

SYSTEM TRAINING PLAN
FOR
MAN-PORTABLE AIR DEFENSE SYSTEM
(MANPADS) CREW MEMBER



TRADOC APPROVED
DATE: 7 JUN 99

DIRECTORATE OF TACTICS, TRAINING AND DOCTRINE
FORT BLISS, TEXAS 79916

**SYSTEM TRAINING PLAN
(STRAP)
FOR THE
STINGER WEAPON SYSTEM**

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SYSTEM TRAINING PLAN

FOR

STINGER

1. SYSTEM DESCRIPTION

a. Narrative

The Stinger missile (Stinger-RMP, Stinger Block I and Stinger Block II) is the primary Air Defense weapon for MANPADS, Avenger and Linebacker Crew Members. The Stinger weapon supports the Air Defense Artillery mission of protecting the force and selected geopolitical assets from cruise missile attack and reconnaissance/surveillance. Stinger is a lightweight, fire-and-forget, passive homing missile system. Stinger's mission is to defeat low altitude aerial threats. The Stinger missile system is the only short-range air defense missile deployed by the U.S. Army. Other U.S. Armed services and several friendly nations also currently deploy Stinger.

The Stinger weapon system must counter low altitude rotary wing (RW), fixed wing (FW), cruise missile (CM), and unmanned aerial vehicle (UAV) threats in both blue sky and background clutter in close combat areas where maneuvering forces and their supporting units operate. Stinger Block I adds a role rate sensor and additional processing which significantly improves missile accuracy; performance against slow-moving targets; counter-countermeasures; night capability, and performance against cruise missiles. Stinger Block II will utilize a new guidance system based on a staring focal plane array IR seeker. This seeker will increase the Stinger acquisition range 2.5 times, out to the missile's kinematics boundary. Block II will also improve the Stinger's ability to counter stand-off helicopters in clutter, improve performance against the future CM and UAV threat, add a full night capability and advanced IR counter-countermeasures.

b. First Unit Equipped (FUE)

Stinger RMP Fielded

Date: 2QFY88

Stinger Block I

Date: 2QFY99

Stinger Block II

Date: FY07

2. TARGET AUDIENCE

a. USAADASCH has an established training base to support Stinger institutional training that consists of entry level 14M (ARNG) Team Member, 14R and 14S crew members, and SHORAD commissioned officers (14B) that attend the SHORAD Track. The following is a list of MOSs supporting the Stinger system:

- 14M MANPADS Team Member

- 14R Linebacker Crew Member
- 14S Avenger Crew Member
- 14B Air Defense Artillery SHORAD Officer

b. The RCTI has established training bases to support Stinger training based on the Total Army Training System (TATS). These training bases will be used to teach a reclassification soldier into an air defense MOS. The POI's and lesson plans will mirror the same courses taught by the Active Component.

3. ASSUMPTIONS

- Resources, personnel and equipment required to support the program of instruction for Stinger will be absorbed within current funding levels.
- There will not be an increase in total Army force structure to support the manning of Stinger.
- As requirements are determined, new training devices will be acquired in a timely manner.
- Training development resources, manpower, and equipment will be available to support Stinger system over the life cycle of the system.
- NET will occur as system improvements are made.
- Required modifications to existing TADSS for Stinger will be developed and fielded with the systems.

4. TRAINING CONSTRAINTS

- Training for the Stinger system will be developed in accordance with TRADOC Regulation 350-70, Training Development Management, Processes, and Products, and within the framework of the material acquisition process (DOD 5000.2.R).
- Personnel resources for Stinger system training must be absorbed within current resource levels. Other resources defined in this System Training Plan (STRAP) (i.e., training equipment, components, and devices) will be funded and/or provided by the SHORAD system Project Office. These resources must be provided in sufficient quantities and within the appropriate time frames to support operational testing and system fielding.
- The limited availability of Stinger rounds and live-fire limitations greatly impacts their use in training and qualification. Therefore, a heavy reliance is placed on the use of TADSS for both training and qualification. Without the required TADSS and associated targets for aerial gunnery, training and ultimately readiness will suffer.
- Due to cost, and characteristics and limited availability of ranges for Combined Arms maneuver training, a virtual solution is required to perform the required training. Without the inclusion of Air Defense fire units in Combined Arms tactical Training, the training and effectiveness of all branches will suffer.

5. TRAINING CONCEPT (AC/RC)

a. New Equipment Training (NET) Concept

All training will be IAW AR 350-35, Army Modernization Training (AMT). AMT ensures an orderly transfer of knowledge on the operation and maintenance of equipment from the Material Developer (MATDEV) or provider to the tester, trainer, supporter, and user. AMT includes New Equipment Training (NET), Doctrine and tactics Training (DTT), and Sustainment Training (ST). AMT requirements are the responsibility of the MATDEV and will be coordinated with USAADASCH, and the Combat Developer (CBTDEV)/Training Developer (TNGDEV), and other supported schools. In the development of training, NET planners will consider institutional training, exportable training, to include Interactive Multimedia Instruction (IMI) and other forms of Distance Learning (DL), Leader training, Key Personnel training, Organizational training, and Total Unit training. Task analysis and individual and collective task development will be performed using the Automated systems Approach to training database software provided as Government Furnished Equipment. For follow-on NET for major system modifications (such as Block I & Block II), developers will consider train-the-trainer training, single-site training, contractor NET Teams (NETT), and, if effective and affordable, Army staffed NETT.

b. Institutional Training Concept

The US Army Air Defense Artillery School (USAADASCH) is the proponent for the 14M Stinger operator institutional training. The training concept builds on the existing Stinger POI and prepares the air defense soldier to qualify as a skill level one 14M Team Member through completion of Advanced Individual Training at Fort Bliss, Texas. The Stinger operator training is included in the 14R & 14S course POIs. In the event of degraded operations, the Crew Members must convert to Stinger MANPADS operations to complete or carry out mission. In order to ensure accurate, cost-effective training occurs, the materiel developer must continue to provide updated TADSS with the latest system modifications to the institution. The combination of institutional and unit training strategies as outlined in the 14M Soldier Training Publication completes the training mix that is designed to prepare the 14M for each level of progression. After completion of AIT, unit sustainment training, or new equipment training (NET), the soldier is capable of performing respective skill level tasks to standard.

USAADASCH Officer's Basic and Advanced Course (OBC/OAC) include instruction for the Stinger and prepare air defense officers to perform as SHORAD leaders. All Stinger associated training and training products prepare the ADA leader, soldier, and unit to execute force protection operations in the combined arms warfighting arena.

c. Unit Training Concept

Stinger training will consist of all three (3) mutually supporting pillars of the Combined Arms Training Strategy (CATS): Unit, Institution, and Self-Development training. CATS provide direction on how the unit trains and identifies the best mix of training resources to actually accomplish the training. The strategy integrates Gunnery, Maneuver exercises, and Soldier Training, into battle-focused training plans. It's not a rigid process that limits the leader but provides the leader with a menu of training events and resources from which he can plan and manage training to ensure soldiers and units are qualified.

The training of soldiers, leaders, and units shall be tough, realistic, and intellectually and physically challenging. It excites, motivates, and develops competence and confidence and capitalizes on technology by using an array of TADSS that provide the best training efficiency (low cost) and training effectiveness (promotes learning). Actual system equipment will be used to validate the transfer of knowledge and expertise learned through the use of TADSS. Gunnery Tables, Maneuver Exercises, and

other training resources can be found in the system training and doctrinal publications identified in paragraph 7.a.

6. TRAINING STRATEGY (AC/RC)

a. New Equipment Training (NET) Strategy

IAW AR 350-35, MATDEV will work in conjunction with the TNGDEV to design and publish a New Equipment Training Plan (NETP) that encompasses the total training subsystem. The NETP is a living document and though the Stinger system is fielded, the original NETP must be extended and updated or a new NETP established for Block I & Block II modifications. USAADASCH will validate all courses, materials, and products developed. All Stinger system equipment and the training subsystem with all its devices and products must be available for NET.

The training designed will constitute a complete training subsystem. It will include, but is not limited to, individual and collective analysis; institutional and unit TADSS; Instructor & Key Personnel Training (I&KPT); formal, contractor NET on site for system operators; and an IMI Training Support Package (TSP). This training will be limited to Stinger-peculiar (air defense specific, operator) instruction and designed as an exportable multimedia-training package, complete with a digitized POI, lesson plans, technical manuals, student and instructor guides, and a course management plan. The TSP will include a self-taught "how-to" tutorial modules covering all aspects of the system and a diagnostic test module that permits identification of soldier training proficiency by module. The TSP will be used during the course of NET and, in addition to other NET materials, will be left with the unit for future NET/Sustainment Training.

Specific NET courses of instruction for the upcoming **Block I & Block II** modifications will include, I&KP training for the Block I & II missiles and NET, both of which will cover operations and operator maintenance. New training requirements, to include new or modified TADSS and TSP development, are limited to Block I and Block II specific air defense peculiar training. It is supported by and provided through the SHORAD Program Manager.

NET is planned for and will be monitored by USAADASCH, incrementally by battery, for an entire battalion. The current plan is for complete contractor NET; no TRADOC NET authorizations will be required. In addition to NET, the following courses will be required:

- Instructor and Key Personnel (I&KP) Course. This course is designed to train TRADOC instructors, New Equipment Training Team (NETT) members, and other key personnel in the training base. Training will be scheduled in such a way that personnel involved will be of training personnel and still maintain stability and continuity within the training base. The I&KP training package will be validated prior to the first presentation of I&KP training. The validation by USAADASCH will be based on performance testing and testing of a representative sample of the target audience. Personnel having completed I&KP training should be stabilized in the institution to ensure availability of qualified personnel to train soldiers to maintain the Stinger system training base.
- Reserve Component training will be accomplished in accordance with the established USAADASCH, and Reserve Component (RC) Training Strategies.

b. Individual Training (Warrior)

Training is developed IAW TRADOC Regulation 350-70 and designed to be safe, battle focused, derived from wartime missions, and based on Stinger/SHORAD doctrine. It will follow the Systems

Approach to Training (SAT) process. The institutional training design is based upon the following criteria:

- Instruction is performance-oriented, emphasizes hands-on practical exercises, and prepares SHORAD soldiers and units to achieve and sustain proficiency on individual and collective tasks. Standards are established per the Mission Essential Task List (METL), the Army Training and Evaluation Program (ARTEP), Mission Training Plan (MTP) and Drills, Soldier's Training Publication (STP), and Officer Foundation Standards (OFS).
- Training is designed to be sequential by steps/procedures and will progress through the skill levels. Institutional and unit training programs capitalize on TADSS technology through the use of devices that support efficient and effective training. The actual equipment is then saved and used only to validate the transfer of learning from device to system.
- Required training ranges are safe and training effective. Ranges are environmentally nondestructive and are used to train using live-fire and simulated firing.

The US Army Air Defense School (USAADASCH), Fort Bliss, is the proponent for the 14M (ARNG) Stinger Team Member institutional training and for the Basic and Advanced officer track training. The 14R Linebacker and 14S Avenger Crew Members are also trained on the Stinger as the first part of their POI. The Advanced Individual Training (AIT) design is based upon the training concept to prepare entry-level soldier to qualify as a skill level one (SL1) 14M. Listed below are the institutional courses of instruction:

NOTE: The Army National Guard has established training bases to support Stinger training based on the Total Army Training System (TATS). These will mirror the same courses taught by the Active Component.

(1) 14M Stinger Team Member AIT.

The US Army Air Defense Artillery School, 6th ADA Brigade conducts 14M AIT. The training is a 6 weeks, 2 days program of instruction (POI) to train an initial entry soldier in MOS 14M10 in the following instruction:

Visual Aircraft recognition.

Operation and Maintenance of the M998 Series Vehicle, and SINCGARS communication equipment.

Operator functions and maintenance of the Simplified Handheld Terminal Unit (SHTU)

Operator functions and maintenance of the Handheld Terminal Unit (HTU)

Introduction to the Precision Lightweight Global Positioning Receiver (PLGR)

MANPADS Safety

Operate/maintain the Stinger weapon systems IFF interrogator programming and PMCS on IFF and support equipment.

Perform target engagement, with the M160 THT inside the IMTS, STPTs and Live Fire Exercise

(2) 14R Linebacker Crew member AIT

The US Army Air Defense Artillery School, 6th ADA Brigade conducts 14R AIT. The training is a 12 weeks, 3 days program of instruction (POI) to train an initial entry soldier in MOS 14R10 in the following instruction:

Air and Ground Vehicle Recognition.

SINCGARS, SHTU and PLGR.

MANPADS

Introduction to the BSFV, Safety, Ext Fires, & Evac Wounded Crew Member.

Operate/maintain Turret on the BSFV

Operate and Maintain the weapon systems on the BSFV.

Linebacker.

Gunnery.

Preventative Maintenance Checks and Services (PMCS).

(3) 14S Avenger Crew member AIT

The US Army Air Defense Artillery School, 6th ADA Brigade conducts 14S AIT. The training is a 10 week program of instruction (POI) to train an initial entry soldier in MOS 14S10 in the following instruction:

Introduction to MANPADS Trng and VACR.

Operate/Maintain M998 or M1097, SINCGARS.

Intro/Operate/Maintain/Dud/Emer Destruction, and IMTS Procedures.

Operation and maintenance of the Avenger Weapon System

March order, target engagement, hangfire/misfire and dud procedures.

(4) 14B SHORAD Officer Basic (Weapons Track) (OBC) and Officer Advanced Course (OAC).

The US Army Air Defense Artillery School, 6th Brigade conducts SHORAD officers' (14B) training. Both the officer's Basic and Advanced courses include Stinger, Linebacker & Avenger weapon system capabilities instruction. The OBC is a 9 week, 4 days weapons track on the operational capabilities on the Stinger, Linebacker & Avenger system. The OAC incorporates SHORAD weapons tactics into the POI small group processes.

(5) 14B-RC SHORAD Officer Reclassification-RC.

The US Army Air Defense Artillery School, 6th Brigade conducts SHORAD officers' training. The SHORAD-RC course is designed for reserve component officers with an actual anticipated assignment to a RC SHORAD Air Defense unit. The POI teaches characteristics, capabilities, limitations, and tactics of MANPADS, C3I and Avenger systems, with emphasis on the platoon, battery and battalion operations.

Stinger Block I upgrade began in 1996. Block I, adds a role rate sensor and additional processing which significantly improves missile accuracy; performance against slow-moving targets; counter-countermeasures; night capability, and performance against cruise missiles. Block I also extends the service life of the missile.

Stinger Block II Operational Requirements Document (ORD) was approved on 12 December 1996. Block II will utilize a new guidance system based on a staring focal plane array IR seeker. This seeker will increase the Stinger acquisition range 2.5 times, out to the missile's kinematics boundary. Block II will also improve the Stinger's ability to counter stand-off helicopters in clutter, improve performance against the future **CM and UAV** threat, adds a full night capability and advanced IR counter-countermeasures.

c. Unit Sustainment Training (Warfighter)

The unit commander and unit trainers accomplish the sustainment of individual and collective tasks through a unit training strategy that is tailored to the unit's mission-essential task list (METL), gunnery tables, and the combined arms training strategy (CATS). The training materials include the NET

training support packages and TADSS. The battalion S-3 monitors the training; maintains a training log; certifies when each lesson plan in the TSP has been taught; and posts the results of each exam. When the soldier completes Block I and Block II training, the S-3 will issue a certificate of training and annotate the soldier's training log, per AR 25-400. Collective training events (live and virtual), combat training center exercises, gunnery training, team-level to battery-level training all combine to support the standards defined in the MANPADS Army Training Evaluation Program (ARTEP), Mission Training Plan (MTP) and Crew Drills. Individual training to support skill level 2 tasks is designed against the standards identified in the MANPADS Soldier Training Publication (STP).

The Stinger CATS captures training events, frequency of occurrence, critical gates, and supporting resources. At the senior level, it helps leaders justify resources based on how units train. At the unit level, it provides a recommended method to maintain soldier and unit proficiency. CATS requires an increased emphasis on the use of training aids, devices, simulators, and simulations supporting the training strategy. It is a method for integrating training and the resources necessary to support that training. Unit commanders have the latitude to integrate the CATS into the training of command and control; and maneuver, survival, and sustainment skills, as they apply to their respective METL.

Gunnery tables provide qualification standards and training strategies and focus on preparing soldiers to qualify and perform as team members. The revised CATS will include the MANPADS gunnery strategy with the MANPADS teams training outlined in each of the gunnery program. Standards outlined in the MTPs/STPs are the minimum acceptable levels of performance. All team members are Stinger trained and must qualify on applicable gunnery table.

In order to obtain maximum collective training benefit, unit commanders should find ways to maximize Stinger participation at CTC's and with other units (in both live and virtual exercises) on their respective post.

7. TRAINING PRODUCTS

The PEO/PM is responsible for the development and integration of all TADSS and will fulfill all responsibilities IAW AR 350-38. PEO/PM will coordinate TADSS development with USAADASCH, the Combat Developer (CBTDEV) and the Training Developer (TNGDEV). TADSS, TSP, and targets for the institution, Combat Training Centers (CTC) and the field must be fielded with the system. Those that cannot must be fielded as soon as technically and economically feasible. The lack of training due to decreased ammunition or TADSS development and distribution will adversely impact the combat readiness of all Stinger units and disqualify those units from participating in combat training center exercises. Overarching resource decrements may adversely impact the strategy in terms of ammunition, targets, and ranges used for gunnery training, ultimately impacting team qualifications, deployment readiness, and individual soldier skill level advancement.

A complete training subsystem, fielded with the Stinger system, is vital to the overall success of the system. The subsystem should contain a full complement of training support products required to support training of the system in the institution, during NET, and in support of the unit training strategy/sustainment training. Wherever possible, systems will employ embedded training capabilities, be multimedia based, and/or use distance learning technologies. The subsystem will contain (as a minimum) required doctrinal manuals, system technical manuals (preferably Interactive Electronic Technical Manuals (IETM), TADSS, an IMI Training Support Package (TSP), and courses (complete with a digitized POI, lesson plans, student and instructor guides, and a course management plan).

The following further details the training products required to support all aspect of AMT, (NET, DTT, and ST):

a. Publications

ARTEP 44-117-11-DRILL, Drill For Stinger Team, 5 February 1992 (DA Print)

ARTEP 44-117-21-MTP, Mission Training Plan for an Avenger Platoon, 10 June 1992 (under revision)

ARTEP 44-413-34-MTP, SHORAD Battery in the Armored Cavalry Regiment and the Armor and Mechanized Infantry Brigade, 2 April 1997

*STP 44-16S14-SM-TG, Soldier's Manual and Trainer's Guide MOS 16S MANPADS Crew Member Skill Levels 1, 2, 3, and 4, 8 January 1996

TM 9-1425-429-12, Operator's and Organizational Maintenance Manual, Stinger Guided Missile System, Consisting of: Weapon Round Basic, Weapon Round Post, Weapon Round RMP, Trainer Handling Guided Missile Launcher M60, Interrogator Set AN/PPX-3A, AN/PPX-3B, Interrogator Programmer AN/GSX-1, AN/GSX-1A, April 1992

TM 9-6920-429-12, Operator's and Organizational Maintenance Manual, Training Set, Guided Missile System M134, Change 1 and 2, February 1982

TM 9-6920-430-14, Operator's and Organizational Direct Support, and General Support Maintenance Manual, Coolant Recharging Unit, Training Guided Missile System M80, Charger, Battery PP-7309/T, Change 6, 9 April 1990

*In process of being replaced with STP 44-14M14-SM-TG

b. TADSS

The proponent institution and field units require a variety of TADSS to support training. For a detailed matrix of those devices required for gunnery training refer to Section II, ARTEP 44-413-34-MTP. The TADSS matrix in Annex I of this STRAP further defines TADSS required for support. The following TADSS and targets support Stinger operator and/or maintainer institutional and/or unit training:

Stinger Troop Proficiency Trainer (STPT) (to be upgraded)

Improved Moving Target Simulator (IMTS) (may be replaced by upgraded STPT)

Tracking Head Trainer (THT)

Field Handling Trainer (FHT)

Air Defense Combined Arms Tactical Trainer (ADCATT) (to be developed)

Force-on-Force Trainer (FOFT) (for home-station and CTCs)

1/5th Scale Remotely Piloted Vehicle Target System (RPVTS)

Ancillary Devices: Scoring, MILES, IR, and PGS

Visual Aircraft Recognition Kit (VACR)

Cruise Missile Targets (to be developed)

Unmanned Aerial Vehicle Targets (to be developed)

Ballistic Aerial Targets (BATS) (Scheduled to be phased out in FY00)

c. Multimedia Products

The MATDEV will provide, as a minimum, an IMI TSP that includes self-taught "how to" tutorial modules covering all aspects of the system, especially Block I and Block II specific modifications, and a diagnostic test module that permits identification of soldier training proficiency by

module. The TSP will be used at the institution, during the conduct of NET, and, in addition to other NET materials, will be left with the unit for future Sustainment Training. Its content may be limited to Stinger Block I and Block II (air defense specific) instruction.

d. System Hardware/Software

The required number of Stingers each year for training at the institution is one per class. The number of classes per year is contingent on student throughput. The projected forecast are:

FY99 8 Stingers

FY00 8 Stingers

FY01 8 Stingers

FY02 8 Stingers

8. TRAINING SUPPORT

a. Distance Learning:

The purpose of Army Distance Learning Program is to establish the specific goals, objectives, requirements, and responsibilities for implementing the ADLP across the force. The plan identifies multimedia technologies and communications infrastructure required for Army-wide access to training sources and timelines for phased implementation that will make the program a reality. Appropriate school courses need to be converted to ADLP. Currently USAADASCH is defining and designing the total digitized training strategy.

b. Facilities:

Existing facilities, ranges and real property satisfy Stinger MANPADS system requirements.

NOTE: Requirements for classroom XXI: **TBD.**

c. Ammunition:

Stinger rounds will be fired at one per section in the unit when available. Each 14M, 14R, and 14S AIT class will fire one Stinger missile (normally top student). NOTE: If a Stinger round is found to be defective, it will be returned through normal Class V channels.

d. Other:

(1) The Stinger user systems (MANPADS, Avenger & Linebacker) will use targets that are cost efficient and training effective. The targets should be a realistic representation of the threat; duplicate or replicate the time, movement, countermeasures, signatures (including number), exposure times, and hit/kill indications; and provide a feedback/performance scoring capability. With BATS and RCMATS leaving the Army inventory and thermal signature limitations associated with RCMAT, it is imperative that 1/5th scale aerial target requirements are met and new targets developed, fielded, and supported to replicate CMs, and UAVs.

(2) It is vitally important that Stinger MANPADS, Avenger & Linebacker continue to participate at CTCs. Participation will be based on the unit's rotational schedule. Every effort should be made to exercise all Stinger user systems (MANPADS, Avenger & Linebacker) capabilities in live, constructive, and simulated environment. Stinger user systems (MANPADS, Avenger & Linebacker) must be fully integrated into CTC instrumentation. The system PM must determine if an upgrade to the Combat Training Centers Instrumentation Systems will be required to support Stinger's planned improvements and resource those upgrades.

9. POST-FIELDING TRAINING EFFECTIVENESS ANALYSIS (PFTEA)

When resources permit and USAADASCH has the manpower to support the PFTEA processes, a PFTEA will be prepared. The process will include coordinating the evaluations of POIs and lesson plans; personnel selection criteria; published exercises (e.g. Situation Training Exercises STX); NET; TADSS; and any TSP or other training products and material. The New Equipment Training Team (NETT) analysis of demonstrated skills by unit personnel provides initial data for these evaluations. The data collected by the NETT and the results of the analysis will be staffed throughout the institution. The training departments will use this information to refine and update training programs and requirements.

ANNEX A

TARGET AUDIENCE

COURSE MATRIX	
FUNCTIONAL AND PROFESSIONAL	USAADASCH
14M MANPADS Crew Member (ARNG)	X
14R Linebacker Crew Member	X
14S Avenger Crew Member	X
14B – OBC	X
C22 – OAC	X
LEGEND	
OBC	Officer Basic Course (SHORAD Track)
OAC	Officer Advanced Course
USAADASCH	United States Army Air Defense Artillery School
ARNG	Army National Guard

ANNEX B

CATS Individual Training Strategies (Warrior)

Military Occupational Specialty (MOS) (present data by MOS by school)
Training Strategy for Advanced Individual Training (AIT): 14M
Location: Fort Bliss, Texas
Lesson Plans: Revised 1QFY99
Course Start: 2QFY92
Classes per year: FY 99/7; FY 00/7; FY 01/7
Student load per Fiscal Year (FY): FY 99/187; FY 00/161; FY 01/160
Analysis Requirements
Training Requirements Analysis System (TRAS) Documents
Individual Training Plan: 2QFY99
Course Administrative Document: 1QFY97
Program of Instruction: 3QFY98
Training Support Required: Refer to Paragraphs 7 and 8 and Annex H
Training Strategy for Advanced Individual Training (AIT): 14R
Location: Fort Bliss, Texas
Lesson Plans: 4QFY98
Course Start: 1QFY99
Classes per year: FY 99/8; FY 00/17; FY 01/18
Student load per Fiscal Year (FY): FY 99/185; FY 00/396; FY 01/419
Analysis Requirements
Training Requirements Analysis System (TRAS) Documents
Individual Training Plan: 1QFY98
Course Administrative Document: 2QFY98
Program of Instruction: 4QFY98
Training Support Required: Refer to Paragraphs 7 and 8 and Annex H

ANNEX B

CATS Individual Training Strategies (Warrior)

Military Occupational Specialty (MOS) (present data by MOS by school)
Training Strategy for Advanced Individual Training (AIT): 14S
Location: Fort Bliss, Texas
Lesson Plans: Revised; 3QFY96 - (Under Revision)
Course Start: 2QFY90
Classes per Fiscal Year: FY 99/20; FY 00/38; FY 01/33
Student load per Fiscal Year (FY): FY 99/649; FY 00/903; FY 01/774
Analysis Requirements
Training Requirements Analysis System (TRAS) Documents
Individual Training Plan: 3QFY98
Course Administrative Document: 3QFY98
Program of Instruction: 3QFY98
Training Support Required: Refer to Paragraphs 7 and 8 and Annex H
Integrated Training Strategy for SHORAD Officer Courses 14B-SHORAD TRACK; C22-OAC
Location: Fort Bliss, Texas
Lesson Plans: 14B - 1QFY97; C22 - 1QFY97
Course Start: 14B - 2QFY90; C22 - 1QFY90
Classes per year: 14B - FY 99/3; FY 00/3; FY 01/3
Student load per Fiscal Year (FY): FY 99/160; FY 00/160; FY 01/160
Classes per Fiscal Year: C22 - FY 99/4; FY 00/4; FY 01/4
Student load per Fiscal Year (FY): C22- FY 99/146; FY 00/160; FY 01/160
Analysis Requirements
Training Requirements Analysis System (TRAS) Documents
Individual Training Plan: 14B - April 98; C22 - November 97
Course Administrative Document: 14B - April 98; C22 - November 97
Program of Instruction: 14B - April 97; C22 - April 97
Training Support Required: Refer to Paragraphs 7 and 8 and Annex H

ANNEX C

CATS Short-Range Unit Training Strategies (Warfighter)

1. Individual Training:			
a. Strategy: Individual skills will be sustained through daily operational training, crew drills, situational training exercises, field training exercises, and use of the ARTEP Mission Training Plan. Commanders ensure individual proficiency per applicable soldier's manuals; e.g. to maintain individual skill proficiency on the Man Portable Air Defense Weapon System, soldiers designated to operate/maintain it will train as follows:			
MOS	Training Event		Frequency
14M10	MOS Training		Weekly
14M20	MOS Training		Weekly
14M30	MOS Training		Weekly
14M40	MOS Training		Weekly
b. Products: Required to sustain individual skills.			
Product	Required Date	Resource Requirement	Responsible Agency
CATS		In-House	DOTTD, USAADASCH
MTP/Crew Drill	2QFY99	In-House	DOTTD, USAADASCH
Tables		In -House	
14M STP	2QFY99	In-House	DOTTD, USAADASCH
14R STP	4QFY98	In-House	DOTTD, USAADASCH
14S STP	4QFY99	In-House	DOTTD, USAADASCH
Operator's TSP	4QFY98	System Contract	Material Developer TRADOC
2. Collective Training:			
a. Strategy: The collective skills to employ and maintain the system are learned and sustained through repetitious application of crew drills, STX, command post exercises, and training with the close combat tactical trainer, gunnery, and tactical simulations. ADA doctrine and tactics will be incorporated. Training will be conducted in accordance with the applicable MTP. To sustain collective proficiency, the following are recommended training echelons, events, and frequencies:			
Echelon	Event		Frequency
Battalion	Maneuver		
	STX		Quarterly
	FTX		Semi-Annually
	DEPEX		Annually
	MAPEX		Annually
Battery	Maneuver		
	STX		Quarterly
	FTX		Semi-Annually
	MAPEX		Annually
Platoon	Maneuver		
	STX		Quarterly
	FTX		Quarterly
	LFX		Annually
	MAPEX		Annually

ANNEX C

CATS Short-Range Unit Training Strategies (Warfighter)

a. Strategy (Continued)			
Echelon	Event		Frequency
Section	Maneuver		
	FTX		Quarterly
	JTX		Annually
	STX		Quarterly
	LFX		Annually
	Gunnery		
	Table IX - (IMTS, THT & FHT)		Annually
	Table X - (STPT, THT, FHT, MILES, Targets (RCMATs, Tactical aircraft, or subscale), Tactical equipment (IFF and Stinger weapons)		Annually
Team	Maneuver		
	Drill		Weekly
	FTX		Quarterly
	MAPEX		Quarterly
	Gunnery		
	Table I - (STPT, THT & FHT, Tactical equipment (IFF and Stinger weapons)		Quarterly
	Table II - VACR Kit & FM 44-80		Quarterly
	Table III - STPT, IMTS, THT, FHT & ARTEP 44-117-11-Drill		Quarterly
	* Table IV - STPT, IMTS, THT, FHT, VACR Kit, tactical equipment (IFF & Stinger weapons)		Semi-Annually
	Table V - STPT, THT, FHT, Targets w/ancillary devices, tactical aircraft, or subscale), VACR Kit, tactical equipment (IFF & Stinger Weapons), ARTEP 44-117-11-Drill		Semi-Annually
	Table VI - THT, FHT, VACR Kit, tactical equipment (IFF & Stinger Weapons), ARTEP 44-117-11-Drill		Semi-Annually
	Table VII - STPT, IMTS, THT, FHT, VACR Kit, tactical equipment (IFF & Stinger Weapons)		Annually
	* Table VIII - IMTS, THT, FHT, live fire targets, VACR Kit, tactical equipment (IFF & Stinger Weapons)		Annually
	* Critical gate--must perform to standard to progress to next table		
b. Products: Required to support collective training.			
Product	Required Date	Resource Documents	Responsible Agency
ARTEP-Crew Drills	4QFY98	In-house	DOTTD, USAADASCH
Gunnery Tables	4QFY99	In-house	DOTTD, USAADASCH
ARTEP-MTP	4QFY99	In-house	DOTTD, USAADASCH
STX		METL	Unit
TSOP		METL	Unit
FM	1QFY96	In-House	DOTTD, USAADASCH
Vehicle TM	3QFY97	System Contract	Material Developer

ANNEX D

Training Development Milestone Schedule.

Individual Training Plan 14M Stinger MANPADS Team Member

Milestone:	Date
1. Initial Individual Training Plan (ITP) submitted.	NOV 94
2. Annotated task list submitted.	AUG 95
3. Course Administrative Data submitted.	AUG 97
4. Training Program Worksheet (TPW) submitted.	JUL 95
5. ITP submitted.	NOV 94
6. POI submitted.	JAN 98
7. Resident course start date.	AUG 98

Army Correspondence Course Program

Milestone: N/A	Date
1. Requirement identified and submitted for approval.	No ACCP's available.
2. Requirement approved by HQ TRADOC.	No ACCP's available.
3. Development initiated.	No ACCP's available.
4. Advance breakdown sheet submitted.	No ACCP's available.
5. Camera-ready mechanicals submitted.	No ACCP's available.
6. Subcourse material ready for distribution.	No ACCP's available.

Army-wide Doctrine and Training Literature Program (ADTLP)

Milestone:	Date
1. Requirements identified.	TBD
2. Draft ADTLP changes validated.	TBD
3. Field Manual (FM) outlines approved.	TBD
4. FM coordinating draft completed.	TBD
5. Print request initiated.	TBD
6. Approved camera-ready copies and comprehensive dummy submitted.	TBD
7. Printing and distribution completed.	TBD

Soldiers' Training Publications

Note: Includes the soldiers' manual (SM), Army Training and Evaluation Program (ARTEP), and trainers' guide (TG).

Milestone:	Date
1. Analysis completed.	N/A
2. Draft SM, ARTEP, and TG.	3QFY99
3. ATSC staffing.	TBD
4. Camera-ready mechanicals submitted.	TBD
5. Distribution completed.	TBD

ANNEX D

Interactive Multimedia Instruction (IMI)/Distance Learning

Milestone:	Date
1. Requirements identified and submitted for approval.	31 JULY 98
2. Requirements approved by ATSC & TRADOC.	AUG 98
3. Identify resources.	JUN 98
4. Develop and Validate courseware.	TBD
5. Master materials to ATSC for replication and distribution.	TBD
6. Replication and distribution completed.	TBD

Training Effectiveness Analysis (TEA)

Milestone:	Date
1. Interim TEA developed.	N/A
2. TEA updated for Milestone Decision Review I.	N/A
3. TEA updated for Milestone Decision Review II.	N/A
4. TEA updated for Milestone Decision Review III.	N/A
5. Post-Fielding TEA (PFTEA) planned.	N/A

DA Audiovisual Production Program (DAAPP)

Milestone:	Date
1. High-risk tasks and jobs identified.	N/A
2. Validated in storyboard.	N/A
3. DAAPP requirements submitted to ATSC.	TBD
4. Requirements approved by DA.	TBD
5. Production initiated.	TBD

Training Aids, Devices, Simulations, and Simulators (TADSS)

Milestone:	Date
1. High risk, hard-to-train tasks identified.	N/A
2. TADSS concept validated.	NOV 96
3. Need for TADSS identified.	NOV 96
4. TADSS incorporated into the STRAP.	MAY 99
5. Analytical justification via TEA.	N/A
6. Training ORD developed, if required.	N/A
7. TADSS effectiveness validated.	NOV 96
8. TADSS incorporated into the Required Operational Capability (ROC).	NOV 96
9. MOS-specific milestone/requirements for TADSS developed and incorporated in integrated training strategy (ITS).	N/A

Facilities

Milestone:	Date
1. Range and Facility requirements identified.	N/A
2. Construction requirements submitted to MACOM.	N/A
3. Development of construction requirements completed.	N/A
4. Requirements validated and updated.	N/A
5. Supporting requirements identified and availability coordinated.	N/A
6. Installation and other construction requirements submitted to MACOM.	N/A
7. Refined construction requirements and range criteria forwarded to MACOM.	N/A
8. Construction initiated.	N/A

ANNEX D

Training Ammunition

Milestone:	Date
1. Ammunition identified.	N/A
2. Tentative validation of ammunition requirements.	N/A
3. Requirements included in the ORD.	N/A
4. Ammunition item developed.	N/A
5. Validation and test complete.	N/A
6. Ammunition requirements in the ITP.	N/A
7. Requirements provided to installation/MACOM manager.	N/A
8. Requirements included in DA PAM 350-38	N/A
9. Production.	N/A

RESOURCE SUMMARY**1. Facilities Requirements.**

<u>Description</u>	<u>Appn/Amount FY Req'd</u>	<u>\$ Source</u>
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NONE REQUIRED

2. Additional Equipment Requirements. (OPA Funded)

<u>Equipment</u>	<u>BOIP Number</u>	<u>Number Required</u>
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NONE REQUIRED

3. Additional OMA Funding Requirements

<u>Description</u>	<u>Appn/Amount</u>	<u>Freq</u>	<u>Req'd</u>	<u>\$ Source</u>
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a. Training -

USAADASCH:

Civ Payroll	OMA/	R	FY	
Contract Maint	OMA/	R	FY	
Sup/Equip	OMA/	R	FY	

b. Training Spt -

USAADASCH:

Civ Payroll	OMA/	R	FY	
Printing	OMA/	R	FY	
Sup/Equip	OMA/	R	FY	

c. BASOPS -

USAADASCH:

Utilities	OMA/	R	FY	
In/Out Proc	OMA/	R	FY	
Info Mgt	OMA/	R	FY	

d. Other (specify)

4. Additional Manpower Requirements

<u>Description</u>	<u>OFF</u>	<u>WO</u>	<u>ENL</u>	<u>CIV</u>	<u>TOTAL</u>
a. Training -					
Inst					
Overhd					
b. Training Spt -					
Training Dev					
Training Eval					
c. BASOPS -					
AG					
Finance					
d. Other (specify)					

REFERENCES

**The following references pertain to the operational testing and subsequent fielding of the
MANPADS Air Defense Weapon System:**

Line-of-Sight Rear (LOS-R) ROC, 15 Oct 86

System MANPRINT Management Plan (SMMP), Not required

Basis of Issue Plan (BOIP) approved: Training Dec 78, Tactical Jan 79

New Equipment Training Plan (NETP) Number: MIC85082

Army Modernization Information Memorandum (AMIM) Number: I0008

ANNEX G

COORDINATION

SYSTEM: STINGER/MANPADS		DATE: 19 MAY, 1999	
	COMMENTS		
AGENCY	SUBMITTED	ACCEPTED	RATIONALE FOR NON-ACCOMMODATION
Commander, 6 TH BDE	0	0	
Commander, 2-6 ADA	6	6	
TRADOC System Manager (TSM), SHORAD	0	0	
Director, USAADASCH, DCD, Weapons Division	3	3	
Director of Training Management, OMMCS	0	0	
Director of Training Management, USACASCOM	0	0	
United States Army Air Defense Artillery School, Chief of Air Defense Artillery	0	0	

ANNEX H

ACRONYMS	
Acronym	MEANING
AC	Active Component
ACCP	Army Correspondence Course Program
AC/RC	Active and Reserve Components
ADA	Air Defense Artillery
ADCATT	Air Defense Combined Arms Tactical Training
AIT	Advanced Individual Training
AMC	United States Army Materiel Command
AMIM	Army Modernization Information Memorandum
AMT	Army Modernization Training
ANCOC	Advanced Noncommissioned Officers Course
AOC	Area of Concentration
AR	Army Regulation
ARNG	Army National Guard
ARTEP	Army Training and Evaluation Program
ASI	Additional Skill Identifier
ATLP	Army Training Literature Program
ATP	Acceptance Test Procedure
ATSC	Army Training Support Center
BD	Battle Drill
BLT	Branch Liaison Team
BNCOC	Basic Noncommissioned Officers Course
BOIP	Basis of Issue Plan
CAD	Course Administrative Data
CATS	Combined Arms Training Strategy
CD	Combat Development
CFT	Captive Flight Trainer
CFX	Command Field Exercise
CMT	Command Military Training
COEA	Cost and Operational Effectiveness Analysis
COFT	Conduct of Fire Trainer
CONUS	Continental United States
CPX	Command Post Exercise
CRC	Camera Ready Copies
CRM	Camera Ready Mechanicals
CRMP	Computer Resource Management Plan
CT	Collective Training
CTC	Combat Training Center
CTEA	Cost and Training Effectiveness Analysis
CTLS	Critical Task List
CTT	Common Task Training
CTX	Combined Training Exercise
DA	Department of the Army
DAAPP	Department of the Army Audio Visual Production Program

ANNEX H

ACRONYMS	
Acronym	MEANING
DAC	Department of the Army Civilian
DAM	Display Aided Maintenance
DCD	Directorate of Combat Developments
DEH	Directorate of Engineering and Housing
DEPEX	Deployment Exercise
DIS	Distributed Interactive Simulation
DTT	Doctrine and Tactics Training
EIDS	Electronic Information Delivery System
EOD	Explosive Ordnance Disposal
ESD	Evaluation and Standard Division
ETM	Extension Training Material
ETP	Exportable Training Package
EXEVAL	External Evaluation
FAAD	Forward Area Air Defense
FEA	Front End Analysis
FCX	Fire Coordination Exercise
FHT	Field Handling Trainer
FLIR	Forward Looking Infrared
FM	Field Manual
FOE	Follow-On Evaluation
FOFT	Force on Force Trainer
FORSCOM	United States Army Forces Command
FTX	Field Training Exercise
FUE	First Unit Equipped
FY	Fiscal Year
GPALS	Global Protection Against Limited Strike
GS	General Support
HE	Human Engineering
HMMWV	High-Mobility Multipurpose Wheeled Vehicle
I&KP	Instructor and Key personnel
IAW	In Accordance With
ICOFT	Institutional Conduct of Fire Trainer
ICW	Interactive Courseware
IET	Initial Entry Training
ILSMT	Integrated Logistics Support Management Team
ILSP	Integrated Logistics Support Plan
IPR	In Process Review
ITP	Individual Training Plan
ITS	Integrated Training Schedule
JRTC	Joint Readiness Training Center
JTX	Joint Training Exercise
LCSMM	Life Cycle System Management Model

ANNEX H

ACRONYMS	
Acronym	MEANING
LOGEX	Logistical Exercise
LRF	Laser Range Finder
LRU	Line Replaceable Unit
LSA	Logistics Support Analysis
LSMU	Launcher Sensor Mock-Up
LTA	Local Training Area
MACOM	Major Army Command
MANPADS	Man-Portable Air Defense System
MANPRINT	Manpower and Personnel Integration
MAPEX	Map Exercise
MATDEV	Materiel Developer
METL	Mission Essential Task List
MFADS	Maneuver Force Air Defense Systems
MG	Machine Gun
MIL-STD	Military Standard
MILES	Multiple Integrated Laser Engagement System
MNS	Mission Needs Statement
MOPP	Mission Oriented Protective Posture
MOS	Military Occupational Specialty
MPTR	Multipurpose Training Range
MQS	Military Qualifications Standards
MQSM	Military Qualifications Standard Manual
MTP	Mission Training Plan
NBC	Nuclear, Biological and Chemical
NDI	Non-Developmental Item
NET	New Equipment Training
NETP	New Equipment Training Plan
NETT	New Equipment Training Team
NMIBT	New Materiel Information Briefing Team
OAC	Officer Advanced Course
OBC	Officer Basic Course
OCADA	Office, Chief of Air Defense Artillery
OCONUS	Outside of Continental United States
OPTEMPO	Operating Tempo
ORD	Operational Requirements Document
OSHA	Occupational Safety and Health Administration/Act
OTRS	Operational test Readiness Statement
PCC	Pre-Command Course
PFTEA	Post Field Training Effectiveness Analysis
PLGR	Precision Lightweight Global Positioning System
PM	Program Manager
PMCS	Preventive Maintenance Checks and Services
POI	Program of Instruction

ANNEX H

ACRONYMS	
Acronym	MEANING
QQPRI	Qualitative and Quantitative Personnel Requirements Information
RC	Reserve Component
RCMAT	Radio Controlled Miniature Aerial Targets
RCU	Remote Control Unit
RDD	Required Delivery Date
RE	Readiness Exercise
ROC	Required Operational Capability
RPVTS	Remotely Piloted Vehicle Target System
SAT	Systems Approach to Training
SHORAD	Short Range Air Defense
SHTU	Simplified Handheld Terminal Unit
SINCGARS	Single-Channel Ground and Airborne Radio System
SM	Soldiers Manual
SME	Subject Matter Expert
SMMP	System MANPRINT Management Plan
SSI	Sensor System Interface/Special Skill Identifier
STAFFEX	Staff Exercise
STP	Soldier Training Publication
STRAC	Standards in Training Commission
STRAP	System Training Plan
STOW	Synthetic Theater of War
STX	Situational Training Exercise
SWOC	Senior Warrant Officer Course
TAD	Target Audience Description
TADSS	Training Aids, Devices, Simulations and Simulators
TBD	To Be Determined
TD	Training Development
TDNS	Training Device Needs Statement
TDR	Training Device Requirement
TDS	Training Development Study
TEMP	Training and Evaluation Plan
TEWT	Tactical Exercise Without Troops
TG	Trainers Guide
THT	Tracking Head Trainer
TIA	Training Impact Analysis
TM	Technical Manual
TOC	Tactical Operations Center
TPT	Troop Proficiency Trainer
TPW	Training Program Worksheet
TRAC	TRADOC Analysis Command
TRADOC	Training and Doctrine Command
TRAS	Training Requirement Analysis System
TSM	TRADOC System Manager

ANNEX H

ACRONYMS	
Acronym	MEANING
TTCP	Training Test Certification Plan
TTSP	Training Test Support Package
USAADASCH	United States Army Air Defense Artillery School
USACAC	United States Army Combined Arms Command
USACASCOM	United States Army Combined Arms Support Command
USAMICOM	United States Army Missile Command
USAOMMCS	United States Army Ordnance Missile and Munitions Center and School
USAR	United States Army Reserve
USASDC	United States Army Strategic Defense Command
USASIGSCH	United States Army Signal School
USALC&FTLEE	United States Army Logistics Center & Fort Lee
USAOC&S	United States Army Ordnance Center & School
USAQC&SCH	United States Army Quartermaster Center and School
USATSC	United States Army Training Support Center
VEDS	Virtual Environment Display System
WOTCC	Warrant Officer Technical Certification Course

TADSS/ET REQUIREMENTS

a. Purpose

The use of TADSS is a training strategy that reduces costs, and, in general, provides a safe training environment that reserves the tactical equipment for final evaluations or qualifications. The use of training devices permits training to be performed under realistic but simulated conditions while protecting the environment and complimenting the requirement to reduce ammunition costs. The limited availability of Stinger rounds and live-fire limitations greatly impacts their use in training and qualification. Therefore, a heavy reliance is placed on the use of TADSS for both training and qualification. The institutional and unit philosophy to train ADA soldiers and leaders as "we fight" is accomplished through the extensive use of TADSS. Successfully achieving and maintaining ADA unit readiness to conduct force protection operations in the combined arms arena using sophisticated ADA tactical systems is a complicated enterprise that is directly tied to the technology that produces training support simulations and devices. State-of-the-art, requirements-based, reliable, deployable, and preferably embedded training devices are needed to ensure soldier proficiency of critical skills.

All the TADSS, Training, and Support materials, products, and equipment addressed in this STRAP are required to support Stinger force package fielding. The result is a complete training subsystem that supports the Stinger system (to include Block I & Block II) and meets all aspects of AMT (NET, DTT, and ST) at the institution, CTCs and units. Every attempt has been made to ensure that TADSS and other products identified; 1) are user friendly/system compatible, 2) capture/replicate Stinger components/characteristics, 3) are realistic and interactive, 4) take advantage of the latest technology, 5) are deployable and 6) provide after-action reporting where applicable. To ensure realization of the TADSS strategy, TADSS and other training product development must be concurrent with the Stinger system development.

b. Overview

The following is an overview of TADSS requirements:

Training Aids, Devices, Simulations, and Simulators (TADSS) Requirements for the STINGER System				
Purpose/Function	NET	Institution	CTC	Unit
Stinger Troop Proficiency Trainer (STPT)				
• Target Identification	X	X		X
• Engagement Training	X	X		X
• Target Tracking	X	X		X
• Target Engagement	X	X		X
• Simulated Missile Firing	X	X		X
Tracking Head Trainer (THT)				
• Target Acquisition	X	X		X
• Target Engagement	X	X		X
• Simulated Missile Firing	X	X		X
• IFF Training	X	X		X

ANNEX I

TADSS/ET REQUIREMENTS

Purpose/Function	NET	Institution	CTC	Unit
Field Handling Trainer (FHT)				
• Weapon Handling	X	X		X
• Operator Function	X	X		X
• Weapon Sighting & Ranging	X	X		X
• Mating & Removing Grip stock	X	X		X
• Inserting & Removing BCU	X	X		X
• Engagement Skills	X	X		X
• Battle Drills	X	X		X
Improved Moving Target Simulator (IMTS)				
• Evaluation Functions		X		X
• Operator Functions		X		X
• Engagement Operations		X		X
• Simulated Missile Firings		X		X
• Team Operations		X		X
• Flight Scenarios		X		X
Stinger/MANPADS MILES Force-On-Force Trainer (FOFT)				
• Crew Operations			X	X
• Target Acquisition			X	X
• Engagement Skills			X	X
Air Defense Combined Arms Tactical Trainer (ADCATT)				
• Crew Operations				X
• Interactive Simulation		X		X
• Engagement Skills				X
• Evaluation Functions		X		X
• Tactical Training		X		X
• Force Operations		X		X
• CATS				X

c. TADSS Strategy

Required TADSS are addressed in separate subparagraphs. These subparagraphs describe device with respect to the new/desired training capabilities and required characteristics, what it trains and how, where it will be used and by whom, how many are required, and why it is required over some other means.

(1) Stinger Troop Proficiency Trainer (STPT)

The STPT is a portable, scenario driven aerial target engagement trainer. It provides gunnery sustainment training in garrison and in the field utilizing a common instructor station linked to a video screen on the gunner's weapon. It generates digitized targets and background onto the weapon system's optics and is used to train weapon system operations, target acquisition, tracking and engagement. The system has indoor and limited outdoor capability and fully supports after-action review/mission rehearsal. The currently fielded device suffers from obsolescence but a new prototype device has been developed that is more flexible, efficient, and state-of-the-art. It is a candidate to replace and exceed the capabilities of the IMTS.

ANNEX I

BOI: Unit (1) per battery, Institution (30). The STPT is used both at the institution and at unit level. The BOI for this device justifies the continuation of the current inventory. However, additional funding is required to replace obsolescence in existing devices.

a. Operations and maintenance design of the Stinger system training devices will be IAW HE design criteria and requirements. The design, operation, and maintenance of the STPT must not require aptitude, education, or training that exceeds the target audience capabilities.

b. The Stinger support concept is based on the use of high reliability components, localization, and modular component replacement. The concept meets requirements for mobility, availability, and autonomous operations. Training devices, hardware, and software will be modified or developed when the Stinger improvements are integrated into the system. Maintenance support above organizational capabilities is required. Logistics and technical assistance support are provided on an as-required basis to all locations where the Stinger system is deployed. Contractor Logistics Support (CLS) provides effective technical assistance and factory repair support to field units. This support provides a responsive system between the field and depot. CLS efforts include, but are not limited to the following:

- Factory repair and return of parts
- Software update/distribution
- Repair, return, and reloading of unserviceable software

(2) Tracking Head Trainer (THT)

The M160 RMP THT is used in the institution and in the field to train the same functional performance characteristics as the Reprogrammable Microprocessor (RMP) weapon round without launching the missile. It also provides additional performance information to the gunner indicating the results of an engagement sequence through the performance indicator. The training set is powered by a rechargeable trainer battery that powers the seeker head, associated electronics and performance indicator. Target acquisition information is output through a miniature speaker to the gunner's ear. The IFF simulator provides the gunner simulated random IFF tones so the gunner can experience different engagement sequences.

BOI: Institution (65); Unit (2 per Btry). The BOI for this device justifies the continuation of the current inventory.

a. Operations and maintenance design of the Stinger system training devices will be IAW HE design criteria and requirements. The design, operation, and maintenance of the THT must not require aptitude, education, or training that exceeds the target audience capabilities.

b. The Stinger support concept is based on the use of high reliability components, localization, and modular component replacement. The concept meets requirements for mobility, availability, and autonomous operations. Training devices, hardware, and software will be modified or developed when the Stinger improvements are integrated into the system. Maintenance support above organizational capabilities is required. Logistics and technical assistance support are provided on an as-required basis to all locations where the Stinger system is deployed. Contractor Logistics Support (CLS) provides effective technical assistance and factory repair support to field units. This support provides a responsive system between the field and depot. CLS efforts include, but are not limited to the following:

- On-site repair

ANNEX I

- Contractor Maintenance Repair Facility
- Factory repair and return of parts

(3) Field Handling Trainer (FHT)

The FHT is used in the institution and in the field to train missile handling procedures. It replicates the Stinger missile in size, appearance, and weight. The FHT consists of a “dummy” separable gripstock with an inert IFF antenna and a Stinger launch tube assembly without its active internal parts and electronics. The FHT may employ an expended gripstock with electronics removed and an expended tactical launch tube, which has been ballasted to simulate the tactical weapons weight and center of gravity. The FHT is used with a dummy BCU and dummy IFF interrogator (with interconnecting cable) to provide practice in basic handling skills to improve sighting and ranging techniques and reaction times. Controls and mechanical operations are the same as the tactical weapon; however, target acquisition indications are not provided.

BOI: Institution (65); Unit (1 per team). The BOI for this device justifies the continuation of the current inventory.

a. Operations and maintenance design of the Stinger system training devices will be IAW HE design criteria and requirements. The design, operation, and maintenance of the FHT must not require aptitude, education, or training that exceeds the target audience capabilities.

b. The Stinger support concept is based on the use of high reliability components, localization, and modular component replacement. The concept meets requirements for mobility, availability, and autonomous operations. Training devices, hardware, and software will be modified or developed when the Stinger improvements are integrated into the system. Maintenance support above organizational capabilities is required. Logistics and technical assistance support are provided on an as-required basis to all locations where the Stinger system is deployed. Contractor Logistics Support (CLS) provides effective technical assistance and factory repair support to field units. This support provides a responsive system between the field and depot. CLS efforts include, but are not limited to the following:

- On-site repair
- Contractor Maintenance Repair Facility
- Factory repair and return of parts

(4) Improved Moving Target Simulator (IMTS)

The IMTS is a multi-weapon, full-dome simulator for training and evaluation of aerial engagements. It realistically simulates both friendly and hostile aircraft in a battlefield environment. The system provides up to three active targets at once and provides high resolution targets for early recognition/identification, which can be presented simultaneously or in any sequence. Up to three students, who utilize STINGER tracking head trainers (THTs) for the STINGER basic or STINGER reprogrammable microprocessor (RMP) weapons, can be exposed to the environment. The IMTS can simulate flare rocks (false IR source), and environmental conditions are also simulated. A training scenario is controlled from the instructor console and may be started, terminated, or temporarily frozen. A communications system enables communication between the operator(s) and each student. The data recorded by the computer can be provided to the operator in hard copy format for student critique and evaluation. The IMTS is designed for fixed site and institutional use.

BOI: 8 IMTS AC; 1 IMTS in the RC.

ANNEX I

a. Operations and maintenance design of the Stinger system training devices will be IAW HE design criteria and requirements. The design, operation, and maintenance of the IMTS must not require aptitude, education, or training that exceeds the target audience capabilities.

b. The Stinger support concept is based on the use of high reliability components, localization, and modular component replacement. The concept meets requirements for mobility, availability, and autonomous operations. Training devices, hardware, and software will be modified or developed when the Stinger improvements are integrated into the system. Maintenance support above organizational capabilities is required. Logistics and technical assistance support are provided on an as-required basis to all locations where the Stinger system is deployed. Contractor Logistics Support (CLS) provides effective technical assistance and factory repair support to field units. This support provides a responsive system between the field and depot. CLS efforts include, but are not limited to the following:

- Factory repair and return of parts
- Software update/distribution
- Repair, return, and reloading of unserviceable software

(5) Force-on-Force Trainer

The FOFT simulates the performance capability of the Stinger missile. It is laser-based system used to provide a simulated engagement capability. It provides a simulated missile field of view replicating the range of the missile and provides engagement capability, tactical simulation of missile, and weapons effect signature simulation. It must be compatible with the CTC instrumentation of the battlefield and supports Stinger air defense requirements. It will provide the necessary instrumented data listed below to support training at the CTC's

Player ID (platform ID)
Weapons Codes (missile/25mm) compatible with current and future instrumentation
Weapons Azimuth/Elevation
Missile Activation
Missile Lock
Administrative Resurrect/Kill
IFF (Identification Friend or Foe) Interrogation
Missile Uncaged (Time uncaged to caged)
Trigger pull
Target Range at Trigger Pull
Status (kill, mobility, communications, weapons)
The NTC-IS must be able to monitor voice/digital radio traffic.

It will be capable of Force-On-Force interactive play at HTI, CTC, and deployed training sites by interfacing with TES, CTC-IS, and HTI systems. The FOFT must provide connectivity to the CTC and HTI-IS, support battlefield simulations, collect data for use in After Action Review (AAR) and system analysis, and provide necessary battlefield control. It must collect and transmit battlefield simulation data to provide appropriate levels of operator feedback at CTCs, drive C⁴I systems, and designed support connectivity to TES and HTI-IS. It will be used at the CTC's and at unit locations.

BOI: The BOI for this device justifies the continuation of the current inventory

NOTE: Existing devices are older MILES systems and are not compatible to the existing instrumentation at the CTCs.

ANNEX I

a. Operations and maintenance design of the Stinger system training devices will be IAW HE design criteria and requirements. The design, operation, and maintenance of the STPT must not require aptitude, education, or training that exceeds the target audience capabilities.

b. The Stinger support concept is based on the use of high reliability components, localization, and modular component replacement. The concept meets requirements for mobility, availability, and autonomous operations. Training devices, hardware, and software will be modified or developed when the Stinger improvements are integrated into the system. Maintenance support above organizational capabilities is required. Logistics and technical assistance support are provided on an as-required basis to all locations where the Stinger system is deployed. Contractor Logistics Support (CLS) provides effective technical assistance and factory repair support to field units. This support provides a responsive system between the field and depot. CLS efforts include, but are not limited to the following:

- Factory repair and return of parts
- Software update/distribution
- Repair, return, and reloading of unserviceable software

(6) Air Defense Combined Arms Tactical Trainer (ADCATT)

The ADCATT will be a system of manned Air Defense Artillery simulators, support emulators, and semi-automated forces (SAF) designed to support collective Air Defense training tasks in a joint and combined arms battlefield environment at the mechanized battalion task force level. The modules will be fully manned (crew) simulated modules that operate and interact on a computer-generated battlefield. The system must accommodate individual crew, as well as, full-size battalion task force training. The device is a computer based, distributed processing, networked simulation system which provides collective, combined arms training for air defense units on a simulated battlefield, in real time against an array of threats under realistic combat conditions. It will be similar in form, fit and function to the existing Close Combat Tactical Trainers (CCTT) of the Armor and Infantry branches. All ADCATT modules will conform to requirements set forth under Synthetic Environment – Core (SE-Core) documents. As indicated in the TADSS table above, ADCATT will be an instrument for executing collective training within the Army's Combined Arms training strategy concept. It will serve as a "gate" through which the unit or individual must pass to reach a progressive level of proficiency in combined arms training.

In the institution ADCATT will serve as an instrument to support Program of Instruction (POI) involving doctrine, tactics, techniques and procedures (DTTP) for officers and noncommissioned officers. ADCATT training will be scheduled, conducted and evaluated with students acting as role players (commanders, platoon/squad leaders, crewmen and staff officers and NCOs). An Institutional Training Strategy is to also teach officers and noncommissioned officers how to use ADCATT as a training tool to support unit training in a garrison location.

ADCATT supports the training of units to counter the threat facing forward area deployed forces. That threat is expected to be rotary wing aircraft, unmanned aerial vehicles, cruise missiles, and fixed-wing aircraft. ADCATT supports leader development and collective training in Air Defense mission areas. It provides battle-focused training on "how to fight" ADA weapon systems in a joint and combined arms setting for institutional training and serves as a collective training device for the unit.

BOI: TBD

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a. Operations and maintenance design of the Stinger system training devices will be IAW HE design criteria and requirements. The design, operation, and maintenance of the ADCATT must not require aptitude, education, or training that exceeds the target audience capabilities.

b. The Stinger support concept is based on the use of high reliability components, localization, and modular component replacement. The concept meets requirements for mobility, availability, and autonomous operations. Training devices, hardware, and software will be modified or developed when the Stinger improvements are integrated into the system. Maintenance support above organizational capabilities is required. Logistics and technical assistance support are provided on an as-required basis to all locations where the Stinger system is deployed. Contractor Logistics Support (CLS) provides effective technical assistance and factory repair support to field units. This support provides a responsive system between the field and depot. CLS efforts include, but are not limited to the following:

- Factory repair and return of parts
- Software update/distribution
- Repair, return, and reloading of unserviceable software

(7) Training Support Equipment

Recharging Unit, Coolant, Training Guided Missile System (M80). The gas pumping unit (GPU) is an item of ancillary equipment to the training set. It is used to recharge the Argon gas bottle located within the THT. The GPU has a maximum outlet pressure of 6,000 psi and automatically shuts down when the desired pressure is reached. The GPU is capable of recharging the THT gas bottle with filtered argon gas (minimum purity of 99.998 percent) in 5 to 45 minutes, depending on the pressure in the argon gas supply cylinder. The power requirement for the GPU is 115 volts AC, 50 to 60 Hz, single phase and weights 370 lbs and measures 40" x 45" x 30". A pressure measuring system and a protective ballistic cover are issued with the GPU in order to perform a proof-pressure test upon receipt and every six (6) months thereafter.

BOI: 1/DSU and IMTS

Charger, Battery. The battery charger (including battery carrying case) is an item of ancillary equipment to the STINGER training set and operates on 103 to 127 volts rms, 50 to 440 Hz, single-phase electrical power. The charger weights 38 lbs and measures 19.6" x 11" x 14". The battery charger can be operated continuously and can charge one(1) to five (5) batteries within a 16 hour period.

BOI: 2/DSU and 1/IMTS

d. Aerial Targets

In addition to the system TADSS identified above, air defense systems, to include Stinger, require specific (aerial) targets. Target needs are based on and must replicate the threat expected both now and in the future. These targets will be used at the institution, CTCs, and at unit home-station by students, MOS qualified soldiers, and crews. At the institution, they will be used for target tracking and target engagement. Each graduating class (normally top student) will fire one missile at an aerial target. Units will use aerial targets for tracking/engagements in conjunction with gunnery. In addition, they will be used in conjunction with combined arms, maneuver, and other collective training events. The use of such targets is far more cost effective and provides greater availability than having to rely on live targets of opportunity or coordinating for the flight of Army/Air Force aviation assets. Aerial targets will most often be used with other training devices, such as; FOFT, CFT & PGS and must be capable of providing engagement feedback. With RCMATS and BATS being phased out of Army inventories, and no other

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suitable target available, it is imperative that 1/5th scale aerial target requirements are met. With the shift in the threat's use of CMs and UAVs over manned aircraft, it is vital that new targets be developed and fielded. Listed below are descriptions of aerial target needs.

BOI: The number and types of targets required will fluctuate based on mission/exercise requirements. The availability/scheduling of existing targets must be programmed through the unit training plan and supported by the Targets Management Office, STRICOM.

- 1/5th Scale Remotely Piloted Vehicle Target System (RPVTS): Consists of two configurations, the SU-25 "FROGFOOT", a propeller driven, highly maneuverable, fixed wing target, and the MI-24 HIND-D Gyrocopter, a replica of the threat aircraft of the same name. The MI-24 is also propeller driven with a rotor providing limited lift and a helicopter appearance in flight. The availability of the target is programmed through the unit-training plan and supported by the Targets Management Office, STRICOM. These target types can be configured to support various training scenarios using ancillary devices attached to the body of the airframe which are:
 - a. PGS Retro Reflectors can be attached to the airframe for use with the Precision Gunnery System (PGS) which provides a non-destructive means to engage the target and receive realistic, real time feedback regarding gunnery hit or miss
 - b. The scoring system consists of a device which is installed on the 1/5th Scale targets, and a ground station which provides a real time readout of hits on target and miss distance indication of rounds penetrating an electronic field around the target. Data telemetry to the ground station permits real time feedback.
 - c. Infrared Pods can be attached to the targets to provide an enhanced IR signature for use with weapons systems equipped with IR seeker technology.
 - d. The Multiple Integrated Laser Engagement System (MILES) is a device similar in some respects to the PGS system in that it is a non-destructive system for simulation engagements.
- Ancillary Device Scoring: Electronic scoring, bullet counting or missile miss distance, provides an objective near-real time means of evaluating gunner or weapon system performance. Immediate feedback in hard copy is provided for After Action Reviews. Scoring devices are tailored to the target and the mission being supported, and are available for pop up ground targets, full-scale and sub-scale fixed wing targets, various towed targets.
- Cruise Missile Targets: CM targets must be developed and fielded that replicate the current and projected flight profiles and radar cross-sections of cruise missiles. The characteristics of the CM should have a speed of 450-550 knots, with a minimum altitude of 20 meters, and a maximum altitude of 3000 meters. The representative flight profile should be 100 meters above sea level minimum and a maximum of 150, with a normal incoming profile. They must be recoverable/reuseable and possess engagement feedback capabilities. As this threat evolves, these targets will be introduced into not only gunnery but training exercises as well.
- Unmanned Aerial Vehicle Targets: UAV targets must be developed and fielded that replicate the current and projected flight profiles and radar cross-sections of various UAVs. The characteristics of the UAV should have a speed 90-150 knots and an altitude of 150-3000 meters. They must be recoverable/reuseable and possess engagement feedback capabilities. As this threat evolves, these targets will also be introduced into not only gunnery but training exercises as well.

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BOI: Support of the RPVTS 1/5th scale target at the institution, unit and CMTC's is based on total mission requirements per year. The 1/5th scale targets are required to support TADSS, gunnery, and live fire exercises. For FY99 the total number of 1/5th scale targets needed to support this training is 610, based on 30 missions flown. With BATS leaving the inventory this requirement will increase by at least, an additional 300-500 1/5th scale targets for live missile firings per year. This requirement includes both active and reserve forces. As additional ARNG units activate, this requirement will increase to approximately 50 targets per unit per year.

e. Data Sources

Tasks to be trained were derived from the training proponent's review of the MATDEV's Logistical Support Analysis (LSA) data and evaluation/validation of procedures on prototype systems. The types and number of TADSS required are a result of the training proponent's estimates based on the training analysis of this system, MATDEV input, PFTEA on predecessor/similar systems, input from the US Army Simulation, Training, and Instrumentation Command (STRICOM) and the US Army Training Support Command (ATSC).

f. Types of TADSS

Many types of TADSS were considered for inclusion in the development of this strategy. Though individual devices for each type were not deemed necessary. Those selected above fully cover the training requirements. The types of TADSS considered are as follows:

- Gunnery Trainers
- Maneuver Trainers
- Force-on-Force Trainers
- Simulations
 - Crew
 - Functional
 - Force Level
- Equipment/Component Simulators
- Basic Skills Trainers
- Part/Task Trainers
- Drivers Trainers
- Embedded Trainers
 - Operator
 - Crew
 - Functional
 - Force-Level