TECHNICAL MANUAL

OPERATOR AND FIELD MAINTENANCE MANUAL FOR

LAUNCHER AND CARTRIDGE, 84 MILLIMETER: AT4 CONFINED SPACE AND REDUCED SENSITIVITY (AT4CS-RS), M136A1 NSN 1315-01-508-8521

HEADQUARTERS, DEPARTMENT OF THE ARMY

19 JUNE 2009

WARNING SUMMARY

To prevent hearing loss, all new M136A1 AT4CS-RS trainees are required to be registered in the Army Hearing Conservation Program through the local medical authority.

Thermal radiant energy generated from back blast will burn bare skin and singe hair. Gunner and nearby personnel must wear helmets, keep sleeves rolled down, and keep collars turned up. Crews shall wear approved body armor and helmet when firing M136A1 AT4CS-RS in training and in combat.

All non-firing personnel within 205 meter radius of M136A1 AT4CS-RS firing position or within 440 meter radius of detonation must wear hearing protection. When firing from inside an enclosure, gunner and all other personnel must wear Combat Arms Earplugs. When firing outdoors, gunners and all other personnel must wear single hearing protection.

In addition to the appropriate hearing protection, protective ballistic eye protection, uniform, body armor, and helmets must be worn when firing M136A1 AT4CS-RS.

When firing from inside an enclosure, gunner and all other personnel must wear Combat Arms Earplugs.

Keep backblast area clear at all times. Do not fire weapon unless backblast area is clear of personnel and obstructions.

Do not fire weapon unless danger zones are clear of personnel and obstructions.

Any equipment kept in room when firing will be exposed to countermass spray (corrosive saline solution).

Keep weapon pointed downrange at all times.

Arming distance for M136A1 AT4CS-RS is 9 to 15 meters (29 to 49 ft). Gunner shall not engage target closer than 30 meters (98 ft). Fragmentation may cause injury or death.

Do not fire through light brush at less than 30 meters away.

Do not use damaged weapons. Use of damaged weapons may cause injury or death.

Before firing M136A1 AT4CS-RS, check rear bumper for leakage from countermass. If countermass leakage is detected, DO NOT FIRE weapon. Serious injury may result. Weapons with countermass leakage will be turned over to Ammunition Supply Point (ASP) for proper disposal.

Do not fire the M136A1 AT4CS-RS from the kneeling position from an enclosure.

When firing at targets 150 meter range or less, fire from behind appropriate cover to prevent possible injury from shrapnel. As target distance decreases, possibility of injury from shrapnel increases.

During training, armored targets must be placed at least 160 meters (175 yd) downrange from the gunner position.

A 160 meters (175 yd) range-safety distance is required from both sides of the intended point of M136A1 AT4CS-RS projectile impact and detonation to prevent serious injury to forward observers or other personnel.

When gunner fires in prone position, gunner's legs shall point minimum 45° to left. Right foot shall rest on left calf.

Do not put eye against sight when firing. Recoil may cause injury to eye.

Do not fire from foxhole or trench.

Do not fire from ship or other water craft.

When firing indoors, no more than 3 personnel (including gunner) are allowed in room.

Fins open approximately 10 inches (25.4 cm) wide shortly after exiting muzzle. Use caution when aiming weapon (muzzle) to prevent fins from impacting window or doorsill.

Structure from which M136A1 AT4CS-RS is fired should be of significant construction to withstand weapon backblast. Firing M136A1 AT4CS-RS from building of framed construction (i.e., common residential) or from room containing furniture or other objects could cause collapse or debris hazard.

If weapon fails to fire, misfire procedures must be followed.

Duds should be treated as hazardous ammunition. DO NOT TOUCH DUDS. Disposition of duds must be handled in accordance with local SOPs.

Health hazard firing restrictions are to reduce risks of hearing loss and exposure to toxic fumes during training per report of U.S. Army Environmental Hygiene Agency. Exceeding these limits can pose risk of injury to the gunner and personnel.

Failure to fully depress and hold down red safety release catch may cause misfire. If this occurs, keep weapon pointed downrange, and do not touch red safety release catch.

Do not fabricate or improvise a lost transport safety fork for an unfired M136A1 AT4CS-RS launcher. A replacement transport safety fork must be received from either another locally fired M136A1 AT4CS-RS or storage at local ASP.

The M136A1 AT4CS-RS must be stored in an indoor environment, protected from direct strike lightning. **DO NOT** store the M136A1 AT4CS-RS outdoors.

The enclosure used during M136A1 AT4CS-RS training must not contain any furniture or other objects, and must have any glass windows and/or doors removed prior to firing.

Weapon sights are boresighted to the individual launcher tube, and firing an M136A1 AT4CS-RS with repaired sights from an expended M136A1 AT4CS-RS may result in lowered accuracy of the weapon.

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LIST OF EFFECTIVE PAGES/WORK PACKAGES

Date of issue for the original manual is:

Original: 19 June 09

TOTAL NUMBER OF PAGES FOR FRONT AND REAR MATTER IS 13 AND TOTAL NUMBER OF WORK PACKAGES IS 29, CONSISTING OF THE FOLLOWING:

Page/WP No.	*Change No.	Page/WP No.	*Change No.	Page/WP No.	*Change No.
Front Cover	0	WP 0008 00 (2 pgs)	0	WP 0019 00 (2 pgs)	0
a thru d	0	WP 0009 00 (12 pgs)	0	WP 0020 00 (4 pgs)	0
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WP 0001 00 (8 pgs)	0	WP 0012 00 (2 pgs)	0	WP 0023 00 (6 pgs)	0
WP 0002 00 (12 pgs)	0	WP 0013 00 (2 pgs)	0	WP 0024 00 (4 pgs)	0
WP 0003 00 (2 pgs)	0	WP 0014 00 (6 pgs)	0	WP 0025 00 (4 pgs)	0
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WP 0005 00 (4 pgs)	0	WP 0016 00 (2 pgs)	0	WP 0027 00 (4 pgs)	0
WP 0006 00 (2 pgs)	0	WP 0017 00 (4 pgs)	0	WP 0028 00 (4 pgs)	0
WP 0007 00 (8 pgs)	0	WP 0018 00 (2 pgs)	0	WP 0029 00 (4 pgs)	0

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HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON, DC, 19 JUNE 2009

TECHNICAL MANUAL

OPERATOR AND FIELD MAINTENANCE MANUAL

LAUNCHER AND CARTRIDGE, 84 MILLIMETER:
AT4 CONFINED SPACE AND REDUCED SENSITIVITY
(AT4CS-RS), M136A1
NSN 1315-01-508-8521

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter or DA Form 2028 (*Recommended Changes to Publications and Blank Forms*) directly to: Logistics Research and Engineering Directorate (RDAR-EIL-LS), U.S. Army RDECOM, Armament Research, Development and Engineering Center, Picatinny Arsenal, NJ 07806-5000. You may also send in your recommended changes via electronic mail or by fax. Our e-mail address is PICAPubChanges@conus.army.mil. Our fax number is DSN 880-4633, Commercial (973) 724-4633. A reply will be furnished to you.

TABLE OF CONTENTS

HOW TO USE THIS MANUAL

GENERAL

This manual contains all descriptive, operational, troubleshooting and maintenance information required to operate and maintain the M136A1 AT4CS-RS.

CONTENT OF MANUAL

This manual is divided into 6 chapters:

Chapter 1, General Information, Equipment Description, and Theory of Operation
Chapter 2, Operator Instructions
Chapter 3, Troubleshooting Procedures
Chapter 4, Operator Maintenance Instructions
Chapter 5, Field Maintenance Instructions
Chapter 6, Supporting Information

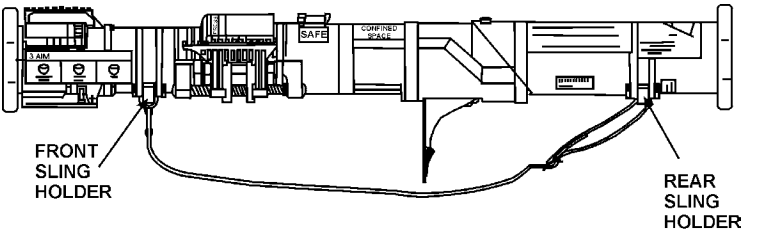
HOW TO ACCESS INFORMATION QUICKLY

The chapters are divided into work packages (WP). Each WP is assigned a six digit sequence number. The sequence numbers run consecutively throughout the manual. The first four digits of the WP sequence number are based on the location of the WP (e.g., 0005 00 is the fifth WP). The last two digits are reserved for WPs added after initial publication (e.g., 0005 01 is a WP added between WP 0005 00 and 0006 00). WP page numbers are numbered consecutively and consist of the WP sequence number followed by -1, -2, -3, etc. (e.g., 0005 00-1, 0005 00-2, etc.).

SUPPORTING ILLUSTRATIONS

All supporting illustrations are located on the same or facing page as the text they support. Illustrations are labeled reflecting references in the text, for example:

1. Ensure the front and rear sling holders are not broken.



CHAPTER 1
GENERAL INFORMATION, EQUIPMENT DESCRIPTION, AND THEORY OF OPERATION FOR M136A1 AT4CS-RS

OPERATOR MAINTENANCE

M136A1 AT4CS-RS

(NSN 1315-01-508-8521)

GENERAL INFORMATION

SCOPE

This Technical Manual (TM) covers the operator and field level instructions for operating and maintaining the M136A1 AT4CS-RS.

Type of Manual: Operator and Field Maintenance.

Model Number(s) and Equipment Name(s): Launcher and Cartridge, 84 Millimeter: AT4, Confined Space and Reduced Sensitivity (AT4CS-RS), M136A1.

Purpose of Equipment: To defeat armor targets.

MAINTENANCE FORMS, RECORDS, AND REPORTS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by (as applicable) DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual, or AR 700-138, Army Logistics Readiness and Sustainability. Accidents involving injury to personnel or damage to material will be reported on DA Form 285 (U.S. Army Accident Report) in accordance with AR 385-10, The Army Safety Program. Explosives and ammunition malfunctions will be reported in accordance with AR 75-1, Malfunctions Involving Ammunition and Explosives.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your M136A1 AT4CS-RS needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. If you have Internet access, the easiest and fastest way to report problems or suggestions is to go to https://aeps.ria.army.mil/aepspublic.cfm (scroll down and choose the "Submit Quality Deficiency Report" bar). The Internet form lets you choose to submit an Equipment Improvement Recommendation (EIR), a Product Quality Deficiency Report (PQDR) or a Warranty Claim Action (WCA). You may also submit your information using an SF Form 368 (Product Quality Deficiency Report). You can send your SF Form 368 via e-mail, regular mail, or facsimile using the addresses/facsimile numbers specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual. We will send you a reply.

CORROSION PREVENTION AND CONTROL (CPC)

Corrosion Prevention and Control (CPC) of Army materiel is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items.

Corrosion specifically occurs with metals. It is an electrochemical process that causes the degradation of metals. It is commonly caused by exposure to moisture, acids, bases, or salts. An example is the rusting of iron. Corrosion damage in metals can be seen, depending on the metal, as tarnishing, pitting, fogging, surface residue, and/or cracking.

Plastics, composites, and rubbers can also degrade. Degradation is caused by thermal (heat), oxidation (oxygen), solvation (solvents), or photolytic (light, typically UV) processes. The most common exposures are excessive heat or light. Damage from these processes will appear as cracking, softening, swelling, and/or breaking.

SF Form 368 (Product Quality Deficiency Report) should be submitted to the address specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual.

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

The weapon must be so badly damaged that it cannot be used, either by repair or cannibalization, in the combat zone. It can be destroyed by burning or detonation. For procedures to destroy this equipment to prevent its use by the enemy, refer to TM 43-0002-33 (Destruction of Conventional Ammunition and Improved Conventional Munitions (ICM) to Prevent Enemy Use).

PREPARATION FOR STORAGE OR SHIPMENT

Ammunition is stored under the provisions DoD 5100.76-M (Physical Security of Sensitive Conventional Arms, Ammunition, and Explosives), AR 740-1 (Storage and Supply Activity Operations), AR 710-2 (Supply Policy Below the National Level), and DA PAM 385-64 (Ammunition and Explosives Safety Standards) and secured under the provisions of DoD 5100.76-M and AR 190-11 (Physical Security of Arms, Ammunition and Explosives). Ammunition storage guidance is provided in FM 4-30.13 (Ammunition Handbook: Tactics, Techniques, and Procedures for Munitions Handlers).

Ammunition is transported under the provisions Defense Transportation Regulation 4500.9-R PT2 (Defense Transportation Regulation Part II (Cargo Movement)), DA PAM 385-64 with transport security under the provisions of DoD 5100.76-M and AR 190-11. Transportation Reference Data is provided in FM 55-15 (Transportation Reference Data).

NOMENCLATURE CROSS-REFERENCE LIST

Common Name	Official Nomenclature
M136A1 AT4CS-RS	Launcher and Cartridge, 84 Millimeter: AT4 Confined Space and Reduced Sensitivity (AT4CS-RS), M136A1

LIST OF ABBREVIATIONS/ACRONYMS

Abbreviation/Acronym	Definition
AG	Assistant Gunner
ASP	Ammunition Supply Point
CAE	Combat Arms Earplugs
CAGEC	Commercial and Government Entity Code
CFG	Cover Fire Gunner
CPC	Corrosion Prevention and Control
CS	Confined Space
EOD	Explosive Ordnance Disposal

Abbreviation/Acronym	Definition
IAW	In Accordance With
LOF	Line Of Fire
NBC	Nuclear, Biological, and Chemical
QASAS	Quality Assurance Specialist Ammunition Surveillance
RS	Reduced Sensitivity
SOP	Standard Operating Procedures
SRA	Specialized Repair Activity
TMDE	Test, Measurement and Diagnostic Equipment
UUT	Unit Under Test

SAFETY, CARE, AND HANDLING

Safety precautions for handling and firing of Army ammunition as prescribed in AR 385-63 and DA PAM 385-64 are applicable to the M136A1 AT4CS-RS.

Protection from Direct Strike Lightning

WARNING

The M136A1 AT4CS-RS must be stored in an indoor environment, protected from direct strike lightning. **DO NOT** store the M136A1 AT4CS-RS outdoors.

The M136A1 AT4CS-RS is a projectile weapon. A direct lightning strike would ignite the propellant and fire the weapon. This will cause serious injury or death to personnel located in the vicinity.

Number of Fired Rounds Permitted

The number of rounds fired per 24-hour period, per individual, is limited as:

FIRING POSITION	INDOORS*			OUTDOORS							
				SINGLE HEARING PROTECTION				DOUBLE HEARING PROTECTION			
	G	OP1	OP2	G	AG/I	OP1	OP2	G	AG/I	OP1	OP2
Standing	1	1	1	28	44	49	108	561	880	980	2000
Kneeling	0	0	0	14	18	24	54	280	360	490	1000
Prone	0	0	0	70	36	673	470	1400	720	>2000	>2000

G – Gunner
AG/I – Assistant Gunner / Instructor
OP1 – Other Personnel 1
OP2 – Other Personnel 2
* Combat Arms Earplugs only

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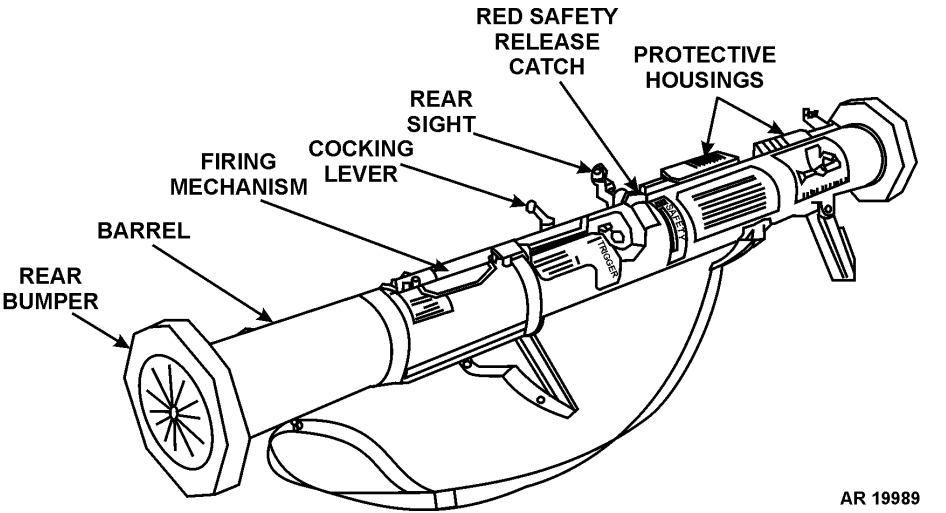
OPERATOR MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
EQUIPMENT DESCRIPTION AND DATA

EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

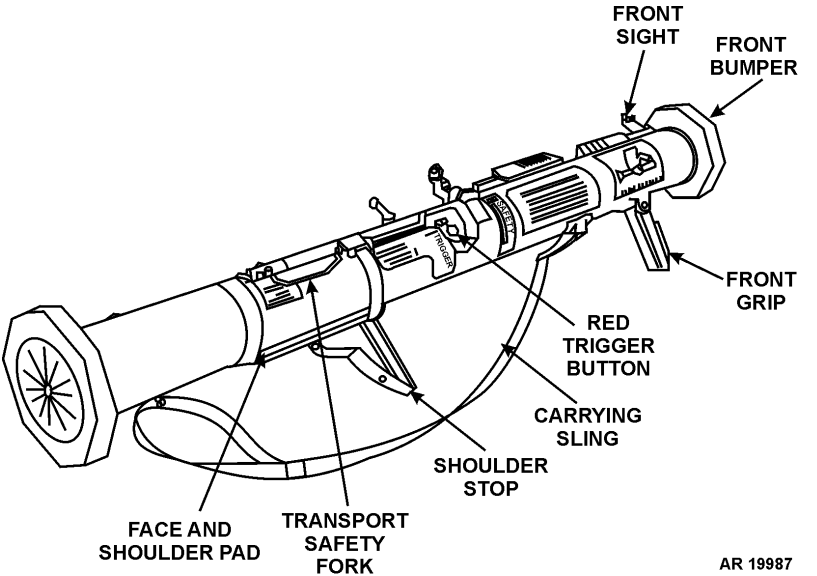
The M136A1 AT4CS-RS is a fully self-contained, one shot, disposable, lightweight, man-portable, right shoulder fired anti-armor weapon. The weapon consists of a free-flight, fin stabilized projectile, packaged and sealed in an expendable launcher that also serves as a transport and water-resistant storage container. The M136A1 AT4CS-RS is issued as a round of ammunition. Firing is mechanical. The rearward moving firing rod strikes a pin and ignites the percussion cap. The effects inside the target consist of: extensive spalling, rising pressure, intense light and heat, and reduction of sight.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

Launcher

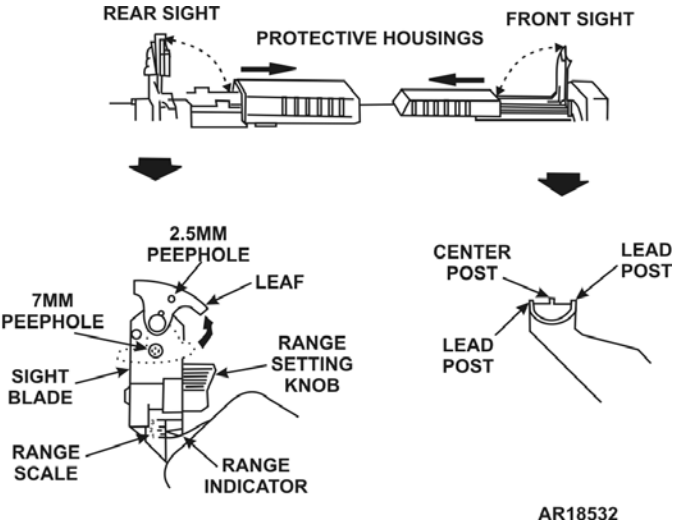


COMPONENT	DESCRIPTION
Rear Bumper	The rear bumper is a rubber cap placed on the rear of the launcher to protect the inside of the weapon from damage, dirt, etc. Bumpers are also referred to as “shock absorbers.” A dust cover is integrated into the bumper to protect the weapon from dirt and debris.
Barrel	The barrel is made of fiberglass-reinforced plastic. The barrel is fitted with a front and a rear bumper with muzzle covers, which do not have to be removed before firing.
Firing Mechanism	The firing mechanism consists of a firing rod with a firing rod spring, three safety devices (transport safety fork, cocking lever, and red safety release catch) and a red trigger button. The weapon cannot be fired unless all three safety devices have been disengaged.
Cocking Lever	The cocking lever is attached to the firing rod. When the lever is in the SAFE position, there is no engagement between the firing rod and the trigger. The weapon is cocked by pushing the cocking lever forward and down. When the weapon is cocked, the firing rod is engaged with the trigger through the hooks on the front of firing rod and trigger.
Rear Sight	The rear sight is a 2.5-millimeter peephole drilled in a leaf that covers a 7-millimeter peephole. The 2.5-millimeter peephole is intended for firing during normal light conditions. The 7-millimeter peephole is intended for firing during limited light conditions.
Red Safety Release Catch	The red safety release catch is located on the forward end of the firing mechanism. It consists of a steel rod that prevents the firing rod from striking the firing pin. It is disengaged by pressing and holding the red safety release catch with fingertips on right hand.
Protective Housings	The protective housings protect the front and rear sights. The sights fold down and the protective housings slide over them.


FRONT SIGHT
FRONT BUMPER
FRONT GRIP
RED TRIGGER BUTTON
CARRYING SLING
SHOULDER STOP
TRANSPORT SAFETY FORK
FACE AND SHOULDER PAD
SAFETY
TRIGGER
AR 19987

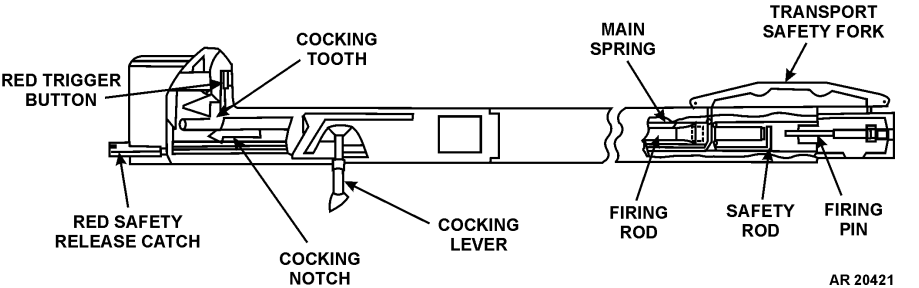
COMPONENT	DESCRIPTION
Front Sight	The front sight is used in conjunction with the rear sight for target engagement. The front sight consists of a sight blade with a center post and two lead posts. It is has a semicircular white line to aid in obtaining the proper sight picture.
Front Bumper	The front bumper is a rubber cap placed on the front of the launcher to protect the inside of the weapon from damage, dirt, etc. Bumpers are also referred to as “shock absorbers.” A dust cover is integrated into the bumper to protect the weapon from dirt and debris.
Front Grip	The front grip is used for supporting the front of the weapon while aiming and firing.
Red Trigger Button	The red trigger button is located on the right side of the launcher and fires the weapon.
Carrying Sling	The carrying sling is for carrying the weapon and can also aid in stabilizing the weapon while firing.
Shoulder Stop	The shoulder stop is a folding metal and plastic bracket designed to rest on the gunner’s shoulder to support the weapon while aiming and firing. If the weapon is not in use, the shoulder stop can be snapped to the underside of the launcher.
Transport Safety Fork	The transport safety fork blocks all movement of the firing rod and firing pin, and prevents the action of cocking the weapon to prepare for fire. It is tethered to the launching tube via an elastic strap. The transport safety fork is removed prior to cocking and preparing to fire. If the weapon is not fired, the weapon must be uncocked, and the transport safety fork must be replaced prior to transporting the M136A1 AT4CS-RS.
Face and Shoulder Pad	The face and shoulder pad is a single piece of thick molded rubber attached to the launcher. The gunner’s face and shoulder are rested against it to support the weapon while aiming and firing.

Sights


REAR SIGHT
PROTECTIVE HOUSINGS
FRONT SIGHT
2.5MM PEEPHOLE
LEAF
7MM PEEPHOLE
RANGE SETTING KNOB
SIGHT BLADE
RANGE SCALE
RANGE INDICATOR
CENTER POST
LEAD POST
LEAD POST
AR18532

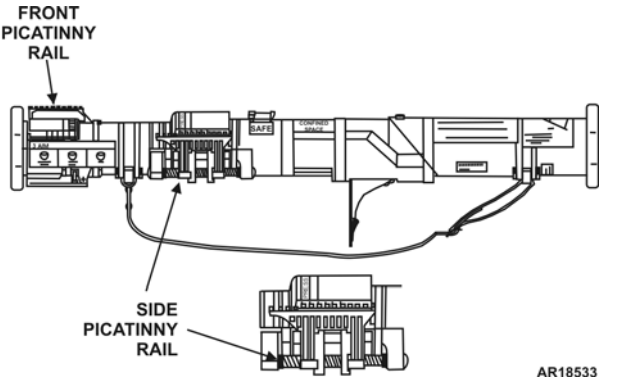
COMPONENT	DESCRIPTION
Protective Housings	The protective housings protect the front and rear sights. The sights fold down and the protective housings slide over them.
Rear Sight:	The rear sight uses two different sized peepholes for different light conditions.
Range Scale	The range scale is the numbering system for the sight range.
Sight Blade	The sight blade is the upright post that holds the range sight.
7mm Peephole	The 7-millimeter peephole is intended for firing during limited light conditions.
2.5mm Peephole	The 2.5-millimeter peephole is intended for firing during normal light conditions.
Leaf	The leaf is the rotating leaf for the peepholes.
Range Setting Knob	The range setting knob is used to set the range.
Range Indicator	The range indicator is the marker that indicates range selected.
Front Sight:	The front sight is used in conjunction with the rear sight for target engagement. The front sight consists of a sight blade with a center post and two lead posts. It is has a semicircular white line to aid in obtaining the proper sight picture.
Lead Post(s)	The lead post(s) are the two posts on either side of the front sight.
Center Post	The center post on the front sight is used for aligning with the target.

Firing Mechanism



COMPONENT	DESCRIPTION
Red Trigger Button	The red trigger button is located on the right side of the launcher and fires the weapon.
Cocking Tooth	The cocking tooth secures the firing rod.
Main Spring	The main spring is used to launch the projectile.
Transport Safety Fork	The transport safety fork blocks all movement of the firing rod and firing pin, and prevents the action of cocking the weapon to prepare for fire. It is tethered to the launching tube via an elastic strap. The transport safety fork is removed prior to cocking and preparing to fire. If the weapon is not fired, the weapon must be uncocked, and the transport safety fork must be replaced prior to transporting the M136A1 AT4CS-RS.
Firing Pin	The firing pin strikes the primer and ignites the propelling charge of the projectile.
Safety Rod	The safety rod prevents the firing rod from reaching the striking pin.
Firing Rod	The firing rod strikes a pin and ignites the percussion cap.
Cocking Lever	The cocking lever is used to cock the weapon.
Cocking Notch	The cocking notch is used to keep the cocking lever in position.
Red Safety Release Catch	The red safety release catch is located on the forward end of the firing mechanism. It consists of a steel rod that prevents the firing rod from striking the firing pin. It is disengaged by pressing and holding the red safety release catch with the index and middle fingertips on right hand.

Picatinny Rails

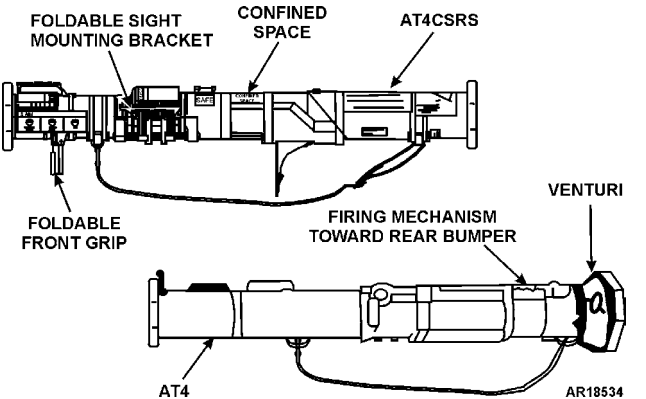


COMPONENT	DESCRIPTION
Front Picatinny Rail	The front Picatinny rail is on the top of the launcher, toward the front bumper. An aiming light/illuminator can be attached to this rail.
Side Picatinny Rail	The side Picatinny rail folds out from the launcher and locks into place. Mountable sight devices with rail grabbers can be attached to this rail.

DIFFERENCES BETWEEN MODELS

The M136A1 AT4CS-RS is similar to the M136 AT4, but uses a different propulsion system that permits the M136A1 AT4CS-RS to be fired from an enclosure. The standard AT4 cannot be, and must never be, fired from an enclosure. It is important to know this difference, and to be able to identify the visual differences between the M136A1 AT4CS-RS and the AT4.

The M136A1 AT4CS-RS clearly displays a marking stating “CONFINED SPACE” to indicate that it is an M136A1 AT4CS-RS.



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EQUIPMENT DATA

NSN	1315-01-508-8521
DODIC	CA30
Type	Confined Space (CS), Reduced Sensitivity (RS)
Caliber	84 mm
Weight:	
Cartridge	4.2 lb (1.9 kg)
Launcher	12.8 lb (5.7 kg)
Length	3.4 ft (1043 mm)
Body material	Fiberglass-reinforced plastic
Color	Green
Color code	Black-yellow-black
Muzzle velocity	738 ft/s (225 m/s)
Maximum effective range	984 ft (300 m)
Arming range	29 to 49 ft (9 to 15 m)
Armor penetration	15.7 in. (400 mm)
Time of flight	1.5 sec (at 300 m)
Shelf life	10 yr unopened package; 6 mo opened package
Storage temperatures	-50°F to +160°F (-45.6°C to +71.1°C)
Operating temperatures	-40°F to +140°F (-40°C to +60°C)
Packaging	Two M136A1 AT4CS-RS per wood box; each M136A1 AT4CS-RS sealed in plastic barrier bag

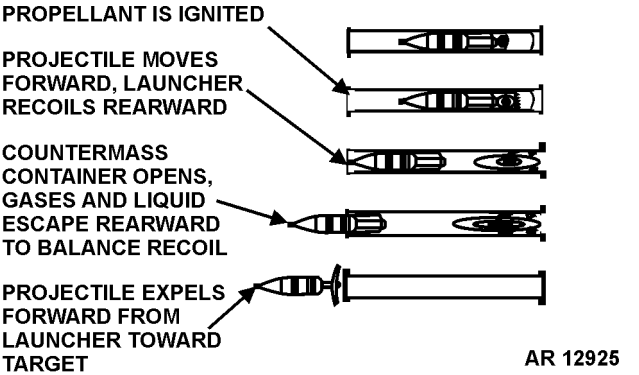
OPERATOR MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
THEORY OF OPERATION

THEORY OF OPERATION

The M136A1 AT4CS-RS is a shoulder-held projectile launcher designed to defeat anti-armor targets.

All safety devices are engaged, with no connection between the trigger and the firing rod. The transport safety fork is removed, the cocking lever is moved into the FIRE position, while the safety rod prevents the firing rod from reaching the striking pin. After the red safety release catch is depressed, the safety rod is removed, thereby permitting the firing rod to reach the striking pin, and the mechanism is ready to fire.

When the firing mechanism is engaged, the propellant is ignited and the projectile moves forward. At the same time, the launcher recoils rearward. The countermass container opens, and gases and liquid escape rearward to balance the recoil. The projectile expels forward from the launcher toward the target.


PROPELLANT IS IGNITED
PROJECTILE MOVES FORWARD, LAUNCHER RECOILS REARWARD
COUNTERMASS CONTAINER OPENS, GASES AND LIQUID ESCAPE REARWARD TO BALANCE RECOIL
PROJECTILE EXPELS FORWARD FROM LAUNCHER TOWARD TARGET
AR 12925

CHAPTER 2
OPERATOR INSTRUCTIONS
FOR
M136A1 AT4CS-RS

0004 00

OPERATOR MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
DESCRIPTION AND USE OF CONTROLS AND INDICATORS

M136A1 AT4CS-RS

Table 1 contains controls and indicators for the M136A1 AT4CS-RS.

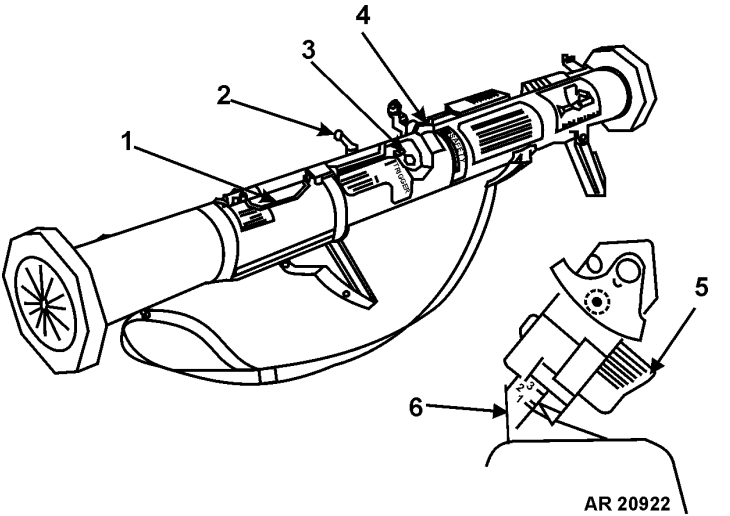

1
2
3
4
5
6
TRIGGER
AR 20922

Table 1. M136A1 AT4CS-RS.

KEY	CONTROL OR INDICATOR	FUNCTION
1	Transport safety fork	Prevents the cocking of the weapon. Must be installed when weapon is moved.
2	Cocking lever	Cocks the weapon, before firing.
3	Red trigger button	Fires the weapon.
4	Red safety release catch	Prevents the firing rod from striking the firing pin.
5	Range setting knob	Changes the settings of the sights.
6	Range indicator	Indicates the firing distance of the weapon.

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OPERATOR MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
DECALS AND INSTRUCTION PLATES

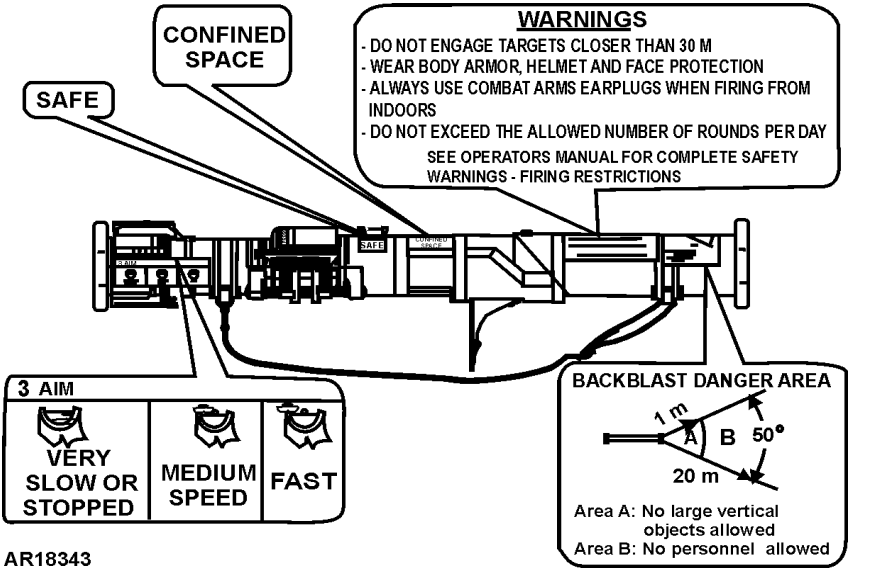
INITIAL SETUP:

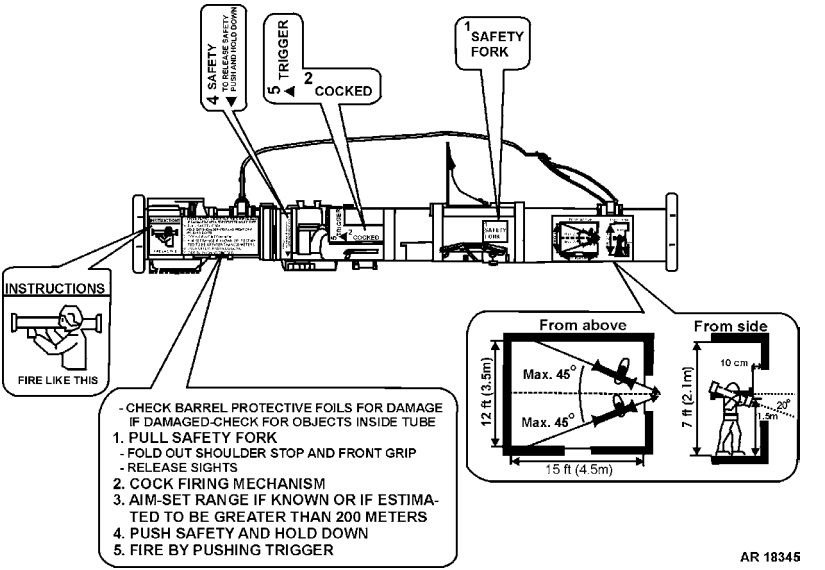
Not applicable

DECALS AND INSTRUCTION PLATES

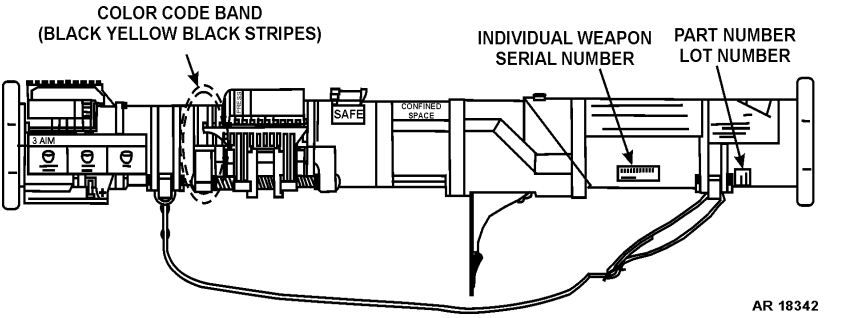
The M136A1 AT4CS-RS has a variety of decals and instruction plates on it which display safety information, instructions, and identification data on the M136A1 AT4CS-RS.

Instruction and Safety Markings




4 SAFETY
TO RELEASE SAFETY
PUSH AND HOLD DOWN
5 TRIGGER
2 COCKED
1 SAFETY
FORK
INSTRUCTIONS
FIRE LIKE THIS
- CHECK BARREL PROTECTIVE FOILS FOR DAMAGE
IF DAMAGED-CHECK FOR OBJECTS INSIDE TUBE
1. PULL SAFETY FORK
- FOLD OUT SHOULDER STOP AND FRONT GRIP
- RELEASE SIGHTS
2. COCK FIRING MECHANISM
3. AIM-SET RANGE IF KNOWN OR IF ESTIMA-
TED TO BE GREATER THAN 200 METERS
4. PUSH SAFETY AND HOLD DOWN
5. FIRE BY PUSHING TRIGGER
From above
From side
Max. 45°
Max. 45°
12 ft (3.5m)
15 ft (4.5m)
7 ft (2.1m)
10 cm
20°
1.5m
AR 18345

Identification Markings



END OF WORK PACKAGE

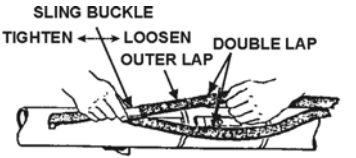
OPERATOR MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
ADJUSTING CARRYING SLING

INITIAL SETUP:

Not applicable

ADJUSTING SLING

1. Loosen carrying sling by grasping outer lap of double lap with one hand and sliding sling buckle towards double lap with other hand.



2. Tighten carrying sling by grasping outer lap with one hand and sliding sling buckle away from double lap with other hand.

END OF WORK PACKAGE

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OPERATOR MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
ALIGNING MOUNTABLE SIGHTING DEVICES AND AIMING LIGHT/ILLUMINATOR

INITIAL SETUP:

Not applicable

ALIGNING SIGHTING DEVICES AND AIMING LIGHT

This work package describes both indoor and outdoor sighting device and lighting device alignment procedures. The preferred procedure is indoor, however, the procedure for aligning the sight and lighting devices outdoors can be followed when it is not possible to align the sights indoors.

WARNING

The transport safety fork must be inserted and secured in the firing mechanism during the Aligning Mountable Sighting Devices and Aiming Light/Illuminator operation to prevent accidental firing. Failure to do so may result in injury or death to personnel.

NOTE

Mountable sight device must be secured to the side Picatinny rail. Aiming light/illuminator must be secured to the front Picatinny rail.

NOTE

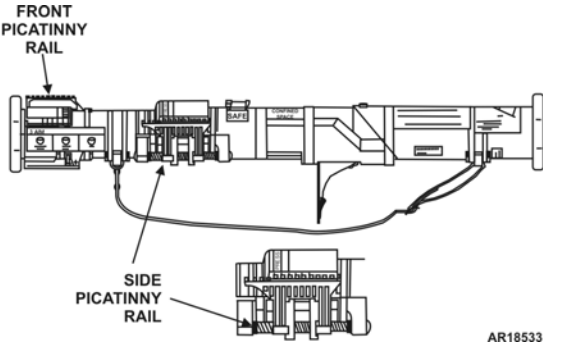
The following procedures provide examples of mounting and aligning a PVS-17 Night Sight as the mountable sighting device and a PEQ-2 as the aiming light/illuminator. The user may select approved sight devices that are appropriate to the mission for use with the M136A1 AT4CS-RS.

When removing and reattaching mountable sight devices to the same weapon, ensure that the devices are replaced to the same positions on the Picatinny rail to maintain zero.

This sight alignment procedure is based on a target at 200 meters. When firing at targets closer or farther than 200 meters, the aimpoint must be adjusted to compensate for the difference in range, i.e., when target is closer, aimpoint is lower, when target is farther, aimpoint is higher.

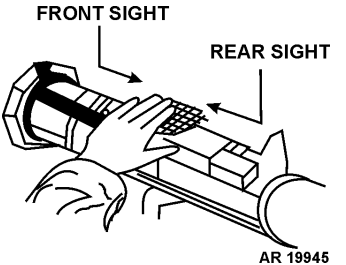
Indoors

1. Fold open the side Picatinny rail.



2. Place the launcher on a steady surface.
3. Detach the sighting template from the TM from the end of this WP. At approximately the same height as the launcher, secure sighting template on a wall 10 meters away from the front bumper of the launcher.
4. Mount and secure the Night Sight to the side Picatinny rail.
5. Mount and secure the PEQ-2 on the front Picatinny rail.

6. Slide open the protective housings of both the front and rear sights.



7. Set range on rear sight to 200 meters.
8. Move the launcher on the surface so that the front and rear sight line up with the reticle, which appears as a **bold cross** on the template. Do not move or bump the launcher and/or surface once the front and rear sights are lined up with the **bold cross**.
9. Turn on the PEQ-2 laser dot. Adjust PEQ-2 windage and elevation to move the laser dot into the **circle** (2) on the template.
10. Turn on the Night Sight. Adjust the Night Sight reticle to line up with the **triangle** (3) on the template while ensuring the PEQ-2 laser dot remains in the **circle** on the template.
11. Confirm that the launcher front and rear sights, PEQ-2 and Night Sight simultaneously line up with the corresponding locations of shapes on the template. Repeat steps 8 through 10 as necessary.

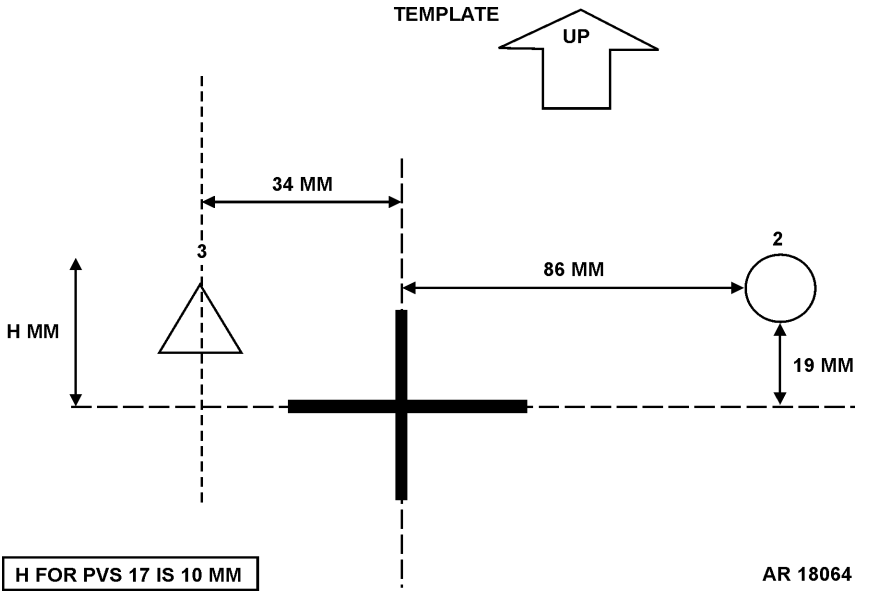
12. Fold down the front and rear sights and slide the protective housings closed.
13. Turn off the Night Sight and PEQ-2.
14. Remove the Night Sight and PEQ-2 from their rails.
15. Fold down the side Picatinny rail.

Night Sight and PEQ-2 zeroing are complete.

Outdoors (Shortly Before Sundown)

1. Fold open the side Picatinny rail.
2. Place the M136A1 AT4CS-RS on a steady surface.
3. Mount and secure the Night Sight to the side Picatinny rail.
4. Mount and secure the PEQ-2 on the front Picatinny rail.
5. Slide open the protective housings of the front and rear sight.
6. Set range on rear sight to 200 meters.
7. Sight a stationary reference target at an estimated range of 200 meters.
8. At sunset, turn on the PEQ-2 laser dot.
9. Observe the placement of the laser dot to the stationary reference target.
10. Illuminate the stationary reference target with visible light.
11. Check stationary reference target sight picture with front and rear sight. Turn off the visible light.

12. Adjust PEQ-2 windage and elevation to move the laser dot to the same reference target sight picture as the front and rear sight.
13. Repeat steps 9 through 12 until laser dot placement coincides with front and rear sight picture of the reference target.
14. Fold down the front and rear sights and slide the protective housings closed.
15. Turn on the Night Sight.
16. Adjust the Night Sight reticle to overlay the PEQ-2 laser dot.
17. Turn off the Sight and the PEQ-2.
18. Remove the Night Sight and PEQ-2 from their rails.



END OF WORK PACKAGE

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OPERATOR MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
FITTING COMBAT ARMS EARPLUGS (CAE)

INITIAL SETUP:

Materials/Parts

Plug, ear (Item 4, WP 0029 00)

FITTING EARPLUGS

WARNING

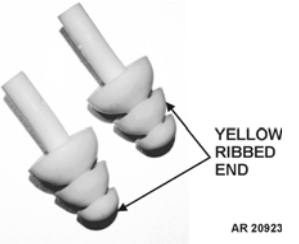
All non-firing personnel within 205 meter radius of M136A1 AT4CS-RS firing position or within 440 meter radius of detonation must wear hearing protection. When firing from inside an enclosure, gunner and all other personnel must wear Combat Arms Earplugs. When firing outdoors, gunners and all other personnel must wear single hearing protection.

NOTE

The yellow end of the CAE allows the user to hear normal conversation, but will provide sufficient hearing protection against the noise delivered during M136A1 AT4CS-RS fire.

Ensure that an individual who has hearing conservation training (medical, safety or range personnel) inspects the insertion of CAE plugs before each firing of M136A1 AT4CS-RS during training.

1. Ensure hands and plugs are clean prior to use.
2. With fingertips, hold the CAE plug so that the yellow ribbed end is ready to insert into ear.



3. With the opposite hand, grab top of outer ear and gently pull upward and outward.
4. Gently insert the yellow end of the CAE plug into ear canal with a slight twisting motion.
5. Repeat steps 2 through 4 for the other ear.
6. CAE plugs can be tested for proper fit by observation. Perform a light tug and observe for some resistance to movement. Notice that the speaking voice sounds like it is within the head, similar to the effect of having a head cold.
7. To remove the CAE plugs, slowly twist the plug while slowly removing it from the ear.
8. CAE plugs are reusable. Wash CAE plugs with mild soap and water. Wipe with cloth and blow dry. Ensure filter holes are free of earwax and other debris. Store CAE plugs in a clean location for future use.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
PREPARATION FOR USE

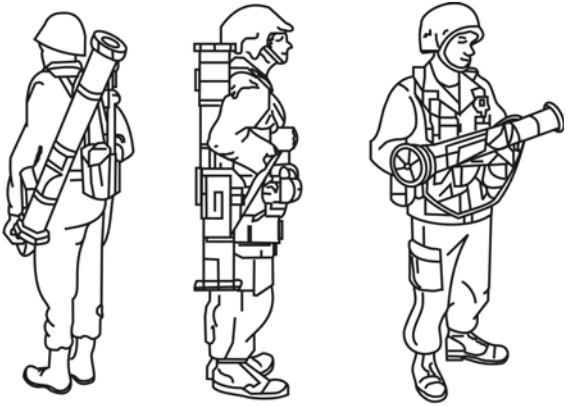
INITIAL SETUP:

Material/Parts

Plug, ear (Item 4, WP 0029 00)

There is important information to know before using the M136A1 AT4CS-RS, such as the M136A1 AT4CS-RS should only be held in and fired from specific positions. Personnel should know of the potential danger zones in using the M136A1 AT4CS-RS.

CARRYING POSITIONS



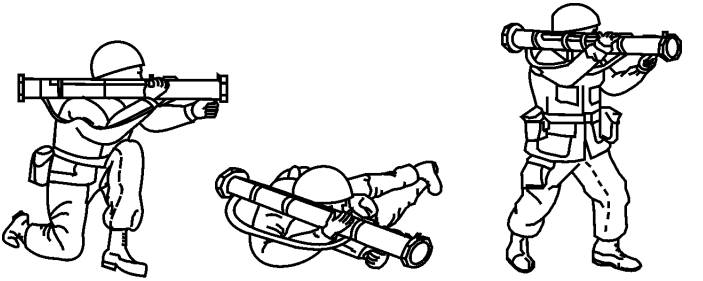
FIRING POSITIONS

WARNING

When gunner fires in prone position, gunner's legs shall point minimum 45° to left. Right foot shall rest on left calf.

When firing indoors, weapon must be fired in standing position only.

Do not fire the M136A1 AT4CS-RS from a kneeling position from an enclosure.



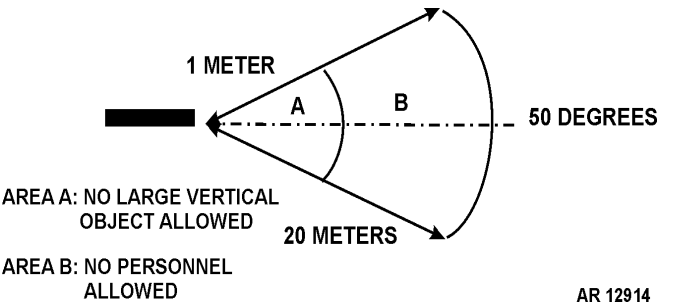
AR 18344

DANGER ZONES

Backblast Danger Zone

WARNING

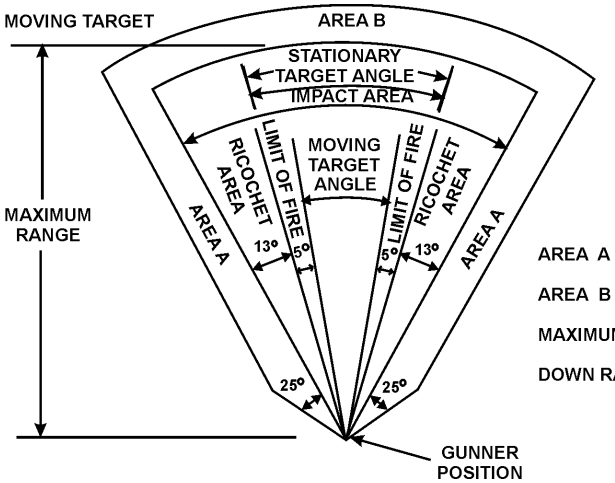
Keep backblast area clear at all times.



Danger Zone A: Danger from backblast, heat, and flying debris. Obstacles such as barriers, big trees, or other vertical objects must not be in this zone.

Danger Zone B: Danger from backblast, flying debris, and noise.

Weapon Downrange Danger Zone



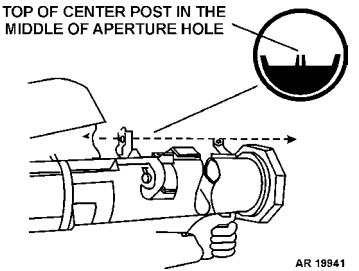
AREA A - 227 METERS (745 FT)

AREA B - 488 METERS (1600 FT)

MAXIMUM RANGE - 2,100 METERS (6,900 FT)

DOWN RANGE - 1,400 METERS (4,600 FT)
ABOVE GROUND LEVEL

AR 12915



Target	Aiming Rule	Sight Pictures
Stationary; when target is proceeding directly toward or away from personnel.	Aim with center post at center of mass.	
All moving targets except front and rear targets and fast moving flank targets.	Aim with center post at front of mass.	
Fast moving flank targets (faster than 15 km/h).	Aim with center post ahead of front of mass.	

AR18536

INDOOR FIRING REQUIREMENTS

WARNING

Weapon must be fired in standing position only.

Firing M136A1 AT4CS-RS from building of framed construction (i.e., common residential) or from room containing furniture or other objects could cause collapse or debris hazard.

Any equipment kept in room when firing will be exposed to countermass spray (corrosive saline solution).

Fins open approximately 10 inches (25.4 cm) wide shortly after exiting muzzle. Use caution when aiming weapon (muzzle) to prevent fins from impacting window or doorsill.

When firing from inside an enclosure, gunner and all other personnel must wear Combat Arms Earplugs.

The enclosure used during M136A1 AT4CS-RS training must not contain any furniture or other objects, and must have any glass windows and/or doors removed prior to firing.

Minimum size of confined space must be a room with the following dimensions:

Inside area	12 ft wide x 15 ft long (about 3.5 m x 4.5 m) minimum
Ceiling Height	7 ft (2.1 m) minimum
Window opening	36 in. x 36 in. (1 m x 1 m) minimum
Door opening	36 in. x 72 in. (1 m x 2 m) minimum
Confined space integrity	Structure should be of significant construction to withstand weapon backblast

The following requirements must be followed when firing indoors:

a. No more than 3 personnel (including gunner) are allowed in room.

b. Fire in standing position only.

c. Cover and/or protect all equipment (i.e., small arms, radio set, etc.) in room.

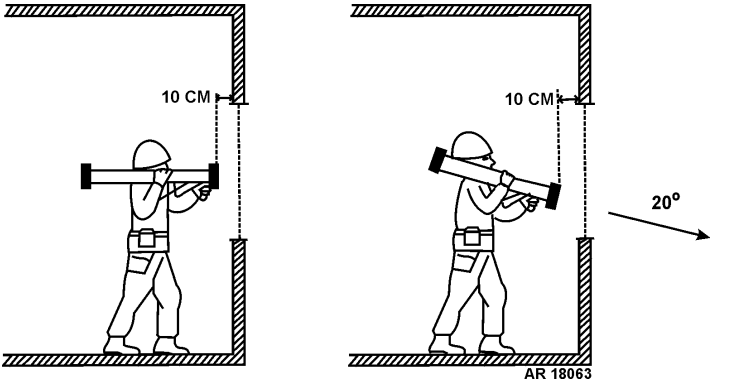
d. Remove any loose objects directly behind weapon which might be thrown when firing.

e. In the training environment, the room must not contain any furniture. In the combat environment, keep stuffed furniture, mattresses, cushions, pillows, etc., to absorb pressure.

f. A blanket hung 1.5 to 2 meters behind weapon and 15 to 30 centimeters from rear wall considerably reduces sound pressure.

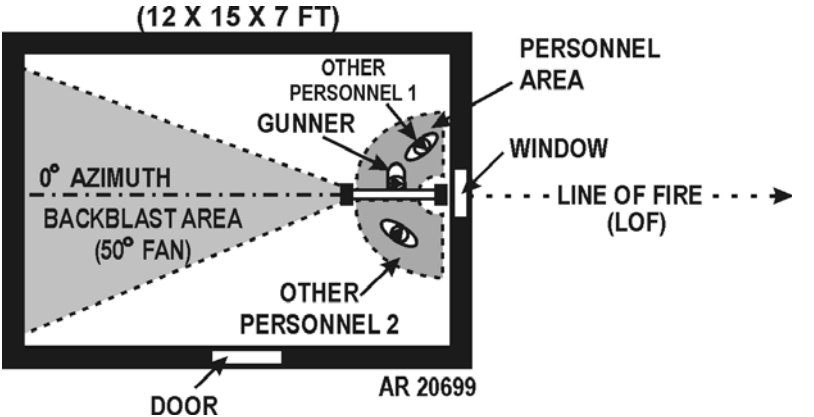
g. Open all windows and doors in room.

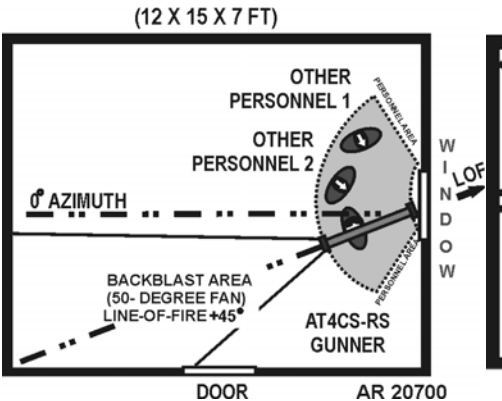
h. Angle of weapon must not exceed 20 degrees of depression from the horizontal plane. Do not fire weapon at any angle of elevation.



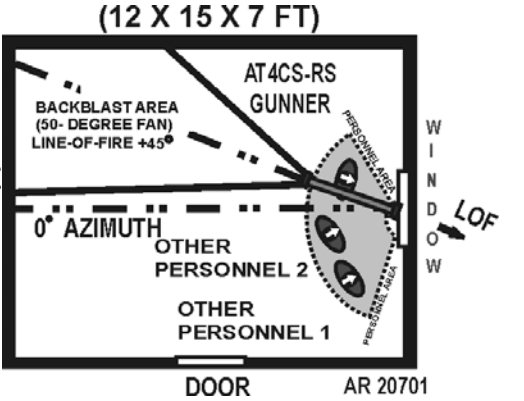
i. Angle of weapon must not exceed 45 degrees left or right from the vertical plane.

j. All personnel must wear Combat Arms Earplugs.


(12 X 15 X 7 FT)
PERSONNEL AREA
OTHER PERSONNEL 1
GUNNER
WINDOW
0° AZIMUTH
LINE OF FIRE (LOF)
BACKBLAST AREA (50° FAN)
OTHER PERSONNEL 2
AR 20699
DOOR

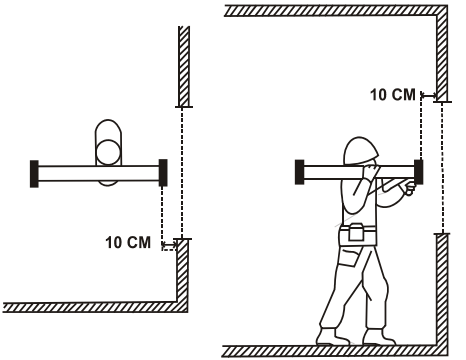


Crew positions for firing an M136A1 AT4CS-RS on an oblique-left azimuth.



Crew positions for firing an M136A1 AT4CS-RS on an oblique-right azimuth.

k. Weapon must be fired no more than 10 centimeters (4 in.) from door or window frame.



AR12909

END OF WORK PACKAGE

OPERATOR MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
ARMING AND FIRING

INITIAL SETUP:

Equipment Conditions

Fitting earplugs (WP 0008 00)

ARMING AND FIRING

WARNING

To prevent hearing loss, all new M136A1 AT4CS-RS trainees are required to be registered in the Army Hearing Conservation Program through the local medical authority.

When firing at targets at 150 meters or less, fire from behind appropriate cover to prevent possible injury from shrapnel. As target distance decreases, possibility of injury from shrapnel increases.

During training, armored targets must be placed at least 160 meters (175 yd) downrange from the gunner position.

A 160 meters (175 yd) range-safety distance is required from both sides of the intended point of M136A1 AT4CS-RS projectile impact and detonation to prevent serious injury to forward observers or other personnel.

WARNING - Continued

Before firing M136A1 AT4CS-RS, check rear bumper for leakage from countermass. If countermass leakage is detected, DO NOT FIRE weapon. Serious injury may result. Weapons with countermass leakage will be turned over to ASP for proper disposal.

Do not engage targets closer than 30 meters.

Weapon shall only be fired with helmet on, sleeves turned down, and collar turned up to prevent burns from thermal radiant energy.

All non-firing personnel within 205 meter radius of M136A1 AT4CS-RS firing position or within 440 meter radius of detonation must wear hearing protection. When firing from inside an enclosure, gunner and all other personnel must wear Combat Arms Earplugs. When firing outdoors, gunners and all other personnel must wear single hearing protection.

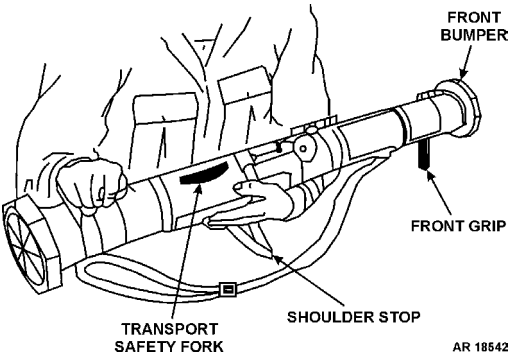
In addition to the appropriate hearing protection, protective ballistic eye protection, uniform, body armor, and helmets must be worn when firing M136A1 AT4CS-RS.

Keep weapon pointed downrange at all times.

Observe backblast area at all times to ensure it is clear of obstacles and personnel.

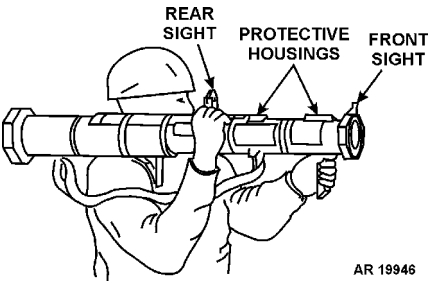
1. Remove weapon from carrying position and cradle in left arm.
2. Inspect weapon for leakage. To inspect for internal leakage, elevate front bumper approximately 10 degrees.
3. Remove transport safety fork with right hand.

4. Unfold shoulder stop and front grip with right hand.

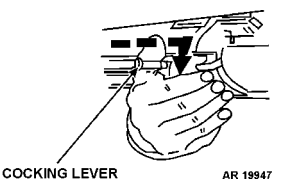


5. Check backblast area.

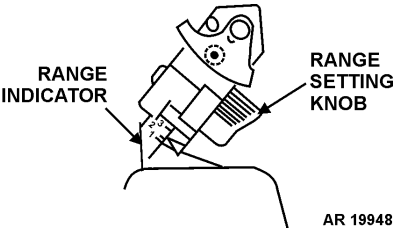
6. Place weapon on right shoulder and grasp front grip with left hand.
7. Release front sight and rear sight by pressing down and sliding protective covers.



8. Unfold cocking lever with right hand. Push cocking lever forward and down with inner part of right thumb and release. Fold down cocking lever.



9. Ensure shoulder stop is pressed against shoulder.
10. Using right hand, turn range setting knob forward or backward to desired range setting. The sight is graduated in 50 meter increments. Turning knob forward increases range; turning knob backward decreases range.



WARNING

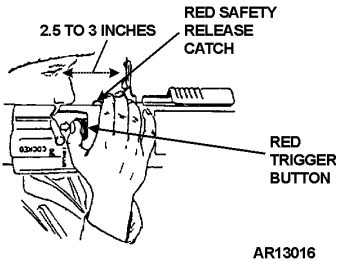
Do not put eye against sight when firing. Recoil may cause injury to eye.

Weapon sights are boresighted to the individual launcher tube, and firing an M136A1 AT4CS-RS with repaired sights from an expended M136A1 AT4CS-RS may result in lowered accuracy of the weapon.

NOTE

An M136A1 AT4CS-RS with sights that have been repaired/replaced at least once, will have "REPAIRED SIGHTS" written below the SAFE label.

11. Position right eye 2.5 to 3 inches (60-80 mm) from rear sight.



WARNING

Failure to fully depress and hold down red safety release catch may cause misfire. If this occurs, keep weapon pointed downrange, and do not touch red safety release catch.

12. Fully depress and hold down red safety release catch using the index and middle fingertips on right hand.

WARNING

The M136A1 AT4CS-RS has slight recoil when fired. Recoil can vary from no recoil to the equivalent of a 12-gauge shotgun. The launcher must be restrained properly on shoulder or it may swing up and off shoulder.

When engaging moving targets from an enclosure, care should be taken not to hit door or window jamb.

If weapon does not fire, follow misfire procedures.

Duds should be treated as hazardous ammunition. DO NOT TOUCH DUDS. Disposition of duds must be handled in accordance with local SOPs.

NOTE

After firing the M136A1 AT4CS-RS (except in combat), do not discard. Each M136A1 AT4CS-RS is accounted for by serial number. The spent launcher must be turned into the ASP for salvage of reusable parts and proper disposal of non-reusable parts in accordance with current directives.

After firing M136A1 AT4CS-RS, the transport safety fork must be retained or returned to the local ASP for storage and reuse as a replacement part.

13. Press red trigger button using thumb on right hand to fire weapon.

Misfire During Combat

WARNING

Keep weapon pointed downrange at all times.

Observe backblast area at all times to ensure it is clear of obstacles and personnel.

1. Wait 5 seconds, recock firing mechanism, aim, fully depress and hold down red safety release catch, and press trigger. Repeat this step at least once.
2. If weapon does not fire, maintain firing position and aiming point for 2 minutes and return cocking lever to SAFE position.
3. Remove weapon from shoulder and re-insert transport safety fork.
4. Place weapon on ground pointing toward target.

Misfire During Training

NOTE

The following steps are for training purposes only.

1. Follow steps in the Misfire During Combat section.

WARNING

If transport safety fork cannot be re-inserted, do not move weapon. Notify Quality Assurance Specialist Ammunition Surveillance (QASAS), Explosive Ordnance Disposal (EOD), or follow local Standard Operating Procedures (SOP).

NOTE

An M136A1 AT4CS-RS that experiences multiple misfires or that is otherwise considered a malfunction must not be destroyed until approval from the local QAQAS is received.

2. Notify supervisor.

NOTE

Supervisor will ensure cocking lever is in SAFE position, red safety release catch is in vertical position, and transport safety fork is re-inserted. Supervisor will also obtain complete description of malfunction.

3. If malfunctioned weapon is not to be held in storage or shipped, securely tape cocking lever and transport safety fork in place so they cannot be moved/removed.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
DISARMING LAUNCHER

INITIAL SETUP:

Not applicable

DISARMING LAUNCHER

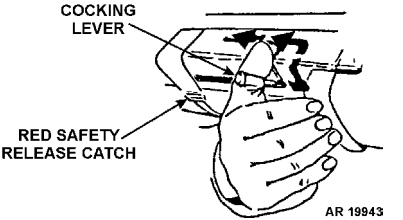
WARNING

Keep backblast area clear at all times.

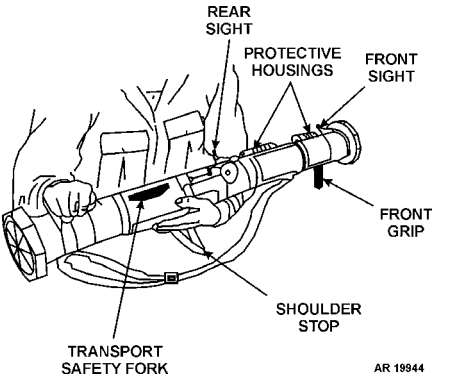
Keep weapon pointed downrange at all times.

Do not fabricate or improvise a lost transport safety fork for an unfired M136A1 AT4CS-RS launcher. A replacement transport safety fork must be received from either another locally fired M136A1 AT4CS-RS or storage at local ASP.

1. Release red safety release catch.
2. Place cocking lever in SAFE position.



3. Remove weapon from shoulder and put in cradle position.



4. Re-insert transport safety fork.
5. Place rear sight to battle sight setting (200 m). Fold rear sight and front sight, and secure with protective housings.
6. Fold and secure shoulder stop and front grip.
7. Get into desired carrying position.

END OF WORK PACKAGE

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OPERATOR MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
OPERATION UNDER UNUSUAL CONDITIONS

INITIAL SETUP:

Not applicable

UNUSUAL CONDITIONS

The M136A1 AT4CS-RS is designed to withstand arctic as well as tropical and desert conditions. However, every effort should be made to protect weapon to guarantee its immediate readiness for action.

The M136A1 AT4CS-RS should not be fired when temperatures exceed its operating limits below -40°F (-40°C) and/or above +140°F (+60°C).

Cold Weather

When operating in cold weather, bringing weapon into a warm enclosure may cause damage. Change in temperature will make metal components sweat and moisture can cause misfire or rust.

Sharp instruments should not be used to chip off snow or ice.

The weapon should not be thawed near a direct flame.

Hot Weather

When operating in extremely hot weather, avoid leaving weapon exposed to direct sunlight for long periods of time. Maximum safe operating temperature of +140°F (+60°C) could be exceeded.

Rain or Snow

When operating in rain and/or snow, protect weapon from moisture.

NUCLEAR, BIOLOGICAL, AND CHEMICAL (NBC) DECONTAMINATION PROCEDURES

The M136A1 AT4CS-RS cannot be immersed for NBC decontamination. The M136A1 AT4CS-RS can be decontaminated in its packaged configuration (barrier bag). If unpackaged weapon becomes contaminated, it is considered expendable.

END OF WORK PACKAGE

CHAPTER 3
TROUBLESHOOTING PROCEDURES
FOR
M136A1 AT4CS-RS

0013 00

OPERATOR MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
OPERATOR TROUBLESHOOTING INTRODUCTION

TROUBLESHOOTING PROCEDURES

The troubleshooting work packages contain tables listing the malfunctions, tests or inspections, and corrective action required to return the M136A1 AT4CS-RS to normal operation. Perform the steps in the order they appear in the tables.

Each work package is headed by an initial setup. This setup outlines what is needed as well as certain conditions which must be met before starting the task. DON'T START A TASK UNTIL:

You understand the task.
You understand what you are to do.
You understand what is needed to do the work.
You have the things you need.

This manual cannot list all malfunctions that may occur, or all tests or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify your supervisor or unit maintenance.

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OPERATOR MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
OPERATOR TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Materials/Parts	References
Bag, plastic (Item 1, WP 0029 00)	WP 0005 00
Tape, adhesive (Item 7, WP 0029 00)	WP 0010 00
	WP 0011 00

Table 1. Troubleshooting Procedures .

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
1. M136A1 AT4CS-RS cocking lever cannot be moved from the SAFE position to the COCKED position.	1. Visually inspect firing mechanism to confirm that the transport safety fork has been removed.	Ensure weapon is pointed downrange. Follow the Arming and Firing procedures to remove the transport safety fork and move the cocking lever from SAFE to COCKED position (IAW WP 0010 00).
	2. If transport safety fork has been properly removed, but cocking lever still cannot be moved or only has partial movement prior to the COCKED position, the cocking lever may have seized up.	1. Do not attempt to proceed in arming and firing the weapon. If possible, move the cocking lever back to the SAFE position and re-insert the transport safety fork to safe the weapon (IAW WP 0011 00). Return the weapon to the ASP as an inoperable weapon.

Table 1. Troubleshooting Procedures - Continued.

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
		2. Do not attempt to proceed in arming and firing the weapon. If it is not possible to move the cocking lever back to the SAFE position, and if the transport safety fork cannot be re-inserted, place weapon on the ground, aimed downrange, and notify QASAS, EOD, or follow local SOP for disposition. Do not move the weapon.
2. M136A1 AT4CS-RS fails to launch projectile.	1. Visually inspect the cocking lever to determine if it has been moved from the SAFE position to the COCKED position.	Ensure the weapon is pointed down-range, and the transport safety fork is removed. Move the cocking lever to the COCKED position, aim at target, and reattempt fire (IAW WP 0010 00).

Table 1. Troubleshooting Procedures - Continued.

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
	2. Inspect the position of the red safety release catch. If the red safety release catch is not fully depressed and held down while attempting fire, an obstruction in travel of the firing rod will occur and cause a misfire.	Follow the misfire procedure to safely recock the cocking lever back to the COCKED position (IAW WP 0010 00). Ensure the weapon is pointed downrange. While aiming at target, fully depress and hold the red safety release catch, and re-attempt fire.
	3. Confirm that the proper Arming and Firing (IAW WP 0010 00) procedure has been followed. A system component misfire may have occurred.	Ensure the weapon is pointed downrange at all times. In a combat situation, follow the Misfire During Combat procedure (IAW WP 0010 00) for proper disposition. During training, follow the Misfire During Training procedure (IAW WP 0010 00) for proper disposition.

Table 1. Troubleshooting Procedures - Continued.

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
3. M136A1 AT4CS-RS front dust cover does not operate properly.	Inspect front dust cover for holes or other damage. Check for debris/ moisture behind dust cover.	Ensure cocking lever is in the SAFE position and the transport safety fork is inserted (IAW WP 0011 00). Remove dust cover by cutting with knife along the inside edge of the front bumper. Inspect for dirt/debris or moisture by tilting the front of the weapon downward. Tightly place clear plastic bag over the end of the front bumper, and tape securely in place around launcher tube.
4. M136A1 AT4CS-RS rear dust cover does not operate properly.	Inspect rear dust cover for holes or other damage. Check for debris and presence of moisture behind dust cover.	1. If moisture or liquid is present behind rear dust cover, replace weapon. Return M136A1 AT4CS-RS with presence of moisture behind dust cover to ASP for proper disposal as unserviceable.

Table 1. Troubleshooting Procedures - Continued.

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
		2. If rear dust cover is damaged and if moisture is not present behind the rear dust cover, notify Field Maintenance.
5. M136A1 AT4CS-RS protective housings for sights do not operate properly.	Inspect for the presence and proper movement of the sight protective housings.	If protective housings have become lost or are broken, notify Field Maintenance.
6. M136A1 AT4CS-RS front and/or rear sights do not operate properly.	Inspect for the presence and proper movement of the weapon front and/or rear sight. When the protective housings are slid open, front and rear sights must spring up and remain in place.	If front and/or rear sights do not spring up and remain in place, do not have proper movement, are broken, or are missing, notify Field Maintenance.
7. M136A1 AT4CS-RS carrying sling does not operate properly.	Inspect the carrying sling for frays, cuts/tears, or any other obvious signs which indicate excessive wear.	If carrying sling is worn beyond serviceability or is missing, notify Field Maintenance.

END OF WORK PACKAGE

FIELD MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
FIELD TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

References

WP 0011 00
WP 0021 00
WP 0022 00
WP 0024 00

M136A1 AT4CS-RS

Table 1. Troubleshooting Procedures .

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
1. M136A1 AT4CS-RS rear dust cover does not operate properly.	Inspect rear dust cover for holes or other damage. Check for debris and presence of moisture behind dust cover.	1. Verify there is no moisture or liquid present behind rear dust cover. If moisture or liquid is present, return M136A1 AT4CS-RS as unserviceable for proper disposal.

Table 1. Troubleshooting Procedures - Continued.

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
		2. Ensure cocking lever is in the SAFE position and the transport safety fork is inserted (IAW WP 0011 00). If rear dust cover is damaged and if moisture or liquid is not present, remove rear dust cover by cutting with knife along inside edge of rear bumper. Countermass will become visible. Inspect countermass for damage or leaks, then return weapon to service if no damage or leaks are present.
2. M136A1 AT4CS-RS protective housings do not operate properly.	Inspect for the presence and proper movement of the sight protective housings.	If protective housings have become lost or are broken, replace the protective housings (IAW WP 0021 00).

Table 1. Troubleshooting Procedures - Continued.

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
3. M136A1 AT4CS-RS front and/or rear sights do not operate properly.	Inspect for the presence and proper movement of the weapon front and/or rear sight. When the protective housings are slid open, front and rear sights must spring up and remain in place.	If front and/or rear sights do not spring up and remain in place, do not have proper movement, are broken, or are missing, then replace the front and/or rear sights (IAW WP 0022 00).
4. M136A1 AT4CS-RS carrying sling does not operate properly.	Inspect the carrying sling for frays, cuts/tears, or any other obvious signs which indicate excessive wear.	If carrying sling is worn beyond serviceability or is missing, replace the carrying sling (IAW WP 0024 00).

END OF WORK PACKAGE

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CHAPTER 4
OPERATOR MAINTENANCE INSTRUCTIONS
FOR
M136A1 AT4CS-RS

OPERATOR MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) INTRODUCTION

INITIAL SETUP:

References

DA Form 2404
DA PAM 750-8

GENERAL

The PMCS provides procedures to ensure weapon is in operating condition prior to firing.

EXPLANATION OF COLUMNS IN THE PMCS TABLE

1. Item Number Column - Numbers in this column are for reference. Item numbers appear in the order in which checks and services must be performed for the intervals listed.

2. Interval Column - This column tells you when each check is to be performed in the procedure column (Before, During, After, Daily, Weekly, Monthly). After operation checks are performed only if weapon is prepared for firing and is not fired. Weekly and monthly checks are not performed if the weapon is fired.
3. Man-hour Column - This column gives the man-hours required to complete all prescribed lubrication services.
4. Item To Be Checked or Serviced Column - This column lists the item to be checked or serviced.
5. Procedure Column - This column gives the procedure you must do to check or service the item listed in the Item To Be Checked or Serviced column to know if the equipment is ready or available for its intended mission or for operation. You must do the procedure at the time stated in the interval column.
6. Equipment Not Ready/Available If: Column - Information in this column tells you what faults will keep your equipment from being capable of performing its primary mission. If applicable, following Equipment Not Ready/Available If: condition is a suggested remedy that will correct the discovered discrepancy. Follow standard operating procedures for maintaining the equipment or reporting equipment failure. Report any malfunctions or failures on DA Form 2404 (Equipment Inspection and Maintenance Worksheet) or refer to DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual.

OPERATOR MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

INITIAL SETUP:

References
WP 0005 00

PMCS FOR M136A1 AT4CS-RS

NOTE
Damaged weapons (unfired) must be returned to Ammunition Supply Point (ASP).

Table 1. PMCS for M136A1 AT4CS-RS .

ITEM NO.	INTERVAL	MAN-HOUR	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
1	Before, After		Transport Safety Fork	Ensure fork is in place.	Fork broken or missing. Replace fork.

Table 1. PMCS for M136A1 AT4CS-RS - Continued.

ITEM NO.	INTERVAL	MAN-HOUR	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
2	Before, After		Cocking Lever	Ensure lever is in SAFE position.	Lever broken or missing. Replace weapon.
3	Before, After, Weekly, Monthly		Front Bumpers (Dust Cover)	Ensure cover is intact and no foreign objects are present.	Cover damaged or torn and/or foreign objects present. Cut out damaged or torn cover. Remove foreign objects.
4	Before, After, Weekly, Monthly		Rear Bumper (Dust Cover)	Ensure cover is intact. Check for moisture (countermass leakage).	Damaged cover requires field maintenance. Presence of moisture. Return weapon to ASP as unserviceable.
5	Before, After, Weekly, Monthly		Color Code Band	Ensure correct color on band (black-yellow-black band).	Color is wrong. Replace weapon.

Table 1. PMCS for M136A1 AT4CS-RS - Continued.

ITEM NO.	INTERVAL	MAN-HOUR	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
6	Before, During, After, Weekly, Monthly		Front and Rear Sights	Check function of sights.	Sights broken or missing. Replace weapon.
7	During		Red Safety Release Catch	Check proper operation. (Inspection performed before firing the weapon.)	Catch does not operate properly. Replace weapon.
8	Before, During, After, Weekly, Monthly		Complete Weapon	Ensure there is no visible damage.	Severe handling damage (i.e., white plastic visible). Replace weapon.
9	Before, During, After		Instruction and Safety Marking Decals	Refer to Decals and Instruction Plates (WP 0005 00) for the proper location of each decal. Visually inspect for the presence and legibility of each individual decal on the weapon.	If any instruction and safety marking decals are illegible or missing. Notify Field Maintenance.

Table 1. PMCS for M136A1 AT4CS-RS - Continued.

ITEM NO.	INTERVAL	MAN-HOUR	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
10	Before, During, After		Identification Markings (Serial Number and Lot Number)	Refer to Decals and Instruction Plates (WP 0005 00) for the proper location of weapon serial number and lot number. Visually inspect for the presence and legibility of each serial number and lot number on the weapon.	If identification markings (serial and lot numbers) are illegible or missing. Notify Field Maintenance.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
CLEANING/DECONTAMINATING M136A1 AT4CS-RS

INITIAL SETUP:

Materials/Parts

Decontamination kit (Item 2, WP 0029 00)
Rag, wiping (Item 5, WP 0029 00)

CLEANING

NOTE

Do not use any solvents to clean inside or outside of launcher.

Do not attempt to disassemble and clean inside weapon.

Keep weapon clean and dry. Clean outside of weapon with damp rag and wipe dry.

Check outside of weapon for dents, holes, cracks, and condition of front and rear bumpers and dust covers. If damage and/or moisture is found, notify unit maintenance.

DECONTAMINATING (IN COMBAT)

An M280 decontamination kit individual equipment can be used to decontaminate a packaged launcher (in barrier bag) of the H-Series, G-Series, and V-Series agents.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
REPLACING TRANSPORT SAFETY FORK

INITIAL SETUP:

Not applicable

REPLACING TRANSPORT SAFETY FORK

Replacement of a damaged or worn safety fork on a serviceable M136A1 AT4CS-RS is performed by cannibalizing the safety fork from an expended or fired M136A1 AT4CS-RS launcher tube. The usable safety fork from the fired M136A1 AT4CS-RS is removed and used to replace a damaged or missing safety fork on an unfired M136A1 AT4CS-RS launcher.

WARNING

Do not perform replacement procedures on live M136A1 AT4CS-RS unless red safety release catch is in vertical position, cocking lever is in SAFE position, and transport safety fork is inserted into pin holes.

Do not fabricate or improvise a lost transport safety fork for an unfired M136A1 AT4CS-RS launcher. A replacement transport safety fork must be received from either another locally fired M136A1 AT4CS-RS or storage at local ASP.

NOTE

Parts can be obtained from expended launchers.

The transport safety fork must be received either from a locally fired M136A1 AT4CS-RS from within the same mission or training, or from storage at local ASP.

Follow the instructions below to remove either a usable or damaged safety fork from an M136A1 AT4CS-RS.

Removal of Transport Safety Fork

1. Ensure red safety release catch is in vertical position, cocking lever is in SAFE position, and transport safety fork is inserted into pin holes.
2. Place the M136A1 AT4CS-RS on a sturdy work surface with the transport safety fork facing up.
3. Remove transport safety fork.
4. If necessary, cut lanyard to free the transport safety fork from the launcher.

Installation of Transport Safety Fork

1. Ensure red safety release catch is in vertical position, cocking lever is in SAFE position.
2. Place the M136A1 AT4CS-RS on a sturdy work surface with the transport safety fork area facing up.
3. Tie lanyard of the transport safety fork to the launcher.
4. Re-insert the transport safety fork into the firing mechanism.

END OF WORK PACKAGE

CHAPTER 5
FIELD MAINTENANCE INSTRUCTIONS
FOR
M136A1 AT4CS-RS

0020 00

FIELD MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
SERVICE UPON RECEIPT

INITIAL SETUP:

References

DA PAM 750-8
DD Form 361

SERVICE UPON RECEIPT OF MATERIEL

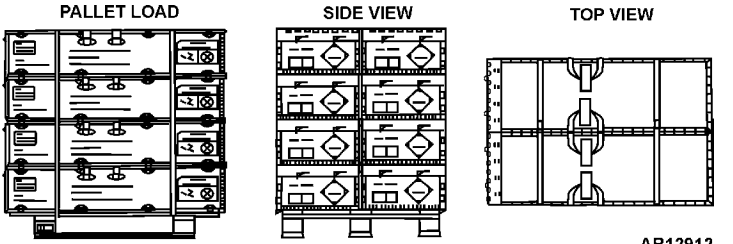
Check equipment against the packing slip to verify shipment is complete. Report all discrepancies with DA PAM 750-8.

Inspect the M136A1 AT4CS-RS for any damage incurred during shipment. If equipment has been damaged, report the damage on DD Form 361, Transportation Discrepancy Report (TDR).

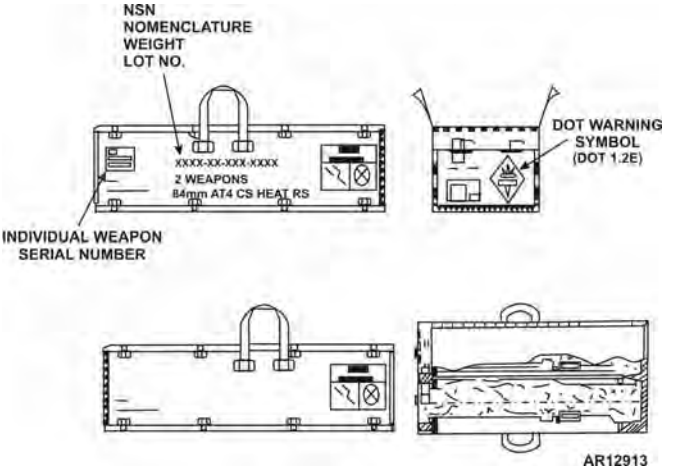
UNPACKING AND INSPECTION

Container Inspection

1. Inspect containers for damage.



2. Inspect containers for correct markings.



Air Drop Inspection

WARNING

If parachute does not open during air drop, do not handle, move, or use weapons. Weapon is considered armed and should be reported to authorized munition personnel for disposal if tactical situation permits.

Palletized weapons dropped by properly functioning parachute should be considered safe to use, regardless of how they impacted. Palletized weapons dropped by partially functioning parachute may be used if inspection shows no damage.

END OF WORK PACKAGE

FIELD MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
REPLACING PROTECTIVE HOUSINGS

INITIAL SETUP:

Tools and Special Tools

Screwdriver, flat-tip (basic tool set)

REPLACING PROTECTIVE HOUSINGS

WARNING

Do not perform replacement procedures on live M136A1 AT4CS-RS unless red safety release catch is in vertical position, cocking lever is in SAFE position, and transport safety fork is inserted into pin holes.

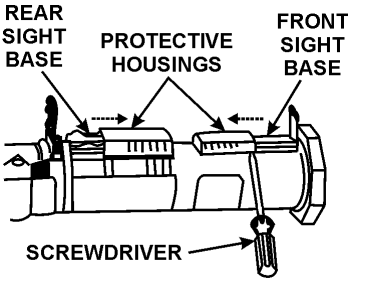
NOTE

Parts can be obtained from expended launchers.

Removal and installation procedures are identical for both protective housings.

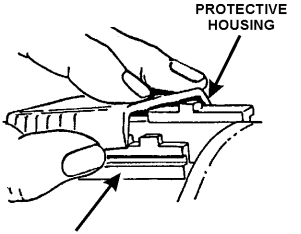
Removal

1. Ensure red safety release catch is in vertical position, cocking lever is in SAFE position, and transport safety fork is inserted into pin holes.
2. Press down and slide open protective housing.
3. Insert flat-tip screwdriver between protective housing and sight base, and lift off housing.



Installation

1. Position protective housing on sight base.



2. Spread protective housing over sight base and snap in place.

CAUTION

Rear sight must be in 200 meter setting prior to folding rear sight down or sight will be damaged.

3. If installing rear sight, ensure sight is set to 200 meters.
4. Fold down sight and hold in place.
5. Slide protective housing over sight until it clicks in place.

END OF WORK PACKAGE

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FIELD MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
REPLACING FRONT OR REAR SIGHT, HINGE PIN AND SPRING

INITIAL SETUP:

Tools and Special Tools

Tool kit (Item 1, Table 2, WP 0027 00)

REPLACING FRONT OR REAR SIGHT, HINGE PIN AND SPRING

WARNING

Do not perform replacement procedures on live M136A1 AT4CS-RS unless red safety release catch is in vertical position, cocking lever is in SAFE position, and transport safety fork is inserted into pin holes.

Weapon sights are boresighted to the individual launcher tube, and repairing/replacing a broken sight with a sight from an expended M136A1 AT4CS-RS may result in lowered accuracy of the weapon.

NOTE

Parts can be obtained from expended launchers.

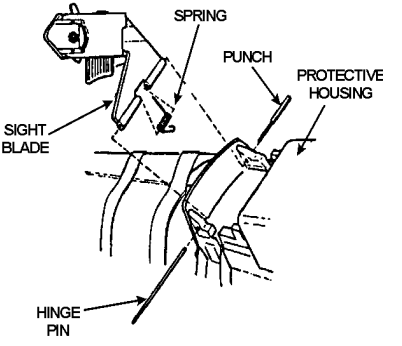
Removal and installation procedures are similar for both front and rear sights. Any differences are mentioned in the following procedures. Illustrations show rear sight.

An M136A1 AT4CS-RS with sights that have been repaired/replaced at least once, will have "REPAIRED SIGHTS" written below the SAFE label.

Removal

1. Ensure red safety release catch is in vertical position, cocking lever is in SAFE position, and transport safety fork is inserted into pin holes.
2. Press down and slide open protective housing.

3. Using smallest punch from punch set, push hinge pin out as far as possible.



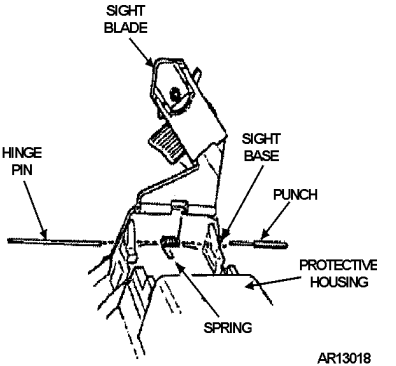
CAUTION

Do not lose spring or sight is unusable.

4. Place hand over spring to avoid losing it, pull hinge pin free and set aside.
5. Remove sight blade and spring and set aside for installation.

Installation

1. Position sight blade in sight base with white marking toward rear of launcher.



2. Position punch through hole in sight base and hole in sight blade far enough to hold sight blade in place on one side.
3. Position hinge pin through other hole in sight base and other hole in sight blade far enough to hold sight blade in place on other side.
4. Position spring in place (hinge pin slides through spring).

5. Push hinge pin into sight base until flush. Punch will fall out as hinge pin is pushed.

CAUTION

Rear sight must be in 200 meter setting prior to folding rear sight down or sight will be damaged.

6. If installing rear sight, ensure sight is set to 200 meters.
7. Fold down sight and hold in place.
8. Slide protective housing over sight until it clicks in place.
9. After replacing either front or rear sight blade, write “REPAIRED SIGHTS” horizontally below the SAFE label with white permanent marker.

END OF WORK PACKAGE

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FIELD MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
REPLACING DECALS

INITIAL SETUP:

Materials/Parts

Rag, wiping (Item 5, WP 0030 00)

REPLACING DECALS

WARNING

Do not perform replacement procedures on live M136A1 AT4CS-RS unless red safety release catch is in vertical position, cocking lever is in SAFE position, and transport safety fork is inserted into pin holes.

NOTE

Parts can be obtained from expended launchers.

Removal

1. Ensure red safety release catch is in vertical position, cocking lever is in SAFE position, and transport safety fork is inserted into pin holes.

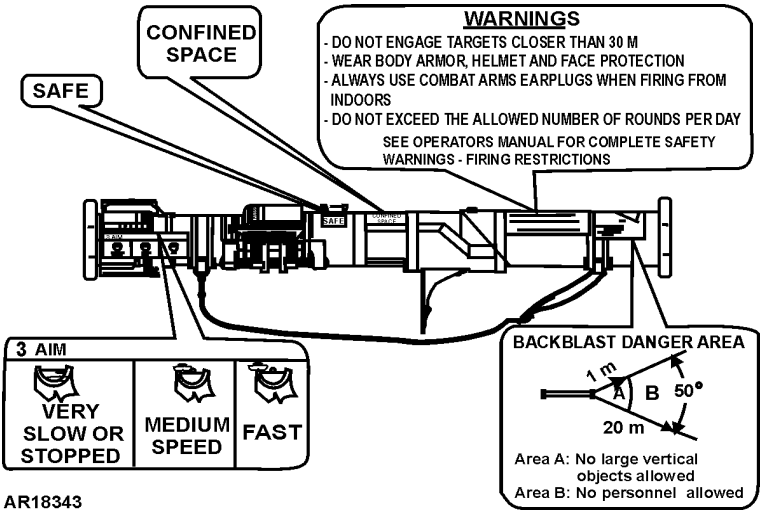
CAUTION

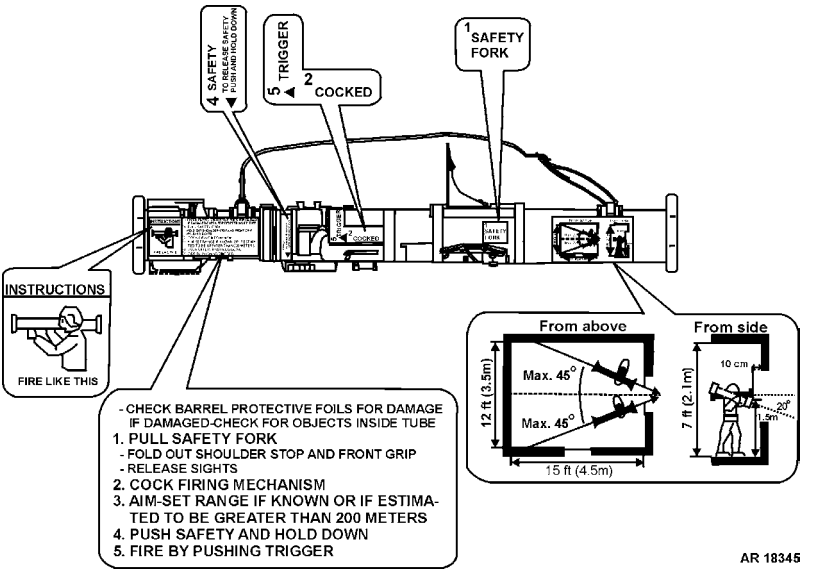
Do not use any type of solution on outside of launcher to remove decal.

2. Slowly peel decal from launcher.
3. Clean area with damp rag, if necessary.

Installation

Place new decal on launcher. Refer to illustrations for proper placement of decals.




4 SAFETY
TO RELEASE SAFETY PUSH AND HOLD DOWN
5 TRIGGER
2 COCKED
1 SAFETY FORK
INSTRUCTIONS
FIRE LIKE THIS
- CHECK BARREL PROTECTIVE FOILS FOR DAMAGE
IF DAMAGED-CHECK FOR OBJECTS INSIDE TUBE
1. PULL SAFETY FORK
- FOLD OUT SHOULDER STOP AND FRONT GRIP
- RELEASE SIGHTS
2. COCK FIRING MECHANISM
3. AIM-SET RANGE IF KNOWN OR IF ESTIMATED TO BE GREATER THAN 200 METERS
4. PUSH SAFETY AND HOLD DOWN
5. FIRE BY PUSHING TRIGGER
From above
From side
Max. 45°
Max. 45°
12 ft (3.5m)
15 ft (4.5m)
7 ft (2.1m)
10 cm
20°
1.5m
AR 18345

REPLACING IDENTIFICATION MARKINGS

1. Request the weapon's most recent DA Form 581 (Request for Issue and Turn-In of Ammunition) from the ASP.
2. Determine the serial number and lot number of the weapon with illegible/missing serial number and/or lot number, based on the record of M136A1 AT4CS-RS weapons that have issued and turned in.
3. Use a white marker to re-mark the weapon serial number and/or lot number at the proper identification marking location.

END OF WORK PACKAGE

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FIELD MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
REPLACING CARRYING SLING

INITIAL SETUP:

Tools and Special Tools

Tool kit (Item 1, Table 2, WP 0027 00)
Hand blind riveter (Item 2, Table 2, WP 0027 00)

REPLACING CARRYING SLING

Replacement of a damaged or worn carrying sling on a serviceable M136A1 AT4CS-RS is performed by cannibalizing the carrying sling from an expended or fired M136A1 AT4CS-RS launcher tube. The usable carrying sling from the fired M136A1 AT4CS-RS is removed and used to replace a damaged or missing carrying sling on an unfired M136A1 AT4CS-RS launcher.

WARNING

Do not perform replacement procedures on live M136A1 AT4CS-RS unless red safety release catch is in vertical position, cocking lever is in SAFE position, and transport safety fork is inserted into pin holes.

NOTE

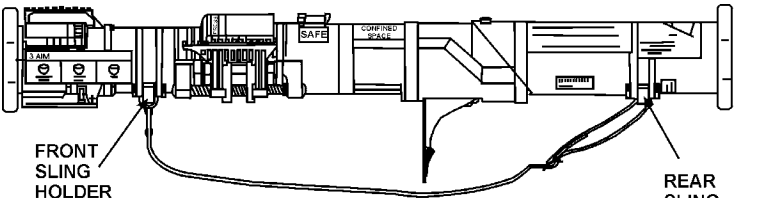
Parts can be obtained from expended launchers.

Follow the instructions below to remove either a usable or damaged carrying sling from an M136A1 AT4CS-RS.

Removal of Carrying Sling

1. Ensure red safety release catch is in vertical position, cocking lever is in SAFE position, and transport safety fork is inserted into pin holes.
2. Place the M136A1 AT4CS-RS on a sturdy work surface with the sling facing up.
3. Locate the three rivets that secure the sling and remove them, maintaining the integrity of the holes in the sling. This enables the sling to be removed from the front sling holder.

4. Pull the sling through the front sling holder.



5. Pull the sling through the sling buckle. This enables the sling to be removed from the rear sling holder.
6. Pull the sling through the rear sling holder.
7. Retain usable sling, discard damaged sling.

Installation of Carrying Sling on Unfired M136A1 AT4CS-RS

1. Ensure red safety release catch is in vertical position, cocking lever is in SAFE position, and transport safety fork is inserted into pin holes.
2. Place the M136A1 AT4CS-RS on a sturdy work surface with the sling holders facing up.
3. Locate the rear sling holder.

4. Place the sling over the middle of the launcher with the sling buckle facing up, ensuring the sling is untwisted.
5. Run the sling through the underside of the rear sling holder toward the rear of the launcher.
6. Loop the sling over the ring sling holder toward the front of the launcher.
7. Run the sling through the sling buckle, pulling the sling through the buckle until enough reaches the front sling holder.
8. Run the sling over and through the front sling holder, back toward the middle of the launcher, ensuring the sling remains untwisted.
9. Line up the rivet holes on the front end of the sling, with three holes on the top of the sling, and the three corresponding holes underneath.
10. Using a riveting tool, place a new rivet through each of the three holes, completing the sling replacement. If a riveting tool is not available, proceed to step 11.
11. Locate three (3) appropriately-sized bolts, three (3) appropriately-sized nuts, and six (6) appropriately-sized washers.
12. Place a washer over each bolt.
13. Insert the bolt through a rivet hole on the sling, going through both layers of the sling.
14. Place a washer over the bolt protruding through the sling.
15. Screw a nut over the bolt, tightening until snug.
16. Repeat steps 12-15 for the remaining two rivet holes.

END OF WORK PACKAGE

CHAPTER 6
SUPPORTING INFORMATION
FOR
M136A1 AT4CS-RS

OPERATOR MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
REFERENCES

SCOPE

This work package lists all Army regulations, field manuals, forms, pamphlets, technical manuals, and miscellaneous publications referenced in this manual.

ARMY REGULATIONS

AR 190-11	Physical Security of Arms, Ammunition and Explosives
AR 385-10	The Army Safety Program
AR 385-63	Range Safety
AR 420-1	Army Facilities Management
AR 700-138	Army Logistics Readiness and Sustainability

ARMY REGULATIONS - Continued

AR 710-2	Supply Policy Below the National Level
AR 740-1	Storage and Supply Activity Operations
AR 75-1	Malfunctions Involving Ammunition and Explosives

FIELD MANUALS

FM 4-30.13	Ammunition Handbook: Tactics, Techniques, and Procedures for Munitions Handlers
FM 55-15	Transportation Reference Data

FORMS

DA Form 2028	Recommended Changes to Publications and Blank Forms
DA Form 2404	Equipment Inspection and Maintenance Worksheet
DA Form 285	U.S. Army Accident Report
DA Form 4379	Ammunition Malfunction Report
DA Form 581	Request for Issue and Turn-In of Ammunition
DD Form 361	Transportation Discrepancy Report
SF Form 368	Product Quality Deficiency Report

PAMPHLETS

DA Pam 25-30	Consolidated Index of Army Publications and Blank Forms
DA Pam 385-63	Range Safety
DA Pam 385-64	Ammunition and Explosives Safety Standards
DA PAM 750-8	The Army Maintenance Management System (TAMMS) Users Manual

TECHNICAL MANUALS

TM 43-0002-33	Destruction of Conventional Ammunition and Improved Conventional Munitions (ICM) to Prevent Enemy Use

MISCELLANEOUS PUBLICATIONS

CTA 8-100	Army Medical Department Expendable/Durable Items
CTA 50-970	Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items)
DoD 4500.9-R PT2	Defense Transportation Regulation Part II (Cargo Movement)
DoD 5100.76-M	Physical Security of Sensitive Conventional Arms, Ammunition, and Explosives

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FIELD MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
MAINTENANCE ALLOCATION CHART (MAC) INTRODUCTION

INTRODUCTION

The Army Maintenance System MAC

This introduction provides a general explanation of all maintenance and repair functions authorized at the two maintenance levels under the Two-Level Maintenance System concept.

The MAC (immediately following the introduction) designates overall authority and responsibility for the performance of maintenance functions on the identified end item or component. The application of the maintenance functions to the end item or component shall be consistent with the capacities and capabilities of the designated maintenance levels, which are shown on the MAC in column (4) as:

Field - includes two subcolumns, Crew (C) and Maintainer (F).
Sustainment - includes two subcolumns, Below Depot (H) and Depot (D).

The maintenance to be performed at field and sustainment levels is described as follows:

1. Crew Maintenance. The responsibility of a using organization to perform maintenance on its assigned equipment. It normally consists of inspecting, servicing, lubricating, adjusting, and replacing parts, minor assemblies, and subassemblies. The replace function for this level of maintenance is indicated by the letter "C" in the third position of the SMR code. A "C" appearing in the fourth position of the SMR code indicates complete repair is possible at the crew maintenance level.

2. Maintainer Maintenance. Maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. The replace function for this level of maintenance is indicated by the letter "F" appearing in the third position of the SMR code. An "F" appearing in the fourth position of the SMR code indicates complete repair is possible at the field maintenance level. Items are returned to the user after maintenance is performed at this level.

3. Below Depot Sustainment. Maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. The replace function for this level of maintenance is indicated by the letter "H" appearing in the third position of the SMR code. An "H" appearing in the fourth position of the SMR code indicates complete repair is possible at the below depot sustainment maintenance level. Items are returned to the supply system after maintenance is performed at this level.

4. Depot Sustainment. Maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. The replace function for this level of maintenance is indicated by the letter "D" or "K" appearing in the third position of the SMR code. Depot sustainment maintenance can be performed by either depot personnel or contractor personnel. A "D" or "K" appearing in the fourth position of the SMR code indicates complete repair is possible at the depot sustainment maintenance level. Items are returned to the supply systems after maintenance is performed at this level.

The tools and test equipment requirements table (immediately following the MAC) list the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from the MAC.

The remarks table (immediately following the tools and test equipment requirements) contains supplemental instructions and explanatory notes for a particular maintenance function.

Maintenance Functions

Maintenance functions are limited to and defined as follows:

1. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel). This includes scheduled inspection and gagings and evaluation of cannon tubes.

2. Test. To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards on a scheduled basis, i.e., load testing of lift devices and hydrostatic testing of pressure hoses.

3. Service. Operations required periodically to keep an item in proper operating condition; e.g., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases. This includes scheduled exercising and purging of recoil mechanisms. The following are examples of service functions:

   a. Unpack. To remove from packing box for service or when required for performance of maintenance operations.

   b. Repack. To return item to packing box after service and other maintenance operations.

c. Clean. To rid the item of contamination.

d. Touch Up. To spot paint scratched or blistered surfaces.

e. Mark. To restore obliterated identification.

4. Adjust. To maintain or regulate, within prescribed limits, by bringing into proper position, or by setting the operating characteristics to specified parameters.

5. Align. To adjust specified variable elements of an item to bring about optimum or desired performance.

6. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments of test, measuring, and diagnostic equipment used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

7. Remove/Install. To remove and install the same item when required to perform service or other maintenance functions. Install may be the act of emplacing, seating, or fixing into position a spare, repair part, or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.

8. Paint (ammunition only). To prepare and spray color coats of paint so that the ammunition can be identified and protected. The color indicating primary use is applied, preferably, to the entire exterior surface as the background color of the item. Other markings are to be repainted as original so as to retain proper ammunition identification.

9. Replace. To remove an unserviceable item and install a serviceable counterpart in its place. “Replace” is authorized by the MAC and assigned maintenance level is shown as the third position code of the Source, Maintenance and Recoverability (SMR) code.

10. Repair. The application of maintenance services, including fault location/troubleshooting, removal/installation, disassembly/assembly procedures, and maintenance actions to identify troubles and restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

NOTE

The following definitions are applicable to the "repair" maintenance function:

Services. Inspect, test, service, adjust, align, calibrate, and/or replace.

Fault Location/Troubleshooting. The process of investigating and detecting the cause of equipment malfunctioning; the act of isolating a fault within a system or Unit Under Test (UUT).

Disassembly/Assembly. The step-by-step breakdown (taking apart) of a spare/functional group coded item to the level of its least component, that is assigned as SMR code for the level of maintenance under consideration (i.e., identified as maintenance significant).

Actions. Welding, grinding, riveting, straightening, facing, machining, and/or resurfacing.

11. Overhaul. That maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

12. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of material maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (e.g., hours/miles) considered in classifying Army equipment/components.

Explanation of Columns in the MAC

Column (1) - Group Number. Column (1) lists Functional Group Code (FGC) numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies, and modules with the Next Higher Assembly (NHA).

Column (2) - Component/Assembly. Column (2) contains the item names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

Column (3) - Maintenance Function. Column (3) lists the functions to be performed on the item listed in column (2). (For a detailed explanation of these functions refer to “Maintenance Functions” outlined above.)

Column (4) - Maintenance Level. Column (4) specifies each level of maintenance authorized to perform each function listed in column (3), by indicating work time required (expressed as manhours in whole hours or decimals) in the appropriate subcolumn. This work time figure represents the active time required to perform that maintenance function at the indicated level of maintenance. If the number or complexity of the tasks within the listed maintenance function varies at different maintenance levels, appropriate work time figures are to be shown for each level. The work time figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions. This time includes preparation time (including any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance time in addition to the time required to perform the

specific tasks identified for the maintenance functions authorized in the MAC. The symbol designations for the various maintenance levels are as follows:

Field:
C - Crew maintenance
F - Maintainer maintenance
Sustainment:
L - Specialized Repair Activity (SRA)
H - Below Depot maintenance
D - Depot maintenance

NOTE

The “L” maintenance level is not included in column (4) of the MAC. Functions to this level of maintenance are identified by a work time figure in the “H” column of column (4), and an associated reference code is used in the REMARKS column (6). This code is keyed to the remarks and the SRA complete repair application is explained there.

Column (5) - Tools and Equipment Reference Code. Column (5) specifies, by code, those common tool sets (not individual tools), common Test, Measurement and Diagnostic Equipment (TMDE), and special tools, special TMDE and special support equipment required to perform the designated function. Codes are keyed to the entries in the tools and test equipment table.

Column (6) - Remarks Code. When applicable, this column contains a letter code, in alphabetical order, which is keyed to the remarks table entries.

Explanation of Columns in the Tools and Test Equipment Requirements

Column (1) - Tool or Test Equipment Reference Code. The tool or test equipment reference code correlates with a code used in column (5) of the MAC.

Column (2) - Maintenance Level. The lowest level of maintenance authorized to use the tool or test equipment.

Column (3) - Nomenclature. Name or identification of the tool or test equipment.

Column (4) - National Stock Number (NSN). The NSN of the tool or test equipment.

Column (5) - Tool Number. The manufacturer's part number.

Explanation of Columns in the Remarks

Column (1) - Remarks Code. The code recorded in column (6) of the MAC.

Column (2) - Remarks. This column lists information pertinent to the maintenance function being performed as indicated in the MAC.

FIELD MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
MAINTENANCE ALLOCATION CHART (MAC)

MAINTENANCE ALLOCATION CHART FOR M136A1 AT4CS-RS

Table 1. MAC for M136A1 AT4CS-RS .

(1)	(2)	(3)	(4) MAINTENANCE LEVEL				(5)	(6)
			FIELD		SUSTAINMENT			
GROUP NUMBER	COMPONENT/ASSEMBLY	MAINTENANCE FUNCTION	CREW C	MAIN-TAINER F	BELOW DEPOT H	DEPOT D	TOOLS AND EQUIPMENT REFERENCE CODE	REMARKS CODE
	M136A1 AT4CS-RS	Inspect	X					
		Service	X					
		Replace		X				
		Repair		X			1	A
	Protective Housings	Inspect	X					
		Replace		X				
	Front Sight, Hinge Pin, Spring	Inspect	X					
		Replace		X				

Table 1. MAC for M136A1 AT4CS-RS - Continued.

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAIN-TAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
	Rear Sight, Hinge Pin, Spring	Inspect	X					
		Replace		X				
	Transport Safety Fork	Inspect	X					
		Replace		X				
	Decals	Inspect	X					
		Replace		X				
	Carrying Sling	Inspect	X					
		Replace		X			2	

TOOLS AND TEST EQUIPMENT REQUIREMENTS FOR M136A1 AT4CS-RS

Table 2. Tools and Test Equipment for M136A1 AT4CS-RS.

TOOLS OR TEST EQUIPMENT REF CODE	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
1	F	Tool Kit, Repairman's, Small Arms:	5180-00-357-7770	
2	F	Riveter, Blind, Hand:	5120-01-289-4310	

REMARKS FOR M136A1 AT4CS-RS

Table 3. Remarks for M136A1 AT4CS-RS.

REMARKS CODE	REMARKS
A	When corrective actions on minor repairs in this manual fail to restore M136A1 AT4CS-RS to serviceable condition, it will be turned in through ammunition supply channels as specified in the SOP.

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OPERATOR MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS (BII) LISTS

INTRODUCTION

Scope

This work package lists COEI and BII for the M136A1 AT4CS-RS to help you inventory items for safe and efficient operation of the equipment.

General

The COEI and BII information is divided into the following lists:

Components of End Item (COEI). This list is for information purposes only and is not authority to requisition replacements. These items are part of the M136A1 AT4CS-RS. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Items of COEI are removed and separately packaged for transportation or shipment only when necessary. Illustrations are furnished to help you find and identify the items.

Basic Issue Items (BII). These essential items are required to place the M136A1 AT4CS-RS in operation, operate it, and to do emergency repairs. Although shipped separately packaged, BII must be with the M136A1 AT4CS-RS during operation and when it is transferred between property accounts. Listing these items is your

authority to request/requisition them for replacement based on authorization of the end item by the TOE/MTOE. Illustrations are furnished to help you find and identify the items.

Explanation of Columns in the COEI List and BII List

Column (1) - Illus Number. Gives you the number of the item illustrated.

Column (2) - National Stock Number (NSN). Identifies the stock number of the item to be used for requisitioning purposes.

Column (3) - Description, CAGEC, and Part Number. Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The stowage location of COEI and BII is also included in this column. The last line below the description is the CAGEC (Commercial and Government Entity Code) (in parentheses) and the part number.

Column (4) - Usable On Code. When applicable, gives you a code if the item you need is not the same for different models of equipment.

Column (5) - Unit of Measure (U/M). Indicates the physical measurement or count of the item as issued per the National Stock Number shown in column (2).

Column (6) - Qty Rqr. Indicates the quantity required.

COMPONENTS OF END ITEM (COEI) LIST

Not applicable.

BASIC ISSUE ITEMS (BII) LIST

Table 1. Basic Issue Items List.

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC, AND PART NUMBER	(4) USABLE ON CODE	(5) U/M	(6) QTY RQR
		TM 9-1315-255-13, Operator and Field Maintenance Manual		EA	1

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OPERATOR MAINTENANCE
M136A1 AT4CS-RS
(NSN 1315-01-508-8521)
EXPENDABLE AND DURABLE ITEMS LIST

INTRODUCTION

Scope

This work package lists expendable and durable items that you will need to operate and maintain the M136A1 AT4CS-RS. This list is for information only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items), or CTA 8-100, Army Medical Department Expendable/Durable Items.

Explanation of Columns in the Expendable/Durable Items List

Column (1) - Item Number. This number is assigned to the entry in the list and is referenced in the narrative instructions to identify the item (e.g., Use brake fluid (Item 5, WP 0029 00).).

Column (2) - Level. This column identifies the lowest level of maintenance that requires the listed item (C = Crew, F = Field).

Column (3) - National Stock Number (NSN). This is the NSN assigned to the item which you can use to requisition it.

Column (4) - Item Name, Description, Commercial and Government Entity Code (CAGEC), and Part Number (P/N). This column provides the other information you need to identify the item.

Column (5) - Unit of Measure (U/M). This code shows the physical measurement or count of an item, such as gallon, dozen, gross, etc.

EXPENDABLE AND DURABLE ITEMS LIST

Table 1. Expendable and Durable Items List .

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) ITEM NAME, DESCRIPTION, CAGEC, PART NUMBER	(5) U/M
1	C	8105-01-529-8615	BAG, SANDWICH: (54027) PRESTO	BX
2	C	4230-01-220-3221	DECONTAMINATION KIT, INDIVIDUAL EQUIPMENT: (19207) 5705588	EA
3	F	7520-01-207-4159	MARKER, TUBE TYPE: Quick-drying, white oil base paint (86874) 63713	DZ
4	C	6515-01-552-0229	PLUG, EAR: Combat ARMS Ear Plug (Single End Design) (IM331) 370-1000	PG

Table 1. Expendable and Durable Items List - Continued.

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) ITEM NAME, DESCRIPTION, CAGEC, PART NUMBER	(5) U/M
5	C	7920-00-205-1711	RAG, WIPING: Cotton, unbleached, mixed colors (80244) 7920-00-205-1711	BE
6	F		RIVET: 1/8-in. diameter x 1/4-in. grip range	
7	C	7510-00-266-5016	TAPE, PRESSURE SENSITIVE ADHESIVE: lusterless, opaque, olive drab, 60 yds, water resistant, (19203) 8783475	RO

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By Order of the Secretary of the Army:

GEORGE W. CASEY, JR.
General, United States Army
Chief of Staff

Official:

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