun marksmanship
Simulated Long-Range, Laser-Designator Rangefinder	X		LLDR operations
Small Arms Flash Noise Gunfire Simulator		X	React to direct fire
Spider	X		Spider emplacement, detonation and recovery
Target Box Paddle		X	M16 Rifle marksmanship
Targetry and Simulation Device System		X	Individual and collective force-on-target training
TOW Field Tactical Trainer	X		TOW II force-on-force
TOW Gunnery Training System	X		TOW II gunnery
TOW ITAS Basic Skills Trainer	X		TOW ITAS gunnery
TOW ITAS Field Tactical Trainer	X		TOW ITAS force-on-force
TOW Missile Simulation Round	X		TOW non-firing tasks
Training IED		X	Counter IED tasks
Vehicle Instrument Interface Package	X		Stryker force on force
Virtual Combat Convoy Trainer		X	Collective convoy defense
War Wound Moulage Set		X	Combat lifesaver tasks

TRAINING SUPPORT SYSTEM

1-6. The TADSS are part of the TSS, a system of systems that provide products to assist the commander. The TSS includes training information infrastructures, TADSS, training products, training services, and training facilities. TSS also provides a reachback capability to the proponent schoolhouse that further expands training support to the commander in the field.

1-7. Another integral part of the TSS is the Training Support Center (TSC), normally located at home stations. However, to ensure that both training support and reach-back capabilities are available, the TSS can also be collocated with deployed units as a theater TSC.

1-8. The Infantry Center and School reach-back portal, located at the Warrior University website, https://www.warrioruniversity.army.mil, provides training information for field units. The website quickly disseminates information on new systems and lessons learned in the contemporary operating environment (COE). The portal is also part of the Army Training Help Desk Federation to provide information and answers from branch proponents.

1-9. Commanders plan and develop strategies to train individual, collective, and leader tasks. This can be done in live-virtual-constructive (LVC) (Figure 1-1) environments to enhance training. Virtual-constructive training support products are used to supplement, enhance, and complement preparation for live training exercises, and to sustain proficiency. Integration of LVC environments can also enhance progression of the unit training strategy through crawl, walk, and run level training.

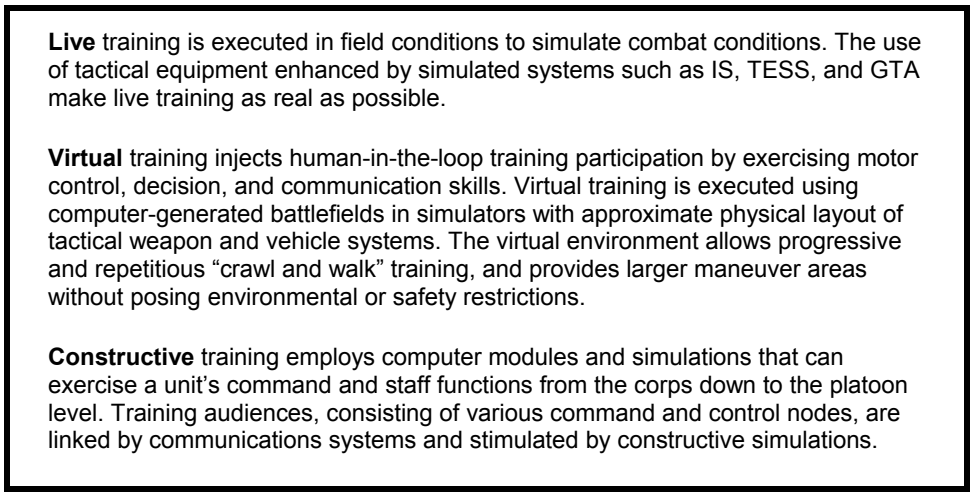

Figure 1-1. Live-virtual-constructive environments.

1-10. Commanders determine what training support is required by examining the who, what, when, and where of their training strategy. They consider the allocation of ranges and ammunition for weapons qualification and live fire events; training areas for live engagement simulation exercises; simulators to support various levels of training exercises; constructive and virtual simulations for individual, leader and collective training; and training unique ammunition requirements. The use of TADSS includes planning, preparation, and execution of equipment issue, accountability, maintenance, and turn-in.

COMBINED ARMS TRAINING STRATEGY

1-11. The CATS is a descriptive training strategy intended to aid units in reaching and sustaining a training band of excellence (BOE) described in the context of a "T" rating IAW AR 220-1, Unit Status Reporting. The CATS describes the Lifecycle Model (Figure 1-2) as a reset, train, alert, and deploy sequence. The Lifecycle model consists of two phases: Reset/Train, and Ready. The Reset/Train phase requires a unit to undergo six months of intensive training to move into the BOE. After the unit is within the BOE, it maintains and improves proficiency while in the Ready phase until alerted for deployment. After alerted, the unit may undertake specific deployment training with a deployment rehearsal exercise at a Combat Training Center (CTC) or with a CTC-exportable training capability (ETC) at homestation.

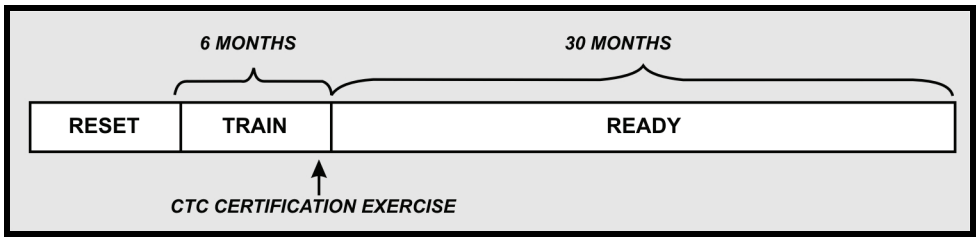

Figure 1-2. Lifecycle model.

1-12. All CATS training events are gated (crawl-walk-run) to accomplish two objectives (Figure 1-3). Objective 1 is to bring the unit from reset to trained within the BOE in six months. Objective 2 is to sustain the unit within the BOE until deployed. It requires that skills are validated from individual level to small group collective tasks in lower fidelity events. Objective 2 also emphasizes more demanding conditions designed to develop adaptive leader and Soldier skills in a collective environment. The CATS identifies training gates and capitalizes on multiechelon training opportunities with suitable and efficient means of achieving training proficiency. This is accomplished through the use of TADSS and a mixture of LVC training environments.

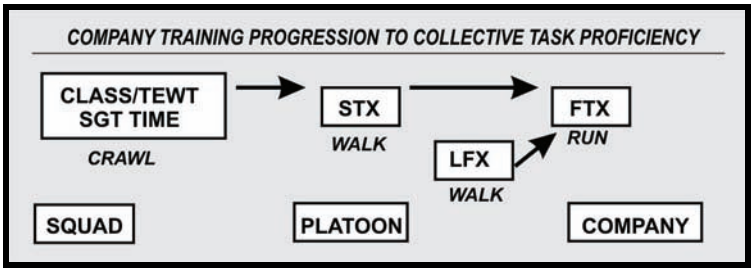

Figure 1-3. Company training progression.

1-13. The CATS provides a descriptive training management tool for leaders unique to unit types. The CATS consists of training tasks, audience, frequency, and event(s) that create the correct training conditions. The IBCT CATS are available in the Digital Training Management System (DTMS) posted on Army Knowledge Online (AKO). They are also linked from Warrior University to AKO.

1-14. The IBCT Infantry company training strategy includes their organizational elements: company headquarters, platoons, squads, and a mortar section. The IBCT CATS includes task selections recommended for training each echelon (Table 1-2). Task selections, annotated as *XX-TS-XXXX*, include a number of supporting tasks that are named to identify its group of supporting tasks. Table 1-1 provides a list of task selections for the Infantry rifle company down to and including its mortar section.

Table 1-2. Infantry rifle company task selections.

Task Selection Title and Number	*Event(s)*	*Echelon to Train*
INFANTRY COMPANY		
Conduct Company Operations, 07-TS-2471	Class, STX, FTX, CALFEX	Company
Prepare for Operations (CO), 07-TS-2472	SGT Time, TEWT, DEPEX	Company HQ
Attack (CO), 07-TS-2473	TEWT, STX	Company
Defend (CO), 07-TS-2474	TEWT, STX	Company
Move Tactically (CO), 07-TS-2475	TEWT, STX	Company
Protect the Force (CO), 07-TS-2476	TEWT, STX	Company
Sustain Digital Proficiency, 07-TS-2477	SGT Time, COMEX	Company
Sustain the Company, 07-TS-2478	STX	Company
INFANTRY PLATOON		
Conduct Platoon Operations, 07-TS-3471	Class, LFX, STX, FTX(EXEVAL)	Platoon
Prepare for Operations (PLT), 07-TS-3472	SGT Time	Platoon
Attack (PLT), 07-TS-3473	SGT Time, STX	Platoon
Defend (PLT), 07-TS-3474	SGT Time, STX	Platoon
Move Tactically (PLT), 07-TS-3475	SGT Time, STX	Platoon
Protect the Force (PLT), 07-TS-3476	SGT Time	Platoon
Task Selection Title and Number	***Event(s)***	***Echelon to Train***
INFANTRY SQUAD		
Conduct Squad Operations, 07-TS-4471	Class, STX, LFX, FTX(EXEVAL)	Squad
Attack (SQD), 07-TS-4473	SGT Time, STX	Squad
Defend (SQD), 07-TS-4474	SGT Time, STX	Squad
Move Tactically (SQD), 07-TS-3475	SGT Time, STX	Squad
MORTAR SECTION		
Provide Mortar Support, 07-TS-4477	Class, SGT Time, STX, LFX, FTX	Section
Protect the Force (Mortars), 07-TS-4479	SGT Time	Section
Move Tactically (Mortars), 07-TS-4480	SGT Time	Section

1-15. Each task selection provides the supporting tasks, training frequency, and recommended training events. Figure 1-4 shows the CATS company echelon task selection *Attack* (CO) (07-TS-2473).

Task: Attack (CO) (07-TS-2473)

Supporting Task(s):

07-2-1000	Conduct an Attack (Infantry Company)
07-2-1027	Conduct a Cordon and Search in a Built-up Area (Infantry Company)
07-2-1090	Conduct a Movement to Contact (Antiarmor/Infantry Company)
07-2-1135	Conduct a Raid (Infantry Company)
07-2-1243	Conduct an Ambush (Infantry Company)
07-2-1256	Conduct an Attack by Fire (Infantry Company)
07-2-1261	Conduct an Attack of a Built-up Area (Infantry Company)
07-2-1315	Conduct Patrol Operations (Infantry Company)
07-2-1324	Conduct Area Security Operations
07-2-1342	Conduct Tactical Movement (Infantry Company)
07-2-1387	Employ a Reserve Force (Infantry Company)
07-2-1405	Establish a Base Camp (Infantry Company)
07-2-1432	React to Snipers (Infantry Company)
07-2-1468	Take Action on Contact (Infantry Company)
07-2-1477	Breach an Obstacle (Infantry Company)
07-2-2072	Report Tactical Information (Infantry Company)
07-2-3000	Conduct Overwatch and or Support by Fire (Infantry Company)
07-2-3027	Integrate Direct Fires (Infantry Company)
07-2-3036	Integrate Indirect Fire Support (Infantry Company)
07-2-4027	Handle Enemy Prisoners of War (Infantry Company)
07-2-4045	Process Captured Documents and Equipment (Infantry Company)
07-2-4054	Secure Civilians During Operations (Infantry Company)
07-2-4063	Treat and Evacuate Casualties (Infantry Company)
07-2-5027	Conduct Consolidation and Reorganization (Infantry Company)
07-2-5036	Conduct Coordination (Infantry Company)
07-2-5135	Operate a Command Post (Infantry Company)

Frequency: Quarterly (4)

Types of Events: STX, TEWT

Supported Mission(s):

Offense
Stability
Support
Generic

Figure 1-4. Company task selection *Attack*.

1-16. Frequency, as shown in Figure 1-2, provides the recommended number of times the task selection should be trained per year. In this example the CATS recommends a company train *Attack* four times a year. For each task selection the CATS provides recommended training events. The types of events recommended within the task selection *Attack* are situational training exercises (STXs), and tactical exercise without troops (TEWTs). CATS recommended events by frequency, phase, and duration for the Infantry rifle company are outlined in Table 1-3.

Table 1-3. CATS event frequency by phase and duration.

Event	*Freq (Train)*	*Freq (Ready)*	*Duration (Hours)*
FTX	1	2	216
FTX EXEVAL	1	1	120
CALFEX	1	1	24
DEPEX	1	2	72
COMEX	6	12	4
STX (3) (Company Move, Company Attack, Company Defend)	1	2	48
STX (Company Protect)	1	2	8
STX (Company Sustain)	2	4	8
STX (Mortar Support)	2	4	24
STX (4) (FS Tables III, IV, V, VI)	1	2	8
LTX (FS Table VII)	1	2	8
TEWT (5) (Prepare for Ops, Attack, Defend, Move, Protect)	1	2	8
LFX(2) (Platoon, Squad)	1	2	24
LFX (Mortars)	4	8	24
LFX, LFX EXEVAL (FS Table VIII)	1	2	72
FTX EXEVAL (Platoon)	1	1	96
FTX EXEVAL (Squad)	1	1	48
EXEVAL (Mortars)	1	1	48
SGT Time (Digital Proficiency)	26	52	5
SGT Time (8) (Prep Platoon Ops, Protect Platoon, Squad Attack, Squad Defend, Squad Move, Protect Mortars, Mortar Support, Mortar Move)	2	4	5
SGT Time (3) (Platoon Attack, Platoon Defend, Platoon Move)	1	2	5
SGT Time (FS Tables I and II)	24	48	5
Class (4) (Company Operations, Platoon Operations, Squad Operations, Mortar Operations)	1	2	4

1-17. In addition to the event type, CATS recommends specifying *means* for each training event. *Means* are any resources within the TSS that are required in order to execute the training event.

1-18. Figure 1-5 shows an example of how CATS uses *means* to support the company task selection *Attack* and the recommended training event *STX*.

Training Audience:	Company Headquarters, (X3) Rifle Platoon HE, (X9) Rifle Squad, (X3) Weapons Squad, FIST (INF Company), and Mortar Section
Means (Event) (TADSS):	2 -Company STX (MILES)
Title:	STX for Attack (Company)
Estimated Duration:	48 Hours
Replication of Conditions (A-D):	C -Gate quality for task or echelon
Multiechelon Training:	STX for Provide Mortar Support (Company Mortars), STX for Attack (Platoon)
Critical Training Gates:	
Action Gates:	Class for Conduct Company Operations; TEWT for Prepare for Company Operations (Company); TEWT for Attack (Company)
Comments:	
Purpose:	Provide training opportunity for the company to practice its offensive tasks.
Outcome:	The company demonstrates proficiency in conducting company offensive tasks.
Execution Guidance:	This STX is a 48 hour training event led by the company commander. This time is dedicated for the commander to practice and refine his command and control procedures in conducting offensive tasks. The company commander should focus on those offensive collective tasks that support the unit METL. The company will execute these tasks again at the walk and run level while executing the other company STXs and FTXs as well as during higher echelon training events. This event should be scheduled once during the train phase of preparation. More frequent multiechelon field exercises during the ready phase may provide the opportunities for the company to sustain a fully trained status, precluding the requirement for this event.

Figure 1-5. CATS company *Attack* and STX task support example.

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Chapter 2
Case Study

The commander of 1-77 IN battalion gathers his commanders together to provide his annual training guidance. His training strategy emphasizes the importance of using all live-virtual-constructive (LVC) training enablers to achieve and sustain proficiency on selected mission essential tasks list (METL) tasks. The battalion commander instructs his company commanders to develop their unit training within the lifecycle model. He challenges them to think innovatively in developing new training initiatives. This chapter follows the commander of Company A, 1-77 IN as he develops his training strategy IAW his battalion commander's guidance.

Section I — TRAINING STRATEGY

2-1. This section discusses how the Infantry company commander develops a training strategy that includes the use of LVC. Using the METL task *Attack* as an example, this section explains how TADSS support multiechelon training for mortar sections, squads, platoons, and companies. It also walks a leader through the process of selecting the most appropriate TADSS to meet his training objectives.

EVENT PLANNING EXAMPLE

2-2. The commander, A/1-77 IN, considers his unit's METL proficiency and the battalion commander's training guidance to develop his company training strategy. The commander's intent is to achieve a "T" in the METL task *Attack*. The commander then looks at the combined arms training strategy (CATS) to select the task that best approximates his mission essential task. He identifies the CATS task selection *Attack (Company) (07-TS-2473)*.

2-3. The CATS recommends the STX as the culminating event. The training progression for the company STX includes several multiechelon training gates such as *Classes*, *Sergeant's Time*, *TEWTs* and *Additional STXs*. Figure 2-1 shows the progression of the company's events.

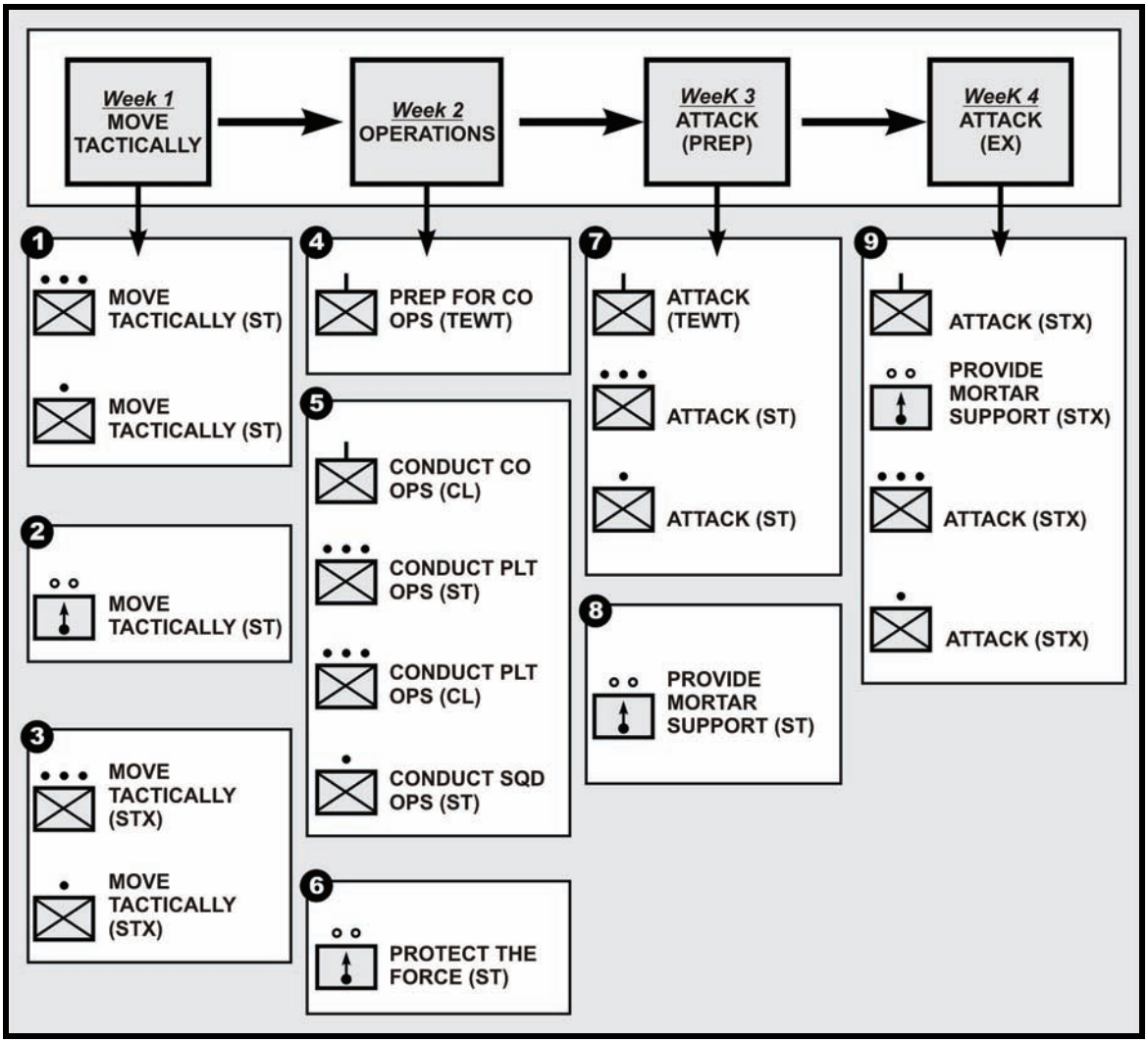

Figure 2-1. Company event training progression.

2-4. Figure 2-2 shows the commander's four-week training plan to achieve a "T" in the METL task *Attack*.

Week 1	***During the first week the commander focuses on the training gate, Move Tactically. Events 1 through 3 each start with—*** (1) The platoon and squad conducting SGT T. (2) The mortar section conducting an ST concurrently or separately. (3) The first week culminates with a platoon and squad STX.
Week 2	***During the second week, the commander focuses on the second training gate, Conduct Operations, from squad through company level, including Events 4 to 6:*** (4) The phase starts with a company TEWT (Prepare for Company Operations). (5) The next event is a multiechelon CL and ST training Conducting Operations from Squad to Company. (6) The mortar section trains Protect the Force during SGT Time, which can be conducted concurrently with Event 5.
Week 3	***During the third week the commander prepares for the culminating STX Attack:*** (7) Concentrate on a company TEWT, Attack, which occurs concurrently with ST for the platoon and squad. (8) The mortar section prepares for the company STX during the ST Provide Mortar Support.
Week 4	***During the fourth week, the commander conducts an STX Attack:*** (9) A multiechelon STX is executed from squad to company.

Figure 2-2. Company training strategy for *Attack*.

TASK-TO-TADSS MATRIXES

2-5. While planning, the company commander identifies the availability of the resources he needs such as time, land, and ammunition. Companies compete for training resources. Considering resource constraints and the battalion commander's intent, the company commander determines whether he must use other methods to effectively train his Soldiers. Tables 2-1 through 2-4, pages 2-4 through 2-7, provide the TADSS for each echelon and event supporting the company event training strategy shown in Figure 2-1. Given his constrained resources, the commander of A/1-77 IN decides to incorporate TADSS into his training strategy. To help identify which TADSS support his overall company training strategy, he refers to the company, platoon, squad, and mortar section task-to-TADSS matrixes (Appendixes A through G). These matrixes match available TADSS to the tasks they enable. The following event abbreviations apply to all of the task-to-TADSS matrixes in this publication:

- Class – CL.
- Combined arms live fire exercise – CALFEX.
- Communication exercise – COMMEX.
- Deployment exercise – DEPEX.
- Field training exercise – FTX.
- Lane training exercise – LTX.
- Live fire training exercise – LFX.
- Sergeant's time – ST.
- Situational training exercise -STX.
- Training exercise without troops – TEWT.

Table 2-1. Company task-to-TADSS matrix.

CLASS ***Conduct Company Operations***	***TEWT*** ***Prepare for Company Operations***	***TEWT*** ***Attack***	***STX*** ***Attack***
CFFT	COTS Simulations	COTS Simulations	CCMCK
COTS	JLCCTC	JLCCTC	COTS Simulations HITS
EST 2000	CCTT (Dismounted Soldier	CCTT (Dismounted Soldier)	Javelin FTT
GUARDFIST			Javelin MSR
Javelin BST			JLCCTC
Javelin FTT			L-CCATS
Javelin MSR			AT4 FHT
JLCCTC			BDM FHT
L-CCATS			Claymore Inert
LMTS			M21 Mine
AT4 FHT			SLAM Trainer
BDM FHT			Medical TADSS
Claymore Inert			MILES
M21 Mine			CBRN TADSS
SLAM Trainer			NGATS
Medical TADSS			NLCS
CBRN TADSS			OneTESS
ROC-V			OPFOR TADSS
CCTT (Dismounted Soldier)			CCTT (Dismounted Soldier)
Spider Trainer			Spider Trainer
TIED			Targetry
			TIED
			TUA

Table 2-2. Platoon task-to-TADSS matrix.

CLASS ***Conduct Platoon Ops***	***SERGEANT'S TIME*** ***Prepare for Platoon Ops***	***SERGEANT'S TIME*** ***Move Tactically***	***SERGEANT'S TIME*** ***Attack***	***STX*** ***Move Tactically***	***STX*** ***Attack***
CFFT	COTS Simulation	CCTT	CFFT	CCTT	CCTT
COTS Simulation	EST 2000	COTS Simulation	COTS Simulation	CCMCK	CCMCK
EST 2000	JLCCTC	Javelin BST	EST 2000	COTS Simulation	COTS Simulation
Guardfist	Claymore Inert	Javelin FTT	Guardfist	HITS	HITS
Javelin BST	M21 Mine	Javelin MSR	Javelin BST	Javelin FTT	Javelin FTT
Javelin FTT	SLAM Trainer	L-CCATS	Javelin FTT	Javelin MSR	Javelin MSR
Javelin MSR	Medical TADSS	LMTS	Javelin MSR	JLCCTC	JLCCTC
LMTS	CBRN TADSS	AT4 FHT	L-CCATS	L-CCATS	L-CCATS
AT4 FHT	NLCS	BDM FHT	LMTS	AT4 FHT	AT4 FHT
BDM FHT	ROC-V	OPFOR TADSS	AT4 FHT	BDM FHT	BDM FHT
Claymore Inert	CCTT (Dismounted Soldier)	ROC-V	SLAM Trainer	SLAM Trainer	M18 Claymore Inert
M21 Mine	Spider Trainer	CCTT (Dismounted Soldier)	Medical	MILES	M21 Mine
SLAM Trainer	TIED	TIED	TADSS	NGATS	SLAM Trainer
Medical TADSS	VCCT	VCCT	NLCS	OneTESS	Medical TADSS
CBRN TADSS			OPFOR TADSS	OPFOR TADSS	MILES
OPFOR TADSS			ROC-V	CCTT (Dismounted Soldier)	NGATS
Spider Trainer			CCTT (Dismounted Soldier)	Spider Trainer	NLCS
TIED			SPIDER Trainer	Targetry	OneTESS
VCCT			TIED	TIED	OPFOR TADSS
			TUA	TUA	CCTT (Dismounted Soldier)
			VCCT	VCCT	Spider Trainer
					Targetry
					TIED
					TUA
					VCCT

Table 2-3. Squad task-to-TADSS matrix.

CLASS ***Conduct Squad Operations***	***SERGEANT'S TIME*** ***Move Tactically***	***SERGEANT'S TIME*** ***Attack***	***STX*** ***Move Tactically***	***STX*** ***Attack***
CCTT	CCTT	CFFT	CCTT	CCMCK
CFFT	COTS Simulations	COTS Simulations	CCMCK	COTS Simulations
COTS Simulations	EST 2000	EST 2000	COTS Simulations	HITS
EST 2000	Javelin BST	Guardfist	HITS	Javelin FTT
Guardfist	Javelin FTT	Javelin BST	Javelin FTT	Javelin MSR
Javelin BST	Javelin MSR	Javelin FTT	Javelin MSR	L-CCATS
Javelin FTT	L-CCATS	Javelin MSR	L-CCATS	AT4 FHT
Javelin MSR	LMTS	L-CCATS	AT4 FHT	BDM FHT
L-CCATS	AT4 FHT	LMTS	BDM FHT	Medical TADSS
LMTS	BDM FHT	AT4 FHT	SLAM Trainer	MILES
AT4 FHT	SLAM Trainer	SLAM Trainer	MILES	CBRN TADSS
BDM FHT	CBRN TADSS	Medical	CBRN TADSS	NGATS
Claymore Inert	OPFOR TADSS	TADSS	NGATS	NLCS
M21 Mine	ROC-V	NLCS	OneTESS	OneTESS
SLAM Trainer	CCTT (Dismounted Soldier)	OPFOR TADSS	OPFOR TADSS	OPFOR TADSS
Medical TADSS	TIED	ROC-V	CCTT (Dismounted Soldier)	CCTT (Dismounted Soldier)
CBRN TADSS	VCCT	CCTT (Dismounted Soldier)	Spider Trainer	Targetry
NLCS		SPIDER Trainer	Targetry	TIED
OPFOR TADSS		TIED	TIED	TUA
ROC-V		VCCT	TUA	
Sighting Targets			VCCT	
CCTT (Dismounted Soldier)				
Spider Trainer				
TIED				
VCCT				

Table 2-4. Mortar section task-to-TADSS matrix.

CLASS ***Provide Mortar Support***	***SERGEANT'S TIME*** ***Protect the Force***	***SERGEANT'S TIME*** ***Move Tactically***	***STX*** ***Provide Mortar Support***
EST 2000	COTS Simulations	CCTT	CFFT
Claymore Inert	EST 2000	COTS Simulations	EST 2000
SLAM Trainer	L-CCATS	EST 2000	HITS
Spider Trainer	AT4 FHT	HITS	JLCCTC
	Claymore Inert	L-CCATS	L-CCATS
	M21 Mine	AT4 FHT	AT4 FHT
	SLAM Trainer	MILES	Claymore Inert
	Medical TADSS	OneTESS	SLAM Trainer
	MILES	CCTT (Dismounted Soldier)	MILES
	CBRN TADSS	TIED	NGATS
	NLCS	TUA	OneTESS
	OneTESS	VCCT	OPFOR TADSS
	OPFOR TADSS		Spider Trainer
	CCTT (Dismounted Soldier)		Targetry
	Spider Trainer		TIED
	TIED		TUA
	TUA		VCCT

TADSS-SUPPORTED TRAINING STRATEGY

2-6. Once he integrates all available information, the commander determines what tasks, events, and TADSS will support his multiechelon training strategy. In the process, he realizes that the TADSS identified in the matrixes to train the task *Attack* cannot be used to train the supporting tasks he has chosen chapter. Table 2-5 shows an example before-and-after checklist that the commander might use to narrow down his training strategy.

Table 2-5. Example commander's TADSS elimination.

BEFORE	***AFTER***
Sergeant's Time (Move Tactically)	*Sergeant's Time (Move Tactically)*
CCTT COTS Simulations EST 2000 Javelin BST Javelin FTT Javelin MSR L-CCATS LMTS AT4 FHT BDM FHT SLAM Trainer CBRN TADSS OPFOR TADSS ROC-V CCTT (Dismounted Soldier) TIED VCCT	COTS Simulations OPFOR TADSS TIED

1. Beginning with the first week as shown in Event (1) of Figure 2-1, the commander reviews the TADSS he will use for the Move Tactically Sergeant's Time (SGT Time). He decides to focus the SGT Time on a dismounted movement to contact with actions on contact. He understands the squad will be constrained to an indoor classroom setting.
2. Device descriptions (Chapter 3) provide the commander with information he needs to choose and eliminate the TADSS that apply to his training strategy. For example, descriptions for both the close combat tactical trainer (CCTT) and virtual combat convoy trainer (VCCT) depict them as mounted training devices. This information directs the A Company commander to eliminate both trainers from his training strategy as he focuses on dismounted movement.
3. The company commander eliminates the Javelin field tactical trainer (FTT), missile simulation round (MSR), and the antitank (AT4)/bunker defeat munition (BDM) field handling trainer (FHT). He makes this choice because these devices are designed for field environment training, and do not support the commander's intent.
4. Because neither the selective lightweight attack munition (SLAM) trainer nor the chemical, biological, radiological, and nuclear (CBRN) TADSS supports his training objectives for tactical movement or actions on contact, the commander eliminates them.
5. Because the following all focus on engagement skills rather than on tactical movement or actions on contact, the commander also eliminates them:
   - Laser Marksmanship Training System (LMTS).
   - Laser Convoy Counter Ambush Training System (L-CCATS).
   - Engagement Skills Trainer (EST) 2000.
   - Javelin basic skills trainer (BST).

6. The recognition of combat vehicles (ROC-V) trainer develops Soldier skills on combat vehicle identification (CVI), not on tactical movement or actions on contact. So the commander eliminates this device as well.
7. The commander reviews device descriptions Chapter to examine the capabilities of several COTS simulations, and then he evaluates the three remaining TADSS. He does this to determine how they best support his training strategy:
   - Commercial off-the-shelf (COTS) simulations.
   - Opposing force (OPFOR) TADSS.
   - Training improvised explosive device (TIED) kit.
8. The commander then decides COTS are the best fit for his event based on the following capabilities. COTS provide multiple iterations for often neglected, complex events; exercise and refine SOPs; and integrate doctrine and TTPs.
9. Using Table 3-8 in Chapter 3, COTS Simulation Capabilities, the commander selects DARWARS Ambush! because of the following capabilities: The use of semi-automated forces (SAF) and live OPFOR supports crawl level operations enables tactics, techniques, and procedures (TTP)/standard operation procedure (SOP) refinement, and mission rehearsal.
10. Finally, Chapter from the descriptions of TIED and OPFOR TADSS the commander learns they both provide hands-on training to familiarize Soldiers with enemy TTPs and equipment.
11. The commander uses the same planning methodology he used for the squad ST to complete his training plan for week one. He focuses training on selected supporting tasks and evaluates the TADSS listed for each event to determine their applicability to his training strategy. He then crosswalks the selected TADSS across the multiechelon events for week one to eliminate redundant and non-supportive TADSS. The culmination of his planning produces a comprehensive one-week training plan.

END-STATE MULTIECHELON TRAINING

2-7. So far, the commander has identified the CATS task selection, the company training strategy for *Attack* in Figure 2-1, and the supporting TADSS by echelon in Tables 2-1 through 2-4. The commander uses the planning method shown in Table 2-5 to resource the company training events with the proper TADSS. Appendixes A through G discuss these in detail.

2-8. In Table 2-6, the commander consolidates all of his information to reflect the training event, gate, echelon, and specific TADSS used. The *Training Events* column reflects the events shown in Figure 2-1. The *Training Gates* column reflects the training progression outlined in the Infantry company CATS. The *Echelon* columns display the TADSS selected by the commander by echelon trained. This enables his platoon leader(s) (PL) to identify what TADSS he intends for their use during the platoon STX for *Attack*. The PLs look at the training event for week four. Reading from left to right and top to bottom, they identify the platoon column and the commander's approved TADSS for that specific training evolution. Chosen TADSS consist of AT4/BDM FHT, HITS, Javelin FTT, Javelin MSR, L-CCATS, Medical TADSS, Multiple Integrated Laser Engagement System (MILES), OPFOR TADSS, Targetry, TIED, and TUA. The PLs can now Chapter plan training using the selected TADSS.

Table 2-6. Example format for training strategy end-state.

Training Gate		*Training Events by Echelon with TADSS Selections*			
		Company	***Platoon***	***Squad***	***Mortar Section***
WEEK 1	Move Tactically		**ST** COTS Simulation	**ST** COTS Simulations OPFOR TADSS TIED	**ST** L-CCATS Claymore Inert TUA
			STX AT4/BDM FHT Javelin FTT Javelin MSR MILES OPFOR TADSS TIED TUA	**STX** AT4/BDM FHT Javelin FTT/MSR L-CCATS OPFOR TADSS TIED	
WEEK 2	Operations	**CL** JLCCTC CFFT Guardfist	**CL** CFFT Guardfist OPFOR TADSS TIED	**CL** CFFT Guardfist OPFOR TADSS TIED WPN SQD: LMTS EST 2000 Javelin BST	**ST** L-CCATS Claymore Inert TUA
		TEWT JLCCTC	**ST** COTS Simulations		
WEEK 3	Attack (Prep)	**TEWT**	**ST** COTS Simulation	**ST** AT4/BDM FHT EST 2000 LMTS Medical TADSS WPN SQD: Javelin FTT/MSR	**CL**
WEEK 4	Attack (Exercise)	**STX** AT4/BDM FHT HITS Javelin FTT Javelin MSR JLCCTC Medical TADSS MILES OPFOR TADSS Targetry TIED TUA	**STX** AT4/BDM FHT HITS Javelin FTT Javelin MSR L-CCATS Medical TADSS MILES OPFOR TADSS Targetry TIED TUA	**STX** AT4/BDM FHT Javelin FTT Javelin MSR L-CCATS Medical TADSS MILES OPFOR TADSS Targetry TIED TUA	**STX** TUA

TRAINING CHALLENGES

2-9. The RESET/TRAIN phase of the unit lifecycle presents the commander with many challenges. Using TADSS can help the commander overcome these challenges.) Challenges can include—

- Only key leadership positions are occupied during a unit's reset because of personnel turnover.
- No equipment on-hand to include vehicles and weapons for new organizations.

- Challenges in understanding new doctrine, TTPs, and unit cohesion.
- Competing requirements with other units on the installation.

2-10. Many other problems that depend on the unit's situation are also possible. The READY phase also presents several unique challenges to the commander, including:

- The availability of TADSS in a deployed area.
- TTP/tactical SOP refinement.
- The ability to sustain skill proficiency.

2-11. The commander can follow the same procedures just described to identify the TADSS that provide the best solution to specific training challenges.

Section II — LIVE/VIRTUAL/CONSTRUCTIVE INTEGRATED-USE CASE

2-12. The integration of LVC into a commander's overall training strategy can provide several effective options to help him succeed in the many training challenges he will face during his command lifecycle. Continuing with the training strategy process of the A/1-77 company commander, this section provides a general concept of how TADSS can be used to support multiechelon training. At the end of this section you will understand how our A Company commander incorporated LVC into his training strategy.

TRAINING

2-13. FM 7-1 describes the commander's training strategy that uses a mix of LVC enablers to achieve and sustain unit proficiency on selected METL tasks within the BOE. Extracted from FM 7-1, Table 2-7 represents the LVC training mix with adaptations to support the company commander's strategy.

Table 2-7 . Company live, virtual, and constructive training mix.

	Leaders			***Unit***		
	Crawl	***Walk***	***Run***	***Crawl***	***Walk***	***Run***
Company	L/V/C	L/V/C	L/C	L/V/C	L/V/C	L/C
Platoon	L/V/C	L/V/C	L/C	L/V/C	L/V/C	L/C
Squad	L/V	L/V	L	L/V	L/V	L
Individual	L/V/C	L/V/C	L/C	L/V	L/V	L

2-14. FM 7-1 also describes an integrated capability with the potential for linking maneuver, aviation, and fire support into a near-seamless training environment. The ability to link integrated training systems is described as the live, virtual, constructive integrated architecture (LVC-IA). LVC-IA contains an installation infrastructure that allows live training instrumentation. Homestation Instrumentation Training System (HITS), constructive simulations (joint land component constructive training capability [JLCCTC]), and virtual simulators (Solder CATT) are integrated into a seamless training environment. The combination of these training tools can provide the commander with a greater training capability and realism. Figure 2-3 shows an example installation with a LVC-IA infrastructure.

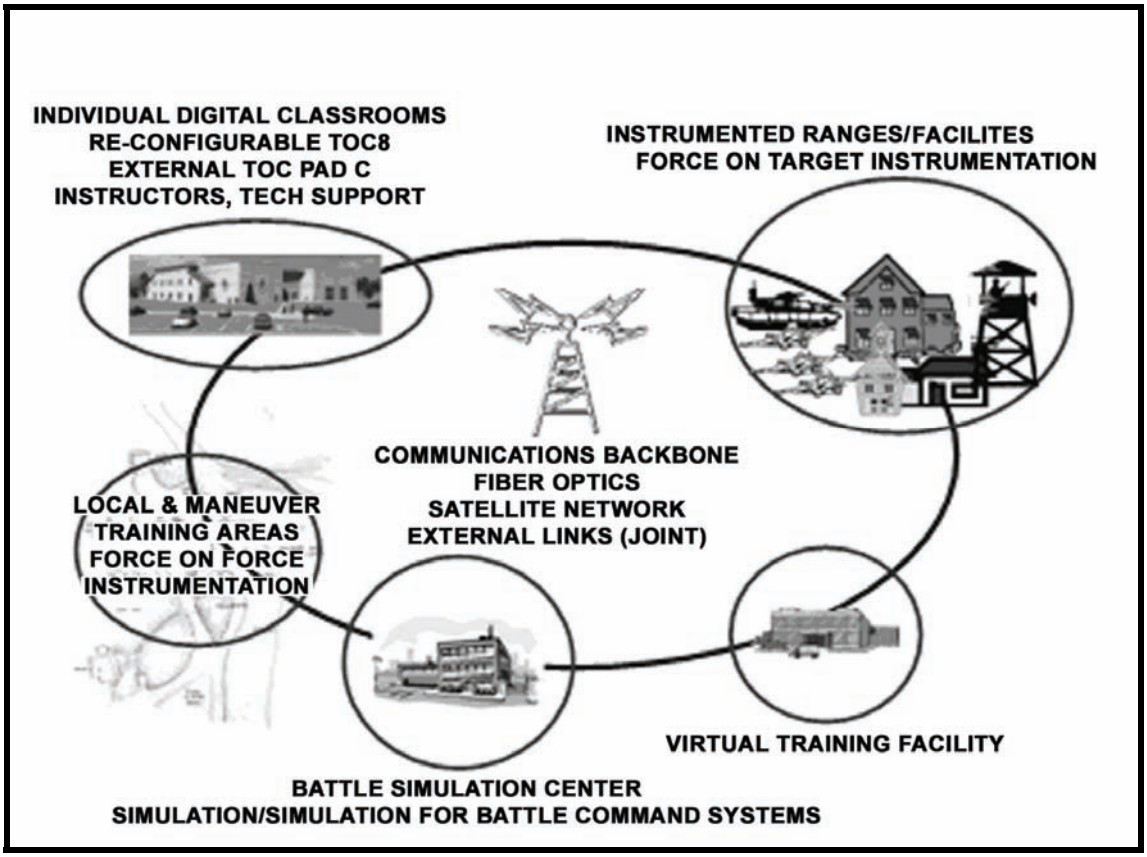

Figure 2-3. Integrated homestation training capability.

BATTLE COMMAND STIMULATION/SIMULATION

2-15. Section I describes the methodology a commander can use to plan a mix of LVC TADSS supporting his training strategy. Table 2-6 outlines the training strategy end state for *Attack.* As a part of the commander's LVC TADSS training methodology, the JLCCTC used in support of company and platoon exercises is an example of incorporating an integrated infrastructure to support training. Chapter 3 provides a description of JLCCTC's capability not only to provide a constructive simulation, but also to stimulate a company's battle command systems.

2-16. To stimulate the company's battle command systems, the installation must have an infrastructure comparable to the one shown in Figure 2-3 (integrated homestation training capability). The infrastructure must connect the constructive training capability located in the Battle Command Training Center (BCTC) to the local training area. With this capability the commander can train his company in a more realistic operational environment with the intelligence and information he and his leaders would receive in combat.

EXAMPLE

2-17. Due to the likelihood of deployment, the battalion commander, 1-77 IN, provides updated guidance so his companies can train in an urban environment. To quickly adjust focus, he coordinates with his Battalion S-3 to analyze what resources are available for urban operations training. The S-3 quickly calls the home station BCTC and discovers the resources listed in Table 2-8 are immediately available for use.

Table 2-8. Additional resources for UO STX.

TADSS allocated for Company STX	*Additional TADSS*
AT4/BDM FHT HITS Javelin FTT Javelin MSR JLCCTC Medical TADSS MILES OPFOR TADSS Targetry TIED TUA	Soldier-CATT Aviation Combined Arms Tactical Trainer (AVCATT)— Aviation equivalent to Soldier-CATT AC-130J Virtual Simulator

FRAGMENTARY ORDER

2-18. The S-3 notifies the battalion commander, who issues a fragmentary order (FRAGO) to his company commanders. The FRAGO—

- Directs them to focus STX Attack on an urban environment.
- Orders the integration of creative LVC training.
- Directs the commanders to be prepared for an OPFOR responsibilities rotation.

ADDITIONAL TRAINING OBJECTIVES

2-19. The battalion commander then provides additional training objectives to focus the STX for the upcoming deployment. The objectives are—

- Combined arms integration.
- The use of joint enablers.
- Ground and aviation fire support coordination.
- Soldier and leader skills that provide joint fire terminal guidance.

CONCEPT OF THE OPERATION

2-20. Upon receiving the FRAGO, the 1-77 IN Company A commander conducts a hasty mission analysis and develops his concept of operations in support of his battalion commander's objectives. He uses the device descriptions (Chapter 3) to determine which TADSS can be integrated into his training scenario. The simulation support staff at the BCTC also aid him in leveraging existing LVC tools within the installation infrastructure to enhance his training. Finally, he consolidates the new resources allocated from the battalion and BCTC with his original list of TADSS for the company STX.

INTEGRATION OF FORCES AND EFFECTS

2-21. To integrate combined arms and joint effects, the commander decides to use 2/A/1-77 IN virtually in the CCTT (Dismounted Soldier). The BCTC will replicate a mechanized Infantry platoon (2/B/2-19 IN[M]) constructively using the JLCCTC. The virtual platoon will be capable of coordinating fires and maneuvering with the constructive mechanized platoon in CCTT (Dismounted Soldier).

COORDINATION

2-22. The commander can coordinate with the aviation platoon through simulated voice communications because the battalion S-3 coordinated with the aviation brigade supporting the battalion to train with an AH-64 platoon using AVCATT. In addition, his virtual platoon (in Dismounted Soldier) will coordinate the fires to the targets identified at the urban facility.

2-23. Also, the battalion S-3 coordinated with the AC-130J crew supporting the IBCT's deployment to train with several company commanders during their STX development of joint terminal guidance skills. The battalion commander identified the A/1-77 IN commander as his lead company to undergo training with the AC-130J crew. Because of these decisions, the AC-130J crew's virtual simulator will integrate in the exercise using a communications line into the installation infrastructure.

2-24. While 2/A/1-77 IN conducts this exercise in CCTT (Dismounted Soldier), 1st platoon, 3rd platoon, and the mortar section will be located at the urban training facility. Figure 2-4 shows the LVC use case end-state. Each of the live units will be instrumented with HITS. They will also be provided stimulation for their battle command systems from the JLCCTC at the BCTC. When implemented the commander will have the option of rotating each platoon through the CCTT (Dismounted Soldier) to train on the battalion commander's objectives.

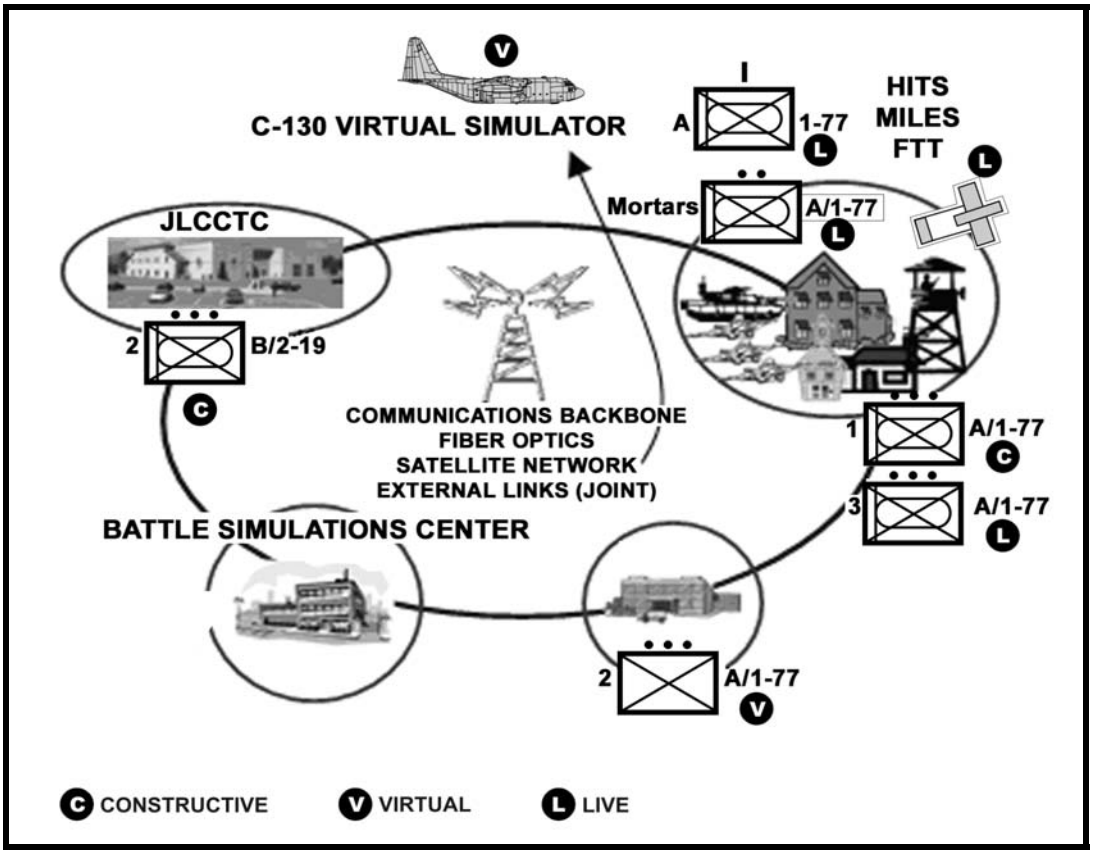

Figure 2-4. End state, LVC.

TADSS = TRAINING MAXIMUM

2-25. The A/1-77 company commander's use of integrated LVC TADSS allows his unit to train at a high level of proficiency in an enhanced, realistic environment. The choice of available simulations incorporated his battalion commander's training objectives that could not be trained solely in a live environment. His use of this TC's reference material maximized his training approach.

TRAINING WITH TADSS = A SUPERIOR TRAINING EVENT

2-26. Using the integrated LVC approach to training maximizes time and allows the commander more flexibility with training conditions and realistic replication of the COE. LVC also maximizes training resources and allows commanders to repetitively train in a resource constrained environment. In conclusion, training with TADSS produces a superior training event.

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Chapter 3

Categories

This chapter describes the various TADSS that support Infantry training by category. It is organized into two sections, which represent the two categories of TADSS, system and nonsystem. Section I groups TADSS by the weapon or combat equipment whose training they support. Section II is organized by trainer. The capabilities and limitations provided should help leaders determine which training system to use. Recommended training strategies and supporting references are also listed. The TADSS provide realistic training conditions in simulated environments. The goal of Infantry Company TADSS is to familiarize company leaders with every available TADSS to ensure a better trained ready force.

Section I — SYSTEM TADSS

3-1. This section discusses the TADSS that support each Infantry company combat system. Device numbers are provided for those available from a local TSC.

HAND GRENADE

3-2. The M288 hand grenade fuze is used with the M67 practice hand grenade. The M67 practice hand grenade is a full scale, three dimensional replica used for adding realism to a tactical exercise or for demonstrations. The TSC device number is DVC T-09-109.

INDIVIDUAL TRAINING

3-3. The M288 hand grenade fuze (DODIC G878) and M67 practice hand grenade (DODIC G811) support hand grenade individual task qualification as outlined in STP 21-1-SMCT, FM 3-23.30 and DA PAM 350-38.

COLLECTIVE TRAINING

3-4. DA PAM 350-38 authorizes practice hand grenade fuzes for use during unit collecting training as well as stun grenades for urban operations training.

REFERENCES

- STP 21-1-SMCT, Soldier's Manual of Common Tasks, Skill Level 1.
- DA PAM 350-38, Standards in Weapons Training.
- FM 3-23.30, Grenades and Pyrotechnic Signals.

HIGH-MOBILITY, MULTIPURPOSE WHEELED VEHICLE

3-5. See TC 21-305-4 for specific guidance on individual qualification and skills training for the HMMWV. The reconfigurable vehicle simulators (RVS) for CCTT as well as the reconfigurable tactical trainer (RVTT) support unit collective training from squad to platoon. The VCCT supports collective training for convoy operations from squad to platoon depending on the installation's number of system suites.

SUPPORTING TADSS

- GTA 43-01-003, HMMWV Hot Weather/Desert Operations.
- GTA 55-03-030, HMMWV Up-Armored Emergency Procedures/Performance Measures.
- Reconfigurable Vehicle Simulator in CCTT (see Section II, Nonsystem TADSS).
- Reconfigurable Vehicle Tactical Trainer (RVTT; see Section II, Nonsystem TADSS).
- VCCT (see Section II, Nonsystem TADSS).

REFERENCES

- FM 21-305, Manual for the Wheeled Vehicle Driver.
- TC 21-305-4, Training Program for the High Mobility Multipurpose Wheeled Vehicle.
- TC 21-305, Training Program for Wheeled Vehicle Accident Avoidance.

JAVELIN

3-6. This paragraph lists the trainers to support the Javelin.

BASIC SKILLS TRAINER

3-7. The BST (Figure 3-1) is designed for indoor use to teach basic target identification, acquisition, engagement, and lock-on skills to gunners. The trainer is used for initial, sustainment, and quarterly qualification for company Javelin gunners. The BST is a self-contained, computer-based, indoor training device. The TSC device number is DVC 07-126.

Figure 3-1. Javelin basic skills trainer.

Capabilities

3-8. Computer generated images simulate firing in multiple scenarios: day, night, weather, obscurations, and all targets. The Javelin BST also simulates a complete tactical engagement sequence and includes a gunnery trainer and gunner qualification trainer.

Limitations

3-9. The BST may only be used in an indoor or covered environment. Also, the BST is one of two required qualification devices for Javelin gunners. DA PAM 350-38 *does not authorize* the use of live rounds for gunner qualification.

Training

3-10. The Javelin BST is commonly located in an installation facility or can be signed out of the TSC. The BST requires about 30 minutes to set up using two Soldiers. The BST can be transported to the field for concurrent training using two Soldiers and one vehicle. It requires 64 square feet of space to train and an electrical outlet or generator if it is used in a tent. Training product support includes the Fort Benning Infantry and Warrior University portals, which link to distance learning material for the resident Javelin Gunner Course and Train-the-Trainer Course. The Javelin BST trains gunner qualification, indoor instruction, and train-the-trainer instruction. The Javelin BST trains—

- Infrared images and target acquisition.
- Target identification and engageability.
- Target engagement and malfunctions.
- Gunners Skill Test (GST).
- Training time requires about 12 hours per gunner to train all BST exercises.
- Centralized Javelin training is recommended to conserve resources and standardize training.
- Requires about two to three hours per gunner to qualify.
- Javelin gunners qualify quarterly using BST.

References

- FM 3-22.37, Javelin Close Combat Missile System, Medium.
- TM 9-1425-687-12, Operator and Organizational Maintenance Manual for Javelin.
- DA Pam 350-38, Standards in Weapons Training.

JAVELIN FIELD TACTICAL TRAINER

3-11. The Javelin FTT (Figure 3-2) is a MILES compatible, fully integrated, three-dimensional, force-on-force or force-on-target training device. The FTT combines the tactical Javelin command launch unit (CLU) with a simulated round. The FTT incorporates a MILES transmitter to simulate Javelin engagements during training exercises. The FTT provides a capability for sustainment, collective, and leader training, as well as quarterly qualification. The TSC device numbers are—

- Javelin FTT student station: DVC 07-127.
- Javelin FTT instructor station: DVC 07-128.

Figure 3-2. Javelin field tactical trainer.

Capabilities

- Supports force-on-force training exercise.
- Provides a qualification station supporting the Gunners Skill Test.

Limitations

3-12. The Javelin FTT requires a MILES small arms alignment fixture (SAAF) to bore sight (see MILES SAAF in Section II, Nonsystem TADSS).

Training

3-13. The Javelin FTT requires four minutes to set up for collective training and 30 minutes to set up with the instructor station. The FTT requires 60 feet by 6 feet to set up the MILES SAAF, and a field environment suitable for a 2,500 meter target engagement. The FTT is transportable with three Soldiers: two for the FTT, and one for the instructor station. Javelin gunners take about two hours for Gunners Skill Test qualification. See training product support for the Javelin BST. The Javelin FTT is used to train—

- Javelin major components, equipment characteristics, capabilities, and features.
- Basic Javelin operation.
- Javelin controls and indicators.
- Conduct of daily readiness check procedures.
- Infrared images and target acquisition.
- Target identification and engageability.
- Target engagement and malfunctions.
- GST (second device used for gunner qualification).

References

- FM 3-22.37, Javelin Close Combat Missile System, Medium.
- TM 9-1425-687-12, Operator and Organizational Maintenance Manual for Javelin.
- DA Pam 350-38, Standards in Weapons Training.

JAVELIN MISSILE SIMULATION ROUND

3-14. The MSR (Figure 3-3) can be used to train Javelin gunners on how to handle, maintain, and carry the round. The MSR consists of a simulated launch tube that contains no instruments or circuitry but is the same weight and balance of the live Javelin round. The TSC device number is T-07-93.

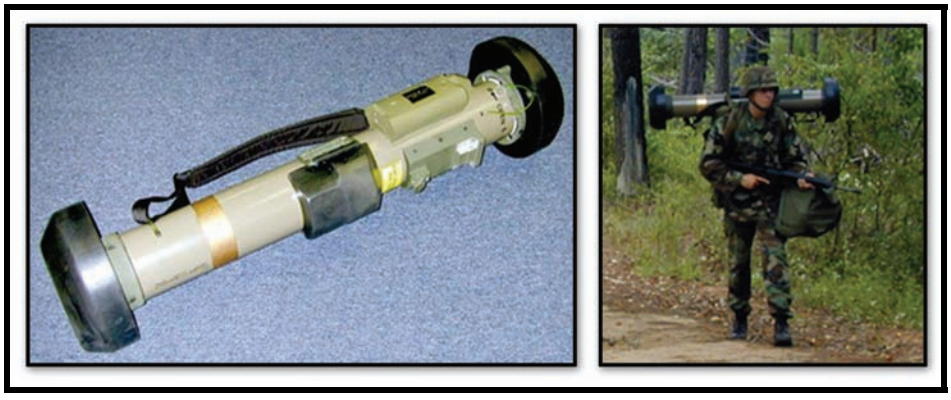

Figure 3-3. Javelin missile simulation round.

Capabilities

- High fidelity of round adds realism to classroom instruction and Sergeant's Time training.
- Replicates the Soldier's combat load for both the Javelin gunner and assistant gunner in field training.

Limitation

3-15. The MSR lacks missile functionality when attached to Javelin CLU.

Training

3-16. The MSR supports classroom instruction on Javelin missile ST training as well as collective training that simulates the weapon's combat load.

References

- FM 3-22.37, Javelin Close Combat Missile System, Medium.
- TM 9-1425-687-12, Operator and Organizational Maintenance Manual for Javelin.
- DA Pam 350-38, Standards in Weapons Training.

LONG-RANGE, LASER-DESIGNATOR RANGEFINDER

3-17. The simulated LLDR (Figure 3-4) replicates all the control functions of the tactical LLDR. It is used as part of the CFFT for individual training. For more about the CFFT, see Section II.

M16/M4 FAMILY OF WEAPONS

3-18. This paragraph discusses the M15 aiming card, the M16 sighting device, the riddle sighting device, and the target box exercise.

M15A1 AIMING CARD

3-19. The aiming card (Figure 3-5) determines if the Soldier understands how to aim at the target's center of mass. This card may be used to ensure the Soldier understands adjustment of the aiming point, how to allow for gravity, and how to engage a moving target. The sight-target relationship on the card is the same visual perception the Soldier should have when he is zeroing on a standard silhouette target. The TSC device number is DVC T-07-26. (See Appendix A, FM 3-22.9, for specific guidance on set-up and training for the aiming card.)

Figure 3-4. Simulated long-range, laser-designator rangefinder.

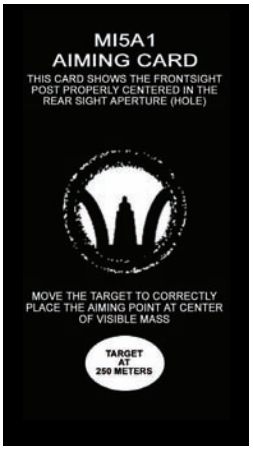

Figure 3-5. M15A1 aiming card.

M16 SIGHTING DEVICE

3-20. The M16 sighting device (Figure 3-6) allows marksmanship coaches to insure firers are aiming correctly at the targets. The device has a metal frame attached to the rear of the rifle carrying handle. When the firer looks through his sights, the coach positioned alongside the firer, can look at the reflection on the tinted glass and view the same picture as the firer. See Appendix A, FM 3-22.9*,* for specific guidance on set-up and training for the sighting device. The TSC device number is DVC T-07-84L/T-07-84R.

RIDDLE SIGHTING DEVICE

3-21. The riddle sighting device (Figure 3-7) trains the Soldier to understand the aiming process while using his own rifle. The device consists of a small plastic plate with a magnet and a drawing of an E-type silhouette target. A two-man team is required for its use. The TSC device number is DVC T-7-87. See Appendix A, FM 3-22.9, for specific guidance on set-up and training for the sighting device.

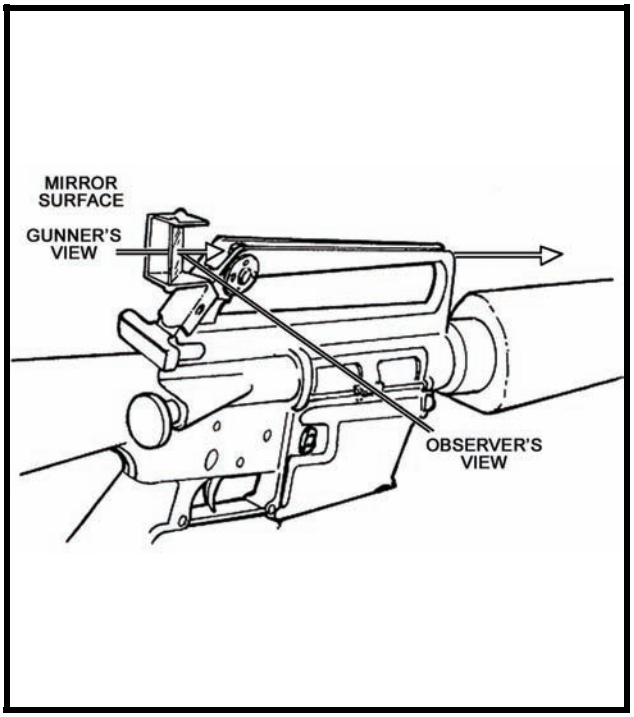

Figure 3-6. M16 sighting device.

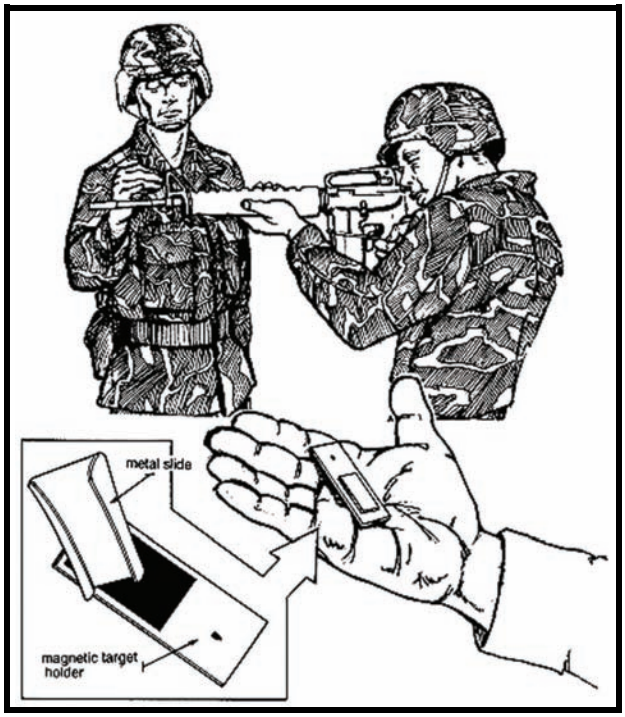

Figure 3-7. Riddle sighting device.

TARGET BOX EXERCISE

3-22. The target box exercise consist of a rifle-holding device (DVC TA-G-12A), and the target box paddle device (DVC T-7-86).

Equipment

3-23. This exercise trains consistency of aiming and placement of three-round shot groups in a dry-fire environment (Figure 3-8).

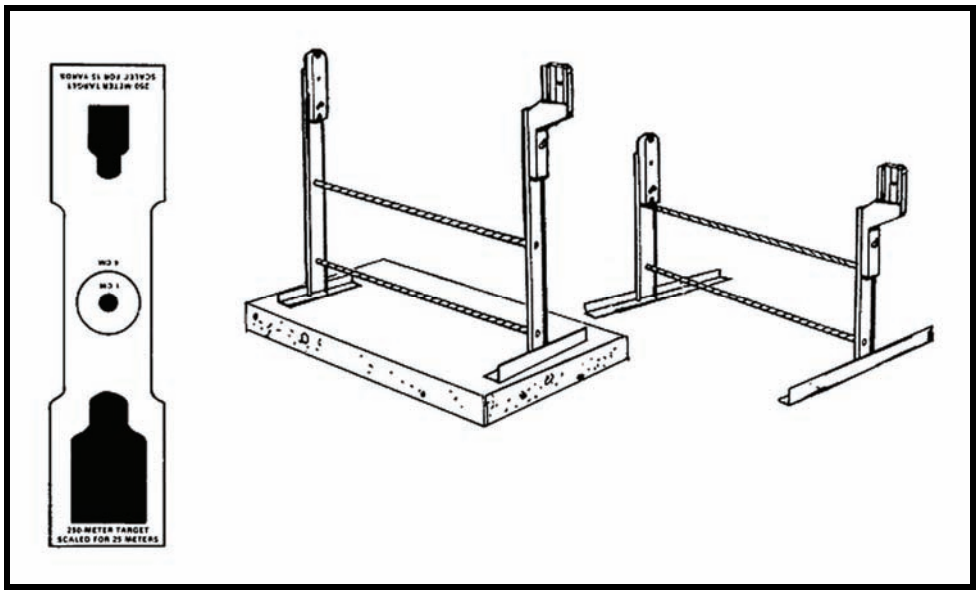

Figure 3-8. Target box paddle and rifle-holding device.

Supporting, Nonsystem TADSS

3-24. The silhouettes on the target box paddle are scaled to represent an E-type silhouette target at 250 meters. The visual perception during the target-box exercise is similar to what a Soldier sees while zeroing on a standard zeroing target. The target box exercise provides a chance for the trainer to critique the Soldier on his aiming procedures, aiming consistency, and placement of shot groups. See Appendix A, FM 3-22.9, for specific guidance on setup and training for the target box exercise. Supporting TADSS include—

- GTAs
  - GTA 07-01-039—M16A2 Disassembly Layout Chart, M16A2 Rifle.
  - GTA 07-01-040—M4 Carbine, Field Stripped.
  - GTA 07-01-043—BRM Coaches Checklist (four fundamentals).
- EST 2000.
- LMTS.
- Training Films
  - TF 21-3907—Rifle, M16A1 Part I, Care, Cleaning, Lubrication.
  - TF 21-3908—Rifle, M16A1 Part II Field Expedients.
- Videotapes
  - 2E/010-071-1271-B, Engagement of Moving Personnel Targets…from the Foxhole Position.
  - 2E/010-071-0444-B, Cycle of Functioning M16A1 Rifle.
  - 2E/010-071-0086-B, Overview of BRM Training.
  - 2E/010-071-0725-B, TVT 7-13 (Feb 87).

- TVT 7-1, Teaching Rifle Marksmanship: Part I.
- TVT 7-2, Teaching Rifle Marksmanship: Part II.

M2 MACHINE GUN

3-25. This paragraph discusses the M19 blank firing adapter (BFA) and the sighting bar.

M19 BLANK FIRING ADAPTER

3-26. The M19 BFA (Figure 3-9) was developed to permit the machine gun to fire the M1A1 blank cartridge in the automatic fire mode. The BFA is an easy to install, reliable device that allows the machine gun to be used more realistically during an FTX. The M19 BFA weighs 15.5 pounds and can be installed using either a crescent wrench or the blank/live round discriminator (a component of the BFA that has been designed to serve as a wrench). The design of the M19 will not allow a live round to be loaded while the blank/live round discriminator cover is in position. Normal headspace and timing must be made when firing blank rounds with the M19. See Appendix B, FM 3-22.65, for specific guidance on setting up and training for the blank firing adapter.

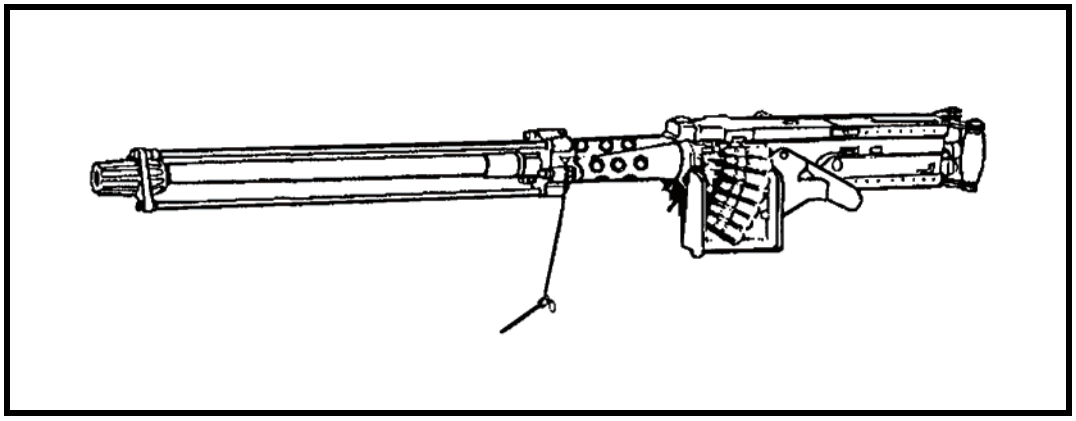

Figure 3-9. M19 blank firing adapter.

SIGHTING BAR

3-27. The sighting bar (Figure 3-10) is used to practice the sighting and aiming exercise for the M2 Weapon System. The sighting bar also has a scaled target that is used to practice acquiring a correct sight picture. See Appendix B, FM 3-22.65, for specific guidance on setting up and training with the sighting bar. Supporting TADSS include—

- EST 2000.
- GTAs.
- GTA 09-06-038, Browning MG, .50 Cal, M2.
- GTA 10-08-007, .50 Caliber MG Layout Chart.
- VCCT.

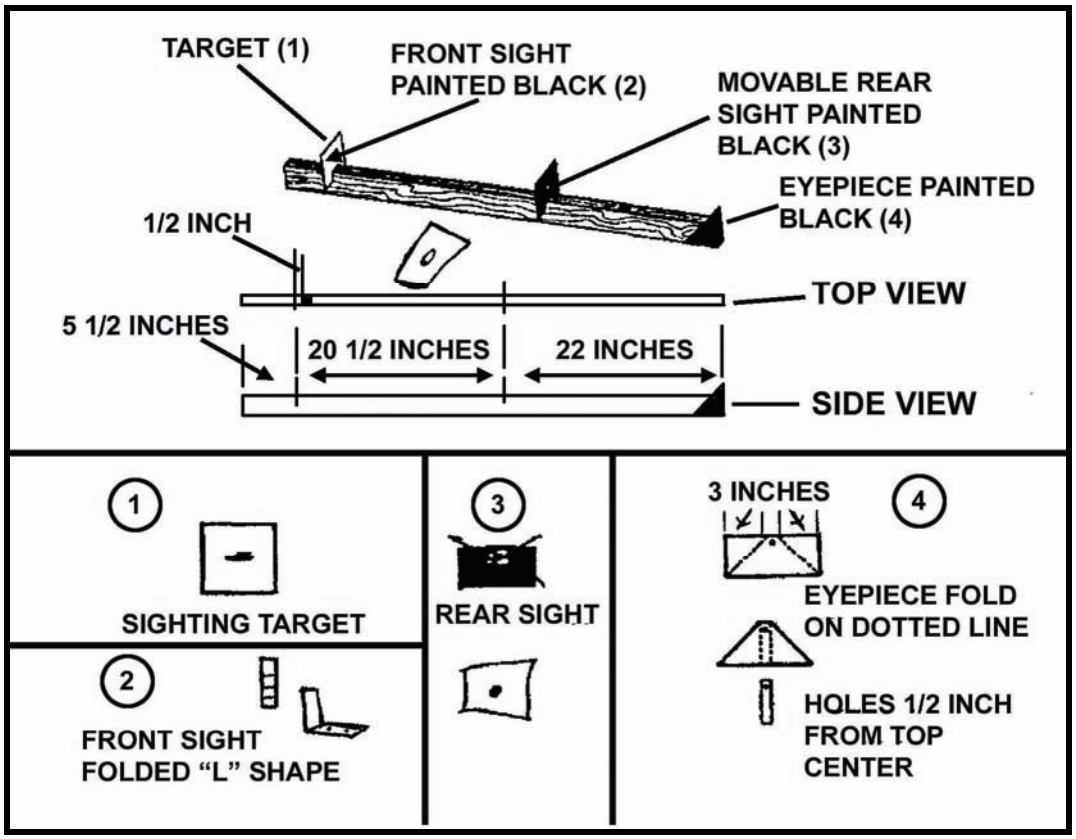

Figure 3-10. M2 HB sighting bar.

M203 GRENADE LAUNCHER

3-28. Appendix E, FM 3-22.31, provides training strategies with training-unique ammunition and designated ranges. Supporting TADSS include—

- EST 2000.
- Targetry.
- Training-unique ammunition.

M240B AND M60 MACHINE GUNS

3-29. Trainers for these weapons include the sighting bar and sighting target. (See FM 3-22.68 for training guidance.)

SIGHTING BAR

3-30. The purpose of the sighting bar (Figure 3-11) is to help teach the correct alignment of the sights on a target. The sighting bar consists of the bar itself and a sighting target that measures 1 x 2 x 48 inches. The sighting target is secured 5 1/2 inches from one end (it should be moveable). The eyepiece is secured on the other end. The peep sight is secured 20 1/2 inches from the sighting target and 22 inches from the eyepiece.

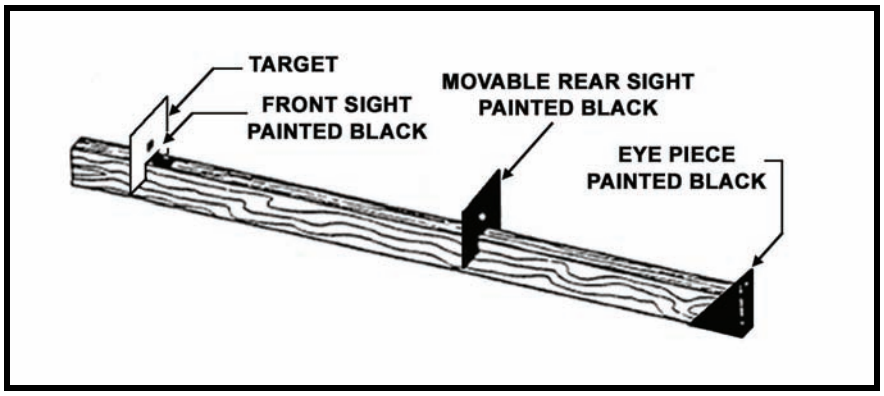

Figure 3-11. Machine gun sighting bar.

SIGHTING TARGET

3-31. The sighting target (Figure 3-12) aids in applying the sight alignment instruction to the actual alignment of the machine gun sights on a target 25 meters away. The sighting target is 1 x 1 x 24 inches. Attached to it is a 3-inch square piece of wood painted black, with a small 1/4-inch hole in the center. The supporting TADSS, TVT 7-24, *M60 Machine Gun Mechanical Training*, describes the components and operation of the M60 machine gun, to include disassembly, cleaning, lubrication, assembly, sighting, firing, and use and preparation of a range card. Video length is 31 minutes.Supporting TADSS include—

- GTA 07-10-001, Machine Gunner's Card.
- EST 2000.
- LMTS.
- MILES.

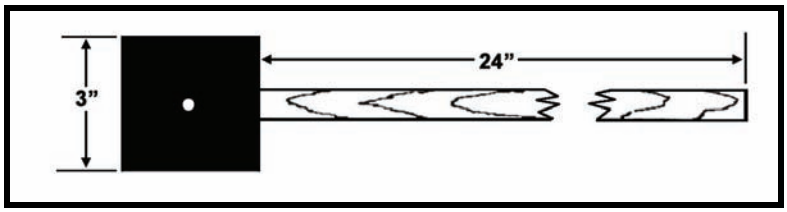

Figure 3-12. Machine gun sighting target.

M249 MACHINE GUN

3-32. The machine gun sighting bar and sighting target supports the M249. Supporting TADSS include—

- GTA 07-10-042, M249 MG Disassembly Mat.
- EST 2000.
- LMTS.
- MILES.

M9 PISTOL

3-33. The M9 air-operated pistol is used with the quick-fire target training device (QTTD) to train operation and marksmanship of the M9 pistol. The devices teach quick fire, increase confidence in the ability to fire the weapon, and provide additional firing practice. The pistol's light recoil and low noise let the Soldier concentrate on fundamentals, build confidence, and hit a target faster and more accurately. (See FM 3-23.35 for specific guidance on setup and training strategies.) Supporting TADSS include the EST 2000 and the LMTS.

MINES

3-34. This paragraph discusses two mines, the M18A1 claymore and the M21 antitank practice mines.

M18A1 CLAYMORE MINE KIT, INERT

3-35. The inert claymore mine (Figure 3-13) is a full-scale plastic replica used for indoor and outdoor instruction on the characteristics, nomenclature, arming, handling, and functioning of the mine. It can also be used to train Soldiers to emplace mine fields. The TSC device number is DVC TA-D-64.

Figure 3-13. Claymore mine kit (inert).

Training

3-36. Individual and collective mine training follows:

Individual

3-37. Soldiers qualify on the M18 Claymore mine by emplacing, firing, and recovering an inert claymore mine IAW FM 23-23, Antipersonnel Mine M18A and, M18 (Claymore), every three months. Army Reserve and National Guard Soldiers qualify on the M18 Claymore mine by emplacing, firing, and recovering an inert Claymore mine IAW FM 23-23 every 12 months. STP 21-1-SMCT outlines the use of Claymore mines for individual task qualification.

Collective

3-38. DA Pam 350-38 outlines quantities for the inert Claymore mines used during unit collective training.

Supporting Devices

3-39. M57 firing device, M40 test set, insulation tape, and M4 electric blasting cap (inert) with firing wire.

References

- FM 23-23, Antipersonnel Mine M18A and M18 (Claymore).
- Training film 7–3180, Technique of Employment, M18 and M18A1 Antipersonnel Weapons (Claymore), 27 minutes.
- STP 21-1-SMCT, Soldier's Manual of Common Tasks, Skill Level 1.

M21 Antitank Practice Mine

3-40. The M21 antitank practice mine (Figure 3-14) is a full scale plastic model of the actual mine. The TSC device number is DVC TA-D-23-33. This device is used during force-on-force training to simulate mine warfare. See GTA 09-04-005, Mine AT M21 (Tank Killer).

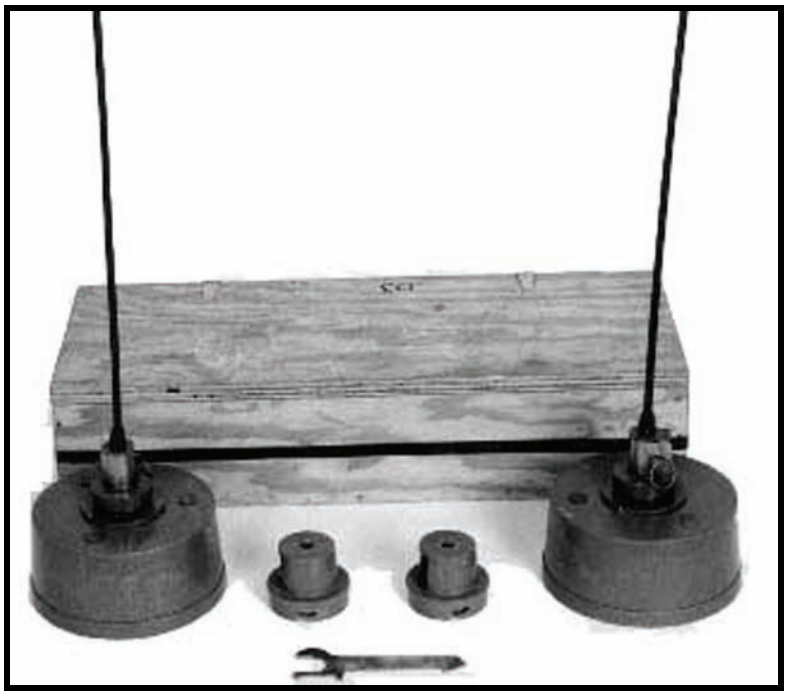

Figure 3-14. M21 Antitank practice mine.

SELECTIVE LIGHTWEIGHT ATTACK MUNITIONS

3-41. The M320 SLAM trainer is a full-scale replication that helps Soldiers maintain proficiency through visual and aural feedback.

Training

3-42. The trainer provides full fidelity and simulates all of the operations of the M4E1 SLAM. The SLAM interfaces with MILES supporting force-on-force training

References

3-43. See GTA 05-10-052, Selectable Lightweight Attack Munition (SLAM), M4.

SPIDER

3-44. The Spider training device is a full-scale replication of the operational Spider antipersonnel mine that provides Soldiers the ability to maintain emplacement, detonation, and retrieval proficiency. (See also Section II.)

TRAINING

3-45. The trainer simulates operations of the Spider. The trainer interfaces with MILES supporting force-on-force training. The training device consists of 30 miniature grenade training simulators, and five mission control unit trainers.

SUPPORTING TADSS

- GTA 05-10-31, US Firing Devices, Booby Traps, and Expedients.
- GTA 05-10-33, Demolition Card.
- GTA 05-10-034, Conventional US Land Mines.
- GTA 05-10-036, Mine Card, Part I.
- GTA 05-10-037, Mine Card, Part II.
- GTA 05-10-041, Maintaining, Employing, and Operating the Modular Pack Mine System (MOPMS) and the Remote Control Unit (RCU).
- HITS.
- OneTESS.

REFERENCES

- TC 20-32-3, Foreign Mine Handbook (Balkan States).
- TC 20-32-4, Foreign Mine Handbook (Asia).
- TC 20-32-5, Commander's Reference Guide for Land Mine and Explosive Hazards (Iraq).

MK19 GRENADE MACHINE GUN

3-46. The MK19 Tactical Engagement Simulation System (TESS, Figure 3-15) supports force-on-force training. It is compatible with MILES.

Figure 3-15. MK19 Tactical Engagement System.

CAPABILITIES

- Laser engagement device.
- Trigger module.
- Audio cue device.
- Transit case.
- Boresight validation targets.
- Audio cue device ground mount interface bracket.

SUPPORTING TADSS

- EST 2000.
- GTA 07-01-035, MK19 Disassembly Layout (Chart).
- OneTESS.
- VCCT.

NONLETHAL CAPABILITY SET

3-47. The NLCS (Figures 3-16 and 3-17) provide commanders with the ability to train additional options when applying military force consistent with the tactical situation. Effective use of the kit and its differing components (Tables 3-1 and 3-2) allows commanders to accomplish stated or directed objectives without having to rely solely on lethal effects. The NLCS is used for combat operations and training. One third of the total NLCS equipment and ammunition is planned for training support. FM 3-22.40, Table D-2, shows a 10-day training plan for each day's activities, tasks, and required resources, including the TADSS from the NLCS. The NLCS is both an operational and training capability focusing on the following objectives:

- Discourage, delay, or prevent hostile actions.
- Limit escalation.
- Take military action in situations where use of lethal force is not the preferred option.
- Provide better force protection.
- Temporarily disable equipment, facilities, and personnel.
- Decrease the post-conflict costs of reconstruction.

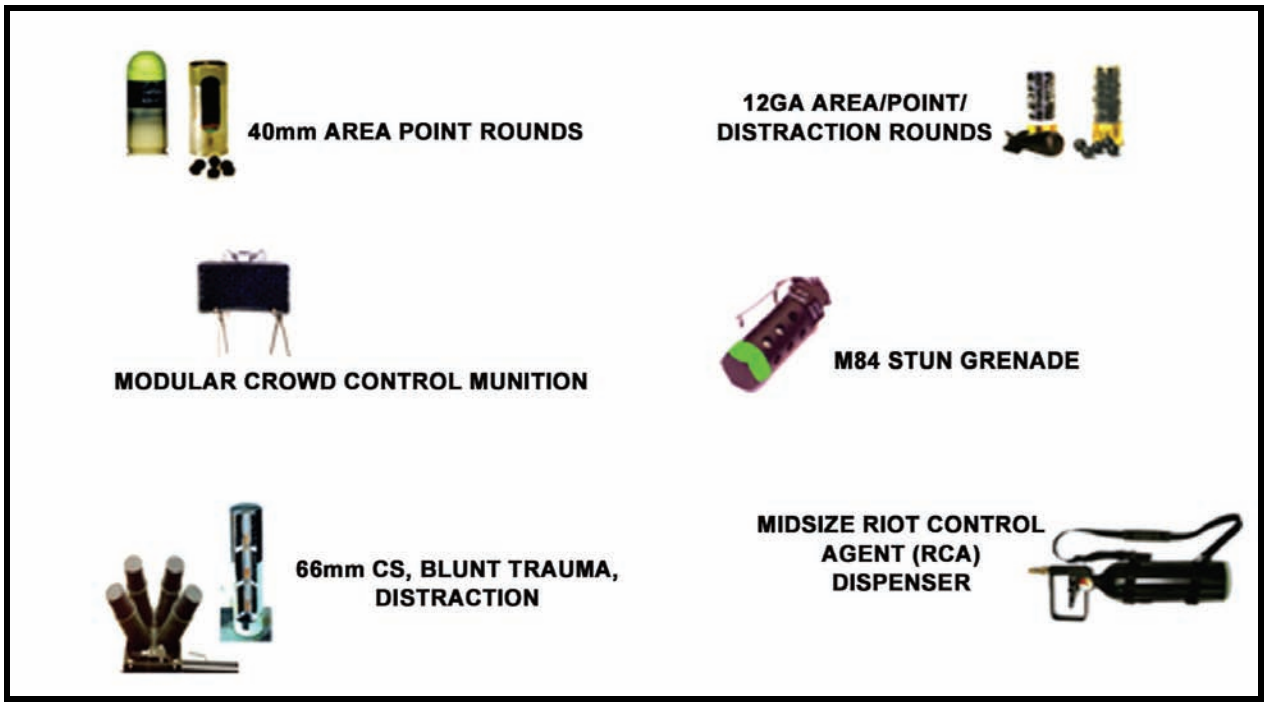

Figure 3-16. Nonlethal ammunition.

Figure 3-17. Nonlethal capability set equipment.

Table 3-1. Nonlethal capability set/kit platoon set component list.

Nomenclature	*NSN*	*QTY*
Nonlethal Grenade Launching Cup Carrying Bag	1095-09-000-3633	15
Riot Training Strike Bag	8460-09-000-3618	3
Collapsible Baton with Holster	1095-09-000-3619	50
White Training Baton	1095-09-000-3620	25
Ultimate Straight Training Baton	1095-09-000-3621	25
Lithium 3V Battery	1095-09-000-3622	100
High-Intensity Individual Flashlight Bulbs	1095-09-000-3623	25
Caltrop	1095-09-000-3624	50
12-Gauge Buttstock Cuff	1095-09-000-3625	15
12-Gauge Launching Cup	1095-09-000-3626	15
MK-4 Individual Pepper Spray Dispenser	1095-09-000-3627	50
MK-4 Inert Training Dispenser	1095-09-000-3628	50
MK-9 Squad Pepper Spray Dispenser	1095-09-000-3629	10
MK-9 Inert Training Dispenser	1095-09-000-3630	10
MK-46 Pepper Spray Dispenser	1095-09-000-3631	3
MK-46 Inert Training Dispenser	1095-09-000-3632	3
Disposable Handcuffs	1095-09-000-3634	100
High-Intensity Individual Flashlight Holster	1095-09-000-3636	50
High-Intensity Light	6240-09-000-3639	4
6V High-Intensity Individual Flashlight	6240-09-000-3641	50
Riot Megaphone	5830-09-000-3640	3
MK-4 OD Pouch	8465-09-000-3642	50
MK-9 OD Pouch	8465-09-000-3643	10
40-mm Carrying Pouch	8465-09-000-3644	50
Sting Ball Diversionary Grenade Pouch	8465-09-000-3645	50
12-Gauge 25-Round Utility Pouch	8465-09-000-3646	30
MK-46 Inert Training Refill Unit	1095-09-000-3647	2
MK-46 Live Pepper Spray Refill Unit	1095-09-000-3648	2
Riot Nonballistic Face Shield	8465-09-000-3649	50
Riot Nonballistic Body Shield	8465-09-000-3650	15
Riot Nonballistic Shin Guard	8465-09-000-3651	50
MK-46 Sling	8465-09-000-3652	3
Stinger Road Spike Kit	1095-09-000-3653	3
Riot Training Suite	8465-09-000-3654	3

Table 3-2. Nonlethal capability set/kit ammunition list.

Nomenclature	*DODIC*	*NSN*
12-Gauge Bean Bag Cartridge	AA29	
12-Gauge Launching Cup	AA30	
12-Gauge Stabilized Fin	AA31	
12-Gauge MK242 Mod 0 Dummy	AA55	
12-Gauge 00 Buckshot	AA60	
12-Gauge M1012 Stabilized Fin	AZ14	
12-Gauge M1013 Crowd-Dispersal Cartridge	AZ15	
40-MM M1006 Sponge Grenade	BA06	1310-01-452-1190
40-MM Foam Baton	BA07	
40-MM Rubber Ball	BA08	
40-MM M1029 Rubber Ball	BZ11	
MK141 Mod 0 Flash-Bang Grenade	DWBS	
CS L96 Riot-Control Grenade	FZ14	
L97 Practice Riot-Control Grenade	FZ15	
M98 Distraction Grenade	FZ16	
M99 Blunt Trauma Grenade	FZ17	
M201A1/SM201A-1 Hand Grenade Fuze	G874	
9590 Nonlethal Rubber Ball Grenade	GG04	
Nonlethal Practice Grenade Body	GG05	
M84 Stun Grenade	GG09	
12-Gauge Dummy Cartridge		1305-01-380-3255
Live OC MK-4		GSADEF5049
Live OC MK-9		5099
12-Gauge Launching Cup		CS19512

TRAINING STRATEGY

3-48. The Army G-3 has approved nonlethal munitions for however, if they are ise, use in predeployment training (See Table 3-3). as outlined in the training strategy described in Table 3-3.

Table 3-3. Nonlethal strategy.

	Training Event	*Point Rounds**	*Area Rounds***
M203 GL M1200/500 Shotgun	Instructional Fire	10	4
	Behind Shields	5	3
	Platoon Formation	5	3
	Sustainment Training	5	5
	Total Rounds	25	15

* Qualification Fire
** Familiarization Fire

TRAINING AVAILABILITY

3-49. Current NLCS are issued to deploying units. Commanders can request NLCS through their chain of command for predeployment training. The supporting TADSS is GTA 19-08-004, *Nonlethal Munitions*.

Procedures for Requesting Nonlethal Training Ammunition

3-50. Units requiring nonlethal training ammunition can complete procedures for requesting additional authorizations as outlined in Appendix C, AR 5-13. Before requesting ammo through higher headquarters answer the following questions:

- Does a training requirement exist?
- Has the installation ammunition manager been contacted for the requested ammunition?
- Has training guidance other than DA Pam 350-38 changed?
- Has the equipment on hand changed?
- Has the unit modified table of organization changed?

3-51. For units preparing to deploy in areas where a mission may require use of nonlethal munitions (and it has been determined by higher headquarters that the unit will be training for those type missions), the unit should complete the following procedures for requesting Nonlethal munitions.

3-52. If the unit has a valid training requirement, they should submit a request with justification for additional training ammunition not currently authorized by DA PAM 350-38 to their installation ammunition manager.

3-53. If the installation ammunition manager is unable to fill the request the unit should submit a request signed by commander to their Major Army Command. The request should include its justification for request (example: deployment to Kosovo where it has been determined by the unit's higher headquarters it may be involved in missions where non-lethal may be employed).

- The EST 2000 replicates the M1200 shotgun supporting nonlethal training requirements. The EST 2000 is limited in nonlethal ammunition.
- JLCCTC simulates the effects of nonlethal munitions for leader and company collective training. JLCCTC replicates multi-sided effects to include escalation supporting TEWT events. The JLCCTC also stimulates company battle command systems with nonlethal effects supporting unit collective training.

References

- AR 190-14, Carrying of Firearms and Use of Force for Law, Enforcement and Security Duties.
- DOD Directive 3000.3, Policy for Nonlethal Weapons.
- FM 3-22.31, 40-mm Grenade Launcher, 203.
- FM 3-22.40, Multi-Service Tactics Tactics, Techniques, and Procedures for the Tactical Employment of Nonlethal Weapons.
- TM 3-1365-204-12, Operator's and Organizational Maintenance Manual for Disperser and Riot control Agent, Manually Carried.
- TM 3-1040-287-12&P, Operator's and Unit Maintenance Manual Including Repair Parts and Special Tools List for Disperse and, Riot Control Agent, Mid-Sized: M37.

SHOTGUN

3-54. Supporting TADSS include the EST 2000 and the LMTS. Although the LMTS BCT suite lacks the laser transmitter rod for the shotgun, the rod may be purchased. (See TM 9-1005-338-13&P, *Unit and Direct Support Maintenance (Including Repair Parts and Special Tools List) for Mossberg 12-Gauge Shotgun.*)

SHOULDER-LAUNCHED MUNITIONS

3-55. These include the M136 AT4 M287 Field Handling Trainer, the M136 AT4 Subcaliber Tracer Trainer, the M141 BDM Field Handling Trainer, and the M190 LAW Subcaliber Training Device.

M136 AT4 M287 FIELD HANDLING TRAINER

3-56. The AT4 FHT is an inert device made from an expended AT4 tactical launcher that simulates the weight, balance, characteristics, and operation of the launcher. The FHT is marked with either a gold or yellow 1-inch band between the front and rear sights and the word "DUMMY" in 1-inch letters on the side of the launch tube. Local TSC converts expended launchers to training devices. The TSC device number is DVC 07-68. (See Appendix B, FM 3-23.25 for specific guidance on setting up and training the FHT.)

Capabilities and Limitations

3-57. The FHT trains the following skills:

- Inspect the AT4 for serviceability.
- Prepare an AT4 for firing.
- Demonstrate the correct AT4 firing position.
- Perform misfire procedures.
- Return an AT4 to a carrying position.

Training Environment

3-58. By replicating the Soldier's combat load, the FHT familiarizes him with using the AT4 in individual marksmanship and collective training.

M136 AT4 SUBCALIBER TRACER TRAINER

3-59. The M287 subcaliber tracer trainer (Figure 3-18, device number DVC 07-68) uses the 9-mm M939 training practice-tracer cartridge. When loaded, this trainer simulates the AT4 in weight, balance, and operation. The velocity and trajectory of its ammunition match that of the AT4's high-explosive antitank cartridge, but the M287 produces less noise, overpressure, and no backblast. The M287 subcaliber tracer trainer is used in place of the AT4 in training. (The device number for the subcaliber tracer device is A-44-51.)

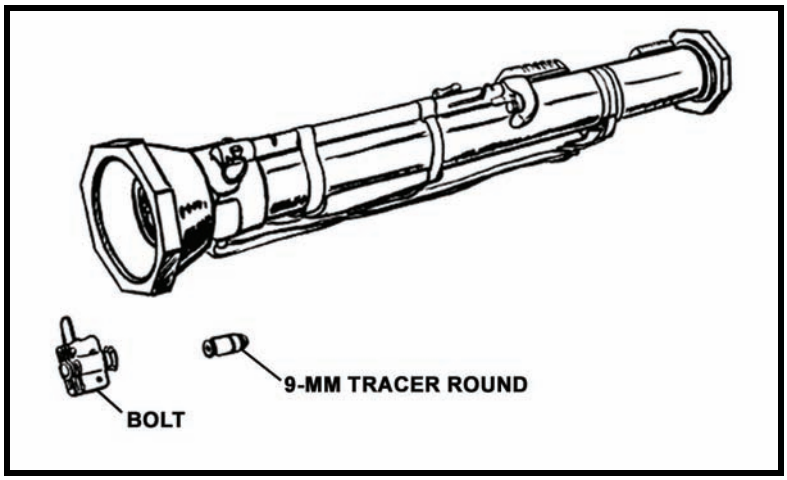

Figure 3-18. M287 subcaliber tracer trainer.

Capabilities

3-60. The M287 tracer trainer accepts a special rifle barrel that fires a reduced-load 9-mm cartridge. Maximum effective range is 300 meters. The M287 may be fired at stationary or moving targets. Unlike the tactical M136 AT4 and the FHT, the M287 has no band between the front and rear sights. The trainer has a 9-mm submachine gun barrel, a breach assembly, and a bolt.

Limitations

3-61. The lack of backblast replication reduces the training effectiveness of the tracer trainer, because the device cannot realistically replicate the firing of the tactical round.

Training Environment

3-62. The M287 tracer trainer is used for antiarmor gunner weapon qualification and familiarization. (See Appendix B, FM 3-23.25 for specific guidance on setting up and training the tracer trainer.)

References

- FM 3-23.25, Shoulder-Launched Munitions.
- STP 21-1-SMCT, Soldier's Manual of Common Tasks, Skill Level 1.

Supporting TADSS

- GTA 07-02-005. Use Part 1 (front sight template) and Part 2 (target silhouette sheet) together to train Soldiers to obtain a correct sight picture.
- EST 2000.
- MILES.

M141 BDM FIELD HANDLING TRAINER

3-63. The FHT duplicates the M141 BDM in weight, length, mechanical action, and external features. It consists of an inert reusable launcher filled with inert ballast to duplicate rocket weight and center of gravity. The firing mechanism safety button and trigger button are functional to permit gunner practice firing. The FHT can be reset after functioning by using a re-cocking pin stored under the night vision device mount protective cover. The only difference between the tactical BDM and FHT is the color of the marking band: FHT (gold), and BDM (yellow).

Capabilities and Limitations

3-64. Units receive BDM training materials with each BDM pallet. Two of the BDM containers on the pallet have gold-painted ends containing training materials:

- One CD ROM containing training documents and video presentations.
- Six paper copies of TM 9-1340-228-10.
- 24 paper copies of the trainee guide.
- One paper copy of the lesson plan.
- One paper copy of instructional media package.
- One set of overhead transparencies.
- Two training video tapes.

Training Environment

3-65. The FHT trains individual familiarization and replicates the combat load supporting collective training exercises. The M141 FHT is not compatible with MILES or other TESS.

M190 LAW SUBCALIBER TRAINING DEVICE

3-66. The M190 subcaliber launcher (Figure 3-19) replicates the LAW by adding a M190 subcaliber conversion kit to an expended M72A2 LAW launcher. It is used to fire the M73 subcaliber 35-mm rocket. The 35-mm rocket simulates the tactical rocket's smoke and flight trajectory, but with less noise and backblast. The TSC device number is AE-09-06. (See Appendix B, FM 3-23.25 for specific guidance on setting up and using this training device.) The M190 subcaliber launcher supports all training phases, from a fixed firing line to simulated tactical situations such as a squad live-fire exercise. It is both an individual familiarization device as well as a live-fire collective training aid.

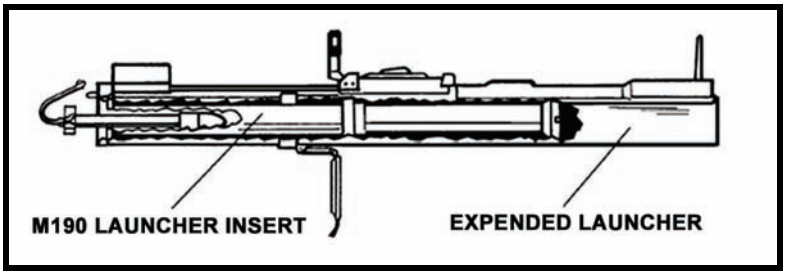

Figure 3-19. M190 LAW subcaliber training device.

SMALL UNMANNED AERIAL VEHICLE

3-67. These include system-specific TADSS and supporting TADSS.

SYSTEM-SPECIFIC TADSS

3-68. Training aids are currently under development for the Raven SUAV, and the tactical micro-air vehicle. Proposed training devices include—

- IMI Courseware.
- SUAV system replication for classroom instruction.
- Collective training simulation capability.

SUPPORTING TADSS

- JLCCTC.
- CCTT.
- OneTESS.

TOW MISSILE

3-69. TOW trainers include the TOW Improved Target Acquisition system (ITAS) Basic Skills Trainer (BST), the TOW ITAS Field Tactical Trainer, the TOW Gunnery Training System, the TOW Field Tactical Trainer, and the TOW MILES trainer.

TOW ITAS BASIC SKILLS TRAINER

3-70. The BST (Figure 3-20) supports initial, sustainment, and qualification training for TOW ITAS gunners. The BST replicates the engagement procedures of the M41 ITAS.

Figure 3-20. TOW ITAS basic skills trainer.

Capabilities

3-71. The BST simulates the sight(s), controls, switches, and indicators of the M41 TOW ITAS.

BST Components	*ITAS Components*
Instructor station.	The traversing unit.
Student station.	Tripod.
	Launch tube.

Training

3-72. The BST provides gunnery skill training, gunnery skill progression, and sustainment training. It is used to train the following skills:

- Target identification.
- Target engageability determination.
- Target engagement, including tracking and firing.
- Fire commands.
- Missile selection.

References

3-73. Individual, sustainment, and leader training strategies are fully addressed in FM 3-22.32, Improved Target Acquisition System, M41.

TOW ITAS Field Tactical Trainer

3-74. The TOW ITAS FTT (Figure 3-21) teaches precision gunnery skills on designated ranges, in general outdoor areas, and in representative tactical environments. The trainer consists of FTT-unique components and an ITAS Weapon System. The FTT attaches to the ITAS and replaces some of its components. The FTT can be either tripod or HMMWV-mounted. (See FM 3-22.32.)

Figure 3-21. TOW ITAS field tactical trainer.

Capabilities

- Missile launch and impact effects are realistically simulated.
- The FTT replicates most of the components of the TOW ITAS.
- The FTT integrates with MILES for collective training.

Limitations

3-75. Within the limitations of technology the FTT is incapable of replicating the "fly-over, shoot-down" capability of the TOW 2B missile.

Training

- The FTT trains gunners to assess target engageability and engages and tracks the target.
- The FTT is interoperable with MILES and is used to provide TOW weapon effects in force-on-force exercises.
- Individual, sustainment, leader, and collective training strategies are discussed fully in FM 3-22.32.

TOW GUNNERY TRAINING SYSTEM

3-76. The TGTS provides realistic training and practice in engaging, tracking, and firing of the TOW II Weapon Guided Missile System. The TSC device number is DVC 07-77. TGTS training, gunnery skills progression, and sustainment training. It is used to train the following skills:

- Target identification.
- Target engageability determination.
- Target engagement, including tracking and firing.
- Fire commands.

TOW FIELD TACTICAL TRAINER

3-77. The TFTT teaches precision gunnery skills to TOW gunners in the field. This training can occur on designated ranges, general outdoor areas, or representative tactical environments. The TFTT trains gunners to assess target engageability, and to engage and track the target. The TSC device number is DVC 07-78.

Capabilities

3-78. The FTT provides visual and aural cues associated with the TOW missile when engaging targets. It also realistically simulates missile launch and impact effects.

Training

3-79. The FTT is compatible with MILES for force-on-force applications.

TOW MILES SYSTEM

3-80. TOW MILES is used in place of the FTT as the training system for force-on-force exercises.

Capabilities

3-81. MILES-equipped weapons have the same range and operational capabilities as the normal weapons. The TOW II is effective against armored MILES-equipped vehicles.

Supporting TADSS

3-82. Support consists of one TESS.

TRAINING-UNIQUE AMMUNITION

3-83. Table 3-4 shows ammunition components, DODICs, and descriptions of the training-unique ammunition that supports individual and collective training. DA PAM 350-38 provides qualification and familiarization requirements to include inert TADSS for TUA. See individual weapon system FMs for specific training guidance using TUA.

Table 3-4. Training-unique ammunition.

Device	*DODIC*	*Description*
M203 GL		
M781 practice round (20 meter danger radius)	B519	Used for qualification and collective training.
AT4		
M939 9-mm	A358	Used with the M287 AT4 subcaliber tracer trainer for qualification/ instructional fire.
Antitank weapon effect signature simulator	L367	Used with MILES.
60-MM MORTAR		
M766 short-range training round (SRTR)	B645	Training round with maximum range of 538 meters. Used with M779 practice fuze. Round can be safely refurbished 24 times.
Refurbishing kit	B653	Reloads the M766 SRTR.
Full-range training round (FRTR)	BA15	Fired instead of HE ammunition.
PYROTECHNICS		
Flare surface trip	L495	Used in collective training.
Simulated projectile ground burst	L594	Used in collective training.
Simulated projectile air burst	L595	Used in collective training.
Simulated booby trap flash	L598	Used in collective training.
Simulated booby trap illumination	L599	Used in collective training.
Simulated booby trap whistle	L600	Used in collective training.
Simulated hand grenade	L601	Used in collective training.
UO TRAINING MUNITIONS		
M100 grenade rifle entry munition – training practice (inert)	GG11	Used during ballistic breach training. Referred to as rifle-launched entry munition in TC 90-1.
5.56mm for GREM-TP	G841	Used with GREM – TP.
M84 stun grenade (fuze)	GG18	Training fuze for M84 training stun grenade.
M84 stun grenade (body)	GG19	After 10 fuzes grenade body is no longer safe for training.
5.56mm Special Effects Small Arms Marking System (SESAMS)	AZ44	Used with the CCMCK (M4/M16).
5.56mm SESAMS Linked	AZ45	Used with the CCMCK (M249 SAW).

BRADLEY FIGHTING VEHICLE

3-84. This section describes TADSS that are specific to the M2-/M3-series and M7 BFVs.

DUMMY ROUNDS

3-85. Various dummy rounds are available to conduct training with the BFV's M242 25-mm automatic gun, M240 machine gun, and the TOW system. Table 3-5 contains requisition information for the two dummy rounds.

M794 Dummy Round

3-86. This is a non-fire training round used on various BFV 25-mm tasks. It is noncorrosive cast metal and weighs about the same as the M792 and M793 rounds. Previous dummy rounds were made from fired casings that had plastic or wooden tips. Because the casing of a fired round is slightly expanded, previous rounds could get stuck in the breech of the 25-mm gun. The links can become damaged or rusty and must be changed often. Some authorities have recommended that cast metal rounds become uniform issue, and that older plastic or wooden tip casings be discontinued. The M794 dummy round is a Class V item that can be requisitioned with DA Form 581, *Request for Issue and Turn-In of Ammunition*.

M172 Dummy Round

3-87. The 7.62-mm brass cartridge lacks gun powder and primer and has a metal tip. It is used for non-fire training with the M240 machine gun, and is recommended over the plastic-tipped version. (The plastic tips can become bent and get jammed either in the weapon or the feed chute.) The M172 round is a Class V item that can be requisitioned using DA Form 581.

CAUTION

Because the M172 dummy round is made of brass and can be damaged during training, inspect rounds periodically and replace them as needed. Continued use of damaged rounds or links can damage the feed chute or the weapon. Change links as often as possible.

Missile Simulation Round

3-88. The MSR is used to train crews in all non-fire TOW-related tasks. It is a dummy TOW round casing that comes in a crate the same as an actual round. The MSR simulates the actual weight of a real TOW missile. Though the MSR does not have a diaphragm or humidity indicator, it does have a front cover and a forward-handling ring. It is a nonexpendable major-end item that can be requisitioned through the supply system.

CAUTION

If the guide lugs or electrical connector on the MSR are damaged, *DO NOT USE* the round. Continued use of a damaged round will damage the launcher.

TRAINING INTEGRATION

3-89. Dummy rounds can be used to train several tasks that are part of the GST.

- Load and unload the HE and AP ready boxes, load the 25-mm feeder, apply immediate action on the 25mm, and unload and clear the 25-mm gun.
- Load, fire, apply immediate action, unload, and clear the M240-series machine guns.
- TOW training: Upload the BFV, upload the TOW launcher, apply immediate action on the TOW subsystem, remove a misfire TOW, unload and stow a TOW to its storage configuration.

Table 3-5. M794/M172 round requisition information.

Nomenclature	*DODIC*
Cartridge, 7.62-mm Dummy M172	1305-A159
Cartridge, 7.62-mm Dummy M172 (Carton Packed)	1305-A162
Cartridge, 25-mm Dummy M794 (Carton Packed)	1305-A966
Cartridge, 25-mm Dummy M794 (Linked)	1303-A967
Missile Simulation Round (MSR)	

PRECISION GUNNERY SYSTEM

3-90. The only trainer in this category is the Precision Gunnery System (PGS). The PGS is an eye-safe laser simulation device that provides normal-and degraded-mode gunnery on unit vehicles. The system allows crews to develop and sustain gunnery skills while training with their own vehicles. All weapons and ammunition are duplicated in simulation by replicating tracer and missile signatures in the commander and gunner's sights. This allows crews to apply lead, burst on target (BOT) , and tracer-on-target (TOT) procedures during engagements. The PGS is fully compatible on MILES-equipped ranges, vehicles, and targets on the MILES battlefield.

Capabilities and Limitations

3-91. The system can send and receive hit, kill, and miss signals from other PGS-or MILES-equipped vehicles. A mounting reconfiguration allows the TOW to be fired in simulation while the 25-mm and coax are fired live. The PGS provides vehicle commanders (VC) the ability to review engagements during the after-action review (AAR) process. It displays ballistic information for each round fired. This information identifies placement of each simulated round in relation to the target, in mils, both in azimuth and elevation. (TM 9-6920-711-12&P and TM 9-6920-710-12&P provide additional information.)

3-92. The BFVA3 PGS is a vehicle-mounted training device that helps the BFV crew gain and improve proficiency in gunnery skills, without expending live ammunition. Gunnery and tactical training can be conducted wherever an eye-safe laser is permitted. The BFVA3 PGS provides the crew with the visual and sound effects that simulate real-world firing conditions. The BFVA3 PGS has full fire-control interface by interfacing system controls into the vehicle's training device interface panel (TDIP).

PGS Training Integration

3-93. PGS is the preferred device for the BFV for use on device-based gunnery training in preliminary and advanced gunnery. It can be incorporated into device-based gunnery tables to include I, II, VII, VIII, X, and XI.

BRADLEY ADVANCED TRAINING SYSTEM

3-94. The BATS (Figure 3-22) is the virtual gunnery trainer for the BFVA3. The purpose of the BATS is to train and sustain a crew's ability to perform fundamental gunnery techniques in simulated gunnery and combat scenarios.

Figure 3-22. Bradley advanced training system.

Capabilities and Limitations

3-95. The BATS provides sustainment and cross-training programs to train crews in a simulated gunnery or combat mode. The system provides battle-focused training in the gunnery mode through the use of panel targets (IAW TC 25-8), range markers, ammunition allocation, and evaluation standards. The BATS provides realistic training in the combat mode by presenting realistic target models. Target destruction is accomplished by realistic PH/ PK, based on range and type. Engagement parameters are input to support a specific unit's threat template and METL.

Training Integration

3-96. BATS is the primary virtual trainer for crews of the BFVA3 for preliminary gunnery training, and gunnery skills sustainment training. It is also useful in the retraining of crews that require it in the basic gunnery phase. BATS training builds the foundation of VC/gunner coordination and trains crews on engagement techniques for precision and degraded modes of gunnery in offensive and defensive postures. BATS training integration trains all elements of the engagement process in a variety of environments.

CONDUCT OF FIRE TRAINER-ENHANCED

3-97. The COFT-E (Figure 3-23) is the virtual gunnery trainer for the BFVA2 and BFVA2/ODS. The purpose of the COFT-E is to train and sustain a crew's ability to perform fundamental gunnery techniques in simulated gunnery and combat scenarios.

Figure 3-23. Conduct of Fire Trainer-E.

Capabilities and Limitations

3-98. The COFT-E provides sustainment and cross-training programs to train crews in a simulated gunnery or combat mode. The system provides battle-focused training in the gunnery mode through the use of panel targets (IAW TC 25-8), range markers, ammunition allocation, and evaluation standards. The COFT-E provides realistic training in the combat mode by presenting realistic target models. Target destruction is accomplished by realistic PH/ PK, based on range and type. Engagement parameters are input to support a specific unit's threat template and METL.

Training Integration

3-99. The COFT-E is the primary virtual trainer for crews of the BFVA2 and BFVA2/ODS for preliminary gunnery training, and gunnery skills sustainment training. It is also useful in the retraining of crews that require it in the basic gunnery phase. COFT-E training builds the foundation of VC/gunner coordination and trains crews on engagement techniques for precision and degraded modes of gunnery in offensive and defensive postures. COFT-E training integration trains all elements of the engagement process in a variety of environments.

ADVANCED BRADLEY FULL-CREW INTERACTIVE SIMULATOR TRAINER

3-100. The AB-FIST (Figure 3-24) is an appended Bradley gunnery training device for use on a powerless, stationary, sheltered, BFV ODS and below. AB-FIST enables BFV crews to conduct Bradley gunnery training using the actual BFV switches and controls. The AB-FIST is a fully deployable, full-crew, high-fidelity training system capable of training and sustaining precision and battlesight gunnery. The AB-FIST incorporates the entire BFV crew, which enhances crew coordination.

Figure 3-24. Advanced Bradley full-crew interactive simulator trainer.

Capabilities

3-101. The AB-FIST trains target acquisition, identification, driving, and engagement skills for BFV crews, sections, and platoons. It has the capability of simulating use of both primary and alternate fire controls and sighting systems against mobile and stationary threats, single, and multiple target arrays. AB-FIST training is simulated in realistic battlefield environments during day, night, and reduced visibility conditions in European, desert, or urban environments. The network-capable system can be linked to conduct combined-arms training and mission rehearsal with the following systems: COFT XXI, TFT, A-FIST XXI, and VCCT. Realistic combat mode training is provided by presenting realistic target models IAW ROC-V 9.1. All ammunition characteristics are correct IAW the applicable firing table. The databases provided by the AB-FIST are European (summer and winter), desert, drban (Zussman urban site and geo-specific Baghdad). AB-FIST crew records are transferable to the TFT, and COFT XXI by either 3.5" floppy disk or writable compact disc.

Limitations

3-102. The AB-FIST can be operated in any facility in a 35' x 20' area with 16 feet of overhead clearance. Power required to operate the system is 115 Vac, 60 Hz, on a 30-amp circuit with L5-30R receptacle within 50' of the IOS. It can also be powered by a single-phase generator 115 Vac, 60 Hz, 30-amp within 70 feet of the IOS. There are no other operating limitations except those environmental considerations that affect the facility.

Training Integration

3-103. AB-FIST training should be incorporated into the virtual gunnery training program of the unit. It is designed to train or sustain gunnery proficiency of crews by successfully completing exercises that require the performance of gunnery tasks under conditions similar to those encountered in combat.

M2 ODS TABLETOP FULL-FIDELITY TRAINER

3-104. The M2A2 ODS TFT (Figure 3-25) is a fully deployable training system capable of training and sustaining precision and battlesight gunnery. The size of this system makes it ideal for deployment to remote sites by units equipped with M2A2 ODS BFVs. The TFT simulates the vehicle's primary fire control and sighting equipment, which are used against aerial and mobile/stationary ground targets in a realistic battlefield environment. The trainer evaluates commander/gunner performances and provides feedback to the crew as the training progresses.

Figure 3-25. M2 ODS full-fidelity trainer.

Capabilities

3-105. The TFT consists of tabletop components including, a commander's station, weapons' station, gunner's station, and instructor's station. Key TFT features include—

- Deploys inside five two-man carry containers.
- Easily transported in HMMWV, van, or pickup truck.
- Uses standard 110V or 220V power.
- Operates in small tent powered by standard Army field generator.
- Crew records are transferable to the AB-FIST and COFT XXI by 3.5" floppy disc or writeable compact disc.
- Realistic vehicle models (IAW ROC-V 9.1).
- All ammunition flight characteristics correct IAW the applicable firing table.

Limitations

3-106. The TFT has no means to conduct engagements using the manual hand wheels. Engagements that would be conducted in the manual mode default to commander's engagements.

Training Integration

3-107. The TFT is not the primary BFV virtual gunnery trainer. However, it does provide sustainment and cross-training programs to train crews in a simulated gunnery or combat mode. Because the TFT is easily transportable and deployable, it can be used to sustain critical gunnery skills while deployed.

STRYKER

3-108. This section discusses the common driver trainer and the Stryker ATGM Basic Skills Trainer (BST).

COMMON DRIVER TRAINER

3-109. The Stryker Common Driver Trainer (CDT) (Figure 3-26) provides initial and sustainment driver training at training institutions and operational installations. The device consists of a simulated vehicle cab, instructor/operator station, a visual system, a 6-degree of freedom motion platform system, after-action report (AAR) station, and a computational system. The CDT provides realistic and challenging training through simulation of various weather and visibility conditions. The system database consists of nine task regions. Each region permits students to drive in terrains varying from steep mountains, to flat rural areas, to urban city settings that interact with traffic. Within the built up area, students are exposed to improvised explosive device (IED), small arms fire, and rocket-propelled grenades (RPG).

Figure 3-26. Stryker common driver trainer.

Capabilities and Limitations

3-110. The CDT is designed to allow driving skills for all Stryker variants including mission equipment packages for the—

- Infantry carrier vehicle (ICV).
- Mortar carrier vehicle (MCV).
- Reconnaissance vehicle (RV).
- Command vehicle (CV).
- Medical evacuation vehicle (MEV).
- Engineer squad vehicle (ESV).
- Antitank guided missile vehicle (ATGM).
- Fire support vehicle (FSV).
- Nuclear biological chemical reconnaissance vehicle (NBCRV).
- Mobile Gun System (MGS).

Training Environment

3-111. The CDT is used in institutional training to familiarize Soldiers with the Stryker drivers controls, indicators and specific handling dynamics of the actual vehicle with or without SLAT armor. In the operational base, the CDT is used in both an initial and sustainment program with little or no cost regardless of local weather and visibility restrictions. The scenario generation tool box allows for tailorable mission rehearsal exercises prior to deployment, and unsafe driving trends within the unit. (See Chapter 7, Training Circular 7-21, Stryker Driver Training, December 2006.)

ANTITANK GUIDED MISSILE VEHICLE BASIC SKILLS TRAINER

3-112. The Stryker ATGM Basic Skills Trainer (BST, Figure 3-27) is an appended training device that links with a host vehicle to provide its training capability. THE ATGM BST reuses software developed for the Improved Target Acquisition System (ITAS) BST. The device allows the ATGM gunner to progress through a series of engagements using mock controls in the rear of the vehicle. Mobile and deployable, the ATGM BST can be used for initial and sustainment gunnery.

Figure 3-27. ATGM basic skills trainer.

Capabilities

3-113. The BST replicates launch, aided target tracking, and allows for identification of friendly and threat armor targets.

Limitations

3-114. The BST is an appended device.

Training Environment

3-115. Training is administered by an instructor seated in the loaders seat of the ATGM BST. The student uses his operational controls to complete training

VEHICLE INSTRUMENT INTERFACE PACKAGE

3-116. The Stryker VIIP (Figure 3-28) appends to vehicles and simulates direct and indirect fire engagements. The VIIP instruments tanks, Bradleys, and Strykers using MILES XXI, Mobile Gun System Tactical Engagement Simulation System (MGS TESS), Tank Weapon Gunnery Simulation System, and Precision Gunnery System. The VIIP allows brigade commanders and training exercise managers to oversee the exercises and conduct a comprehensive AAR.

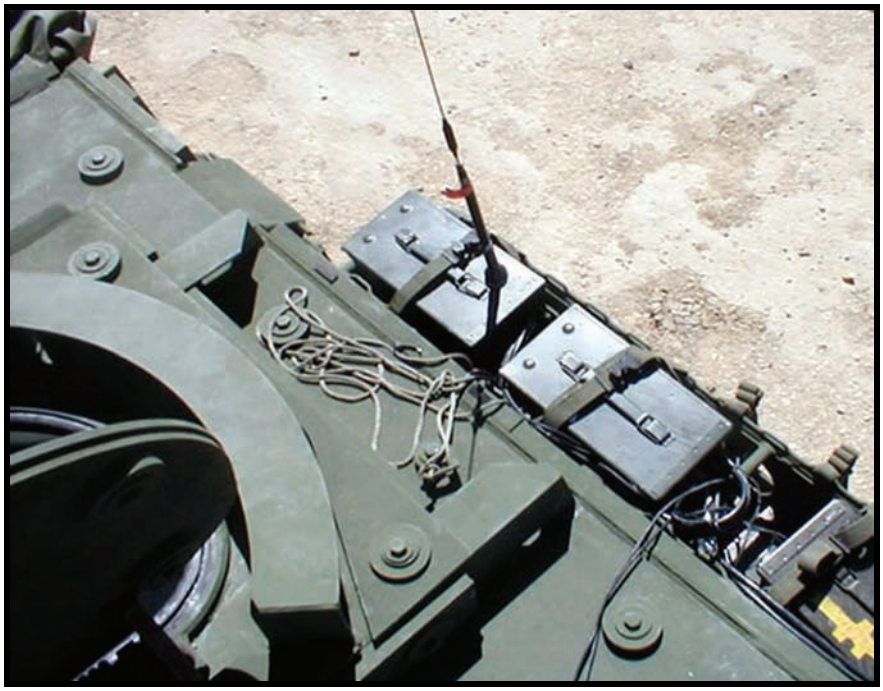

Figure 3-28. Vehicle instrument interface package.

Capabilities

3-117. The VIIP links Stryker vehicles with the instrumentation systems at the Combat Training Centers and the Alaska Range; as well as to the Initial Homestation Instrumentation Training System (HITS); the Deployable Instrumented Training System (DITS); and the Deployable System for Training and Readiness DSTARS).

Training Environment

3-118. The VIIP is installed, operated, and maintained by Combat Training Centers. Other than its physical presence and effect on the vehicle load plan, its operation is transparent to the Soldier.

MGS INTERIM DEPLOYABLE ADVANCED GTS

3-119. The Stryker MGS Interim Deployable Advanced Gunnery Training System (IDAGTS) (Figure 3-29) replicates the vehicle commander and gunner crew stations and controls to help them develop individual and crew gunnery skills. The IDAGTS provides an interim step toward development of the MGS Advanced Gunnery Training System (AGTS) full-fidelity crew trainer. It leverages proven M1A2 Abrams tank AGTS software, databases, and visual models, and at the same time allows MGS crews to train basic gunnery tasks and gate exercises IDAGTS contains a progression matrix to help meet the requirements of the advanced gunnery tables. The system uses the new Arab Urban Operations, desert, and Korean terrain databases. It also allows free movement in the new Arab UO database.

Figure 3-29. MGS Interim Deployable Advanced Gunnery Training System.

Section II — NONSYSTEM TADSS

3-120. This section discusses every TADSS for the Infantry company except those that pertain to one specific combat system. These TADSS incorporate a wide variety of tasks to enable the commander to conduct the CRAWL-WALK-RUN-phased training strategy. He may use them to support individual, leader, and collective training.

CALL-FOR-FIRE TRAINER

3-121. The CFFT is an indirect fire mission-training device using three-dimensional technologies to create virtual battlefields. It provides a common task trainer for all Soldiers supporting basic and advanced call for fire skills. It can be integrated and distributed with other constructive and virtual simulations. The CFFT replaces Guardfist and Training Set Forward Observer. The TSC device number for this call-to-fire trainer is DVC 06-61/06-61A.

CAPABILITIES

3-122. The CFFT trains the following tasks and capabilities:

- Observer location and direction.
- Call-for-fire grid and call-for-fire polar.
- Shift from known point.

- Adjust area fire and adjust area fuze time.
- Suppression and immediate suppression.
- Fire for effect.
- Coordinated illumination and continuous illumination.
- Final protective fires.
- Immediate and quick smoke.
- registration point time registration, and mortar registration.
- Irregularly shaped targets.
- Replication and simulation of LLDR capabilities.
- Use of tactical binoculars.
- Close air support Levels 2 and 3.
- Naval gunfire.
- Integration with the mortar fire control systems (mortar ballistic computer) for leader training.
- Night vision goggles and thermal imagery.
- Interoperability with other training systems: CCTT, UAS Simulator, and JLCCTC integrates call for and adjust fire into other tactical tasks.
- Multiple terrain databases for mission rehearsal capabilities.

TRAINING

3-123. The CCFT is best used for leader/Soldier refresher and sustainment training. A typical training mission takes six minutes for each individual Soldier. IBCTs receive two systems each capable of training up to 12 Soldierss at a time. A typical training session takes 72 minutes. The CFFT is normally maintained at the installation TSC and supported through the BCTC.

SUPPORTING TADSS

- GTA 17-02-015, The Call for Fire.
- GTA 07-01-005, Target Grid Methods of Fire.
- GTA 07-01-032, Observed Fire Reference Card.
- GTA 06-05-001, Multi-Purpose Protractor.
- GTA 06-07-003, Observed Fire Fan.

CBRN TADSS

3-124. This paragraph discusses the AN/TDQ-T1, AN/TDQ-T2, the chemical agent monitor simulator (CAMSIM), the M141 atomic explosion simulator, the M256 chemical detection training kit.

AN/TDQ-T1 RADIAC TRAINER

3-125. AN/TDQ-T1 large area radiation, detection, indication, and computation (RADIAC) trainer simulates the functions of RADIAC meter (AN/PDR-56F) to identify and map alpha radiation contamination.

Components

3-126. This trainer replicate the actual RADIAC meter set. It includes the simulated RADIAC receiver, OR-114/TDQ-1(V) and transmitter, OT-51/TDQ-(V). two hot-spot transmitters, and four point source contamination simulators. The TSC device number is DVC 03-05/1-3.

Capabilities

3-127. Units may practice all operator tasks with the main probe, the auxiliary probe, and the X-ray probe. Soldiers may hear the same audible clicks through the headset and see the meter respond, replicating the operational RADIAC meter in the presence of radioactive material. The omni-directional hot spot transmitter simulates an area of alpha contamination by sending radio frequency (RF) signals. These are translated to audible clicks and meter readings by the receivers within the RADIAC meter simulator. The leader may change the size of the area of contamination from 10 to 1000 meters for each transmitter by adjusting the variable attenuators. The RADIAC meter simulator has no antenna (which could detract from training realism) and it is not sensitive to elevation changes or body effects. Realism is enhanced by the use of internal ultrasonic sound navigation and ranging to measure probe height.

Training

3-128. The RADIAC meter supports classroom instruction and ST on the use of the IM174. It also supports collective training during field exercises by training Soldiers to operate the meter without the use of radioactive material.

Reference

3-129. STP 21-24-SMCT.

AN/TDQ-T2: RADIAC Training Set

3-130. The AN/TDQ-T2 (Figure 3-30) is designed to project a forward directional RF pattern to simulate a radioactive fallout field. The TSC device number is DVC 03-15. The system consists of an equipment/transit case that holds the RADIAC meter, M-243/VDR-2, mobile transceiver, and the antenna, cable, and mast case.

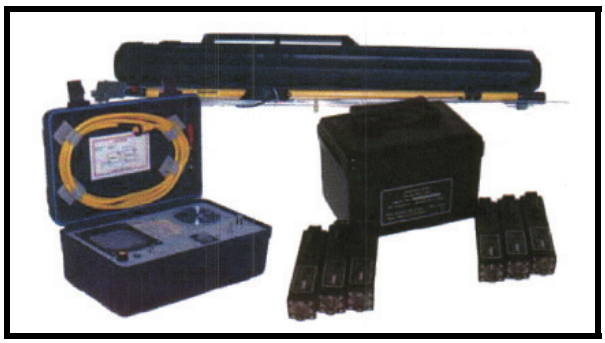

Figure 3-30. RADIAC training set.

Chemical Agent Monitor Simulator

3-131. The CAMSIM (Figure 3-31) replicates the chemical agent monitor (CAM) capability for detecting point source and area based contamination of both nerve and blister agents. The TSC device number is DVC 03-16. The CAMSIM—

- CAMSIM does not use any chemical stimulants.
- Powered with a standard CAM battery or battery pack.
- Compatible with the CAM buzzer and all CAM accessories.
- Stores and provides operator error messages to the instructor showing errors such as bumping the nozzle against a contaminated source, and incorrect mode changes.
- Sequences through the standard power up sequence of the CAM.
- Incorporates a confidence tester, which exactly duplicates the function of the CAM confidence tester.

Figure 3-31. Chemical agent monitor simulator.

M141 ATOMIC EXPLOSION SIMULATOR

3-132. The M141 is a pyrotechnic item that displays the visual and auditory effects of a nuclear explosion. Initiated on the ground at a reduced scale, it alerts troops participating in field exercises that a nuclear device has exploded.

M256 CHEMICAL DETECTION TRAINING KIT

3-133. The M256 trainer (Figure 3-32) Simulator provides realistic training while avoiding unnecessary exposure to potentially carcinogenic reagents in the M256 detector kit. The M256 trainer contains 36 pre-engineered detector tickets and an instruction booklet. The pre-engineered detector tickets show color changes comparable to those seen when the M256 detector kit is used in clean or contaminated environments. The TSC device number is DVC A-03-11. See STP 21-24-SMCT for specific guidance on using the M256 chemical detection training kit in individual and collective training. Capabilities include training Soldiers to identify the following agents:

- Hydrogen cyanide AC, blood agent (cyanide).
- Cyanogen chloride CK, blood agent (cyanide).
- Mustard H, blister agent.
- Nitrogen mustard HN, blister agent.
- Distilled mustard HD, blister agent.
- Phosgene oxime CX, blister agent.
- Lewsite L, blister agent.
- Nerve agents V and G series.

Figure 3-32. M256 chemical detection training kit.

3-134. The M291 skin decontamination kit (Figure 3-33) is the Soldier's primary means for immediate decontamination of skin following exposure to chemical agents. The configuration of the training kit is similar to the M291 skin decontamination kit, except there is no pouch. Its packet is blue and marked for use in training only. The M291 kit consists of a wallet-like flexible carrying pouch containing individually sealed foil packets. Each packet contains a folded nonwoven fiber applicator pad with an attached strap handle on one side. The pad contains a reactive and absorptive resin polymer mixture.

Figure 3-33. M291 Skin decontamination training kit.

M81 SIMULATION DETECTOR UNIT

3-135. The M81 simulation detector unit (Figure 3-34) is a portable training device designed for use in the field with the M43A1 chemical agent detector. The TSC device number is DVC 03-06.

Figure 3-34. M81 simulation detector unit.

Capabilities

3-136. The M81 simulation detector unit remotely activates detectors to signal the presence of agents as they would during normal operations. The trainer/controller uses a hand-held lightweight transmitter that sends signals to selected detectors causing an alarm to sound. Each M81 is used with up to four chemical alarms deployed in a tactical situation. The alarm is selectively triggered from remote positions up to 1,000 meters away in support of realistic chemical attack training.

Components

- Transit case.
- Four receiver assemblies.
- Five antennas.
- Transmitter.
- Power cable extender.
- Manual.

M9 Simulator, Projectile, Airburst, Liquid

3-137. The SPAL, when fired, simulates a toxic rain attack. The device provides a realistic simulated persistent agent enabling Soldiers to perform detection and decontamination procedures for personnel and equipment. The DODIC number is L598.

Mark I Nerve Agent Antidote Training Kit

3-138. The nerve agent antidote training kit is equipped with a simulated nerve agent antidote auto-injector kit (Figure 3-35) used to train Soldiers in the proper administration of antidote for chemical nerve agent poisoning. The TSC device number is DVC 08-36.

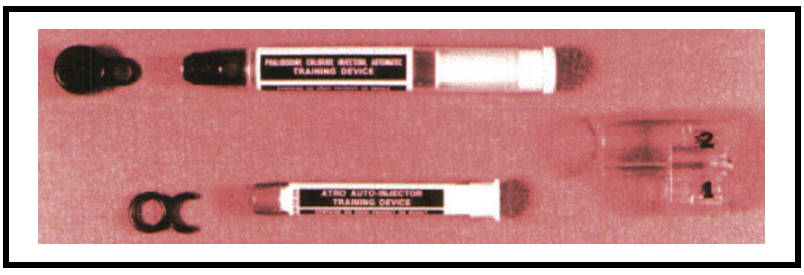

Figure 3-35. Nerve agent antidote training kit.

Capabilities

- Replicates the operational auto-injector except for color coding and description of contents.
- Functions like actual injectors, except contains neither drugs nor needle.
- Is color-coded light blue with white on black labels for training.
- Functions with an audible click and ejects a 0.25-inch plastic flat prod (needle) when activated with an applied pressure of 1.5 to 9 pounds.

References

- GTA 03-01-006, M12A1 Decontaminating Apparatus.
- STP 21-1-SMCT, Soldier's Manual of Common Tasks, Skill Level 1.
- STP 21-24 SMCT, Soldier's Manual of Common Tasks, Skill Level 2, 3, and 4.

CLOSE COMBAT MISSION CAPABILITY KIT

3-139. CCMCK is a force-on-force or force-on-target, short-range, marksmanship and collective task training system. The kit provides a limited range, small arms engagement capability to conduct individual and collective operational preparation. The training system is designed to meet requirements of stability operations support operations (SOSO), urban operations (UO), and the special response teams.

CAPABILITIES

- CCMCK supports M16/4, M249 SAW, and M9 pistols.
- Resourcing for UO training comes from the collective training ammunition allocated for each weapon IAW DA Pam 350-38 (see Training Unique Ammunition in Section I, System TADSS).
- Mission rehearsal capability enhances lethality and survivability in Close Quarter Combat such as clearing buildings, rooms, tunnels, entrenchments, and to react to or conduct a near ambush.

LIMITATIONS

- The Army recommends a trained instructor with technical knowledge and safety skills is present to use CCMCK.
- Not all recommended safety equipment is supplied with CCMCK issue.
- The maximum effective range is about 30 meters.
- Special Effects Small Arms Marking System (SESAMS), used as a part of CCMCK, is listed as Class V and as is stored at the installation ammunition supply point separate from the equipment kit located at TSC.

TRAINING

3-140. The CCMCK is a user installed weapons modification system that allows the Soldier to employ his individual weapon (M16, M4, M249, M9) at short range. The system uses low velocity marking ammunition while precluding the weapon from firing standard service ammunition. It also provides employment cues (aiming, firing, ejection, immediate action, loading, re-load) and immediate target feedback during force-on-force and force on target engagements, interactive live fire scenario task, and mission rehearsal.

3-141. Chapter 7, FM 3-22.9 describes the reflexive fire techniques Soldiers need to train supported by CCMCK. FM 3-06.11 describes tactics, techniques, and procedures used during short-range target engagements. CCMCK supports the training scenarios outlined in TC 90-1.

REFERENCES

- DA Pam 350-38, Standards in Weapons Training.
- TC 90-1, Training for Urban Operations.

- FM 3-22.9, Rifle Marksmanship M16A1, M16A2/3, M16A4, and M4 Carbine.
- FM 3-06.11, Combined Arms Operations in Urban Terrain.

CLOSE COMBAT TACTICAL TRAINER

3-142. The CCTT facility provides a combined arms training capability. CCTT consists of manned modules (M1, M2, HMMWV, [Enhanced] dismounted Infantry manned modules [E-DIMM]), Reconfigurable Vehicle Simulator (RVS) manned modules (wheeled vehicles), Tactical Operations Center (TOC) mock-ups, SAF, master control station , and AAR capability. Dismounted Soldier Manned Modules are an emrging capability that will will replace the E-DIMMs and provide virtual simulation training for ground Soldiers. The TSC device number is A-71-02.

CAPABILITIES

3-143. The CCTT facilities are currently fielded to the installations supporting heavy brigade combat teams (HBCT). IBCT Infantry companies will be supported by either CCTT facilities with RVS or by Reconfiguarable Vehicle Tactical Trainers (RVTT). Those units located on a installation with a HBCT can train with the following capabilities:

- HMMWV modules can provide commanders with virtual views of the battlefield integrated with constructive simulation training exercises. HMMWV modules are equipped with the Army Battle Command Systems (ABCSs) stimulated by the CCTT SAF that enables collective digital training.
- The RVS replicate HMMWV (regular and up-armored), the family of medium tactical vehicles (FMTV), and other tactical wheeled vehicles. The RVS provides a capability for individual and collective training on recon/scout missions, logistics package operations, mounted patrolling, SOSO and convoy defense drills similar to the VCCT.
- The E-DIMM provides Infantry leaders a dismounted mission rehearsal capability for possible TEWT events and combined arms integration exercises with mechanized forces.
- CCTT modernization efforts will provide an immersive , virtual trainer for dimoutned Soldiers called Dismountd Soldier capabible of training individual and leader tasks as well as collective tasks up through platoon. The dismounted Soldier manned moduales will be fielded to the RVTTs as well.
- CCTT will have a capability to integrate combined arms training such as aviation support via the Aviation Combined Arms Trainer (AVCATT). Leaders will be able to train command and control (C2) of combined arms forces during tactical operations.

LIMITATIONS

3-144. CCTT is limited because of its platform-centric focus.

- The E-DIMM dismounted capability is limited in functionality and only replicates suad and platoon leader positions. The voice recognition feature that controls squad members requires time for additional leader training and voice system recognition to achieve optimal system performance.
- UO are limited to maneuver through cities. Vehicles and Soldiers cannot enter buildings.

REFERENCES

3-145. *The Unit Leader's Guide to Training* in the CCTT video can be obtained from the Training Support Center at your installation by ordering TVT 17-220, PIN 711131.

Note: VCCT provides a capability similar to CCTT RVS at fielded locations. Coordinate with the BCTC for availability.

COTS SIMULATIONS

3-146. Many times, Infantry units do not have enough personnel, time, or resources to properly train squads collectively. Resources are often retained by higher headquarters due to tight deployment schedules, land restrictions, logistics constraints, and many other reasons. Due to the current operational demands on Infantry brigades, the reality of limited resources often affects training opportunities at the squad level. Leaders at all levels will need to look for innovative and easily resourced ways to sustain training levels at the small unit level. This section outlines current and emerging COTS simulations that have a potential to benefit companies in crawl level training supporting small unit introduction and familiarization training.

USE IN TRAINING

3-147. Nothing replaces live training. Given today's reality of resource constraints and limited time, alternative training techniques must be pursued. Additionally, conservation of limited resources can be achieved by conducting COTS simulations prior to live training.

3-148. Leaders can focus resources on live training by using COTS simulations as a precursor for often neglected, complex events. COTS simulations also allow units to exercise and refine SOPs, and to integrate doctrine and TTPs.

3-149. Computer simulations prepare Soldiers to conduct live training. Leaders can use COTS simulations in the crawl and walk phases, focusing on task execution so live training can be executed at a higher proficiency level.

3-150. COTS simulations should be planned and controlled the same as live events. COTS simulations best train cognitive decision-making skills. The simulations leverage a robust and complex scenario generation capability and provide a comprehensive AAR tool that allows leaders to repetitively train multiple scenarios.

CAPABILITIES

- Provide the ability for units to train and rehearse SOPs with a moderate level of fidelity.
- Use visual and auditory cues to stress the need for timely, concise, and accurate reporting. Units can train to provide rapid and concise reporting scheme to update the leader's operational picture. The simulations typically replicate the tactical environment to gather and report intelligence.
- Provide a limited measure of spatial orientation stimulated by moderate environmental cues permitting training on tactical movement IAW terrain, weather, and enemy.
- [Scenarios] Contain adequate information to develop the direct fire plan and at least a partial IPB before a training exercise.
- Use units from squad to company size to exercise command and control skills.

LIMITATIONS

3-151. This system has two limitations:

Tactical Communications

3-152. This applies unless supported by voice over Internet protocol. Tactical communications and hand-and-arm signals are not supported by COTS simulations. These shortcomings can be resolved by using organic radio equipment for verbal communication, or by placing workstations close enough that squad members can hear audio commands over the simulated sound effects.

Weapons Performance

3-153. Most COTS simulation weapons effects and performance do not accurately reflect weapon characteristics which create a potential for negative training. For example, the weapons are uncharacteristically accurate at long distances. In addition, a simulated weapon has an unrealistic "first round on target" capability that does not reflect operational conditions of Soldier fatigue, wind, obstacles, and weapon malfunctions. These shortcomings do not adversely affect collective task training.

TRAINING RESOURCES

3-154. Table 3-6 shows COTS simulation capabilities. COTS simulation training requires a network of computers. A computer for each Soldier, one as a server, and one for the O/C is recommended. Some COTS simulations provide an untethered view of action (from above, from behind, from the enemy perspective, and from the player's view). Computers with video output can be used to record training for an AAR. BCTCs may have a networked capability supporting COTS simulation training.

Table 3-6. Commercial off-the-shelf simulation capabilities.

COTS Simulations	Multiplayer	Individual	Unit capability: Squad	Unit capability: Platoon	Session playback	Minimal AAR capability built in	Extensive AAR capability built in	AAR can be saved	Multiple blue force elements	Multiple OPFOR elements	Live OPFOR (players)	SAF OPFOR (game controlled)	COE fidelity (desert, urban)	Conduct patrols	Conduct convoy	Conduct ambush	Conduct offensive operations	Conduct defensive operations	CBRN play	Call for and adjust indirect fire	COE weaponry	*Select weapon for mission*
America's Army	□	□	□			□					□	□	□	□		□	□	□			□	□
Full Spectrum Command	□	□			□		□	□	□	□	□	□				□	□			□	□	□
Full Spectrum Leader	□	□		□	□		□	□	□	□	□	□				□	□	□		□	□	□
Full Spectrum Warrior		□	□		□	□			□	□		□	□	□		□	□				□	□
SLIM-ES3		□			□	□							□	□								
Rapid Decision Trainer		□	□	□	□		□	□	□	□		□		□			□			□		

More COTS Capabilities	Select antiarmor weapon	Select machine guns	Select grenades	Select explosives for demolition	Evacuate casualties	Give first aid to self	Give first aid to buddy	Wounds get worse without first aid	Designated medic	Soldier ability affected by load, distance, or terrain	Wheeled vehicles included	Strykers included	Bradleys included	Armored vehicles included	Helicopters included	Mission Objectives (task based)	Maps with operational graphics	Navigation aids (compass, PLGR)	Scenario editing difficulty (1 to 5)	Voice chat (headset & microphone)	*Text chat on screen*
America's Army	□	□	□				□	□								□	□	□	2	□	□
Full Spectrum Command	□	□	□	□	□		□		□	□						□	□	□	3		
Full Spectrum Leader	□	□	□	□	□		□		□	□						□	□	□	2		
SLIM-ES3																□	□	□	3		
Rapid Decision Trainer		□			□											□	□	□	*1*		

America's Army

3-155. America's Army is a squad-based, first-person shooter simulation that replicates a Soldier's training, beginning with Initial Entry Training, Airborne, UO, and Special Forces training. The goal is to develop a team-based force using Special Forces and Combat Medics to operate in the COE. America's Army provides the following training capabilities:

- Crawl-level team-building tool for C2 plus entry-level improvement on TTPs.
- Currently the game allows 16 players per side (friendly and enemy).
- It is networkable.
- Communication is person-to-person or headset over local or wide area network connections and also includes text chat.
- Scenarios are built upon geotypical (generic terrain and non-specific structures) terrain. The database includes UO scenarios.
- Specific government add-ons include the Adaptive Thinking Leadership Trainer for cultural awareness training.

Self-Directed Learning Internet Module ES2 System

3-156. SLIM ES3 focuses on presence patrol training. The simulation supports training in active surveillance and threat indicator identification.

3-157. Participants role play Soldiers on point in an environment modeled on a southwest Asian urban setting. ES3 is provided with an intuitive editor that enables non-programmers to build levels and create or modify objects as the operational environment evolves.

Full Spectrum Command

3-158. FSC is company commander-level tactical decision trainer. The Infantry commander focuses on operating against asymmetric threats in an urban environment. FSC prepares commanders to—

- Analyze a five paragraph battalion operations order.
- Conduct mission analysis and develop a course of action.
- Conduct company operations.

Full Spectrum Leader

3-159. The FSL lets platoon leaders train in an asymmetrical environment. The FSL provides an adaptive, learning environment with stimulating player-OPFOR interaction, which instills confidence in the Soldiers. It also provides familiarization training on close air support (CAS), call for and adjust fire, and casualty evacuation.

Full Spectrum Warrior

3-160. FSW supports small unit asymmetrical operations training in an urban environment. This simulation focuses on critical leader decisionmaking skills. The squad leader directs simulated squad members in various tactical scenarios. RDECOM distributes the software. The FSW allows modification of scenarios and difficulty level. It has basic AAR (replay) capability. The simulation trains these two tasks:

- Analyze mission orders.
- Develop and execute course of action.

Rapid Decision Trainer

3-161. The RDT is a personal computer-based simulation that trains Infantry platoon leaders to plan, execute, and assess their own performance during squad and platoon level LFXs in a virtual environment. It supports doctrinally correct scenarios including operational graphics.

Capabilities and Limitations

3-162. The trainer incorporates advanced performance assessment tools and techniques to assist in evaluating a leader's decision-making skills.

- Leaders can examine exercise performance through the simulation event log.
- Limited to live-fire exercises at Fort Benning's Griswold and Ware Ranges.

Training

3-163. Each RDT training scenario has the following four phases:The exercise begins with the leader logging on and establishing a separate log for each training event.

1. The introduction provides a four minute briefing describing the purpose, tasks, conditions, standards, and the required doctrinal references.
2. Leaders review company and platoon OPORDs; map overlays; complete task reorganization; establish signal and fire support plans; and conduct pre combat inspections during the planning phase.
3. Missions conducted during the mission phase include movement to contact, reaction to contact, and consolidation and reorganization.
4. The assessment combines embedded and self assessment techniques to evaluate a leader's performance. Leaders receive feedback during the AAR. A record of performance is maintained on the student's computer. A copy of the record can be forwarded to an instructor for additional evaluation.

Alternate COTS Simulations

3-164. The preceding mentioned simulated training programs are meant to serve as a guide to help the commander to reach out for alternative training resources, but their listing is not comprehensive. Following is a list of COTS simulations that are not discussed here, but that are available:

- Asymmetrical Warfare Virtual Training Technology.
- Battle Command 2010.
- Battlefield 1942.
- Civil Support Team Trainer.
- Critical Leadership Analysis System.
- DARWARS Tactical Language Trainer.
- Decisive Action.
- Delta Force Team Saber.
- Digital Warrior.
- Gator Six, Battery Command Virtual Experience.
- Guard Force.
- M1 Tank Platoon.
- Mission Rehearsal Exercise.
- Operation Flashpoint.
- Saving Sergeant Pabletti.
- Sim FX.
- Spearhead II.
- Steel Beasts.
- TAC-OPS.

ENGAGEMENT SKILLS TRAINER 2000

3-165. The EST 2000 trains marksmanship, collective defensive engagements, and decision skills for rules of engagement (ROE) situations. Networkable subsystems enable ten Soldiers to train simultaneously. It trains fire control and distribution at squad level.

MODES

3-166. The EST 2000 operates in three different modes: marksmanship, shoot-don't shoot, and collective training:

Marksmanship

3-167. In the marksmanship mode the weapons accurately replicate recoil, balance, weight and action, and can train handling drills.

Shoot-Don't Shoot

3-168. Shoot-don't shoot mode provides judgmental use of force with multiple outcomes allowing instructors to escalate or de-escalate the training situation.

Collective Training

3-169. Collective mode (squad tactical) provides squads the opportunity to train static defensive tactics in various environments.

CAPABILITIES

- Thirteen ranges (Army training center ranges, Fort Benning Malone Complex) support basic and advanced rifle marksmanship training.
- Fourteen tactical environments support squad defensive scenarios (including forest, desert and urban settings).
- Over 30 target models range from individual weapon targets to crew-served weapon targets. Each target displays a killed or damaged view after it has been hit.
- Special effects include artillery, explosion, muzzle flash, tracers, flares, grenade explosions, vehicle explosions, smoke effects, bullet splash, rain, snow, hail, fog, clear weather, day night, dusk, and dawn.
- A scenario editor creates or modifies scenarios.
- The trainer replicates the feel, weight, recoil, fit, and sounds of 11 Army small arms.
  - M16A2/A4 rifle.
  - M4 carbine.
  - M9 pistol.
  - M249 machine gun.
  - M240B machine gun.
  - M60 machine gun.
  - M2 .50 cal. machine gun.
  - MK 19 grenade machine gun.
  - M203 grenade launcher.
  - M136 antitank weapon (AT4).
  - M1200 shotgun.

TRAINING

3-170. Rifle rifle marksmanship typically requires from 9 to 11 hours for grouping and zeroing, 6.4 to 6.8 hours for Field Fire I and II, and 2.6 to 2.9 hours for practice and record fire.

Home Station Training—Figure 3-36 shows an example of marksmanship strategies for home station training.

Initial Entry Training—Figure 3-37 shows an example marksmanship strategy from IET.

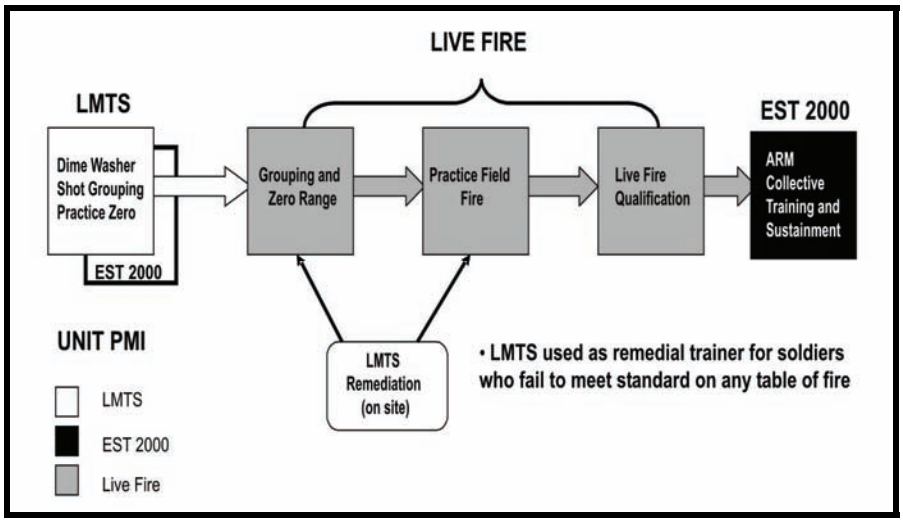

Figure 3-36. Homestation marksmanship training strategy.

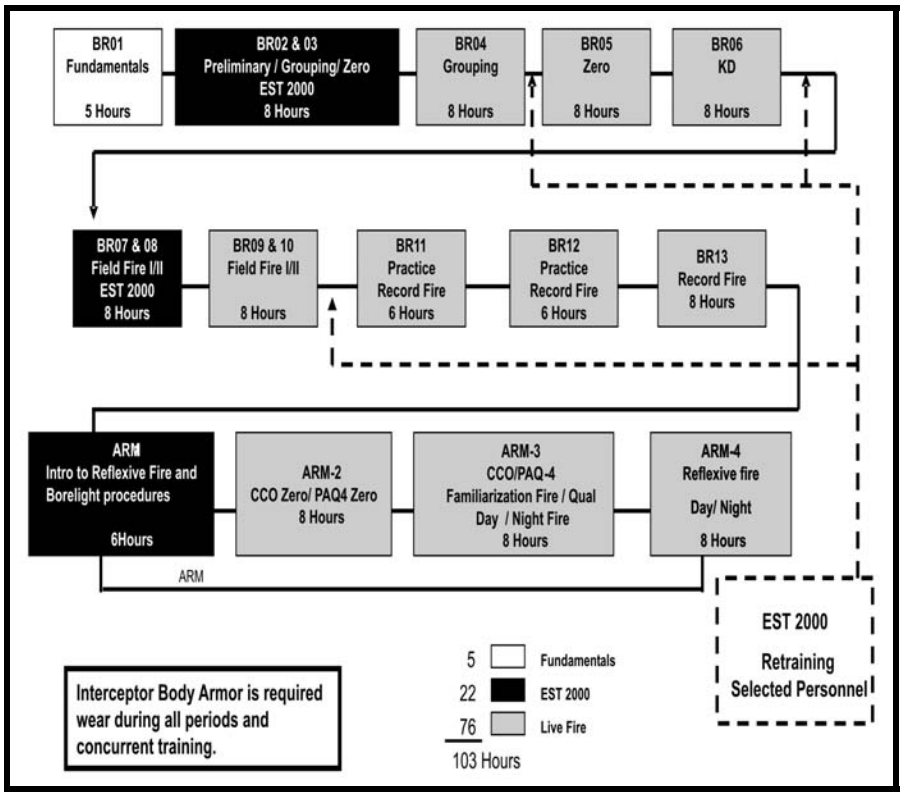

Figure 3-37. IET rifle marksmanship training strategy.

Infantry Company Deployed in Theater

3-171. Figure 3-38 shows an example marksmanship strategy for an Infantry company while deployed in theater. Theater TSC provides the EST 2000 facility.

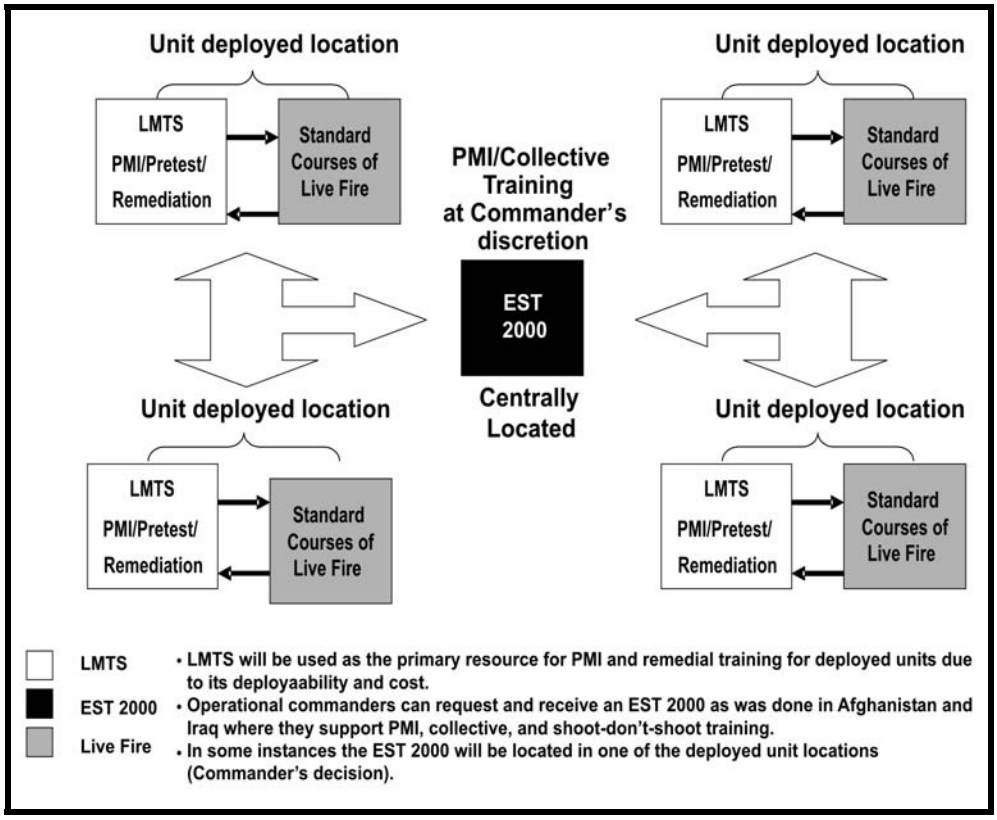

Figure 3-38. Deployed marksmanship training strategy.

Collective training

3-172. Completing five collective training scenarios takes about an hour.

Rules of Engagement (Shoot-Don't Shoot)

3-173. The five scenarios in Shoot-Don't Shoot can require about 110 minutes to complete. When training these scenarios, leaders must enforce the standards of fire discipline because Soldiers tend to shoot as if they had unlimited ammunition; therefore it is recommended that at among the lethal hits, near-misses, and misses, at least 50 percent should be lethal hits in the initial training mode. Shoot-don't shoot scenarios are limited to five lane configurations. The EST 2000 weapons mix (Table 3-7) is unit dependent. An installation only supporting an IBCT receives a light weapons mix. An installation supporting a HBCT receives a heavy weapons mix.

Table 3-7. Engagement skills trainer weapons mix.

Light Weapon Mix		*Heavy Weapon Mix*	
M16	10	M16	10
M4	10	M4	10
M9	6	M9	6
M249	3	M249	3
M240	2	M240	2
M2	0	M2	2
MK19	0	MK19	2
M203	4	M203	4
AT4	3	AT4	3
M1200	2	M1200	2

References

- TM 07-6910-702-10, Operator Manual: EST 2000.
- FM 3-22.9. Rifle Marksmanship: M16A1, M16A2/3, M16A4, and M4 Carbine.
- DA-PAM 350-38, Standards in Weapons Training.

GRAPHIC TRAINING AIDS

3-174. Table 3-8 lists GTAs that affect Infantry company leaders. These GTAs can support individual and unit collective training as classroom aids or quick-reference guides. Many are referenced elsewhere in this FM. Others are related to and recommended for use in TADSS Infantry training. Additional GTAs are available at local TSCs and online at the ATSC web site, http://www.atsc.army.mil.

Table 3-8. Graphic training aids.

GTA	*Title*	*Pub Date*
03-01-006	M12A1 Decontaminating Apparatus	15 Aug 2001
05-08-005	Leadership and the Environment: Unit Leader's Field Guide, Assessment, and Quality-Assurance Checklist	01 Jan 1999
05-08-013	Training and Environment Soldier's Field Card	01 Jul 2005
05-10-034	Conventional U.S. Land Mines	04 Jan 1995
05-10-036	Mine Card, Part I	28 May 1997
05-10-037	Mine Card, Part II	28 May 1997
05-10-041	Maintaining, Employing, and Operating the Modular Pack Mine System (MOPMS) and the Remote Control Unit (RCU)	15 Jul 1999
05-10-044.	Mine Awareness (SANDI)	1 May 1999
05-10-052	Selectable Lightweight Attack Munition (SLAM), M4	01 Feb 2003
05-11-016	Standard/Situational Obstacle Job Aid	01 Apr 2002
06-05-001	Multi-purpose Protractor	01 Jun 1979
06-07-003	Observed Fire Fan	08 Jan 1983
07-01-005	Target Grid Methods of Fire	01 Jun 1965
07-01-032	Observed Fire Reference Card	01 Jun 1987
07-01-035	MK19 Disassembly Layout (Chart)	01 Jan 1994
07-01-038	Infantry Leader's Reference Card	01 Jan 1995
07-01-039	Disassembly Layout Chart, M16A2 Rifle	02 Jan 1996
07-01-040	M-4 Carbine, Field Stripped	18 Jul 2001
07-01-041	Conversion Chart, 30 Gram	01 Jun 1998
07-01-042	M249 MG Disassembly Mat	01 May 2001
07-01-043	BRM Coaches Checklist (4 Fundamentals)	01 May 2000
07-02-005	Sight Engagement Trainer, AT4 (Parts 1 and 2)	02 Jan 1990
07-04-005	Pathfinder Control Zone Scale	01 Jan 1987
07-04-006	Infantry Leader's Reference Card for Building the Company Team for Defense	02 May 1994
07-04-007	Training Meeting	01 Sep 1994
07-04-008	Infantry Leader's Reference Card for Linkup Operations	02 Jan 1995
07-06-001	Fighting Position Construction – Infantry Leader's Reference Card	01 June 1992
07-10-001	Machine Gunner's Card	01 Jun 2002
07-10-002	Advanced Infantry Marksmanship Strategies and Standards	01 Jun 2002
07-10-003	Small Unit Leader's Card (Infantry)	01 Mar 2003
08-01-002	Leader's Guide to AAR Debriefings	01 Aug 1996
08-01-004	MEDEVAC Request Form	01 May 1997
08-07-001	Combat Stress Control	01 Oct 1996
08-11-014	MILES Casualty Cards	04 Jan 1993
09-04-005	Mine AT M21 (Tank Killer)	01 May 1970
09-12-001	Unexploded Ordnance (UXO) Procedures	03 Jan 1992

Table 3-8. Graphic training aids (continued).

GTA	*Title*	*Pub Date*
09-12-002	Initial Downwind Hazard Area Template	03 Jan 1995
GTA 17-02-011	Combat Vehicle Identification (CVI) Training Cards	03 Jan 1984
17-02-015	The Call for Fire	01 Apr 2000
09-07-001	Enemy Prisoners of War (EPW) Basic Commands	01 Feb 1989
19-08-004	Nonlethal Munitions	01 Oct 2001
21-03-004	Battle Fatigue, Normal Common Signs, What to Do For Self and Buddy Aid	02 Jun 1986
21-03-005	Battle Fatigue	03 Oct 1983
21-03-006	Battle Fatigue, Company Leader Actions and Prevention	01 Jun 1994
21-03-009	Code of Conduct Card	01 Aug 1989
21-03-010	Code of Conduct Chart	02 Oct 1989
21-06-002	Advanced Land Navigation	01 Feb 1973
21-08-001	Risk Management Information Card	01 Jun 2000
22-06-004	Army Values/Soldier's Creed Card	10 Aug 2004
22-06-005	Army Values/Warrior Ethos Tag	10 Aug 2004
24-01-003	Iraq Culture Smart Card	20 May 2006
43-01-003	HMMWV Hot Weather/Desert Operations	01 May 2005
55-03-030	HMMWV Up-Armored Emergency Procedures/Performance Measures	01 Oct 2006
90-01-001	IED and VBIED Smart Card	20 May 2004
03-01-006	M12A1 Decontaminating Apparatus	15 Aug 2006
05-08-005	Leadership and the Environment: Unit Leader's Field Guide, Assessment, and Quality Assurance Checklist	01-Jan-1999
05-08-013	Training and Environment Soldier's Field Card	01 Jul 2005
05-10-31	U.S. Firing Devices, Booby Traps, and Expedients	02 Oct 1989
05-10-33	Demolition Card	03 Jan 1994
05-10-034	Conventional U.S. Land Mines	04 Jan 1995
05-10-036	Mine Card, Part I	28 May 1997
05-10-037	Mine Card, Part II	28 May 1997
05-10-041	Maintaining, Employing, and Operating Modular Pack Mine System (MOPMS) and Remote Control Unit (RCU)	15 Jul 1999
05-10-044.	Mine Awareness (SANDI)	1 May 1999
05-10-052	Selectable Lightweight Attack Munition (SLAM), M4	01 Feb 2003
05-11-016	Standard/Situational Obstacle Job Aid	01 Apr 2002
06-05-001	Multi-Purpose Protractor	01 Jun 1979
06-07-003	Observed Fire Fan	08 Jan 1983
CJTF	***Title***	***Pub Date***
CJTF-7	Operation Enduring Freedom Smart Card 1, Report Procedures	10 Jan 2004
CJTF-7	Operation Enduring Freedom Smart Card 2, Convoy Operations (Logistics)	Jan 2004
CJTF-7	Operation Enduring Freedom Smart Card 3, Convoy Operations (Combat)	10 Jan 2004
CJTF-7	Operation Enduring Freedom Smart Card 4, IED and VBIED Threat	10 Jan 2004
CJTF-7	Operation Enduring Freedom Smart Card 5, Vehicle Search Techniques	5 Jan 2004
CJTF-7	Operation Enduring Freedom, IED Handbook	May 2004

HOMESTATION INSTRUMENTATION TRAINING SYSTEM

3-175. Instruments squad to company level training including simulation of weapon effects and preparation AARs. HITS supports collective and combined arms training exercises, mission rehearsals at home station, and deployed locations. HITS allows a company to execute three independent platoon lanes at one time, or a single company collective training event. HITS instruments both vehicles, targets and individuals. It allows the company to train at home station and sustain a higher level of proficiency between and during deployments. The HITS also serves as a leader training device. Finally, it can be useful to provide a detailed and objective AARs

DIRECT FIRE TACTICAL ENGAGEMENT SIMULATION SYSTEM

3-176. The direct-fire TESS captures data from MILES and other TESS to integrate battlefield weapon effects. This provides a common operational picture (COP) and an integrated AAR for the commander. Other TESS features include—

- Area weapons effects.
- Dismount player instrumentation.
- Vehicle player instrumentation.
- Rotary wing/army aircraft instrumentation.
- O/C Instrumentation with remote situational awareness display.
- An exercise planning module that provides the following capabilities:
  - Loads the training objectives and tasks.
  - Develops minimum essential subsystem list using selected training objectives and tasks.
  - Loads the digital exercise map data.
  - Selects the exercise box and begins building the exercise graphics.
  - Builds the exercise scenario from the master events list.
  - Enters troop list data to include vehicle type and density for blue and red forces.

3-177. The direct-fire TESS is also used to develop and insert battlefield effects using the exercise control cell terminal and module. The company can insert preplanned or immediate battlefield effects such as mine fields, CBRN events, IED, vehicle-borne improvised explosive devices (VBIEDs), smoke, TRPs, artillery, mortar fire, and restricted areas to further shape the simulated battlefield.

3-178. Extensive multimedia AAR capabilities captures analog and digital battle command communications for both two and three-dimensional presentations and training analysis supporting comprehensive take home packages. The AAR module allows the facilitator to—

- Capture snap shots of the events.
- Capture audio feeds from tactical communication systems.
- Playback the entire battle or select portions of the battle.
- Insert digital photos into the AAR.
- Assess direct fire engagements by analyzing pairing lines.
- Generate reports:
  - Personnel and vehicle combat assessment.
  - Ammunition expenditures.
  - Trigger pulls.
- Incorporate tasks, conditions, and standards into the AAR.
- View the AAR in 2D and 3D, from all angles on the battlefield, including the Soldier's view.
- Measure effects of area weapon systems.

3-179. Based on the commander's critical information requirements (CCIR), the commander and system operator build the unit's AAR in the planning and preparation phases of the exercise, and include the following. Fully transportable and deployable system supporting in theater mission training:

- Mission and intent slides for blue and red forces.
- The exercise tasks, conditions, and standards slides.
- Tactical CCIR slides.
- Task organization slides for blue and red forces.

TRAINING EQUIPMENT

3-180. Fielding strategy provides one HITS system for every 39 companies on an installation. Man and vehicle player units can increase or decrease to reflect the installation unit mix. For example: an HBCT company HITS System will contain more vehicle player units. Each unit will have enough player units to train the entire company to include OPFOR. One IBCT Infantry company HITS consists of—

- 160 BLUFOR man-player units that interface with MILES and other TESS.
- 49 OPFOR man-player units.
- 4 BLUFOR vehicle player units.
- 1 OPFOR vehicle player unit.

TRAINING ENVIRONMENT

3-181. The HITS can be used in any field training environment from squad to company. This can include STXs, LTXs, FTXs, and LFXs.

REFERENCES

- HITS Training Strategy, Army Training Support Center (ATSC).
- HITS Basis of Issue Plan, ATSC.
- HITS Operational Requirements Document, ATSC.

INFANTRY RIFLE FIRE SIMULATOR

3-182. The RFS (TSC device number: DVC 07-75, see Figure 3-39) simulates small arms fire, either single shot or automatic at 600 rounds per minute. The simulator consists of a tubular, gun-like structure having a combustion chamber that contains a mixture of oxygen and propane gas. The mixture is ignited by a spark plug. This results in small explosions, replicating the sound of gunfire. A minimum of 2500 shot simulations is possible on one charge of gas.

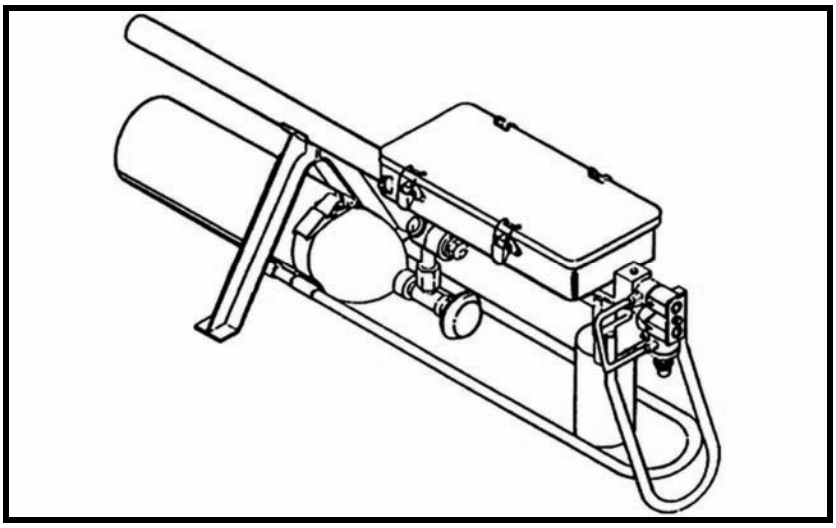

Figure 3-39. Infantry rifle fire simulator.

TARGETRY AND SIMULATION DEVICE SYSTEM

3-183. The TSDS (Figure 3-40) replicates battlefield visual and aural effects for individual and collective training exercises.

- Components.
- Target OPFOR multi-purpose individual (TOMI).
- Target lifting devices (TLD).
- Hand-held control(HHC) devices.
- Radio frequency control modules (RFCM).
- Sound effects simulators (SES).
- MILES shoot-back devices (MSD).

Figure 3-40. Targetry and Simulation Device System.

TARGET OPFOR MULTIPURPOSE INDIVIDUAL

3-184. The TOMI target is a three-dimensional, life-like Figure representing men, women, and children:

- Adult TOMI targets are five to six feet tall, child targets are three to four feet tall.
- The targets have moveable joints and can assume standing, kneeling, sitting, and prone positions.
- A weapon can be gripped in either hand.
- TOMI targets can be clothed and fitted with female form attachments.
- A thermal vest powered by a 12V battery causes the upper body to radiate a thermal signature appropriate to target type and size.
- The targets are constructed of a weatherproof, fire-retardant, self-sealing material engineered to not produce bullet ricochet or fragmentation.
- Twenty-five impacts by 5.56-mm ammunition within a 6-inch square on the target will not degrade capabilities.
- Repairs can be made in the operational environment.

Handheld Control Device

3-185. The handheld control device is a programmable electronic device carried by a mobile target operator that is used to send commands to control modules that interface with the other TSDS components.

Target Lifting Device

3-186. When cued by the HHC, TLDs move life-like human figures into viewing positions. They also transmit hit count and go/no-go status back to the HHC via a RF link.

Sound Effects Simulator

3-187. The SES provides realistic audio signatures to train individual Soldiers. The audio simulator replicates the sounds of selected vehicles, humans, and threat weapons.

MILES Shootback Device

3-188. MSDs add further training realism by injecting the element of enemy direct small arms fire.

TRAINING

3-189. The TSDS supports individual and unit collective training. Leaders can use applicable FMs and TCs to plan and execute training using the simulation system to improve the training realism for target engagement techniques.

Supporting TADSS

3-190. See TC 25-8, Training Ranges, for additional specifications and descriptions for targetry supporting ranges to include individual qualification, crew qualification, and collective training ranges.

References

- DA Pamphlet 350-9, Description of Army Training Device Training Devices for Armywide Use.
- STP 21-24 SMCT, Soldier's Manual of Common Tasks, Skill Level 2, 3, and 4.
- TC 25-8, Training Ranges.
- TC 90-1, Urban Operations.

JOINT LAND COMPONENT CONSTRUCTIVE TRAINING CAPABILITY

3-191. Constructive training involves the use of computer models and simulations to exercise C2 functions and provide stimulation of ABCS. The JLCCTC provides commanders with a ground maneuver replication capability consisting of a tool box of integrated individual constructive simulations that also stimulates company ABCS. It can be used for individual digital training, collective and leader training, or as an exercise supporting virtual and live training exercises. The BCTC has a JLCCTC capability supporting the commander's training objectives. BCTC personnel assist the commander in achieving his training objectives and train key C2 tasks. The JLCCTC maneuver component consists of the following:

GROUND MANEUVER DRIVER

3-192. The JLCCTC includes the joint conflict and tactical simulation (JCATS) and the One Semi-Automated Forces Objective System (OOS). These simulations can provide BLUEFOR, OPFOR, and limited multisided functionality that simulates the contemporary operating environment. The BCTC coordinates with the commander to select the best simulation model meeting his training objectives.

C2 INTERFACE

3-193. The C2 interface allows the maneuver driver to populate the COP on the company's ABCS. The interface can support ABCS training within a constructive environment. It can also be distributed to support live training in the maneuver and local training areas, or instrumented ranges and facilities. The JLCCTC also provides the capability to integrate a simulated video feed from a constructively replicated SUAV into the commander's COP.

LASER MARKSMANSHIP TRAINING SYSTEM

3-194. LMTS supports preparatory and partial task training prior to EST 2000 and remedial training during and after use of the EST 2000. The LMTS supports training on all Army direct fire small arms including the M9, all variants of the M16, M4, all machine guns, and the M24 sniper rifle, with associated optical devices.

CAPABILITIES

- Individual trainer.
- Preliminary marksmanship instruction and remedial training.
- Dry fire and or blank fire modes (for recoil effects).
- Used with assigned weapon.
- Used with miniature replicated engagement target system scaled range to replicate BRM tables of fire.
- Transportable/deployable.
- Runs indoors or out, without special facility requirements, on batteries, 12/24VDC, 120/240AC.

LIMITATIONS

3-195. The laser transmitter rod mandrel does not allow tactical training because the mandrel is not secured within the weapons' barrel. With the addition of the MP 400B or equivalent clamp mounted laser transmitter, LMTS can train advanced rifle marksmanship (ARM), reflexive firing, and urban operations training.

TRAINING SETUP

3-196. The system comes in multiple cases and can be carried by one Soldier. It can be transported in one vehicle. Two Soldiers can setup the system in about 45 minutes. Use of the scoring station requires training for the operator.

TRAINING ENVIRONMENT

3-197. LMTS supports ST or classroom instruction of BRM, initial and sustainment training in garrison or a field environment. With the addition of the MP 400B, LMTS can also provide a force on target capability for individual and collective training. (See BRM/ARM example training strategies under EST 2000.)

TRAINING COMPONENTS

3-198. Each Infantry battalion is issued a company set of LMTS consisting of—

- An LMTS 460-2 targeting system.
- A 130-8 targeting system.
- An accessory kit including scoring station and power cables.
- A machine gun target system.
- A sniper training system.

REFERENCES

- See EST 2000 reference list.
- Appendix C, FM 3-22.9.

MEDICAL TADSS

3-199. Medical TADSS include the casualty simulation kit; the intravenous therapy trainer; the CPR mannequin, the resuscitation training mannequin, and the war wound moulage set.

CASUALTY SIMULATION KIT

3-200. The casualty simulation kit (Figure 3-41) provides materials for realistically simulating multiple combat wounds. Kit materials are used to train combat lifesaver (CLS) skills, and to condition Soldiers against shock when seeing a combat casualty's appearance. The TSC device number is DVC 08-14. The kit has 100 stick-on wound moulages and a variety of makeup material to replicate the effects of the wound. Effects include frothing at the mouth, loss of stomach content, shock, perspiration, bruises, and contusions. The instructor's guide for the casualty simulation kit provides illustrations on the proper use of the kit.

Figure 3-41. Casualty simulation kit.

INTRAVENOUS THERAPY TRAINER

3-201. The intravenous therapy trainer (Figure 3-42) consists of a life-sized plastic arm and hand, with two simulated vein sites in the antecubital area (inner or front surface of the forearm) and dorsum (upper surface) of the hand. Designed for injecting and withdrawing fluids, it has a normal range of wrist and elbow motion to simulate a right or left arm that allows for application of tourniquets and arm boards. The device is provided with a carrying case. The TSC device number is DVC 08-05. This trainer supports classroom instruction or ST training for CLS skills.

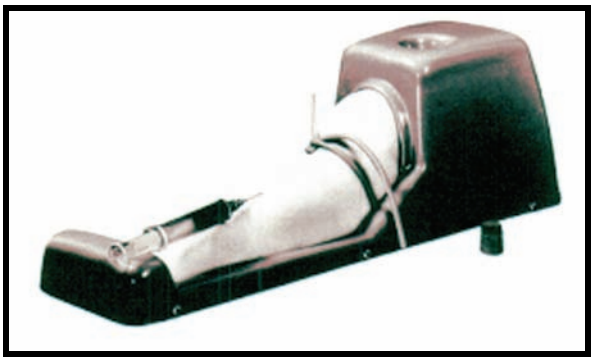

Figure 3-42. Intravenous therapy trainer.

MANNEQUIN, HEAD AND TORSO, CARDIOPULMONARY RESUSCITATION TRAINING

3-202. The CPR mannequin (Figure 3-43) is a natural looking, adult-sized upper torso mannequin that models a realistic human blood circulation system. This demonstrates and trains both artificial ventilation and external cardiac compressions. The device is portable and can be for indoor and outdoor demonstrations. It can be used in medical classes and basic first aid instructions. The TSC device number is DVC 08-16. For artificial ventilation (mouth-to-mouth resuscitation), Soldiers apply intermittent positive pressure to inflate and deflate the lungs. For the external cardiac compression mode, the device shows the heart compressed between the sternum and the spine, and the exchange of blood in the circulation tubes.

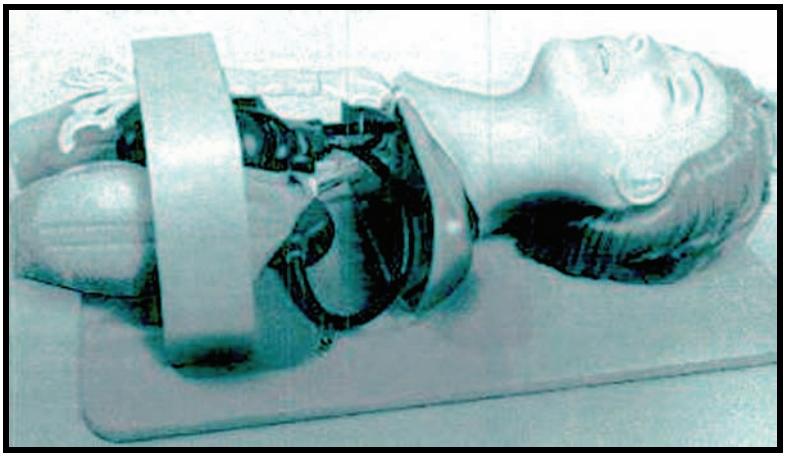

Figure 3-43. CPR mannequin.

RESUSCITATION TRAINING MANNEQUIN

3-203. The resuscitation training mannequin (Figure 3-44) provides realistic practice in mouth-to-mouth, cardiopulmonary resuscitation, bleeding control, leg splints, and traction. This training device supports training first aid and medical tasks in the SMCT. The TSC device number is DVC 08-15. The device replicates an adult, non-inflatable body that replicates heart-lung resuscitation, visual indicating device, air vent, broken femur, dilated pupil, and penetrating arm wounds. The torso is separable at the waist and has a removable head. The device simulates breastbone reaction and carotid pulse pressure of an unconscious person. The resuscitation training mannequin contains face mask pieces, outer garments, and two carrying bags. Accessories furnished for sterilization include—

- Stand for head.
- Tubing with nipple.
- Syringe.
- Sterilizing solution.
- Measuring glass.
- Funnel.

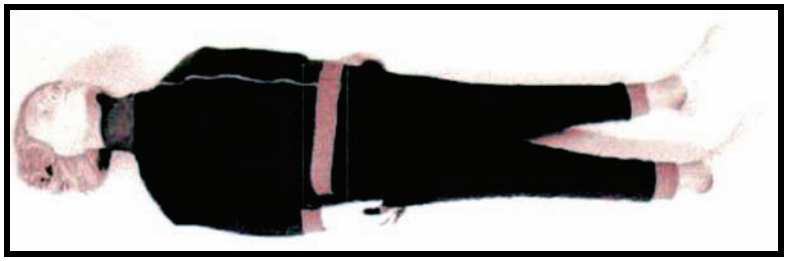

Figure 3-44. Resuscitation training mannequin.

WAR WOUND MOULAGE SET

3-204. The war wound moulage set (Figure 3-45) is an enhancement to the casualty simulation kit that supports training first aid treatment of combat type casualties. It also assists in the development of first aid skills. The TSC device number is DVC 08-04.

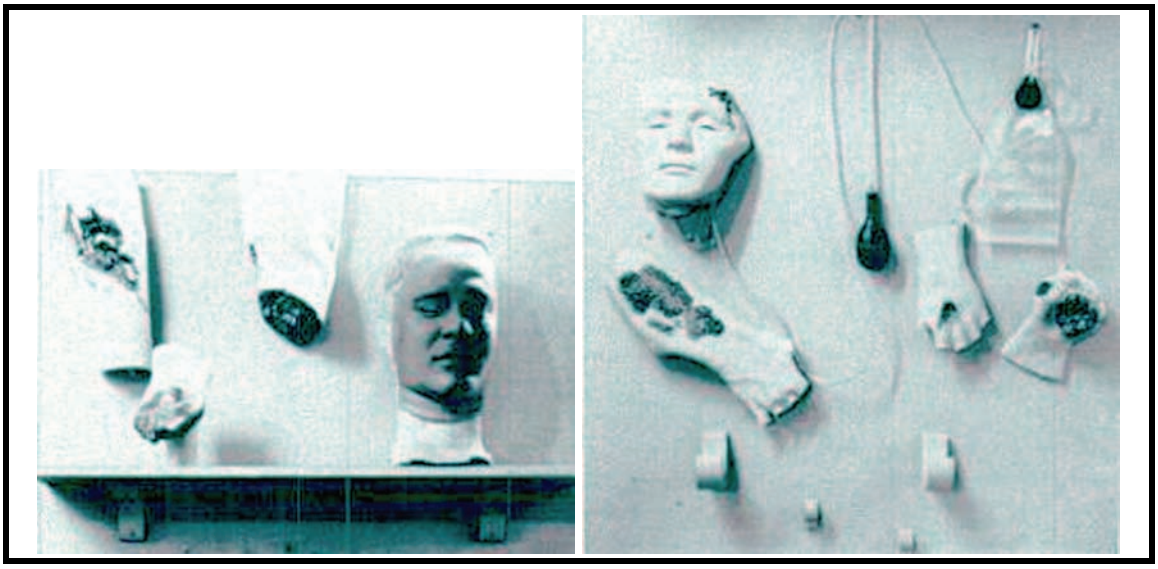

Figure 3-45. War wound moulage set.

Capabilities

- Has a set of vinyl plastic models or moulages that simulate wounds.
- Is life sized. Surface relief reveals bone structure and flesh. It is finished in colors simulating real human skin, bone, and flesh.
- Is strappable onto a Soldier acting as a casualty during an FTX or first aid lesson.
- Comes with a pump and blood reservoir, plus five packages of powder to make five gallons of simulated blood.

Training

3-205. Training with the device helps remove the shock at the first sight of a severe wound and develops skills in identifying and treating wounds. During training, the subject wearing the moulage can manually operate a pump and reservoir which causes simulated blood to flow through veins and arteries built into the moulage. The flow may be either pulsating or steady. The war wound kit trains the following casualty types:

- Amputation of leg.
- Compound fracture of femur.
- Compound fracture of humerus.
- Compound fracture of lower leg.
- Gunshot wound of hand (palm).
- Laceration of the forehead (scalp).
- Shrapnel wound of the abdominal wall with protruding intestines.
- Shrapnel wound on the lower jaw, with partial loss of jaw.
- Atomic burn on back.
- Atomic burn on chest.
- Atomic burn on face.
- Atomic burn on hand (palm and dorsal area).
- Face in shock.
- Frostbite of foot.
- Phosphorous burn on the hand.
- Second and third degree burns on the forearm.
- Trench foot.
- Hypodermic needle insertion technique moulage.
- Sucking chest wound.

Supporting TADSS GTAs

- 08-01-004, MEDEVAC Request Form.
- 08-07-001, Combat Stress Control.
- 21-03-004, Battle Fatigue, Normal Common Signs, What to Do For Self and Buddy Aid.
- 21-03-005, Battle Fatigue.
- 21-03-006, Battle Fatigue, Company Leader Actions and Prevention.

References

- STP 21-1-SMCT, Soldier's Manual of Common Tasks, Skill Level 1.
- STP 21-24 SMCT, Soldier's Manual of Common Tasks, Skill Levels 2, 3, and 4.

MULTIPLE INTEGRATED LASER ENGAGEMENT SYSTEM

3-206. Making up a family of training systems, MILES simulates the effects of direct-fire weapons at their operational ranges. The systems operate in a fully integrated tactical training environments. MILES provides the capability for force-on-force and force on target tactical engagements and realistic casualty assessments. MILES actually includes basic MILES, MILES with Simulated Area Weapons Effects (SAWE) II, and MILES Replacement. MILES Replacement (formerly known as MILES 2000 and MILES XXI) has laser transmitters that allow ground troops to fire coded invisible laser pulses instead of live ammunition. Receiving detectors located on opposing troops and vehicles pick up the laser pulses, activate aural and visual signs of a kill, hit, or near miss as well as disable the Soldier's or vehicle's weapons. The hit and kill probabilities simulate live ammunition effects. Miles TSC device numbers are shown in Table 3-9.

Table 3-9. MILES TSC device numbers.

Nomenclature	*Legacy MILES Device Number*	*MILES 2000 Device Number*
M16A1/2/4, M4 Kit	DVC 07-56/1, 99-84	DVC 23-22
M249 SAW Kit	DVC 07-56/14	DVC 23-22
M60 MG Kit	DVC 07-56/2	DVC 23-24
M240B MG Kit	DVC 99-76	DVC 23-25
AT4 Kit	DVC 07-56	DVC 23-27
ITS/WITS		DVC 23-52
CD/TDTD		DVC 23-53
ASAAF		DVC 23-58
LTID	*DVC 17-146*	

Capabilities

3-207. Supports any training scenario (individual, leader, or collective) using blank ammunition. Provides individual casualty killed and wounded assessments. Casualty assessment for a mobile weapon system includes catastrophic, mobility, firepower, and communication kill. AAR capability includes—

- Ability to conduct AARs based on objective information.
- Comprehensive data collection with sorting capability.
- Archives data from many exercises.
- Allows modification of the configuration of MILES equipment.
- Allows modification of Ability to modify the probability of hit and kill for new weapons and configurations.

Limitations

- Requires blank ammunition, Antitank Weapon Effects Simulation System (ATWESS), direct and indirect fire cueing device, blank firing adapters (BFA), batteries, OPFOR, or MILES receptive targetry.
- Allows only line-of-sight engagements for indirect fire weapons. MILES cannot simulate effects of indirect fire munitions limiting the realistic effects of mortars and artillery. Indirect fires are currently simulated only through facility instrumentation systems.
- Does not simulate the M203 GL or hand grenades.

SMALL ARMS TRANSMITTER

3-208. The SAT (Figure 3-46) provides MILES capability for M16-series, M4, M249, M240B, and M60 rifles and machine guns.

Configuration

3-209. It is a laser transmitter that attaches to the weapon, usually to the barrel, with a weapon-specific adapter. The SAT aligns to the weapon sights using the automatic small arms alignment fixture (ASAAF) or an off-set aiming light. The Soldier need not zero or adjust his weapon prior to training. The SAT will not interfere with optical sights or night vision devices.

Figure 3-46. MILES small arms transmitters.

Capabilities

- Retains alignment until transmitter is removed.
- Automatically disables itself if Soldier is "killed."
- Requires both flash and bang to trigger laser.
- Indicates weapon firing by visible LED.
- Embeds player identification code in LASER signal.

INDIVIDUAL WEAPON SYSTEM

3-210. The IWS provides the detectors and electronics necessary to receive the MILES LASER messages, process and display the results, and store and download them for use in AARs. The system consists of two parts, the torso unit, (Figure 3-47), and the helmet unit (Figure 3-48).

Configuration

3-211. The MILES torso unit is configured three ways.

- As an 'H" harness that can overlay any equipment the participant wears.
- As an integrated package where all MILES components are mounted in an actual modified tactical vest.
- As part of a Combat Training Center Instrumentation System or HITS, where the data link and GPS receiver is mounted with the MILES components.

Capabilities

- Lethality assessments, including NEAR MISS, HIT-NOT KILLED, AND KILLED.
- Audible alerts.
- Catastrophic or cheat kill—one continuous tone until SAT is disabled.
- Hit or near miss—two tones.
- Selectable probability of kill (PK) tables for unprotected individual(s) wearing body armor.
- Player ID reprogrammability.

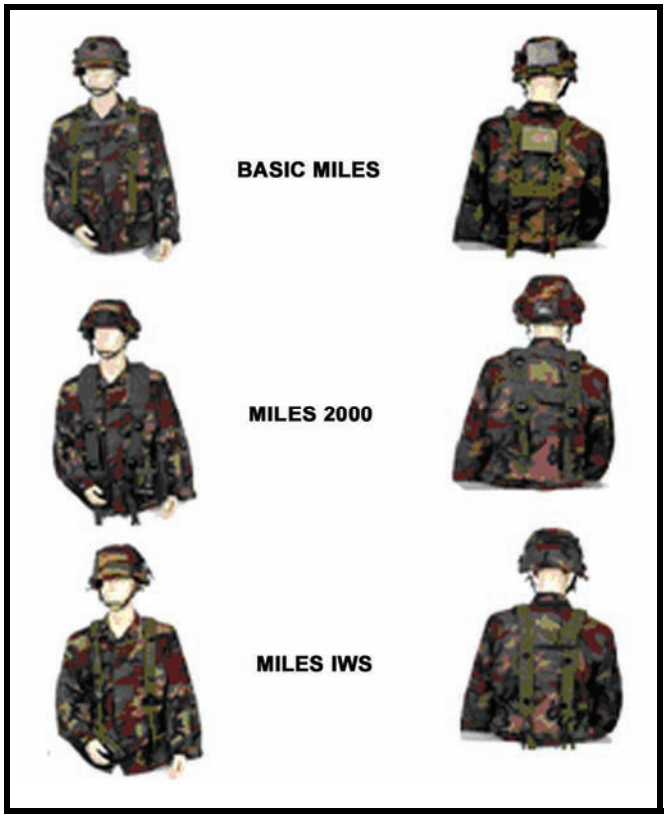

Figure 3-47. MILES individual torso harnesses.

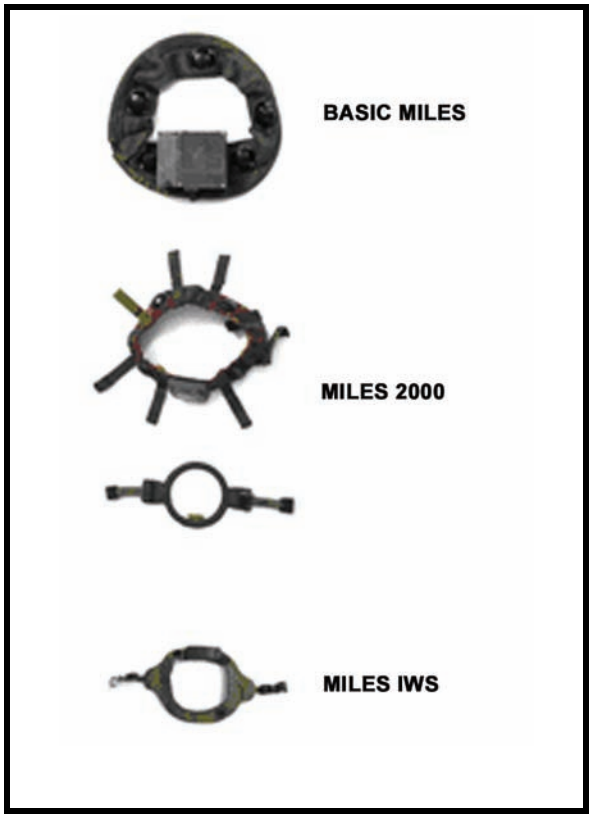

Figure 3-48. MILES helmet halo configurations.

ANTITANK WEAPON SIMULATORS

3-212. Antitank weapon simulators (Figure 3-49 shows the one for the AT4) replicate the weight, feel, and operating procedures of the actual weapons. Tanks and other targets can be killed out to the weapon's maximum effective range.

Configuration

3-213. The simulated weapon launcher tube contains the control electronics and a laser transmitter aligned to the weapon sights. Firing realism is enhanced by the flash and smoke produced by the ATWESS. Data communication between the surrogate and torso harness couples the shooter's ID to the transmitted kill code and records firing events for the AAR.

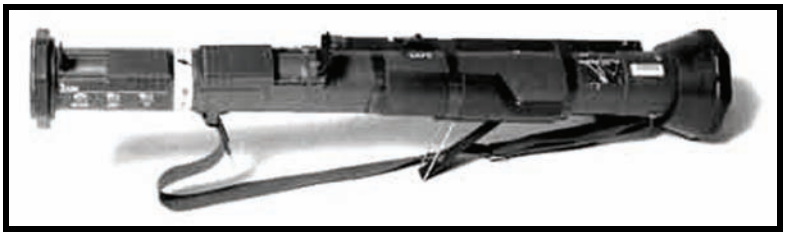

Figure 3-49. AT4 weapon simulator.

Capabilities

- Size, weight, balance and operation closely replicate real weapons.
- Fires standard M22 ATWESS cartridges to simulate the signature of a round firing.
- Prevents a "killed" player from firing a weapon.
- Displays rounds remaining (LED), BIT results, and low battery.

AUTOMATIC SMALL ARMS ALIGNMENT FIXTURE

3-214. The ASAAF (Figure 3-50) automatically aligns the SAT laser beams to the sights of small arm weapons and machine guns and works with optical sights and night vision devices. No blank ammunition is required during the alignment process. Size and portability provide an alignment capability at any location, including inside a room. The ASAAF consists of an alignment head and a display unit. Capabilities

Capabilities

- Aligns laser to weapon sights within 3-5 min.
- Is dry fire capable.

Figure 3-50. Automatic small arms alignment fixture.

INDEPENDENT TARGET SYSTEM AND WIRELESS INDEPENDENT TARGET SYSTEM

3-215. The ITS and WITS (Figure 3-51 and Figure 3-52) support noncombat vehicles and targets such as bridges and bunkers.

Configuration

3-216. It uses a high-fidelity detection system that assesses casualties in real time. Components are designed for rapid attachment. If the devices report hit or destroyed, they cue participants with a flashing strobe light.

Capabilities

- Supports
  - Kill.
  - Near miss.
  - Hit, not killed.
  - Mobility kill.
- Has selectable probability of kill tables with vulnerabilities of 32 vehicles and structures.
- Detects and logs cheating as an event.
- Has a standard detector array that fits all vehicles.

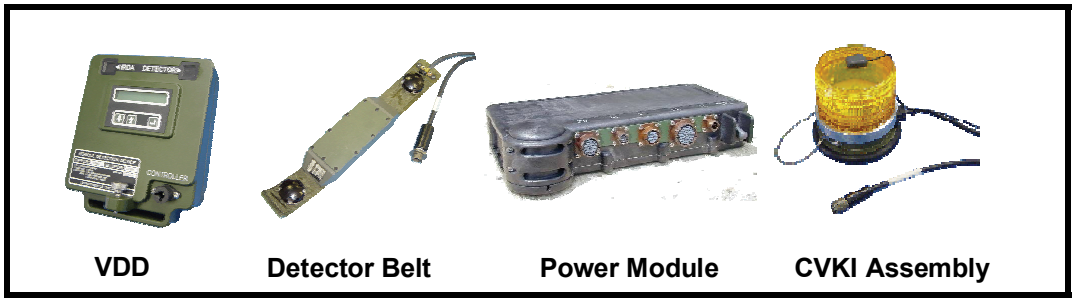

Figure 3-51. Independent target system.

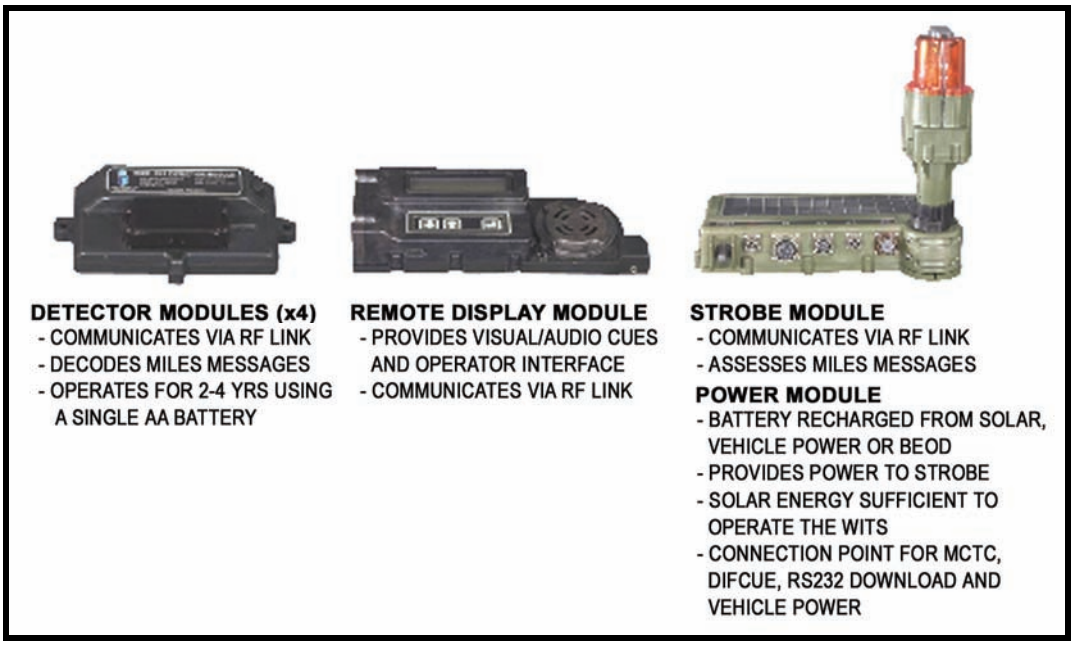

Figure 3-52. Wireless independent target system.

CONTROLLER DEVICE/TRAINING DATA TRANSFER DEVICE

3-217. The CD/TDTD (Figure 3-53) supports the observer/controller's (O/C) interactions with MILES including resetting or resurrecting players, downloading event data, synchronizing player time, and uploading new or revised system configurations and PK tables.

Configuration

3-218. The CD/TDTD is also used to load and configure surrogate weapons, making reloading realistic and easy. Event data downloaded from players is transferred to the MILES After-Action Review System (MAARS) for analysis and report generation.

Capabilities

- Interfaces with all MILES system components and MAARS.
- Performs at the following ranges:
  - 500 meters: Universal Kill, Mankill, Reset, Resurrect, and Near Miss.
  - 100 meters: time synchronize internal clock.
  - 100 meters: transmit MILES code; selects kill probability table.
  - 20 meters: decode MILES code.
- Downloads and stores data for a typical exercise for 100 or more players.
- Transmits any player ID and weapon code.
- Reassigns player IDs.
- Automatically allows player ID to be assigned for friendly and opposing forces.

UNIVERSAL CONTROLLER DEVICE

3-219. The MILES universal controller device (Figure 3-54) supports player/equipment preparation for force-on-force and force-on-target training exercises, plus player training on MILES systems. It transmits—

- A universal kill code to ITS/WITS, crew-served weapon system, and IWS unit up to 500 meters.
- Near miss code up to 500 meters.
- Reset code.
- Resurrection code up to 500 meters.
- Synchronization signal up to 100 meters.
- Administrative functions.

Figure 3-53. Controller device/ training data transfer device.

Figure 3-54. Universal controller device.

MICRO CONTROLLER DEVICE

3-220. The MCD (Figure 3-55) augments the CD/TDTD and universal controller device in supporting player and equipment preparation for force-on-force or force on target training exercises, MILES player training, and referee control.

Configuration

3-221. The MCD interfaces with all MILES systems (Basic MILES – MILES Replacement).

Capabilities

- Transmits universal kill code up to five meters.
- Transmits reset code up to five meters.
- Transmits resurrection code up to five meters.
- Transmits near miss sequence up to five meters.

MILES AFTER-ACTION REVIEW SYSTEM

3-222. MAARS (Figure 3-56) captures data for use in AARs and modifies MILES systems' configuration data to meet commanders' needs.

Figure 3-55. MILES micro controller device.

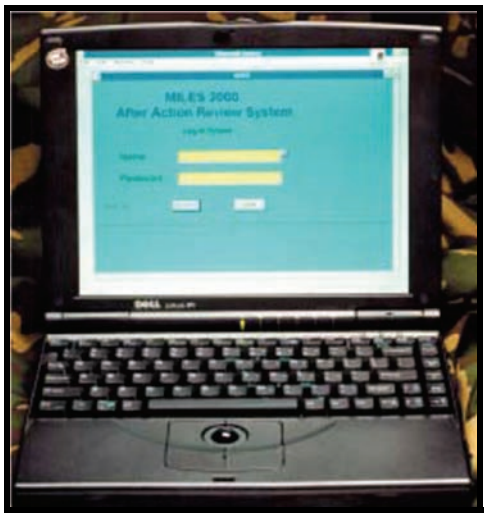

Figure 3-56. MILES AAR system.

Configuration

3-223. The modified configuration data is uploaded to the MILES systems through the CD/TDTD. The AAR system allows commanders to process, format, and view engagement data after the exercise is complete. The exercise data can be archived for future use.

Capabilities

3-224. Programs the CD/TDTD to—

- Customize probability of kill (PK) data for vehicle, target, man-worn, or dismounted TOWs.
- Customize default ammunition loads, ammunition types, and MILES codes fired.
- Download event data from vehicles, targets, man-worn, or dismounted TOWs.
- Download event records:
  - Fratricide incidents.
  - Lethality assessment events.
  - Firing events.
  - Cheat events.
  - Administrative events.
  - Custom configuration data.
- Perform prescribed database maintenance operations:
  - Delete, archive, or restore event data sets.
  - Export events associated with a specific exercise to an alternate file format (Excel), allowing the user to further process reported data.

LASER TARGET INTERFACE DEVICE

3-225. LTID interfaces existing live-fire tank and man target mechanisms with standard MILES transmitters enabling transmitters to knock down targets. LTID provides realistic marksmanship training without the high cost of ammunition and target repair or replacement encountered in live-fire training programs. It consists of a detection assembly, an electronic assembly, and a shock generator mechanism . The detection assembly simulates target vulnerability using six detectors fastened with Velcro to the target. The electronic assembly contains the detector amplifier, decoder, shock generator mechanism activation electronics, and two standard 6-volt batteries. The shock generator mechanism lowers the target lift mechanism when a “hit” is decoded.

Training

3-226. The device supports ST training and collective force on target training from squad to company.

Supporting TADSS

3-227. GTA 08-11-014, MILES Casualty Cards.

OPPOSING FORCE TADSS

3-228. This section discusses the AK-47 assault rifle replica, the PM50 pistol replica, the POMZ-2 antipersonnel mine, the RG-42 antipersonnel grenade, the RGD-5 antipersonnel grenade, the RKD-3 antitank grenade, the RPK squad machine gun, the SA-7 Guided Antiaircraft Missile System (Grail), and the suitcase sagger.

AK-47 ASSAULT RIFLE REPLICA

3-229. The AK-47 replica (Figure 3-57) is a full scale, three-dimensional static plastic replica of the weapon. The weapon replica can be used for classroom and field recognition instruction, and can be carried during tactical exercises to add realism to the portrayal of opposing force troops. The TSC device number is DVC T-30-06.

Figure 3-57. AK-47 Assault rifle replica.

PM50 PISTOL REPLICA

3-230. The PM50 (Figure 3-58) is a full scale, three-dimensional static plastic replica of the pistol. The weapon replica can be used for classroom or field recognition instruction, and can be carried during tactical exercises to add realism to the portrayal of opposing force troops. The TSC device number is DVC T-30-08.

Figure 3-58. PM50 Pistol replica.

POMZ-2 ANTIPERSONNEL MINE

3-231. The POMZ-2 (Figure 3-59) is a full scale, three-dimensional static plastic replica of the antipersonnel mine. The weapon replica can be used for classroom or field recognition instruction, and can be carried during tactical exercises to add realism to the portrayal of opposing force troops. The TSC device number is DVC 30-09.

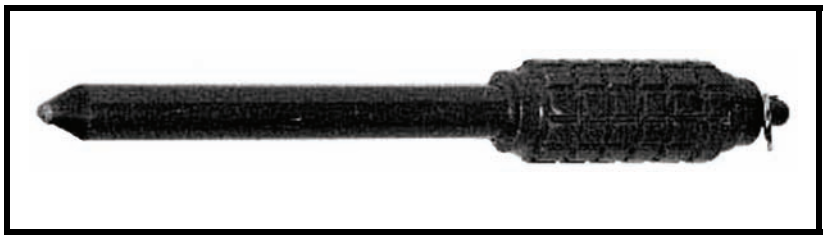

Figure 3-59. POMZ-2 AP mine.

RG-42 ANTIPERSONNEL GRENADE

3-232. The RG-42 (Figure 3-60) is a three dimensional static plastic replica of the anti-personnel grenade. The replica can be used for classroom or field recognition instruction, and can be carried during tactical exercises to add realism to the portrayal of opposing force troops. The TSC device number is DVC T-30-10.

RGD-5 ANTIPERSONNEL GRENADE

3-233. The RGD-5 (Figure 3-61) is a full scale, three-dimensional static plastic replica of the antipersonnel grenade. The replica is used for classroom, field recognition instruction, or it can be carried during tactical exercises to add realism to the portrayal of opposing force troops. The TSC device number is DVC T-30-11.

Figure 3-60.
RG-42 AP grenade.

Figure 3-61.
RGD-5 Antipersonnel grenade.

RKD-3 ANTITANK GRENADE

3-234. The RKD-3 (Figure 3-62) is a full-scale three-dimensional static plastic replica of the antitank grenade. The replica is used for classroom, field recognition instruction, or it can be carried during tactical exercises to add realism to the portrayal of opposing force troops. The TSC device number is DVC T-30-12.

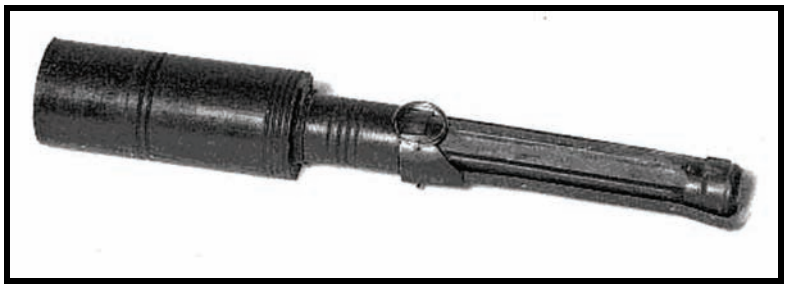

Figure 3-62. RKD-3 AT grenade.

RPG-7 ANTITANK GRENADE LAUNCHER WITH ROUND

3-235. The RPG-7 (Figure 3-63) is a full scale three-dimensional replica of the RPG-7 antitank grenade launcher. Designed to enhance the realism of opposing force simulation during tactical training that can also be used for classroom or field instruction on foreign nation weapons. It duplicates the size and physical appearance of the actual RPG-7, facilitating instruction on its components and characteristics. A removable model of the 85-mm round with collapsible fins is mounted in the launcher assembly. The TSC device number is DVC T-30-05.

RPK SQUAD MACHINE GUN

3-236. The RPK (Figure 3-64) is a full scale, three-dimensional static plastic replica of the RPK squad machine gun. The replica is used for classroom or field recognition instruction, and can be carried during tactical exercises to add realism to the portrayal of opposing force troops. The TSC device number is DVC T-30-07.

Figure 3-63. RPG-7 AT grenade launcher.

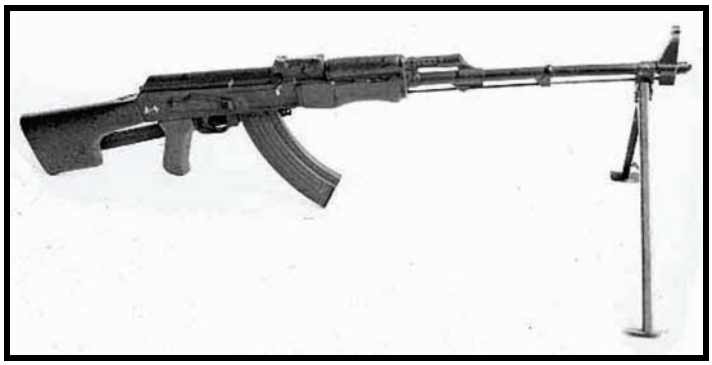

Figure 3-64. RPK squad machine gun.

SA-7 GUIDED ANTIAIRCRAFT MISSILE SYSTEM (GRAIL)

3-237. THE SA-7 (Figure 3-65) is a full scale, three-dimensional plastic and metal replica of the SA-7 GRAIL, consisting of the launcher and removable missile. The GRAIL is used during classroom and field instruction to emphasize the lethality of foreign nation antiaircraft capabilities. It is also used by the opposing forces during tactical exercises to enhance realism and introduce an antiaircraft dimension to field intelligence play. The TSC device number is DVC T-30-14.

SUITCASE SAGGER

3-238. The suitcase sagger (Figure 3-66) is a full scale, three dimensional plastic facsimile of the man-portable sagger antitank guided missile with fire-control mechanism. The missile is collapsible and is carried in the suitcase, which also serves as a platform for the launch rail. The replica is used for classroom and field recognition training to emphasize the lethality, characteristics, and employment of primary foreign nation antitank weapon systems on the modern battlefield. It is also used during tactical training to simulate the employment of antiarmor systems by the OPFOR and to enhance intelligence play. The TSC device number is DVC T-30-04.

Figure 3-65. SA-7 Guided Antiaircraft Missile System.

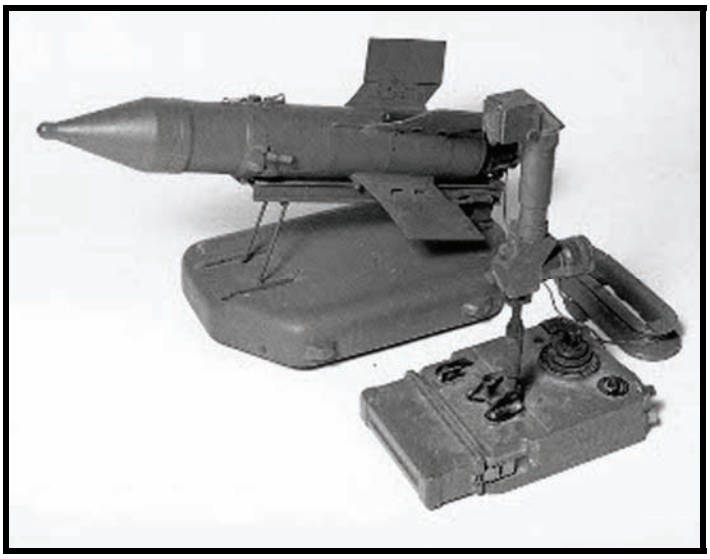

Figure 3-66. Suitcase sagger.

SVD SNIPER RIFLE

3-239. The SVD (Figure 3-67) is a full scale, three dimensional plastic replica of the sniper rifle. The weapon replica is used for classroom and field recognition training to emphasize the lethality, characteristics, and employment of foreign nation small arms. The TSC device number is DVC T-30-18.

Figure 3-67. SVD Sniper rifle.

RECOGNITION OF COMBAT VEHICLES

3-240. ROC-V trains Soldiers to identify the thermal signatures of combat vehicles through interactive curriculum that teaches the unique patterns and shapes of vehicle "hotspots," and overall vehicle shapes. ROC-V also provides Soldiers with practical experience in the use of thermal sensor image controls. Through the use of virtual sight controls, Soldiers learn to effectively adjust thermal optical images to identify target identification cues.

TRAINING

3-241. The trainer includes on-board training/testing for the SMCT, Skill Level 1, for visual vehicle identification. ROC-V is a downloadable product. It is available at https://rocv.army.mil/rocv/.

CAPABILITIES

3-242. Vehicles in current version:

- 2S1 self-propelled howitzer.
- 2S3 self-propelled howitzer.
- 2.5-ton cargo truck.
- 5-ton cargo truck.
- Armored command and reconnaissance vehicle (ACRV).
- AS90 self-propelled gun.
- BMP-1 Infantry fighting vehicle.
- BMP-2 Infantry fighting vehicle.
- BRDM-2 sagger wheeled reconnaissance vehicle.
- BTR-70 armored personnel carrier.
- BTR-80 armored personnel carrier.
- Challenger I main battle tank.
- FMTV medium truck.
- FV432 armored personnel carrier.
- GAZ-66 truck.
- HEMTT 10-ton truck.
- HMMWV M1038.
- HMMWV scout.
- HMMWV TOW.
- LAV-AT light armored vehicle—antitank.
- LAV self-propelled mortar.
- LAV-25 light armored vehicle.
- Leopard II main battle tank.
- Lurch wheeled reconnaissance vehicle.
- M1A1 main battle tank.
- M1A1 main battle tank (with CIPs).
- M109 self-propelled howitzer.
- M113 armored personnel carrier (with or without CIPs).
- M2/M3 Bradley fighting vehicle (with or without CIPs).
- M548 United defense tracked cargo carrier.
- M551 Sheridan light tank/reconnaissance vehicle.
- M577 light armored recovery vehicle.
- M60A3 main battle tank.
- M728 combat engineer vehicle.
- M88 Armored recovery vehicle.
- M93 Fox Nuclear, Biological, and Chemical Reconnaissance System (with or without CIPs).
- Marder armored personnel carrier.
- MTLB multipurpose tracked vehicle.
- SPLAV-300 SMERCH Multiple Rocket System.
- Stryker self-propelled antitank guided weapon vehicle.
- T-55 main battle tank.
- T-62 main battle tank.

- T-72 main battle tank (with or without reactive armor).
- Warrior Infantry fighting vehicle.
- ZIL-131 4,500 kg truck.
- ZSU-23/4 air defense artillery.

SMALL ARMS FLASH-NOISE GUNFIRE SIMULATOR

3-243. The small arms flash-noise gunfire simulator (Figure 3-68) simulates rifle or machine gun noise and flash for collective training. It consists of a gun simulator, a carrying case, and an AC-DC power converter. It may be fired manually or remotely in single shots or bursts. Several devices may be operated simultaneously by locating remote trigger switches at a central location. The TSC device number is DVC 07-22D.

Figure 3-68. Small arms flash-noise gunfire simulator.

TARGETRY

3-244. Table 3-8 shows common Infantry system supported targetry. Ashley visual modification targets are available at TSC and support all systems. Precision Infantry targets are covered in TC 90-1 and also support all systems. All other targets are shown in Table 3-10 and are covered in TC 25-8.

Table 3-10. Infantry targetry.

Target Description	*System-Supported Reference*
Ashley targets	TSC
Precision Infantry targets	TC 90-1
15-meter qualification zero target	M16/M4
175 -meter feedback target	M16/M4
25-meter scaled silhouette slow-fire target	M16/M4
25-meter scaled silhouette timed-fire target	M16/M4
25-meter zeroing target	M16/M4
3D personnel target	All
50-foot indoor rifle target	All
50-foot pistol target	M9
50-foot slow-fire pistol bull's-eye paper target	M9
50-foot timed and rapid-fire pistol bull's-eye paper target	M9
75-meter feedback target	M16/M4
Army rifle target A, 200 to 300 yards	M16/M4
Army rifle target B, 600 yards	M16/M4/M24/M107
Army rifle target C, 1,000 yards	M24/M107
Basic machine gun target	M240/M249/M60
BMD flank target	All
BMD front target	All
BMP 1981 flank target	All
BMP 1981 front target	All
Boresight and zero target for the cupola-mounted machine gun	M249/M240/M60
BRDM flank target	All
BRDM front target	All
BTR series front target	All
Double E-type silhouette	All
Dummy silhouette	Bayonet – All
E-type silhouette	All
F-type silhouette	All
HIND front target	All
Human urban targets	All
Moving armor target	Antiarmor
Moving Infantry target	All
Small area target	All
Stationary armor target	Antiarmor
Stationary Infantry target	All
T-72 flank target	All
T-72 front target	All
T-72 partial defilade target	All
T-72 turret target	All
Target for zeroing exercises	All
Truck U-375 flank target	All
Truck U-375 front target	All
ZSU-23/4 flank target	All
ZSU-23/4 front target	All

ASHLEY TARGETS

3-245. Ashley targets (Figure 3-69) provide visual modification (VISMOD) to E-and F-type silhouettes in support of individual, leader, and collective training. Ashley VISMODs include replication of combatant (friendly and enemy representations) and non-combatants (women and children). Targets consist of a plastic sleeves that fit over the target silhouettes. Ashley targets are available from local TSCs. Leaders use them with E-and F-type silhouettes to train target identification and discrimination. TSC VISMOD device numbers follow:

- Friendly: DVC T-07-104-3.
- Enemy: DVC T-07-104-4.

Figure 3-69. Ashley visual modifications.

HUMAN URBAN TARGETS

3-246. HUTs (Figure 3-70) are precision human target systems required for supporting short distance engagements at ranges of 50 meters or less, in UO training facilities. HUTs train target discrimination by presenting life-size, three-dimensional precision targets that replicate combatant and noncombatant targets. Precision hit sensors respond only to lethal shot placement.

Figure 3-70. Human urban target mannequins.

Capabilities

3-247. HUTs can easily be emplaced manually in any urban facility. When placed, the target has immediate access to the range operations center for exercise control and data collection. All targets are remote controlled by the range operations center. Targets are reconfigurable to replicate men, women, children, combatants, non-combatants. Each target replicates an accurate thermal signature. Targets have three dimensional representation and can be engaged from any direction. They fall down when hit in the lethal zone. The targets torso measures 8 x 18 inches. Neck and head measure 4 x 8 inches. Targets react to tactical engagement systems like MILES. Urban facilities may contain both HUTs and precision interior targets (PIT). PITs incorporate an E-type silhouette with VISMOD (Ashley target sleeves) devices to replicate combatants and noncombatants.

Training

3-248. See TC 90-1 for specific guidance on training in urban facilities and proper use and setup of urban targets.

LOCATION OF MISS AND HIT

3-249. LOMAH (Figure 3-71) provides target instrumentation in support of marksmanship training. LOMAH consists of target sensors, miss and hit displays located at firing points, and centralized control within the range control tower.

3-250. LOMAH provides accurate feedback on rifle ranges to increase Soldier confidence in the use of their weapon system. LOMAH is best used as an advanced learning tool to improve Soldiers' basic skills such as target acquisition and aiming point. Using LOMAH on the automated field fire and modified record fire increases the Soldier's skill to engage and destroy targets before qualification.

3-251. Currently LOMAH ranges are being used for BRM period 06 (downrange feedback), BRM 07 (single timed targets), and BRM 08 (multiple timed targets). Grouping and zeroing can be accessed at any time to allow individual Soldiers to adjust weapon sights. (See FM 3-22.9 for further guidance on implementing LOMAH technology. Leaders see DA PAM 350-9 for additional technical information on device power and terrain/resource requirements.)

3-252. Leaders use applicable FMs and TCs to incorporate RETS into individual, leader, and collective training environments. To support training, the system offers computer-driven, programmed tactical scenarios. It can also operate in manual mode with group or individual targets raised on command.

3-253. LOMAH provides the following capabilities in support of training:

- Immediate feedback to trainee on firing point display.
- Instructors can identify and correct trainee problems immediately.
- Printer score cards provide each shooter with a shot-by-shot performance record.
- Lanes can be operated by a central control computer or individually at the firing point.

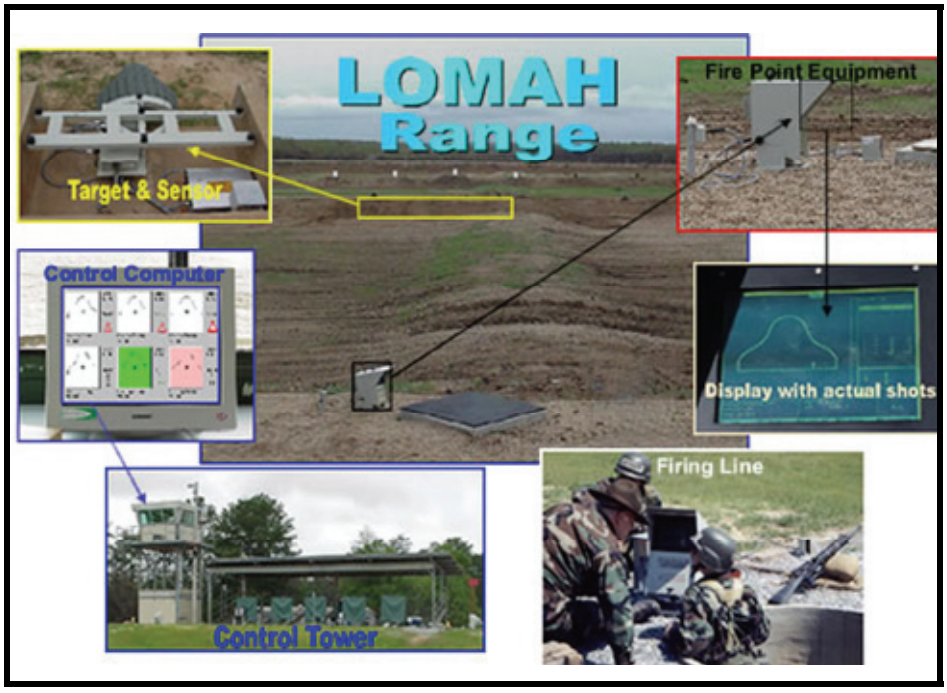

Figure 3-71. Location of miss and hit equipment.

REMOTE TARGET SYSTEM

3-254. RETS supports individual and crew marksmanship, gunnery, and collective/combined arms training. RETS consists of stationary, moving Infantry, and armor targets. The targets are a part of an integrated system which allows automatic, manual, centralized, or decentralized control. Targets detect and accumulate hit data to provide a record for evaluation. In addition, RETS includes realistic battle effects such as night muzzle flash, hostile fire, and armor target kills.

Infantry Target Mechanism

3-255. The ITM (Figure 3-72) target mechanism raises and lowers targets on electronic commands from the Range Control Station (RCS). The target mechanism contains a hit sensor which detects and transmits hit information to the RCS. TSC device numbers are—

- ITM device number: DVC 07-73.
- RCS device number: DVC 11-51.

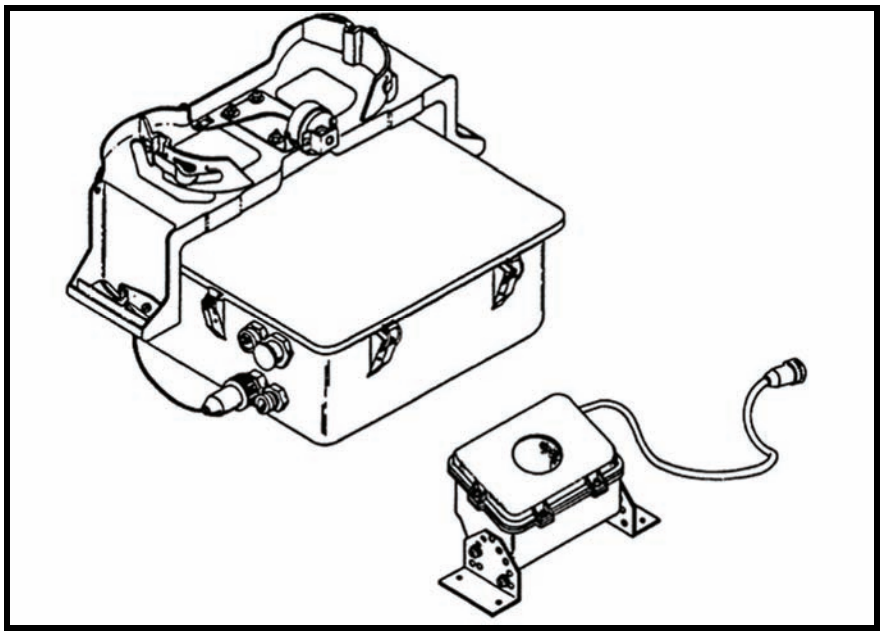

Figure 3-72. Remote target system infantry target mechanism.

Infantry Moving Target Carrier

3-256. The IMTC (Figure 3-73) simulates a person running from one concealed position to another. It carries an ITM and is electronically controlled from the RCS. The device moves forward or backward in either up or down position at one of three speeds: 1.8±.2 meters per second, 2.7±.2 meters per second, or 3.7 plus or minus 0.2 meters per second. Speed is preset at the device, not remotely controlled. TSC device numbers follow:

- IMTC device number: DVC 07-74.
- RSC device number: DVC 11-51.
- ITM device number: DVC 07-73.

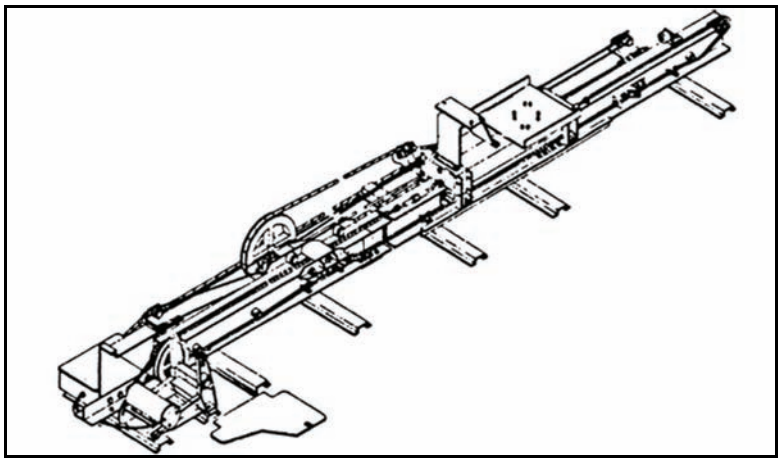

Figure 3-73. Infantry moving target carrier.

TRAINING IMPROVISED EXPLOSIVE DEVICE

3-257. The TIED (Figure 3-74) kit includes devices that simulate visual and aural aspects of enemy IEDs. The TIED provides Soldiers the tools to train recognition and reaction to IEDs. The TSC device number is DVC 05-07.

Figure 3-74. Training improvised explosive device kit.

CONFIGURATIONS

3-258. The TIED is used in two configurations; pyrotechnic and nonpyrotechnic. The *pyrotechnic* configuration is for outdoor use in convoy training. The *nonpyrotechnic* configuration trains scenarios where pyrotechnics are unsafe. The TIED can be effectively jammed when in the wireless configuration.

3-259. Soldiers should allow 10 to 30 minutes to set up the training aid, depending on the training objective and on the complexity of the IED being replicated. The complete kit weighs about 78 pounds. The TIED kit contains—

- 155-mm round.
- Mortar round.
- Close-quarter speaker.
- Strobe light.
- Wire detonator.
- RC detonator.
- Distribution/battery box.
- Motion sensor.
- Case.
- M70 Pyrotechnics.

USE WITH TADSS

3-260. The following TADSS could be used with TIED to increase the realism of training:

- DVC-T 09-89, 81-mm Mortar, Illumination.
- DVC-T 09-59/2, 120-mm Mortar, S-843, USSR.
- DVC-T 09-59/1, 81-mm Mortar, M66, YUGO.
- DVC-T 09-63/4, 130-mm PROJO, OF-482, USSR.
- DVC-T 09-63/3, 122-mm PROJO, D462, USSR.
- DVC-T 09-62/5, 100-mm PROJO, Armor Piercing, PSV.

TASKS TRAINED

- Identify possible IED.
- React to and report a possible IED.
- React to IED/mine strike.
- React to unexploded ordnance hazards.
- React and identify unexploded ordnance (UXO) and IED.
- Mobility, countermobility, and survivability.

INTERFACE

3-261. The TIED provides training opportunity for leaders and Soldiers on IEDs. The pyrotechnic configuration allows for convoy training, and the nonpyrotechnic configuration is intended to train Soldiers in scenarios where pyrotechnics would not be safe. It interfaces with the following devices:

- MILES transmitter.
- Main Gun Simulation System (MGSS) device.
- ATWESS device.

SUPPORTING TADSS

3-262. The following supporting TADSS include coalition JTF GTAs, other GTAs, and two IED aids.

- CJTF-7 Operation Enduring Freedom Smart Card 4, IED and VBIED Threat.
- CJTF-7 Operation Enduring Freedom, IED Handbook.
- GTA 90-01-001, IED and VBIED Smart Card.
- GTA 05-10-044, Mine Awareness (SANDI).
- GTA 09-12-001, Unexploded Ordnance (UXO) Procedures.
- Multinational Corps IED Smart Cards.
- TV 5-159, IED Awareness Guide.

REFERENCES

- TC 9-21-01, Soldier's IED Awareness Guide, Iraq and Afghanistan Theaters of Operation.
- TSP 05-21B10D02D, Detect Explosive Hazard Indicators by Visual Means.
- Training Support Package 093-401-5050, *React to Possible IED*.

VIRTUAL COMBAT CONVOY TRAINER

3-263. The VCCT (Figure 3-75) is designed to improve Soldiers' ability to identity and react to threats in an asymmetrical combat environment. The VCCT provides convoy training for vehicle operators, occupants, and commanders. It requires Soldiers to coordinate actions on a single vehicle, between multiple vehicles, and with higher headquarters. This trainer incorporates precision weapons effects and limited driving skills for several vehicle types.

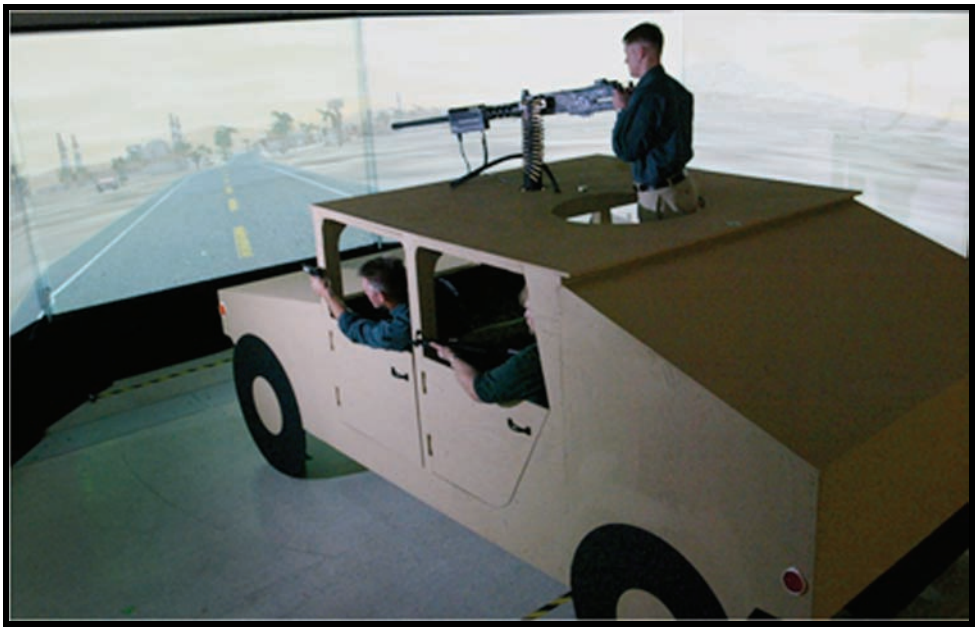

Figure 3-75. Virtual combat convoy trainer.

CAPABILITIES

- Collective training for platoon and below.
- Development and validation of convoy SOP/TTP.
- Implementation of ROE.
- Identification of threats in the COE.
- Integration with CCTT for combined arms training.
- Training of crew basic and advanced engagement techniques (stationary and moving) for ring-mounted weapon system operators and vehicle commanders.
- Crew basic convoy driving skills for maintaining vehicle speed and control during engagements.
- Collective (multiple HMMWV crews) convoy operations, convoy movement, scanning sectors of fire, and engagement of targets.
- Convoy defense battle drills.
- Mounted patrolling techniques.
- React to an attack from armed personnel and vehicles.
- React to forced convoy stop due to breakdown or ambush.
- Detect and respond to IEDs.
- Respond to IED detonation.

LIMITATIONS

- Simulator's FOV (180 degrees) is limited to the number of screens and projectors.
- Simulated tethered weapons limit range of movement for dismounted operations to 6 feet from vehicle.

FOOTPRINT

3-264. Each suite consists of four mobile systems consisting of a full size HMMWV vehicle mockup, including—

- Basic driver controls, simulated radio, and battle command systems.
- Crew-served weapon ring mount.
- Modified weapons with simulated recoil.
- Four M16 rifles (16 total).
- One crew-served weapon (1-M240, 1-M2, 3 -M2 Mockups).

REFERENCES

- CALL No. 04-27: Convoy Leader Training Handbook.
- CALL No. 03-06: Tactical Convoy Operations.
- Training Support Package 55-Z-0001-EX, Convoy Live Fire Exercise, Version 1.1.
- Training Support Package 071-T-1003, Secure a Route, IMI.

NOTE: The close combat tactical trainer's (CCTT's) reconfigurable vehicle simulator (RVS) is currently being fielded to CCTT fixed site locations. The RVS, where available, provides the same capabilities as the VCCT.

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Appendix A

Rifle Company
Task-to-TADSS Matrix

The rifle company matrixes in this appendix are based on the CATS. Table A-1 provides tasks from the IBCT CATS, and Table A-2 provides tasks from the functional CATS, SOSO, and UO. Across the top of each matrix are the tasks and supporting events taken from the respective CATS. Down the left are current and emerging TADSS for a rifle company.

Table A-1. Rifle company task-to-TADSS matrix (IBCT CATS).

RIFLE COMPANY ***TASK SELECTIONS FROM IBCT, CATS***	***Conduct Company Operations Events: CL, STX, FTX, CALFEX***	***Prepare for Operations Event: ST, DEPEX, TEWT***	***Attack Events: STX, TEWT***	***Defend Events: STX, TEWT***	***Move Tactically Events STX, TEWT***	***Protect the Force Event: STX, TEWT***	***Sustain Digital Proficiency Event: ST, COMEX***	***Sustain the Company Event: STX***
EST 2000	CL, STX	ST, DEPEX		STX		STX		
GUARDFIST/CFFT	CL							
HITS	STX FTX CALFEX		STX	STX	STX	STX	COMEX	STX
Javelin BST	CL							
Javelin FTT	CL STX FTX CALFEX		STX	STX	STX	STX		
Javelin MSR	CL STX FTX CALFEX		STX	STX	STX	STX		
JLCCTC	CL STX FTX CALFEX	ST TEWT DEPEX	TEWT STX	TEWT STX	TEWT STX	TEWT STX	ST COMEX	STX
L-CCATS	CL STX FTX		STX	STX	STX	STX		
LMTS	CL	ST DEPEX						

Table A-1. Rifle company task-to-TADSS matrix (IBCT CATS, continued).

RIFLE COMPANY *TASK SELECTIONS FROM IBCT, CATS*	*Conduct Company Operations Events: CL, STX, FTX, CALFEX*	*Prepare for Operations Event: ST, DEPEX, TEWT*	*Attack Events: STX, TEWT*	*Defend Events: STX, TEWT*	*Move Tactically Events STX, TEWT*	*Protect the Force Event: STX, TEWT*	*Sustain Digital Proficiency Event: ST, COMEX*	*Sustain the Company Event: STX*
M136 AT4 FHT	CL STX FTX		STX	STX	STX	STX		
M141 BDM FHT	CL STX FTX		STX	STX	STX	STX		
M18 Inert Claymore Mine	CL STX FTX CALFEX		STX	STX	STX	STX		
M21 Antitank Practice Mine	CL STX FTX CALFEX		STX	STX		STX		
M287 AT4 Subcaliber Trainer	CALFEX							
M320 SLAM Trainer	CL STX FTX CALFEX		STX	STX	STX	STX		
Medical TADSS*	CL	ST DEPEX	STX	STX				STX
MILES	STX FTX CALFEX		STX	STX	STX	STX		STX
CBRN TADSS*	CL STX FTX CALFEX	ST	STX	STX		STX		
NGATS	STX FTX CALFEX	ST DEPEX	STX	STX	STX	STX		
NLCS*		ST	STX	STX		STX		STX
OneTESS	STX FTX CALFEX		STX	STX	STX	STX	COMEX	STX
OPFOR TADSS*	STX FTX CALFEX		STX	STX	STX	STX		STX
ROC-V	CL							
Spider Trainer	CL STX FTX CALFEX		STX	STX	STX	STX		

Table A-1. Rifle company task-to-TADSS matrix (IBCT CATS, continued).

RIFLE COMPANY *TASK SELECTIONS FROM IBCT, CATS*	*Conduct Company Operations Events: CL, STX, FTX, CALFEX*	*Prepare for Operations Event: ST, DEPEX, TEWT*	*Attack Events: STX, TEWT*	*Defend Events: STX, TEWT*	*Move Tactically Events STX, TEWT*	*Protect the Force Event: STX, TEWT*	*Sustain Digital Proficiency Event: ST, COMEX*	*Sustain the Company Event: STX*
Targetry*	STX FTX CALFEX	ST DEPEX	STX	STX	STX	STX		
TIED	CL STX FTX CALFEX	ST	STX	STX	STX	STX		
Training Unique Ammunition*	STX FTX CALFEX	ST DEPEX	STX	STX	STX	STX		STX
VCCT					TEWT STX	TEWT STX		

Table A-2. Rifle company task-to-TADSS matrix (functional CATS, SOSO, UO).

RIFLE COMPANY *TASK SELECTIONS FROM FUNCTIONAL CATS, SOSO, AND UO*	*Operate in an Urban Environment Event: ST, TEWT, STX, FTX*	*Integrate Civil – Military and Liaison Operations Event: ST, STX*	*Control Civilians in an Urban Environment Event: ST, STX*	*Secure Base of Operations Event: CL, ST, TEWT, STX,*	*Secure Area of Operations Event: ST, TEWT, STX ,FTX*	*React to Hostile Activity Event: ST, TEWT, STX, LFX*	*Conduct Moving Security Operations Event: ST, TEWT, STX,*	*Coordinate with Other Elements in a SOS Environment Event: ST, TEWT, STX,*	*Conduct Civil – Military Operations Event: ST, TEWT, STX*
CCTT	ST TEWT STX				ST TEWT STX		ST TEWT STX		
CFFT	ST				ST				
CCMCK*	STX FTX	STX	STX	STX	STX FTX	STX	STX		STX
COTS Simulations*	ST TEWT STX			ST TEWT	ST TEWT STX	ST TEWT STX	ST TEWT STX		
EST 2000	ST STX			ST STX	ST STX	ST			ST
GUARDFIST/CFFT	ST				ST				
HITS	STX FTX	STX	STX	STX	STX FTX	STX LFX	STX	STX	STX
Javelin BST	ST			ST	ST	ST	ST		

Table A-2. Rifle company task-to-TADSS matrix (functional CATS, SOSO, UO).

RIFLE COMPANY *TASK SELECTIONS FROM FUNCTIONAL CATS, SOSO, AND UO*	*Operate in an Urban Environment Event: ST, TEWT, STX, FTX*	*Integrate Civil – Military and Liaison Operations Event: ST, STX*	*Control Civilians in an Urban Environment Event: ST, STX*	*Secure Base of Operations Event: CL, ST, TEWT, STX,*	*Secure Area of Operations Event: ST, TEWT, STX ,FTX*	*React to Hostile Activity Event: ST, TEWT, STX, LFX*	*Conduct Moving Security Operations Event: ST, TEWT, STX,*	*Coordinate with Other Elements in a SOS Environment Event: ST, TEWT, STX,*	*Conduct Civil – Military Operations Event: ST, TEWT, STX*
Javelin FTT	ST STX FTX			ST STX	ST STX FTX	ST STX LFX	ST STX		
Javelin MSR	ST STX FTX			ST STX	ST STX FTX	ST STX LFX	ST STX		
JLCCTC	ST TEWT STX FTX	ST STX	ST STX	ST TEWT STX	ST TEWT STX FTX	ST TEWT STX LFX	ST TEWT STX	ST TEWT STX	ST TEWT STX
L-CCATS	ST STX		STX	STX	ST STX FTX	ST STX	ST STX		ST STX
M136 AT4 FHT	ST STX FTX			ST STX	ST STX FTX	ST STX	STX		
M141 BDM FHT	ST STX FTX			ST STX	ST STX FTX	ST STX LFX	STX		
M18 Inert Claymore Mine	ST STX FTX			ST STX	ST STX FTX				
M190 LAW Subcaliber Trainer						LFX			
M21 Antitank Practice Mine	ST STX FTX			ST STX	ST STX FTX				
M287 AT4 Subcaliber Trainer						LFX			
M320 SLAM Trainer	ST STX FTX			ST STX	ST STX FTX				
Medical TADSS*	ST STX FTX		ST STX		ST STX FTX	ST STX			
MILES	STX FTX	STX	STX	STX	STX FTX	STX LFX	STX	STX	STX
CBRN TADSS*				STX					
NGATS	STX FTX		STX	STX	STX FTX	STX LFX	STX		STX
NLCS*	ST STX FTX	ST STX	ST STX	ST STX	ST STX FTX		ST STX	ST STX	ST TEWT STX

Table A-2. Rifle company task-to-TADSS matrix (functional CATS, SOSO, UO).

RIFLE COMPANY *TASK SELECTIONS FROM FUNCTIONAL CATS, SOSO, AND UO*	*Operate in an Urban Environment Event: ST, TEWT, STX, FTX*	*Integrate Civil – Military and Liaison Operations Event: ST, STX*	*Control Civilians in an Urban Environment Event: ST, STX*	*Secure Base of Operations Event: CL, ST, TEWT, STX,*	*Secure Area of Operations Event: ST, TEWT, STX ,FTX*	*React to Hostile Activity Event: ST, TEWT, STX, LFX*	*Conduct Moving Security Operations Event: ST, TEWT, STX,*	*Coordinate with Other Elements in a SOS Environment Event: ST, TEWT, STX,*	*Conduct Civil – Military Operations Event: ST, TEWT, STX*
OneTESS	STX FTX	STX	STX	STX	STX FTX	STX LFX	STX	STX	STX
OPFOR TADSS*	STX FTX	STX	STX	STX	STX FTX	STX LFX	STX	STX	STX
Spider Trainer	ST STX FTX			ST STX	ST STX FTX				
Targetry*	STX FTX		STX	STX	STX FTX	STX LFX	STX		
TIED	ST STX FTX		STX	ST STX	ST STX FTX	ST STX LFX	ST TEWT STX		STX
Training Unique Ammunition*	STX FTX	STX	STX	STX	STX FTX	STX LFX	STX	STX	STX
VCCT	ST TEWT STX				ST TEWT STX		ST TEWT STX		

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Appendix B

Rifle Platoon Task-to-TADSS Matrix

The rifle platoon matrix in this appendix, Table B-1, is based on the CATS. It provides tasks from the IBCT CATS, functional CATS, SOSO, and UO. Across the top of each matrix are the tasks and supporting events taken from the respective CATS. Down the left are current and emerging TADSS for an IBCT rifle platoon.

Table B-1. Rifle platoon task-to-TADSS matrix.

RIFLE PLATOON ***TASK SELECTIONS IBCT AND FUNCTIONAL CATS, SOSO, AND UO***	***Conduct Platoon Operations Events: CL, LFX, STX, FTX***	***Prepare for Operations Event: ST***	***Attack Events: ST, STX***	***Defend Events: ST, STX***	***Move Tactically Events: ST, STX***	***Protect the Force Event: ST***	***Operate in an Urban Environment Event: CL, ST, TEWT, STX, LTX, FTX***	***Interact with Civilians Event: CL, ST, STX***	***React to Immediate Threats/ Assault Course Event: CL, ST, STX, LFX SH / BF***	***Secure Base of Operations Event: CL, ST, TEWT, STX, LTX***	***Secure Area of Operations Event: ST, TEWT, STX ,FTX***	***Conduct Moving Security Operations Event: CL, ST, TEWT, STX, LFX, LTX***	***React to Hostile Activity Event: CL, ST, TEWT, STX, LFX, LTX***	***Conduct Civil–Military Operations Event: CL, ST, TEWT, STX, LTX***
CCTT	STX		STX		ST STX	ST	CL ST TEWT STX		ST		ST TEWT STX	CL ST TEWT STX		
CFFT	CL		ST	ST			CL ST		CL ST		ST	CL ST	CL ST	
CCMCK*	STX		STX	STX	STX		STX LTX FTX	STX	ST STX LFX	STX LTX	STX FTX	STX LTX	STX LTX	STX LTX
COTS Simulations*	CL STX	ST	ST STX	ST STX	ST STX	ST	CL ST TEWT STX	CL ST	CL	CL ST	ST STX TEWT	CL ST STX	CL ST STX	CL ST
EST 2000	CL	ST	ST	ST		ST	CL ST STX	CL ST STX		CL ST STX LTX	ST STX		CL ST	
GUARDFIST/CFFT	CL		ST	ST			CL ST		CL		ST	CL ST	CL ST	
HITS	STX FTX LFX		STX	STX	STX		STX LTX FTX	STX	STX LFX	STX LTX	STX FTX	STX LTX LFX	STX LTX LFX	STX LTX
Javelin BST	CL		ST	ST	ST	ST	CL ST					ST	ST	

Table B-1. Rifle platoon task-to-TADSS matrix (continued).

RIFLE PLATOON ***TASK SELECTIONS IBCT AND FUNCTIONAL CATS, SOSO, AND UO***	***Conduct Platoon Operations Events: CL, LFX, STX, FTX***	***Prepare for Operations Event: ST***	***Attack Events: ST, STX***	***Defend Events: ST, STX***	***Move Tactically Events: ST, STX***	***Protect the Force Event: ST***	***Operate in an Urban Environment Event: CL, ST, TEWT, STX, LTX, FTX***	***Interact with Civilians Event: CL, ST, STX***	***React to Immediate Threats/ Assault Course Event: CL, ST, STX, LFX SH / BF***	***Secure Base of Operations Event: CL, ST, TEWT, STX, LTX***	***Secure Area of Operations Event: ST, TEWT, STX ,FTX***	***Conduct Moving Security Operations Event: CL, ST, TEWT, STX, LFX, LTX***	***React to Hostile Activity Event: CL, ST, TEWT, STX, LFX, LTX***	***Conduct Civil–Military Operations Event: CL, ST, TEWT, STX, LTX***
Javelin FTT	CL STX FTX LFX		ST STX	ST STX	ST STX	ST	CL ST STX LTX FTX		ST STX	ST STX LTX	ST STX FTX	ST STX LTX LFX	ST STX LTX LFX	
Javelin MSR	CL STX FTX LFX		ST STX	ST STX	ST STX	ST	CL ST STX LTX FTX		ST STX	ST STX LTX	ST STX FTX	ST STX LTX LFX	ST STX LTX LFX	
JLCCTC	STX FTX LFX	ST	STX	STX	STX		TEWT STX LTX FTX		CL ST	TEWT	ST TEWT STX FTX	CL TEWT STX LTX	CL TEWT STX LTX	CL TEWT
L-CCATS	STX FTX		ST STX	ST STX	ST STX	ST	ST STX FTX LTX		ST	ST STX LTX	ST TEWT STX FTX	ST STX LTX	ST STX LTX	
LMTS	CL		ST	ST	ST	ST	CL ST		ST		ST	CL ST	CL ST	
M136 AT4 FHT	CL STX FTX LFX		ST STX	ST STX	ST STX	ST	CL ST STX LTX FTX		ST STX LFX	ST STX LTX	ST STX FTX	ST STX LTX LFX	ST STX LTX LFX	
M141 BDM FHT	CL STX FTX LFX		ST STX	ST STX	ST STX	ST	CL ST STX LTX FTX		ST STX LFX	ST STX LTX	ST STX FTX	ST STX LTX LFX	ST STX LTX LFX	
M18 Inert Claymore Mine	CL STX FTX LFX	ST	ST STX	ST STX		ST	CL ST STX LTX FTX			CL ST STX LTX	ST STX FTX			
M190 LAW Subcaliber Trainer	LFX											LFX	LFX	
M21 Antitank Practice Mine	CL STX FTX LFX	ST	ST STX	ST STX		ST	CL ST STX LTX FTX				ST STX FTX			

Table B-1. Rifle platoon task-to-TADSS matrix (continued).

RIFLE PLATOON ***TASK SELECTIONS IBCT AND FUNCTIONAL CATS, SOSO, AND UO***	***Conduct Platoon Operations Events: CL, LFX, STX, FTX***	***Prepare for Operations Event: ST***	***Attack Events: ST, STX***	***Defend Events: ST, STX***	***Move Tactically Events: ST, STX***	***Protect the Force Event: ST***	***Operate in an Urban Environment Event: CL, ST, TEWT, STX, LTX, FTX***	***Interact with Civilians Event: CL, ST, STX***	***React to Immediate Threats/ Assault Course Event: CL, ST, STX, LFX SH / BF***	***Secure Base of Operations Event: CL, ST, TEWT, STX, LTX***	***Secure Area of Operations Event: ST, TEWT, STX ,FTX***	***Conduct Moving Security Operations Event: CL, ST, TEWT, STX, LFX, LTX***	***React to Hostile Activity Event: CL, ST, TEWT, STX, LFX, LTX***	***Conduct Civil–Military Operations Event: CL, ST, TEWT, STX, LTX***
M287 AT4 Subcaliber Trainer	LFX											LFX	LFX	
M320 SLAM Trainer	CL STX FTX LFX	ST	ST STX	ST STX	STX	ST	CL ST STX LTX FTX				ST STX FTX			
Medical TADSS*	CL	ST	ST STX	ST STX			CL ST STX LTX FTX				ST STX FTX		CL ST STX LTX	
MILES	FTX LFX STX		STX	STX	STX		STX LTX FTX	STX	ST STX LFX	STX LTX	STX FTX	STX LTX LFX	STX LTX LFX	STX LTX
CBRN TADSS*	CL STX FTX LFX	ST				ST			CL ST STX		ST STX FTX			
NGATS	STX FTX LFX		STX	STX	STX		STX LTX FTX		STX LFX	STX LTX	STX FTX	STX LTX LFX	STX LTX LFX	
NLCS*		ST	ST STX	ST STX		ST	CL ST TEWT STX LTX FTX	CL ST STX		CL ST STX LTX	ST STX FTX	CL ST STX LTX	CL ST STX LTX	CL ST STX LTX
OneTESS	FTX STX LFX		STX	STX	STX		STX LTX FTX	STX	STX LFX	STX LTX	STX FTX	STX LTX LFX	STX LTX LFX	STX LTX
OPFOR TADSS*	CL STX FTX LFX		ST STX	ST STX	ST STX	ST	CL ST STX LTX FTX		STX	CL ST STX LTX	ST TEWT STX FTX	CL ST STX LTX	CL ST STX LTX	
ROC-V		ST	ST	ST	ST	ST	CL ST			CL ST	ST			
Targetry*	FTX LFX STX		STX	STX	STX		STX LTX FTX		STX LFX	STX LTX	STX FTX	STX LTX LFX	STX LTX LFX	

Table B-1. Rifle platoon task-to-TADSS matrix (continued).

RIFLE PLATOON ***TASK SELECTIONS IBCT AND FUNCTIONAL CATS, SOSO, AND UO***	***Conduct Platoon Operations Events: CL, LFX, STX, FTX***	***Prepare for Operations Event: ST***	***Attack Events: ST, STX***	***Defend Events: ST, STX***	***Move Tactically Events: ST, STX***	***Protect the Force Event: ST***	***Operate in an Urban Environment Event: CL, ST, TEWT, STX, LTX, FTX***	***Interact with Civilians Event: CL, ST, STX***	***React to Immediate Threats/ Assault Course Event: CL, ST, STX, LFX SH / BF***	***Secure Base of Operations Event: CL, ST, TEWT, STX, LTX***	***Secure Area of Operations Event: ST, TEWT, STX ,FTX***	***Conduct Moving Security Operations Event: CL, ST, TEWT, STX, LFX, LTX***	***React to Hostile Activity Event: CL, ST, TEWT, STX, LFX, LTX***	***Conduct Civil–Military Operations Event: CL, ST, TEWT, STX, LTX***
TIED	CL STX FTX LFX	ST	ST STX	ST STX	ST STX	ST	CL ST STX LTX FTX	ST STX	CL ST STX LFX	CL ST STX LTX	ST STX FTX	CL ST STX LTX LFX	CL ST STX LTX LFX	
Training Unique Ammunition*	FTX STX LFX		ST STX	ST STX	STX		STX LTX FTX		STX LFX	STX LTX	STX FTX	STX LTX LFX	STX LTX LFX	STX LTX
VCCT	STX CL	ST	ST STX	ST STX	ST STX	ST	CL ST STX				ST STX	CL ST STX	CL ST STX	

Appendix C

Rifle Squad Task-to-TADSS Matrix

The rifle squad matrix in this appendix, Table C-1, is based on the CATS. It provides tasks from the IBCT CATS, functional CATS, SOSO, and UO. Across the top of each matrix are the tasks and supporting events taken from the respective CATS. Down the left are current and emerging TADSS for an IBCT rifle squad.

Table C-1. Rifle squad task-to-TADSS matrix.

RIFLE SQUAD ***TASK SELECTIONS FROM IBCT AND FUNCTIONAL CATS, SOSO, AND UO***	***Conduct Squad Operations Events: CL, FTX, LFX, STX***	***Attack Events: ST, STX***	***Defend Events: ST, STX***	***Move Tactically Events: ST, STX***	***Conduct Small Unit Operations (Urban Operations) Event: CL, ST, LTX, STX***	***Conduct Small Unit Operations (Stability and Reconstruction Operations) Event: CL, ST***
CCTT	CL STX			ST STX	ST STX	ST
CFFT	CL	ST	ST			
CCMCK*	STX, FTX	STX	STX	STX	STX, LTX	
COTS Simulations*	CL STX	ST STX	ST STX	ST STX	CL ST	CL ST
GUARDFIST/CFFT	CL	ST	ST			
HITS	STX LFX FTX	STX	STX	STX	STX LTX	
Javelin BST	CL	ST	ST	ST	CL ST	CL ST
Javelin FTT	CL STX LFX FTX	ST STX	ST STX	ST STX	CL ST STX LTX	CL ST
Javelin MSR	CL STX LFX FTX	ST STX	ST STX	ST STX	CL ST STX LTX	CL ST
L-CCATS	CL STX FTX	ST STX	ST STX	ST STX	ST STX LTX	ST
LMTS	CL, STX	ST	ST	ST	CL, ST	CL, ST
M136 AT4 FHT	CL STX LFX FTX	ST STX	ST STX	ST STX	CL ST STX LTX	CL ST

Table C-1. Rifle squad task-to-TADSS matrix (continued).

RIFLE SQUAD *TASK SELECTIONS FROM IBCT AND FUNCTIONAL CATS, SOSO, AND UO*	*Conduct Squad Operations Events: CL, FTX, LFX, STX*	*Attack Events: ST, STX*	*Defend Events: ST, STX*	*Move Tactically Events: ST, STX*	*Conduct Small Unit Operations (Urban Operations) Event: CL, ST, LTX, STX*	*Conduct Small Unit Operations (Stability and Reconstruction Operations) Event: CL, ST*
M141 BDM FHT	CL STX LFX FTX	ST STX	ST STX	ST STX	CL ST STX LTX	CL ST
M18 Inert Claymore Mine	CL STX LFX FTX		ST STX		CL ST STX LTX	CL ST
M21 Antitank Practice Mine	CL STX LFX FTX		ST STX		CL ST STX LTX	CL ST
M320 SLAM Trainer	CL STX LFX FTX		ST STX	ST STX	CL ST STX LTX	CL ST
Medical TADSS*	CL STX LFX FTX	ST STX	ST STX		CL ST STX LTX	CL ST
MILES	STX LFX FTX	STX	STX	STX	STX LTX	
CBRN TADSS*	CL STX LFX FTX	ST STX	ST STX	ST STX	CL ST STX LTX	CL ST
NGATS	STX LFX FTX	STX	STX	STX	STX LTX	
NLCS*	CL STX LFX FTX	ST STX	ST STX		CL ST STX LTX	CL ST
OneTESS	STX LFX FTX	STX	STX	STX	STX LTX	
OPFOR TADSS*	CL STX LFX FTX	ST STX	ST STX	ST STX	CL ST STX LTX	CL ST
ROC-V	CL	ST	ST	ST	CL, ST	CL, ST

Table C-1. Rifle squad task-to-TADSS matrix (continued).

RIFLE SQUAD ***TASK SELECTIONS FROM IBCT AND FUNCTIONAL CATS, SOSO, AND UO***	***Conduct Squad Operations Events: CL, FTX, LFX, STX***	***Attack Events: ST, STX***	***Defend Events: ST, STX***	***Move Tactically Events: ST, STX***	***Conduct Small Unit Operations (Urban Operations) Event: CL, ST, LTX, STX***	***Conduct Small Unit Operations (Stability and Reconstruction Operations) Event: CL, ST***
Sighting Target	CL	ST	ST			
CCTT (Dismounted Soldier)	CL STX	ST STX	ST STX	ST STX	CL ST STX LTX	CL ST
Spider Trainer	CL STX LFX FTX		ST STX	ST STX	CL ST STX LTX	CL ST
Targetry*	STX LFX FTX	STX	STX	STX	ST STX LTX	ST
TIED	CL STX LFX FTX	ST STX	ST STX	ST STX	CL ST STX LTX	CL ST
Training Unique Ammunition*	STX LFX FTX	STX	STX	STX	STX LTX	
VCCT	CL, STX			ST, STX	ST, STX	CL, ST

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Appendix D

Mortar Section Task-to-TADSS Matrix

The mortar section matrix in this appendix, Table D-1, is based on the CATS. It provides tasks from the IBCT CATS, functional CATS, SOSO, and UO. Across the top of each matrix are the tasks and supporting events taken from the respective CATS.

Table D-1. Mortar section task-to-TADSS matrix.

MORTAR SECTION ***TASK SELECTIONS FROM IBCT CATS, FUNCTIONAL CATS, SOSO, UO***	***Provide Mortar Support Events: CL, ST, STX, LFX, FTX***	***Protect the Force Event: ST***	***Move Tactically Event: ST***
CCTT			*ST*
CFFT	STX, FTX		
COTS Simulations*		ST	*ST*
EST 2000	CL ST STX	ST	*ST*
HITS	STX, FTX		*ST*
JLCCTC	STX, FTX		
L-CCATS	ST, STX	ST	*ST*
M136 AT4 FHT	ST, STX	ST	*ST*
M18 Inert Claymore Mine	CL ST STX FTX	ST	
M320 SLAM Trainer	CL ST STX FTX	ST	
Medical TADSS*		ST	
MILES	STX LFX FTX	ST	*ST*
CBRN TADSS*		ST	

Table D-1. Mortar section task-to-TADSS matrix (continued).

MORTAR SECTION *TASK SELECTIONS FROM IBCT CATS, FUNCTIONAL CATS, SOSO, UO*	*Provide Mortar Support Events: CL, ST, STX, LFX, FTX*	*Protect the Force Event: ST*	*Move Tactically Event: ST*
NGATS	ST STX LFX FTX		
NLCS*		ST	
OneTESS	STX LFX FTX	ST	*ST*
OPFOR TADSS*	ST STX FTX	ST	
CCTT (Dismounted Soldier)		ST	*ST*
Spider Trainer	CL ST STX FTX	ST	
Targetry*	STX LFX FTX		
TIED	ST STX FTX	ST	*ST*
Training Unique Ammunition*	ST STX LFX FTX	ST	*ST*
VCCT			*ST*

Appendix E

Weapons Company Task-to-TADSS Matrix

The weapons company matrixes in this appendix are based on the CATS. Table E-1 provides tasks from the IBCT CATS, and Table E-2 provides tasks from the functional CATS, SOSO, and UO. Across the top of each matrix are the tasks and supporting events taken from the respective CATS. Down the left are current and emerging TADSS.

Table E-1. Weapons company task-to-TADSS matrix.

WEAPONS COMPANY ***TASK SELECTIONS FROM IBCT CATS***	***Conduct Weapons Company Operations Events: CL, FTX, CALFEX***	***Protect the Force Events: ST, STX***	***Move Tactically Events: TEWT, STX***	***Overwatch/Support by Fire Event: TEWT, STX***	***Defend Events: TEWT, STX***	***Sustain the Company Events: STX***	***Deploy/Redeploy the Company Events: TEWT, DEPEX***	***Sustain Digital Proficiency Events: ST, COMEX***
CCTT	CL	STX	TEWT	TEWT	TEWT			
COTS Simulations*	CL	ST	TEWT STX	TEWT STX	TEWT STX	STX		
EST 2000	CL	ST		STX	STX			
HITS	FTX CALFEX	STX	STX	STX	STX	STX		*COMEX*
JLCCTC	CL FTX CALFEX	ST STX	TEWT STX	TEWT STX	TEWT STX	STX	TEWT DEPEX	*ST* *COMEX*
L-CCATS	FTX	ST STX	STX	STX	STX			
LMTS	CL	ST						
M18 Inert Claymore Mine	CL FTX CALFEX	ST STX			STX			
M19 BLANK FIRING DEVICE	FTX	STX	STX	STX	STX			
M320 SLAM Trainer	CL FTX CALFEX	ST STX	STX	STX	STX			
Medical TADSS*		ST, STX				STX		
MILES	FTX CALFEX	STX	STX	STX	STX	STX		
MK 19 SPU	FTX CALFEX	STX	STX	STX	STX	STX		

Table E-1. Weapons company task-to-TADSS matrix (continued).

WEAPONS COMPANY *TASK SELECTIONS FROM IBCT CATS*	*Conduct Weapons Company Operations Events: CL, FTX, CALFEX*	*Protect the Force Events: ST, STX*	*Move Tactically Events: TEWT, STX*	*Overwatch/Support by Fire Event: TEWT, STX*	*Defend Events: TEWT, STX*	*Sustain the Company Events: STX*	*Deploy/Redeploy the Company Events: TEWT, DEPEX*	*Sustain Digital Proficiency Events: ST, COMEX*
CBRN TADSS*		ST STX						
NGATS	CALFEX	STX	STX	STX	STX			
NLCS*		ST, STX						
TGTS	CL	ST						
TIED	CL FTX CALFEX	ST STX	STX	STX				
TOW ITAS BST	CL	ST						
TOW ITAS FTT	FTX CALFEX	STX	STX	STX	STX			
Training Unique Ammunition*	FTX CALFEX	STX	STX	STX	STX	STX		
VCCT	CL	ST STX	TEWT STX	TEWT STX	TEWT STX			ST

Table E-2. Weapons company task-to-TADSS matrix (functional CATS, SOSO, and UO).

WEAPONS COMPANY *TASK SELECTIONS FROM FUNCTIONAL CATS, SOSO, UO*	*Operate in an Urban Environment Event: ST, TEWT, STX, FTX*	*Integrate Civil – Military and Liaison Operations Event: ST, STX*	*Control Civilians in an Urban Environment Event: ST, STX*	*Secure Base of Operations Event: CL, ST, TEWT, STX,*	*Secure Area of Operations Event: ST, TEWT, STX ,FTX*	*React to Hostile Activity Event: ST, TEWT, STX, LFX*	*Conduct Moving Security Operations Event: ST, TEWT, STX,*	*Coordinate with Other Elements in a SOS Environment Event: ST, TEWT, STX,*	*Conduct Civil – Military Operations Event: ST, TEWT, STX*
CCTT	ST TEWT STX				ST TEWT STX		ST TEWT STX		
CFFT	ST				ST				
CCMCK*	STX FTX	STX	STX	STX	STX FTX	STX	STX		*STX*

Table E-2. Weapons company task-to-TADSS matrix (functional CATS, SOSO, and UO, continued).

WEAPONS COMPANY ***TASK SELECTIONS FROM FUNCTIONAL CATS, SOSO, UO***	***Operate in an Urban Environment Event: ST, TEWT, STX, FTX***	***Integrate Civil – Military and Liaison Operations Event: ST, STX***	***Control Civilians in an Urban Environment Event: ST, STX***	***Secure Base of Operations Event: CL, ST, TEWT, STX,***	***Secure Area of Operations Event: ST, TEWT, STX ,FTX***	***React to Hostile Activity Event: ST, TEWT, STX, LFX***	***Conduct Moving Security Operations Event: ST, TEWT, STX,***	***Coordinate with Other Elements in a SOS Environment Event: ST, TEWT, STX,***	***Conduct Civil – Military Operations Event: ST, TEWT, STX***
COTS Simulations*	ST TEWT STX			ST TEWT	ST TEWT STX	ST TEWT STX	ST TEWT STX		
EST 2000	ST STX			ST STX	ST STX	ST			*ST*
GUARDFIST/CFFT	ST				ST				
HITS	STX FTX	STX	STX	STX	STX FTX	STX LFX	STX	STX	*STX*
JLCCTC	ST TEWT STX FTX	ST STX	ST STX	ST TEWT STX	ST TEWT STX FTX	ST TEWT STX LFX	ST TEWT STX	ST TEWT STX	*ST* *TEWT* *STX*
L-CCATS	ST STX		STX	STX	ST STX FTX	ST STX	ST STX		*ST* *STX*
M18 Inert Claymore Mine	ST STX FTX			ST STX	ST STX FTX				
M19 Blank Firing Device	STX FTX	STX	STX	STX	STX FTX	STX	STX	STX	*STX*
M21 Antitank Practice Mine	ST STX FTX			ST STX	ST STX FTX				
M320 SLAM Trainer	ST STX FTX			ST STX	ST STX FTX				
Medical TADSS*	ST STX FTX		ST STX		ST STX FTX	ST STX			
MILES	STX FTX	STX	STX	STX	STX FTX	STX LFX	STX	STX	*STX*
MK 19 SPU	STX FTX	STX	STX	STX	STX FTX	STX LFX	STX	STX	*STX*
CBRN TADSS*				STX					
NGATS	STX FTX		STX	STX	STX FTX	STX LFX	STX		*STX*

Table E-2. Weapons company task-to-TADSS matrix (functional CATS, SOSO, and UO, continued).

WEAPONS COMPANY ***TASK SELECTIONS FROM FUNCTIONAL CATS, SOSO, UO***	***Operate in an Urban Environment Event: ST, TEWT, STX, FTX***	***Integrate Civil – Military and Liaison Operations Event: ST, STX***	***Control Civilians in an Urban Environment Event: ST, STX***	***Secure Base of Operations Event: CL, ST, TEWT, STX,***	***Secure Area of Operations Event: ST, TEWT, STX ,FTX***	***React to Hostile Activity Event: ST, TEWT, STX, LFX***	***Conduct Moving Security Operations Event: ST, TEWT, STX,***	***Coordinate with Other Elements in a SOS Environment Event: ST, TEWT, STX,***	***Conduct Civil – Military Operations Event: ST, TEWT, STX***
OneTESS	STX FTX	STX	STX	STX	STX FTX	STX LFX	STX	STX	*STX*
OPFOR TADSS*	STX FTX	STX	STX	STX	STX FTX	STX LFX	STX	STX	*STX*
CCTT (Dismounted Soldier)	ST TEWT STX			ST TEWT STX	ST TEWT STX FTX	ST TEWT STX	ST TEWT STX		
Spider Trainer	ST STX FTX			ST STX	ST STX FTX				
Targetry*	STX FTX		STX	STX	STX FTX	STX LFX	STX		
TFTT	STX FTX	STX	STX	STX	STX FTX	STX LFX	STX	STX	*STX*
TGTS	ST	ST	ST	CL ST	ST	ST	ST	ST	*ST*
TIED	ST STX FTX		STX	ST STX	ST STX FTX	ST STX LFX	ST TEWT STX		*STX*
TOW ITAS BST	ST	ST	ST	CL ST	ST	ST	ST	ST	*ST*
TOW ITAS FTT	STX FTX	STX	STX	STX	STX FTX	STX LFX	STX	STX	*STX*
Training Unique Ammunition*	STX FTX	STX	STX	STX	STX FTX	STX LFX	STX	STX	*STX*
VCCT	ST TEWT STX				ST TEWT STX		ST TEWT STX		

Appendix F

Weapons Platoon Task-to-TADSS Matrix

The weapons platoon matrixes in this appendix are based on the CATS. Table F-1 provides tasks from the IBCT CATS, and Table F-2 provides tasks from the functional CATS, SOSO, and UO. Across the top of each matrix are the tasks and supporting events taken from the respective CATS. Down the left are current and emerging TADSS.

Table F-1. Weapons platoon task-to-TADSS matrix (IBCT CATS).

WEAPONS PLATOON ***(TASK SELECTIONS FROM IBCT CATS)***	***Conduct Weapon Platoon Operations Events: CL, STX, FTX***	***Protect the Force Event: ST***	***Move Tactically Events: ST***	***Overwatch/Support by Fire Events: ST, STX***	***Defend Events: ST, STX***	***Escort Convoys Events: ST, STX***
CCTT	STX	ST	ST			
CCMCK*	CL				ST	
COTS Simulations*	STX				STX	
EST 2000	CL STX	ST	ST		ST STX	
HITS	CL	ST			ST	
JLCCTC	CL				ST	
L-CCATS	STX FTX				STX	
LMTS	CL	ST	ST		ST	
M18 Inert Claymore Mine	STX FTX				STX	
M19 Blank Firing Device	STX FTX	ST	ST		ST STX	
M21 Antitank Practice Mine	CL	ST	ST		ST	
M320 SLAM Trainer	CL STX FTX	ST	ST		ST STX	
Medical TADSS*	CL STX FTX	ST	ST		ST STX	

Table F-1. Weapons platoon task-to-TADSS matrix (IBCT CATS, continued).

WEAPONS PLATOON *(TASK SELECTIONS FROM IBCT CATS)*	*Conduct Weapon Platoon Operations Events: CL, STX, FTX*	*Protect the Force Event: ST*	*Move Tactically Events: ST*	*Overwatch/Support by Fire Events: ST, STX*	*Defend Events: ST, STX*	*Escort Convoys Events: ST, STX*
MILES	CL STX FTX	ST			ST STX	
M19 SPU						
CBRN TADSS*	CL STX FTX	ST			ST STX	
NGATS						
NLCS*	CL STX FTX	ST			ST STX	
OneTESS	CL				ST STX	
OPFOR TADSS*	FTX STX				STX	
ROC-V	CL STX FTX	ST				
Spider Trainer	CL STX FTX	ST	ST		ST STX	
Targetry*		ST	ST		ST	
TOW FTT	STX	ST	ST		ST STX	
TGTS	CL STX FTX	ST			ST STX	
TIED	FTX STX				STX	
TOW ITAS BST	CL STX FTX	ST	ST		ST STX	
TOW ITAS FTT	FTX STX LFX				ST STX	
Training Unique Ammunition*	STX CL	ST	ST		ST STX	

Table F-2. Weapons platoon task-to-TADSS matrix (functional CATS, SOSO, UO).

WEAPONS PLATOON *TASK SELECTIONS FROM FUNCTIONAL CATS, SOSO, UO*	*Operate in an Urban Environment Event: CL, ST, TEWT, STX, LTX, FTX*	*Interact with Civilians Event: CL, ST, STX*	*React to Immediate Threats/ Assault Course Event: CL, ST, STX, LFX SH / BF*	*Secure Base of Operations Event: CL, ST, TEWT, STX, LTX*	*Secure Area of Operations Event: ST, TEWT, STX ,FTX*	*Conduct Moving Security Operations Event: CL, ST, TEWT, STX, LFX, LTX*	*React to Hostile Activity Event: CL, ST, TEWT, STX, LFX, LTX*	*Conduct Civil – Military Operations Event: CL, ST, TEWT, STX, LTX*
CCTT	CL ST TEWT STX		ST		ST TEWT STX	CL ST TEWT STX		
CFFT	CL ST		CL ST		ST	CL ST	CL ST	
CCMCK*	STX LTX FTX	STX	ST STX LFX	STX LTX	STX FTX	STX LTX	STX LTX	STX LTX
COTS Simulations*	CL ST TEWT STX	CL ST	CL	CL ST	ST STX TEWT	CL ST STX	CL ST STX	CL ST
EST 2000	CL ST STX	CL ST STX		CL ST STX LTX	ST STX		CL ST	
GUARDFIST/CFFT	CL ST		CL		ST	CL ST	CL ST	
HITS	STX LTX FTX	STX	STX LFX	STX LTX	STX FTX	STX LTX LFX	STX LTX LFX	STX LTX
JLCCTC	TEWT STX LTX FTX		CL ST	TEWT	ST TEWT STX FTX	CL TEWT STX LTX	CL TEWT STX LTX	CL TEWT
L-CCATS	ST STX FTX LTX		ST	ST STX LTX	ST TEWT STX FTX	ST STX LTX	ST STX LTX	
LMTS	CL ST		ST		ST	CL ST	CL ST	
M18 Inert Claymore Mine	CL ST STX LTX FTX			CL ST STX LTX	ST STX FTX			
M19 Blank Firing Device	STX FTX	STX	STX	STX	STX FTX	STX	STX	STX
M21 Antitank Practice Mine	CL ST STX LTX FTX				ST STX FTX			

Table F-2. Weapons platoon task-to-TADSS matrix (functional CATS, SOSO, UO, continued).

WEAPONS PLATOON *TASK SELECTIONS FROM FUNCTIONAL CATS, SOSO, UO*	*Operate in an Urban Environment Event: CL, ST, TEWT, STX, LTX, FTX*	*Interact with Civilians Event: CL, ST, STX*	*React to Immediate Threats/ Assault Course Event: CL, ST, STX, LFX SH / BF*	*Secure Base of Operations Event: CL, ST, TEWT, STX, LTX*	*Secure Area of Operations Event: ST, TEWT, STX ,FTX*	*Conduct Moving Security Operations Event: CL, ST, TEWT, STX, LFX, LTX*	*React to Hostile Activity Event: CL, ST, TEWT, STX, LFX, LTX*	*Conduct Civil – Military Operations Event: CL, ST, TEWT, STX, LTX*
M320 SLAM Trainer	CL ST STX LTX FTX				ST STX FTX			
Medical TADSS*	CL ST STX LTX FTX				ST STX FTX		CL ST STX LTX	
MILES	STX LTX FTX	STX	ST STX LFX	STX LTX	STX FTX	STX LTX LFX	STX LTX LFX	STX LTX
M19 SPU	STX LTX FTX	STX	STX LFX	STX FTX	STX FTX	STX LFX LTX	STX LFX LTX	STX LTX
CBRN TADSS*			CL ST STX		ST STX FTX			
NGATS	STX LTX FTX		STX LFX	STX LTX	STX FTX	STX LTX LFX	STX LTX LFX	
NLCS*	CL ST TEWT STX LTX FTX	CL ST STX		CL ST STX LTX	ST STX FTX	CL ST STX LTX	CL ST STX LTX	CL ST STX LTX
OneTESS	STX LTX FTX	STX	STX LFX	STX LTX	STX FTX	STX LTX LFX	STX LTX LFX	STX LTX
OPFOR TADSS*	CL ST STX LTX FTX		STX	CL ST STX LTX	ST TEWT STX FTX	CL ST STX LTX	CL ST STX LTX	
ROC-V	CL ST			CL ST	ST			
Spider Trainer	CL ST STX LTX FTX				ST STX FTX			
Targetry*	STX LTX FTX		STX LFX	STX LTX	STX FTX	STX LTX LFX	STX LTX LFX	

Table F-2. Weapons platoon task-to-TADSS matrix (functional CATS, SOSO, UO, continued).

WEAPONS PLATOON *TASK SELECTIONS FROM FUNCTIONAL CATS, SOSO, UO*	*Operate in an Urban Environment Event: CL, ST, TEWT, STX, LTX, FTX*	*Interact with Civilians Event: CL, ST, STX*	*React to Immediate Threats/ Assault Course Event: CL, ST, STX, LFX SH / BF*	*Secure Base of Operations Event: CL, ST, TEWT, STX, LTX*	*Secure Area of Operations Event: ST, TEWT, STX ,FTX*	*Conduct Moving Security Operations Event: CL, ST, TEWT, STX, LFX, LTX*	*React to Hostile Activity Event: CL, ST, TEWT, STX, LFX, LTX*	*Conduct Civil – Military Operations Event: CL, ST, TEWT, STX, LTX*
TFTT	STX LTX FTX	STX	ST STX LFX	STX LTX	STX FTX	STX LTX LFX	STX LTX LFX	
TGST	CL ST	CL ST	CL ST	CL ST	ST	CL ST	CL ST	CL ST
TIED	CL ST STX LTX FTX	ST STX	CL ST STX LFX	CL ST STX LTX	ST STX FTX	CL ST STX LTX LFX	CL ST STX LTX LFX	
TOW ITAS BST	CL ST	CL ST	CL ST	CL ST	ST	CL ST	CL ST	CL ST
TOW ITAS FTT	STX LTX FTX	STX	ST STX LFX	STX LTX	STX FTX	STX LTX LFX	STX LTX LFX	STX LTX
Training Unique Ammunition*	STX LTX FTX		STX LFX	STX LTX	STX FTX	STX LTX LFX	STX LTX LFX	STX LTX
VCCT	CL ST STX				ST STX	CL ST STX	CL ST STX	

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Appendix G

Weapons Company Gunnery Tables Task-to-TADSS Matrix

The weapons company gunnery table matrixes in this appendix (Table G-1) tasks come from the IBCT CATS. Across the top of each matrix are the tasks and supporting events taken from the respective CATS. Down the left are current and emerging TADSS.

Table G-1. Weapons company gunnery tables task-to-TADSS matrix.

WEAPONS COMPANY GUNNERY TABLES ***TASK SELECTIONS FROM IBCT CATS***	***HMMWV Gunnery Skills Test***	***HMMWV Gunnery Table I***	***HMMWV Gunnery Table II***	***HMMWV Gunnery Table III***	***HMMWV Gunnery Table IV***	***HMMWV Gunnery Table V***	***HMMWV Gunnery Table VI***	***HMMWV Gunnery Table VII***	***HMMWV Gunnery Table VIII***	***HMMWV Gunnery Table IX***	***HMMWV Gunnery Table X***	***TOW Gunnery Table V***	***TOW Gunnery Table VI***	***TOW Gunnery Table VII***	***TOW Gunnery Table VIII***
CCTT		X													
EST 2000	X	X	X	X	X										
L-CCATS			X	X						X					
LMTS			X												
M19 Blank Firing Device										X					
MILES						X	X	X	X	X	X	X	X	X	X
MK 19 SPU										X					
Targetry*	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
TFTT		X			X	X	X	X	X	X	X	X	X	X	X
TGST	X				X										
TOW ITAS BST					X										
TOW ITAS FTT	X				X	X	X	X	X	X	X	X	X	X	X
Training Unique Ammunition*	X		X	X	X	X	X	X	X	X	X	X	X	X	X
ROC-V	X														
VCCT		X													

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Glossary

Section I — ACRONYMS AND ABBREVIATIONS

A

AAR after-action review
ABCS army battle command systems
AC alternating current
ACOG advanced combat optical gunsight
AKO Army Knowledge Online
AOR area of responsibility
ARM advanced rifle marksmanship
ARNG Army Reserve National Guard
ASAAF automatic small arms alignment fixture
ASP ammunition supply point
ATSC Army Training Support Center
ATWESS antitank weapon effects simulator
AVCATT aviation combined arms tactical trainer

B

BATS Bradley Advanced Training System
BCT brigade combat team
BCTC battle command training center
BDM bunker defeat munition
BFA blank firing adapter
BFV Bradley fighting vehicle
BLOS beyond line of sight
BLUFOR blue force
BOE band of excellence
BRM basic rifle marksmanship
BST basic skills trainer

C

C2 command and control
CALFEX combined arms live-fire exercise
CALL Center for Army Lessons Learned
CAMSIM chemical agent monitor simulator
CAS close air support
CATS combined arms training strategy
CATT combined arms tactical trainer
CBRN chemical, biological, radiological, or nuclear
CCIR commander's critical information requirements
CCMCK close combat mission capability kit
CCTT close combat tactical trainer
CD controller device
CDT common driver trainer
CD/TDTD controller device/training data transfer device
CFFT call-for-fire trainer
CFX command field exercise
CJTF coalition joint task force
cl class (graphics only)
CLS combat lifesaver
CLU command launch unit
co company (graphics only)
COE contemporary operating environment
COFT conduct of fire trainer
COFT-E conduct of fire trainer – enhanced
COMEX communications exercise
COP common operational picture
COTS commercial off-the-shelf
CPR cardiopulmonary resuscitation
CQC close quarters combat
CTC combat training center
CTX combined training exercise
CVI combat vehicle identification

D

DA Department of the Army
DC direct current
DEPEX deployment exercise
DODIC Department of Defense identification code
DTMS Digital Training Management System

DVC device (nomenclature only)
DW dismounted warrior

E

E-DIMM enhanced dismounted Infantry manned module
EST Engagement Skills Trainer
ETC exportable training capability
EXEVAL external evaluation

F

FCX fire coordination exercise
FHT field handling trainer
FMTV family of medium tactical vehicles
FRAGO fragmentary order
FRTR full-range training round
FSC full-spectrum command
FSL full-spectrum leader
FSO fire-support officer
FSW full-spectrum warrior
FTT field tactical trainer
FTX field training exercise
FY fiscal year

G

GL grenade launcher
GMG grenade machine gun
GST gunners skill test
GTA graphic training aid
GUARDFIST Guard Unit Armory Device Full Crew Interactive Simulation Trainer

H

HBCT heavy brigade combat team
HITS Homestation Instrumentation Training System
HMMWV high-mobility multipurpose wheeled vehicle
HUT human urban target

I

IAW in accordance with
IBCT Infantry brigade combat team
IED improvised explosive device
IET initial entry training
IMI interactive multimedia instruction
IMTC Infantry moving target carrier
IPB intelligence preparation of the battlefield
IS instrumentation system
ITAS Improved Target Acquisition System
ITM infantry target mechanism
ITS Independent Target System
IWS Individual Weapon System

J

JCATS joint conflict and tactical simulation
JLCCTC joint land component constructive training capability

L

LASER light amplification by the stimulated emission of radiation
LAW light antitank weapon
L-CCATS Laser Counterconvoy Ambush Training System
LFX live-fire exercise
LLDR long-range, laser-designator rangefinder
LMTS Laser Marksmanship Training System
LOMAH location of miss and hit
LTID laser-target interface device
LTX lane training exercise
LVC live-virtual-constructive
LVC-IA live,virtual, constructive—integrated architecture

M

MAARS MILES After-Action Review System
MAPEX map exercise
MCD micro control device
MEDEVAC medical evacuation
METL mission-essential task list
MG machine gun
MGSS main gun signature simulator
MILES Multiple Integrated Laser-Engagement System

mm millimeter
MOPMS Modular-Oriented Mine System
MSD MILES shootback device
MSR missile simulation round
MTP mission training plan

N

NGATS New Generation Army Target System
NLCS nonlethal capability set
NSN national stock number

O

O/C observer controller
OneTESS One Tactical Engagement Simulation System
OPFOR opposing force
op operation (graphics only)
OPTEMPO operating tempo

P

PK probability of kill
PL platoon leader
plt platoon (graphics only)

Q

QTTD quick-fire target training device

R

RADIAC radiation, detection, indication, and computation
RCS range control station
RCU remote control unit
RDECOM research development and engineering command
RDT rapid decision trainer
RETS Remoted Target System
RF radio frequency
RFCM radio frequency control module
RFS rifle fire simulator
ROC-V recognition of combat vehicles
ROE rules of engagement
RVS reconfigurable vehicle simulator
RVTT reconfigurable vehicle tactical trainer

S

SAAF small arms alignment fixture
SAF semiautomated force
SAT small arms transmitter
SAWE simulated area weapons effects
SES sound effects simulator
SESAMS Special Effects Small Arms Marking System
SGT sergeant
SLAM selective lightweight attack munition
SLIM-ES3 self-directed learning internet module – every soldier a sensor simulation
SMCT Soldiers manual common task
SOP standing operating procedures
SOSO stability operations support operations
SPAL liquid airburst projectile simulator
sqd squad
SRTR short-range training round
ST sergeant's time
STAFFEX staff training exercise
STRAC Standards in Training Commission
STX situational training exercise
SUAV small unmanned aerial vehicle

T

TADSS training aids, devices, simulators, and simulations
TDTD training data transfer device
TESS tactical engagement simulation system
TEWT tactical exercise without troops
TFT tactical field trainer
TFTT TOW tactical field trainer
TGTS TOW Gunnery Training System
TIED training improvised explosive device
TLD target lifting device
TOC tactical operations center
TOMI target OPFOR multipurpose individual
TOW tube launched, optically tracked, wire guided
TRADOC Training and Doctrine Command

TRP	target reference point
TSC	Training Support Center
TSDS	Targetry Simulator and Device System
TSS	Training Support System
TTP	tactics, techniques, and procedures
TUA	training unique ammunition

U

UAS	unmanned aerial system
UO	urban operations
UXO	unexploded ordinance

V

VBIED	vehicle-borne improvised explosive device
VCCT	virtual combat convoy trainer
VISMOD	visual modification

W

WITS	Wireless Independent Target System
WPN	weapon

Section II — ACRONYMS AND ABBREVIATIONS

antecubital	of or relating to the inner or front surface of the forearm
caltrop	a field expedient area denial system consisting of a small multipronged device that will puncture tires or boots; best employed when about 50 are secured to 550 military cord for quick and easy tossing and recoving
claymore	a usually electrically fired land mine containing steel fragments that are discharged in a predetermined direction
dorsum	upper surface of the hand

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Digital Training Management System	https://dtms.army.mil/DTMS (individual and collective tasks)
NATO ISAs	http://www.nato.int/docu/standard.htm
Reimer Digital Library	http://www.train.army.mil

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14 July 2009

By Order of the Secretary of the Army:

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