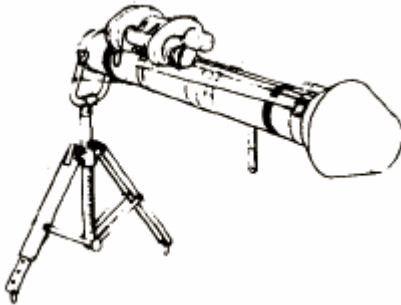


**TECHNICAL MANUAL
OPERATOR'S MANUAL
FOR
DRAGON WEAPON GUIDED
MISSILE SYSTEM,
SURFACE ATTACK:
M47
(MEDIUM
ANTITANK/ASSAULT
WEAPON SYSTEM)**



WARNING - This document contains technical data whose export is restricted by the Arms Export Control Act (Title 22, U.S.C. Sec. 2751, *et seq.*) or the Export Administration Act of 1979, as amended, Title 50, U.S.C., App. 2401, *et seq.* Violations of these export laws are subject to severe criminal penalties. Disseminate in accordance with provisions of DoD Directive 5230.25.

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**EXPENDABLE SUPPLIES
AND MATERIALS LIST** D-1

**HEADQUARTERS, DEPARTMENT OF THE ARMY
JULY 1979**



- Don't look at the sun, flares, lasers or searchlights while sighting through the tracker telescope. You could severely burn your eyes.
- A practice missile may contain "live" rocket motors after termination of flight. The warhead on this type missile is inert, but the "live" rocket motors present a real hazard to personnel. The location of all practice missiles must be reported to EOD for disposal.
- The prone firing position is unstable and uncomfortable. If this position must be used, make sure you keep your body out of the danger areas. When tracking moving targets in this position, make sure you don't swing the aft end of the launcher into a position where the backblast could injure you.
- Don't fire at targets closer than 65 meters. The warhead won't be armed and you'll have a dud.
- When the tracker is mated to the round, use extreme care not to fire the round accidentally.
- Don't perform any cleaning or maintenance operations with the tracker mated on the round.
- Do not attempt to destroy the DRAGON rounds by use of hammers, picks, axes, or other mechanical methods.
- All personnel within 50 meters engaged in DRAGON firing must wear flak vest, helmet, ear and eye protection.
- An instructor and gunner are required to wear flak vest, helmet, ear and eye protection during DRAGON missile training firing.
- Most paints are flammable. Be sure your workplace has good ventilation. Don't inhale fumes and don't smoke when painting.
- Read FM 21-11 so you'll know about artificial respiration.
- Do not fire DRAGON over heads of friendly troops or power lines and don't fire from inside buildings or bunkers.



RADIATION HAZARD



The anti-reflective coating on the AN/TAS 5 infrared optics contains thorium fluoride which is slightly radioactive. The only potential hazard involves ingestion (swallowing or inhaling) of the coating material. Dispose of broken lenses, etc., in accordance with AR 385-11.



CHEMICAL AGENT RESISTANT COATING

This coating is extremely toxic during mixing/application! Proper clothing and protection devices must be worn to prevent absorption, through the skin or inhalation of vapors. See TM 43-0139.

Technical Manual

No. 9-1425-484-10

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C. , 31 July 1979

**OPERATOR'S MANUAL
DRAGON WEAPON G.M. SYSTEM SURFACE ATTACK: M47**

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can 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 DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 in the back of this manual direct to Commander, U.S. Army Missile Command, ATTN: AMSMI-MMC-LE-FP, Redstone Arsenal, AL 35898-5238. A reply will be furnished to you.

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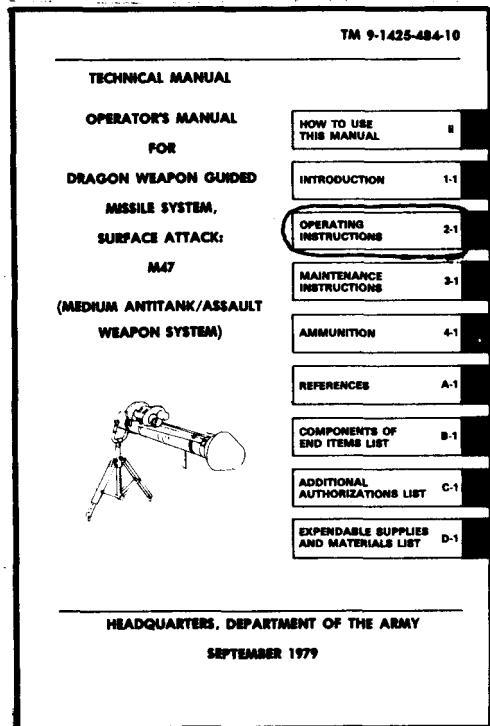
*This manual supersedes TM 9-1425-480-10, dated 1 June 1977, including all changes.

HOW TO USE THIS MANUAL

If you spend a few minutes looking through this manual, you'll see that it has a new look that is very different from the manuals you have been using. The new look is not just to make this manual look good, but to make it easier for you to read and use so you can do your job right. We got rid of as many big words as we could. Each chapter is set up to lead you through it step by step for ease of understanding. Now check out the front cover and you'll see the black bars on the right-hand edge with chapter titles next to them. So HOW DO YOU USE THIS MANUAL?

LIKE THIS:

1. Suppose you want to know about tracking a target.
2. Look at the cover, and you'll see the chapter titles listed top to bottom. Find "OPERATING INSTRUCTIONS".
3. Bend the pages a bit and look at the edges. You'll see black bars on some of the pages that are lined with the bars on the cover.
4. If you put your thumb-nail on the black bar that is aligned with the one on the cover for OPERATING INSTRUCTIONS you'll find the beginning of chapter 2.



HOW TO USE THIS MANUAL - CONTINUED

5. Right under the chapter title you'll see a list of all the sections by title and page number.
6. Look down the list until you come to Section III. GENERAL OPERATING INSTRUCTIONS . . . 2-21.

TM 9-1425-484-10

CHAPTER 2
OPERATING INSTRUCTIONS

	Page
Section I. DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS	2-1
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Section I. DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS		Para	Page
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Section III. GENERAL OPERATING INSTRUCTIONS

	Para	Page
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Select a Firing Position	2-8	2-25
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Acquire Target and Evaluate Range	2-11	2-35
Tracking a Target	2-12	2-39
Firing the Missile	2-13	2-40

2-21

7. Now that you have reached the section you want you will see the title of each paragraph, paragraph and page number.

8. Now look down the list until you come to "Tracking a Target" and read across. The information you want is located in paragraph 2-12 on page 2-39. Now flip to page 2-39.

HOW TO USE THIS MANUAL - CONTINUED

9. Now that you're at the paragraph you want, you will find something else that's new. SOME PROCEDURES HAVE BOXES AROUND THEM. The "boxed" procedures and the pictures go together, so you don't have to look for a picture by number or look on other pages to find what gizmo (1) looks like. In this TM, it's right there.


TM 9-1425-484-10

2-12. TRACKING A TARGET


STEP 1

MOVING TARGET

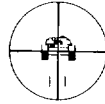
A. Center the crosshairs on the center of visible mass of the target.



FLANK



OBLIQUE



FRONT OR REAR


B. Excessive or jerky movement of the tracker while the missile is in flight may cause you to miss the target.

C. Track target for approximately two seconds prior to trigger squeeze. This establishes a smooth tracking rate used during missile flight.

STEP 2

STATIONARY TARGET

Center the crosshairs on the center of visible mass of the target until missile impact.



END OF TASK

YOU ARE NOW READY TO FIRE THE MISSILE

TURN THE PAGE

2-30

10. When you find procedures that are not boxed, you don't need to look for a picture. Either you've seen it before, and now know where the control (or whatever) is, or you just don't need one to do the job.

11. You can find procedures in other sections in the same way. First, find the section you think the procedure should be in, open the manual to that section, and find the page number of the procedure from the list at the beginning of the section.

12. You can also use the table of contents on page i in the front of this manual.

13. You don't have a subject matter index because you have an index in each chapter and section of this manual.

CHAPTER I
INTRODUCTION

	Page
Section I GENERAL INFORMATION	1-1
Section II. EQUIPMENT DESCRIPTION	1-5
Section III. FUNCTIONAL DESCRIPTION	1-13

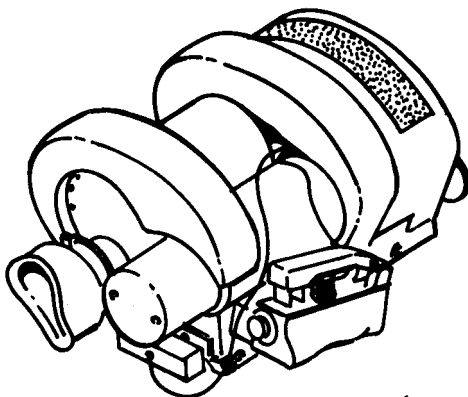
Section I. GENERAL INFORMATION

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Scope	1-1	1-2
Maintenance Forms and Records	1-2	1-3
Reporting Equipment Improvement Recommendations (EIR's)	1-3	1-3
Nomenclature Cross-Reference	1-4	1-4
List of Abbreviations	1-5	1-4

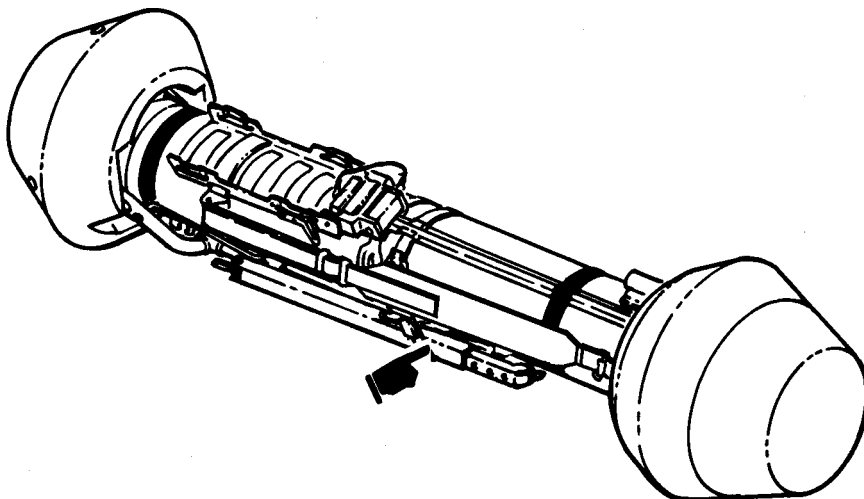
1-1. SCOPE

This manual is for your use in operating and maintaining the DRAGON G.M. System, Surface Attack: M47 which consists of the following major items.

- a. SU-36/P Tracker, G.M., Infrared.

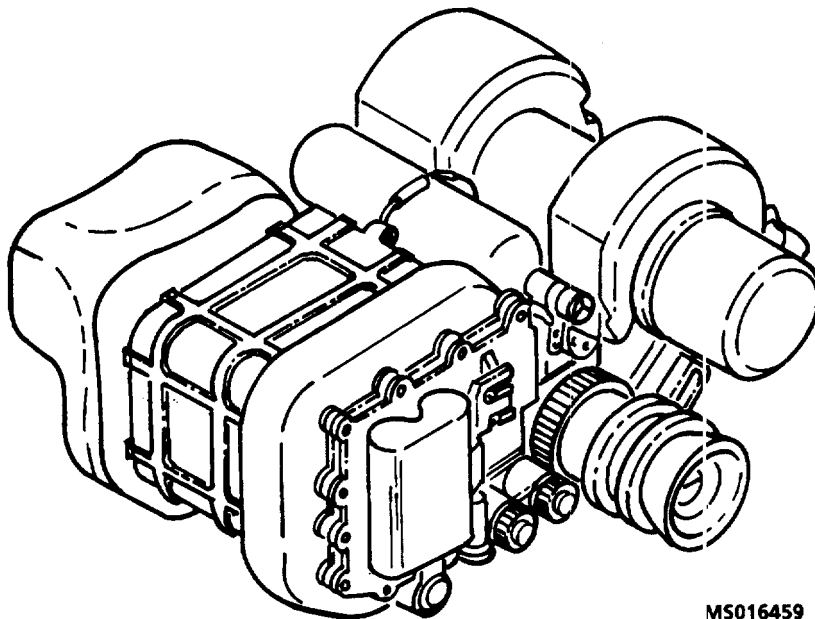


- b. M222 and MK 1 MOD 0 Guided Missile and Launcher, Surface Attack or M223 Guided Missile and Launcher, Surface Attack (Practice).



1-1. SCOPE - CONTINUED

- c. AN/TAS 5 Night Vision Sight, Infrared

**MS016459****1-2. MAINTENANCE FORMS AND RECORDS**

Maintenance forms and records you are required to use are explained in DA PAM 738-750, The Army Maintenance Management System (TAMMS).

1-3. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIRs)

If your DRAGON 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. Tell us why a procedure is hard to perform. Put it on an SF 368 (Quality Deficiency Report). Mail it to us at Commander, U.S. Army Missile Command, ATTN: AMSMI-MMC-CS-AC, Redstone Arsenal, AL 35898-5238. We'll send you a reply.

1-4. NOMENCLATURE CROSS-REFERENCE

A cross-reference between official nomenclature and the nomenclature used in this manual is provided in table 1-1. All references in this manual to the items listed will be by TM nomenclature.

Table 1-1. Nomenclature Cross-reference

TM	Nomenclature	Official Nomenclature
DRAGON	M47	Guided Missile System, Surface Attack: M47 (DRAGON)
Day	Tracker	Infrared Tracker GM SU-36/P
Round		M222/MK 1 MOD 0 Guided Missile and Launcher, Surface Attack
Practice	Round	M223 Guided Missile and Launcher, Sur- face Attack (Practice)
Night	Tracker	Night Vision Sight, Tracker, Infrared AN/TAS-5
M175	Mount	Guided Missile Launcher Mount M175

1-5. LIST OF ABBREVIATIONS

A list of abbreviations used in this manual and their definitions are listed below.

<u>Abbreviation</u>	<u>Definition</u>
APC	Armored Personnel Carrier
BRT	Brightness
CTRS	Contrast
IR	Infrared
PMCS	Preventive Maintenance Checks and Services
PSI	Pounds per Square Inch
VPC	Vehicle Power Conditioner
LOS	Line of Sight
para	Paragraph
ASP	Ammunition Supply Point
CB	Circuit Breaker
Kph	Kilometers per hour
CARC	Chemical agent resistant coating

Section II. EQUIPMENT DESCRIPTION

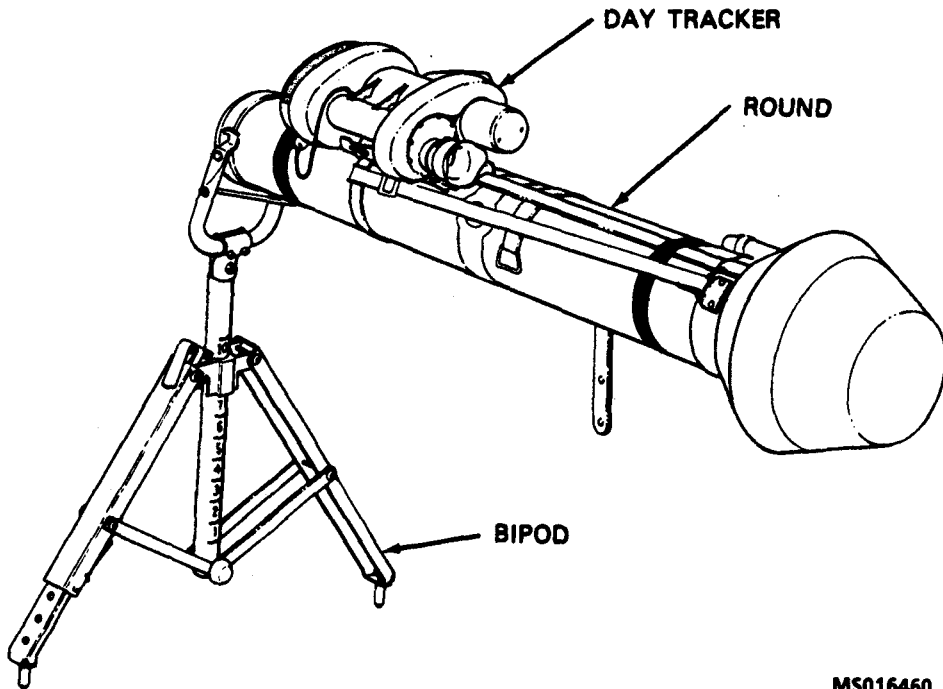
	Para	Page
Equipment Capabilities	1-6	1-6
System Characteristics	1-7	1-9
Support Equipment Used with the Dragon	1-8	1-9

1-6. EQUIPMENT CAPABILITIES

a. The DRAGON (figure 1-1) is a light weight recoilless, antitank assault weapon. It is capable of defeating enemy armor, fortified bunkers, concrete gun emplacements, and other hardened targets on the battlefield. It can be operated by the individual soldier. When employed with the Mechanized Infantry, it can be mounted and fired from the Armored Personnel Carrier (APC) or machine gun tripod as shown in figures 1-2 and 1-3.

b. The DRAGON can be fired in daylight conditions using the day tracker providing the gunner can see the target through the tracker scope.

c. The DRAGON can be fired using the night tracker during darkness or daylight periods of limited visibility such as smoke or fog.



MS016460

Figure 1-1

1-6. EQUIPMENT CAPABILITIES - CONTINUED

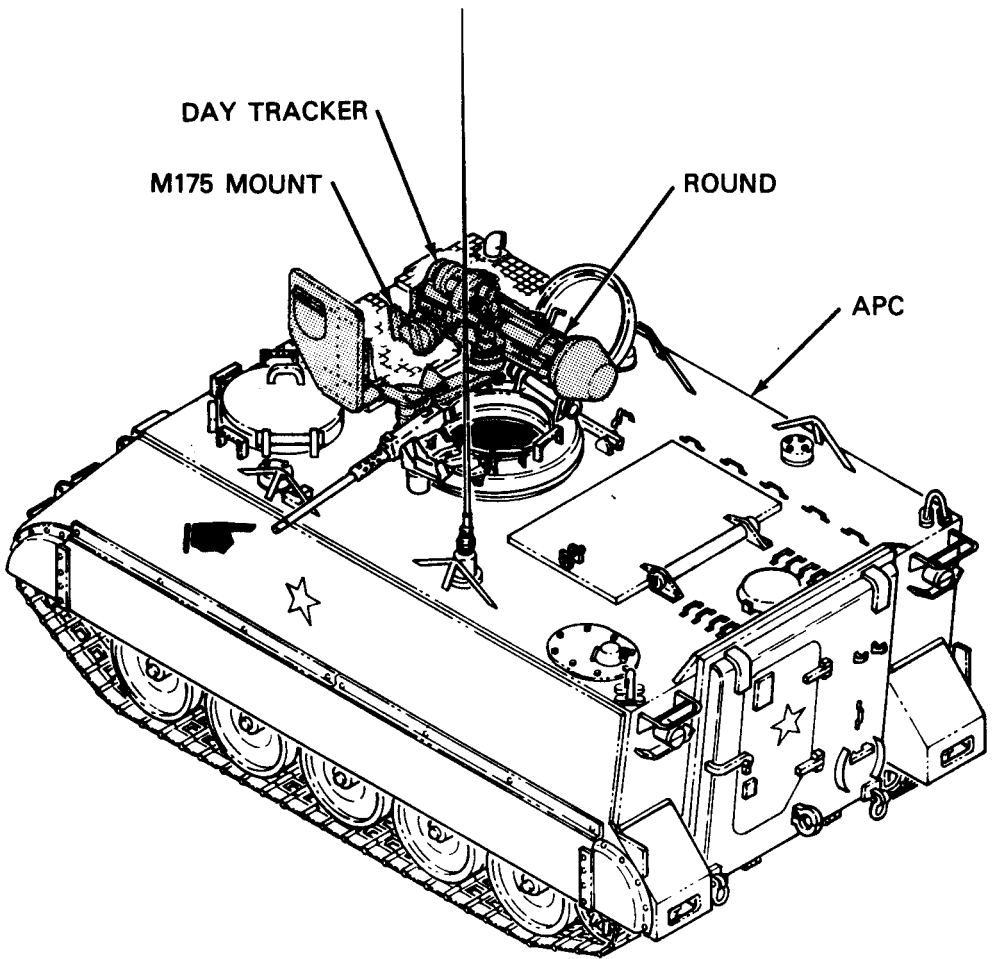


Figure 1-2

1-6. EQUIPMENT CAPABILITIES - CONTINUED

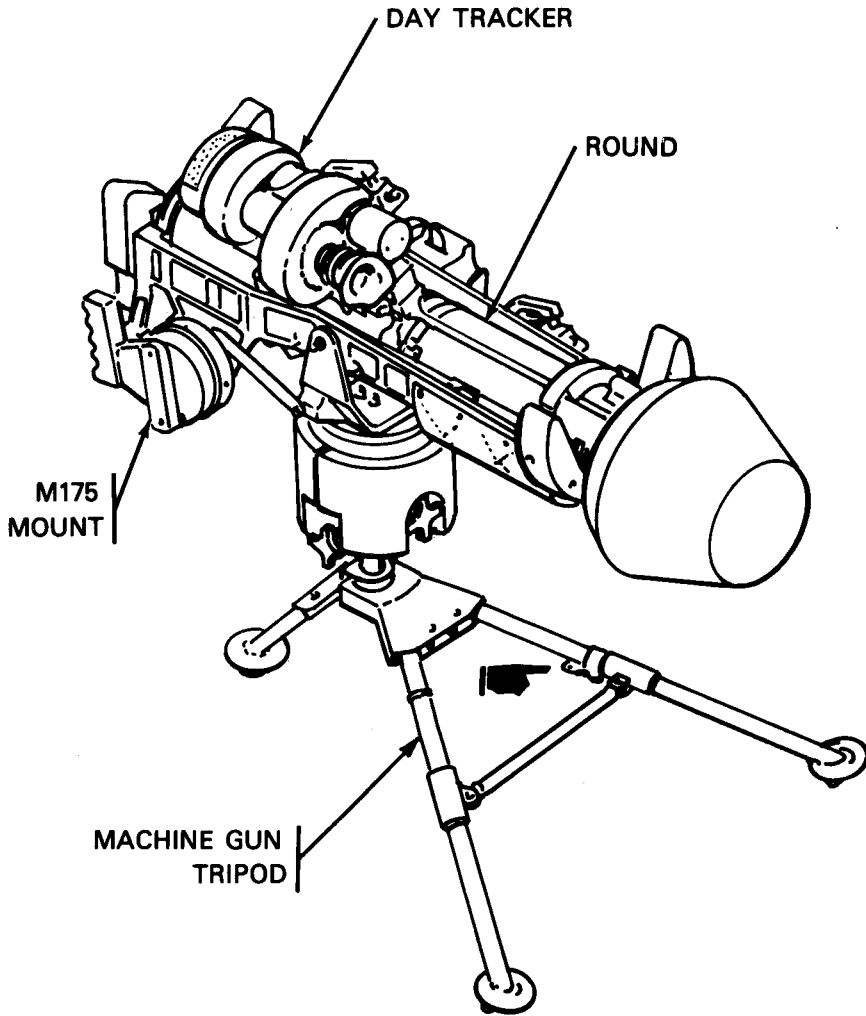


Figure 1-3

1-7. SYSTEM CHARACTERISTICS

- a. Day Tracker. Operating temperature range
 -32°C (-25°F) to +63°C (+145°F)
- Weight to 3.1 kg (6.75 lbs.)
- b. Night Tracker. Operating temperature range
 -32°C (-25°F) to +52°C (+125°F)
- Weight:
- With 1 battery and 1 bottle
 9.82 kg (.21.65 lbs.)
- Rucksack with stiffner
 5.18 kg (11.41 lbs.)
- Coolant bottles (5) with carry-
 ing case
 5.56 kg (12.24 lbs.)
- Batteries (5) with carrying case
 5.15 kg (11.35 lbs.)
- c. M175 Mount. Operating temperature range
 -32°C (-25°F) to +63°C (+145°F)
- Weight to 37.6 kg (82.8 lbs.)
- d. Round (M222/M223/
 MK 1 MOD 0 Operating temperature range
 -32°C(-25°F) to +63°C(+14°F)
- Weight to 12.4kg (27.2 lbs.)
- Effective Range
 Minimum 65 meters
 Max imum 1,000 meters
- Warhead (See Chapter 4)
 M222 HEAT
 M223 INERT (practice)
 MK 1 MOD 0 HEAT

1-8. SUPPORT EQUIPMENTUSEDWITH THE DRAGON.

- a. Support equipment issued with your DRAGON is listed in Appendices B and C. Appendix D lists the expendable supplies and materials that you need to keep your DRAGON in number one

1-8. SUPPORT EQUIPMENT USED WITH THE DRAGON-CONTINUED

operating condition.

b. When you are using the DRAGON on an APC you will require the following items of support equipment. These items are shown on Figure 1-4, 1-5 and 1-6.

c. These items of equipment are installed on the APC in the locations shown. If your APC doesn't have them installed see your supervisor and get your track mechanic to install them. Make sure you tell the track mechanic to remove all the support equipment if the APC is turned in for overhaul or repair.

d. Have your supervisor or track mechanic refer to TB 9-1425-480-20 for instructions and procedures to install, remove, and maintain DRAGON support equipment shown on figure 1-4.

1-8. SUPPORT EQUIPMENT USED WITH THE DRAGON -CONTINUED

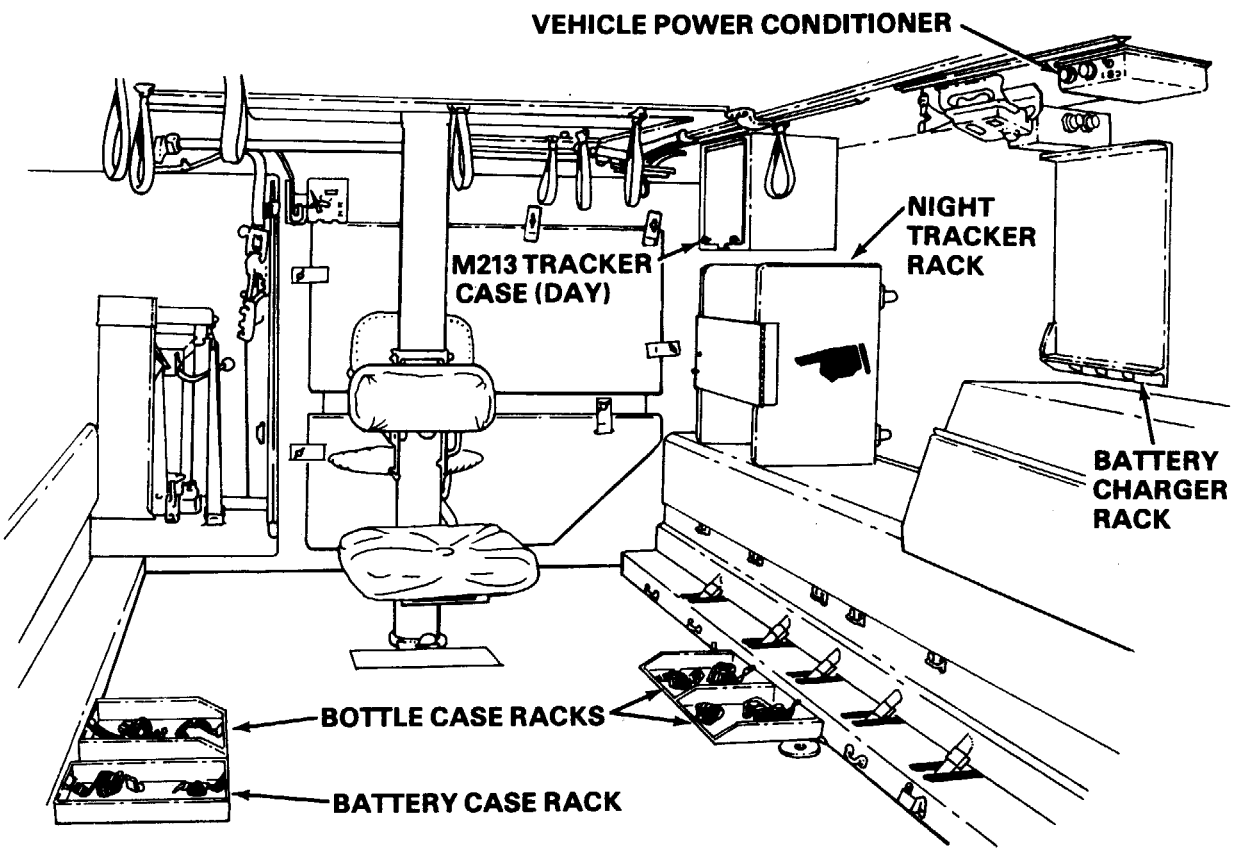


Figure 1-4

1-8. SUPPORT EQUIPMENT USED WITH THE DRAGON - CONTINUED

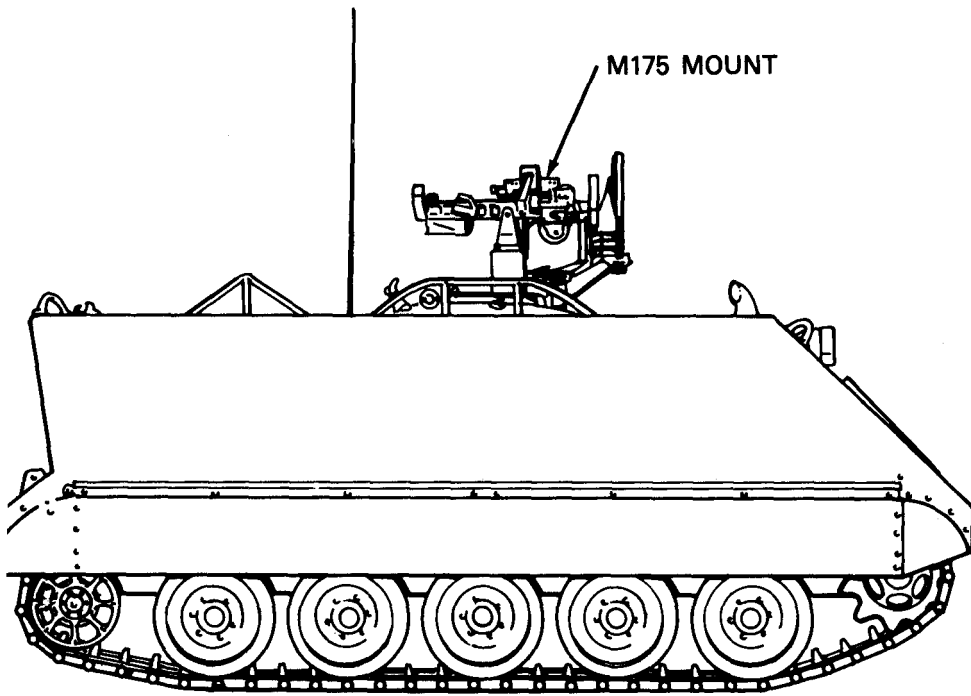


Figure 1-5

I

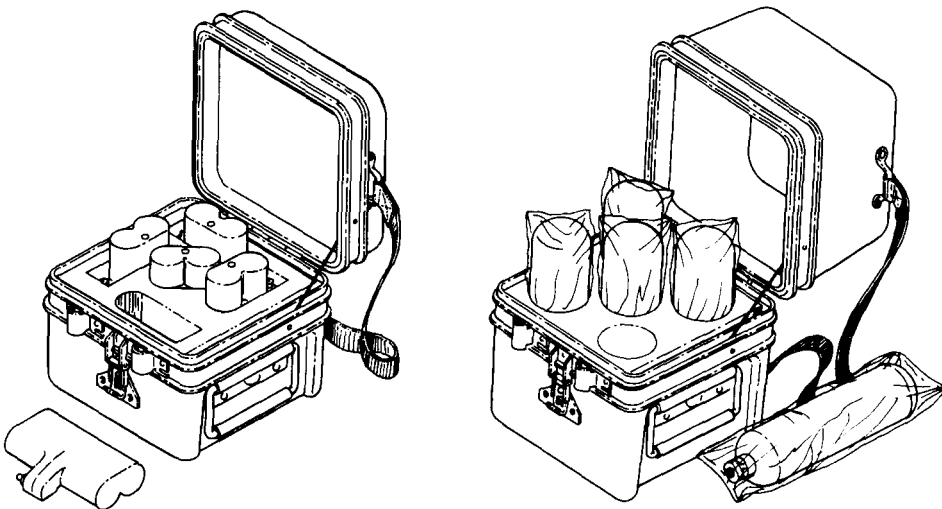


Figure 1-6

I

Section III. FUNCTIONAL DESCRIPTION

	Para	Page
DRAGON Functional Description	1-9	1-14
Day Tracker Functional Description	1-10	1-15
Night Tracker Functional Description	1-11	1-15
M175 Mount Functional Description	1-12	1-16
M222/MK1 MOD 0/M223 Ruond Functional Description	1-13	1-17

1-9. DRAGON FUNCTIONAL DESCRIPTION. (SEE FIGURE 1-7)

a. When you launch your missile the tracker receives infra-red (IR) signals from the missile flare. These IR signals tell the tracker the position of the missile in relation to the gunner's line-of-sight (LOS). The tracker sends control signals to the missile through the guidance wire coming out the rear end of the missile.

b. While the missile is in flight the tracker measures missile position errors and sends a control signal to the missile which fires a pair of side thrusters. When the side thrusters fire, the missile position is corrected and its forward speed is increased. This is a continuous process until missile impact.

c. When the missile has traveled 65 meters, the arming function is completed. Upon missile impact, a crush switch closes and completes an electrical circuit to the primer charge, which detonates the main explosive charge.

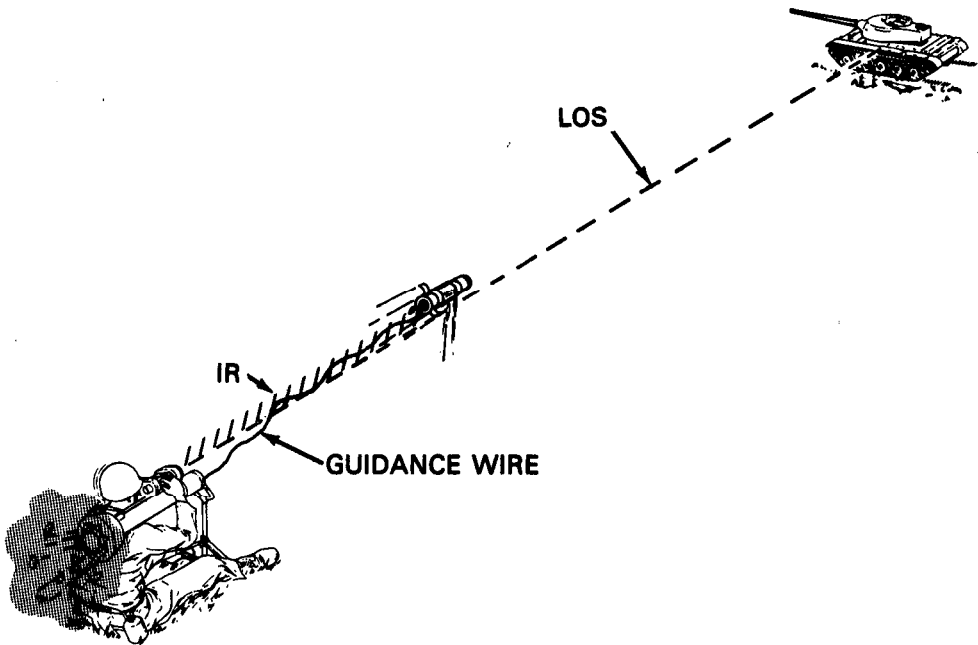


Figure 1-7

1-10. DAY TRACKER FUNCTIONAL DESCRIPTION. (SEE FIGURE 1-8)

The day tracker automatically guides the missile along the gunner's LOS by flight direction commands generated in the tracker, which is transmitted to the missile through a guidance wire until missile impact.

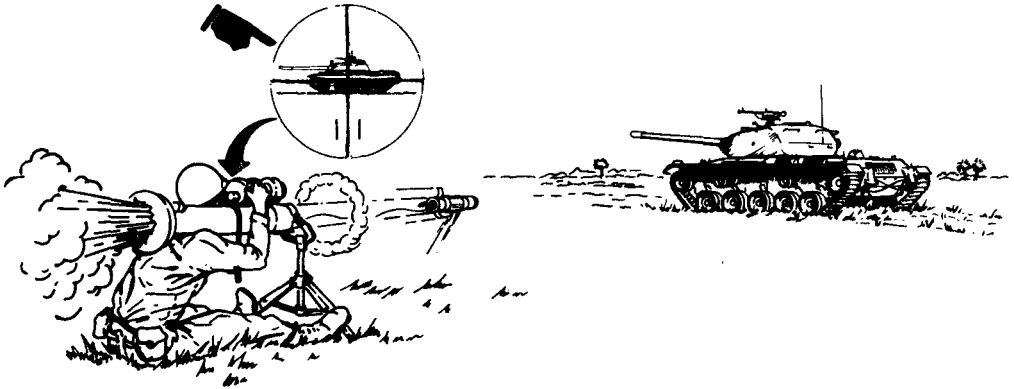


Figure 1-8

1-11. NIGHT TRACKER FUNCTIONAL DESCRIPTION. (SEE FIGURE 1-9)

The night tracker senses heat from the target, and changes it into a picture that is displayed in the sight reticle. Control and guidance of the missile are the same as with the day tracker.

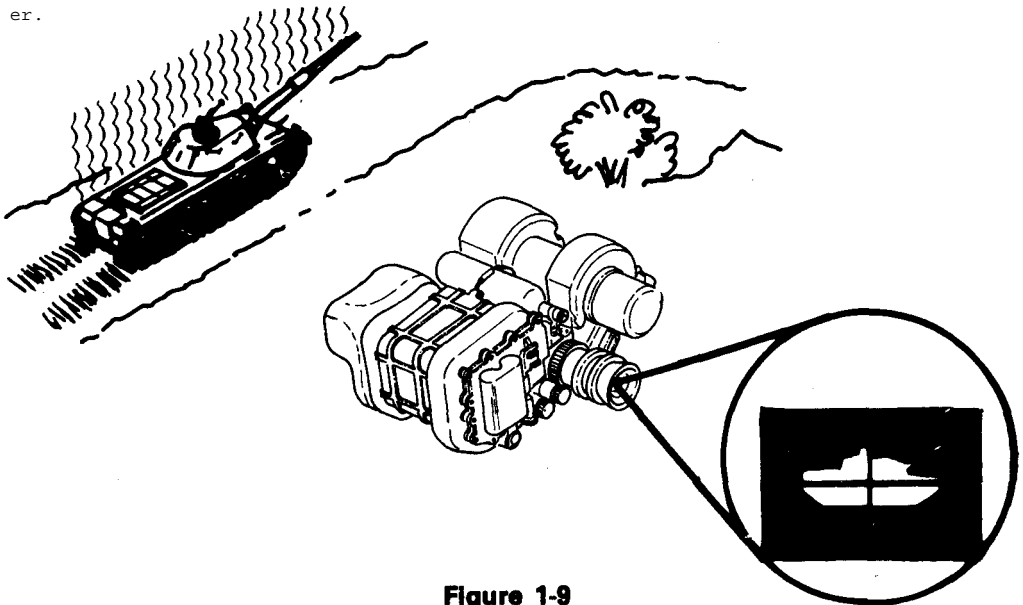


Figure 1-9

1-12. M175 MOUNT FUNCTIONAL DESCRIPTION. (SEE FIGURE 1-10)

The M175 mount provides a stable launch platform to fire the missile from the M113A1 APC and the M3 or M122 machine gun tripod. The tracker mount provides the electrical connection between the round and tracker. A remote firing mechanism is located on the right rear side of the cradle for easy access by the gunner. The azimuth and elevation damper assemblies reduce vibration and provide a firm but steady tracking action.

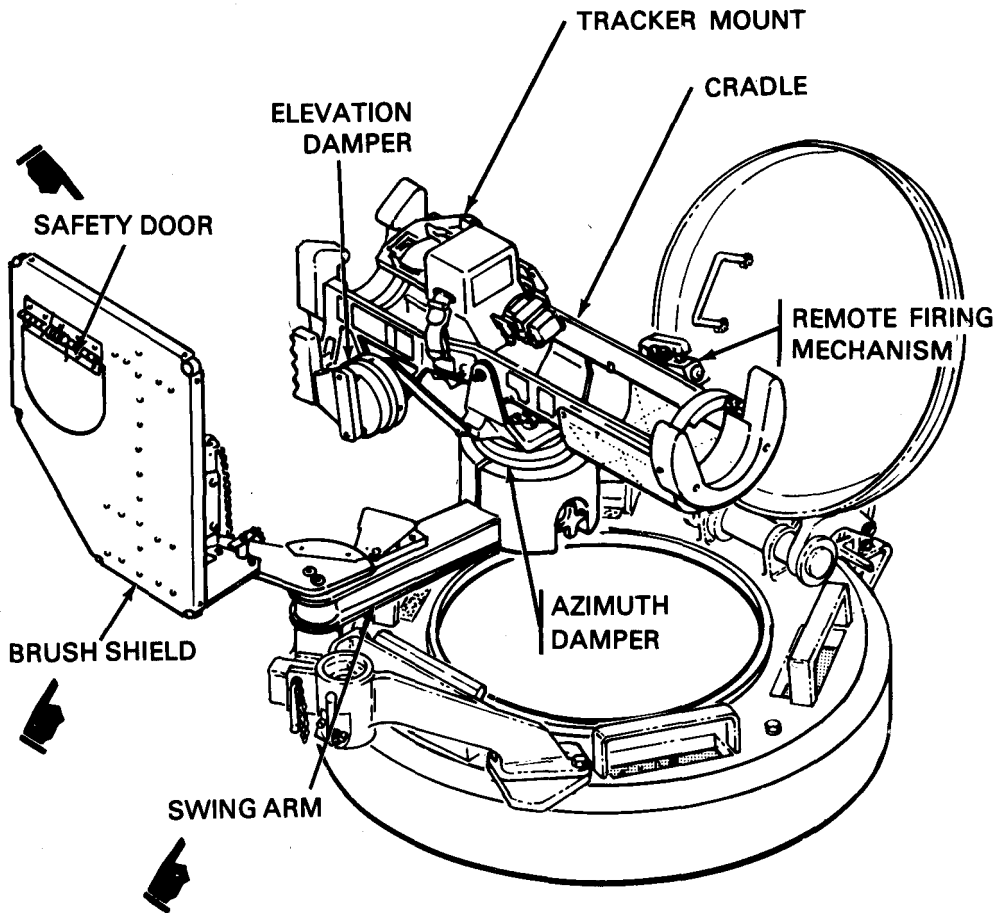


Figure 1-10

1-13. M222/MK1 MOD 0/M223 ROUND FUNCTIONAL DESCRIPTION

The M222/MK 1 MOD 0/M223 round consists of a smooth bore fiberglass launch tube with missile stored inside. The launch tube has a tracker battery that provides power to the tracker and fires the missile. The tracker bracket provides the electrical connections necessary for missile, trigger, and tracker operation. The bipod is attached to the forward end of the launch tube and supports the launcher during operations.

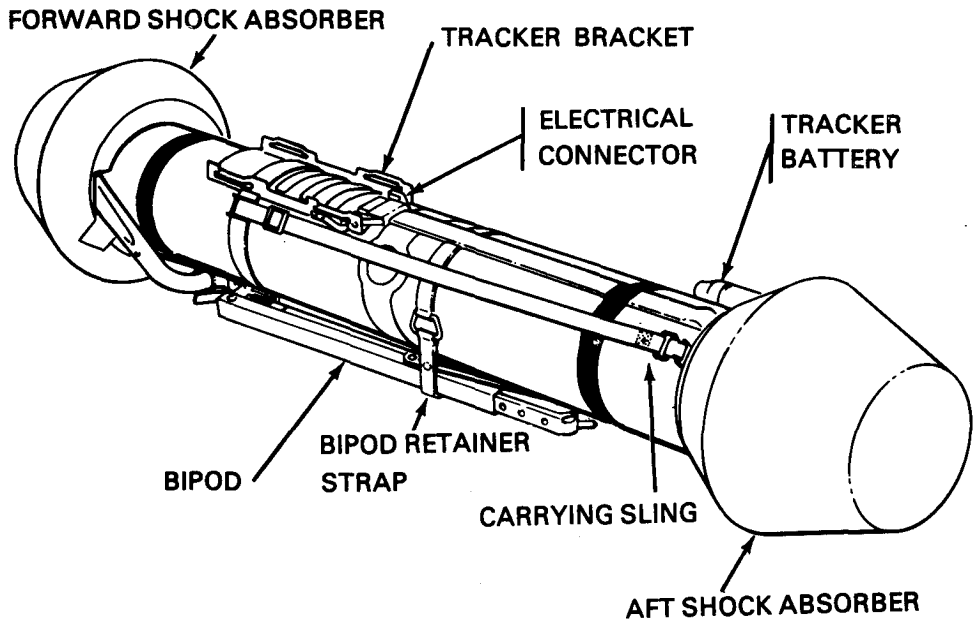


Figure 1-11

CHAPTER 2

OPERATING INSTRUCTIONS

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Section I. DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS

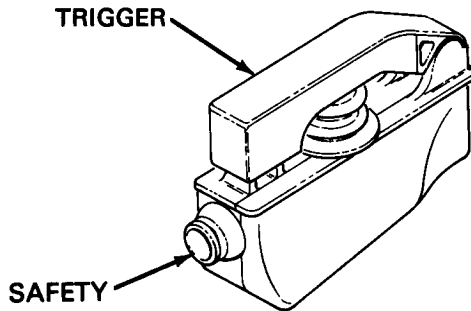
	Para	Page
Day Tracker Controls	2-1	2-2
Round Controls	2-2	2-3
M175 Mount Controls	2-3	2-4
Night Tracker Controls and Indicators	2-4	2-5

2-1. DAY TRACKER CONTROLS.

SIGHT ADJUSTING RING — Rotates and allows you to focus the target for the sharpest image.

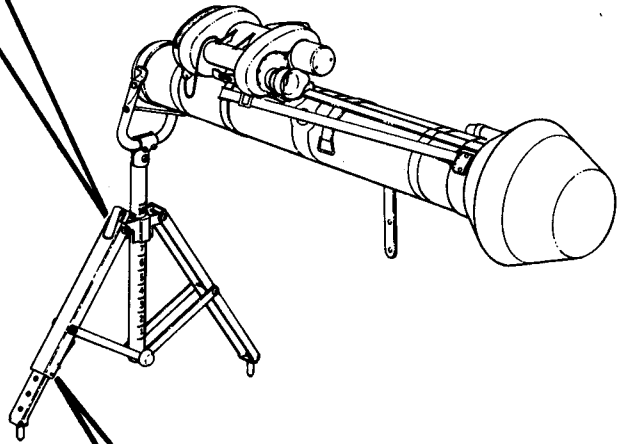
EYEGUARD — Adjusts to fit contour of gunner's face.

FIRING MECHANISM — Consists of a trigger and safety. When you push and hold the safety in and squeeze the trigger, a pulse is generated that fires the missile.



2-2. ROUND CONTROLS

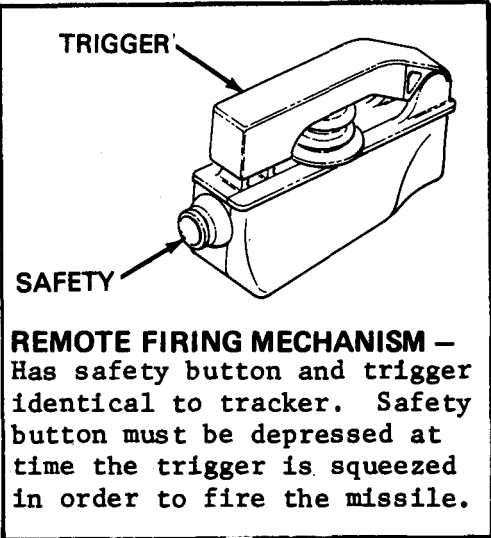
FRICITION LOCK – Allows you to adjust the height of the round to your firing position.



FOOT ADJUST – Allows you to adjust the level of the round for better tracking.

2-3. M175 MOUNT CONTROLS

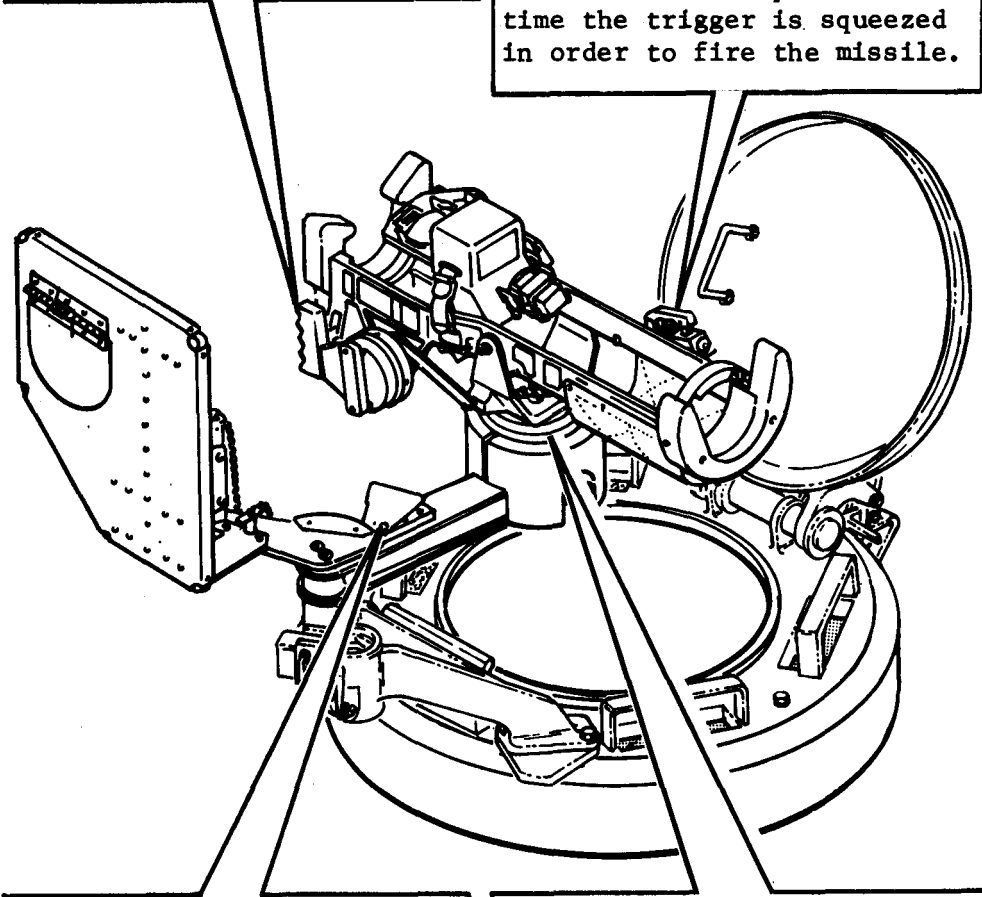
ELEVATION CONTROL — Moves the cradle vertically during tracking and firing.



TRIGGER

SAFETY

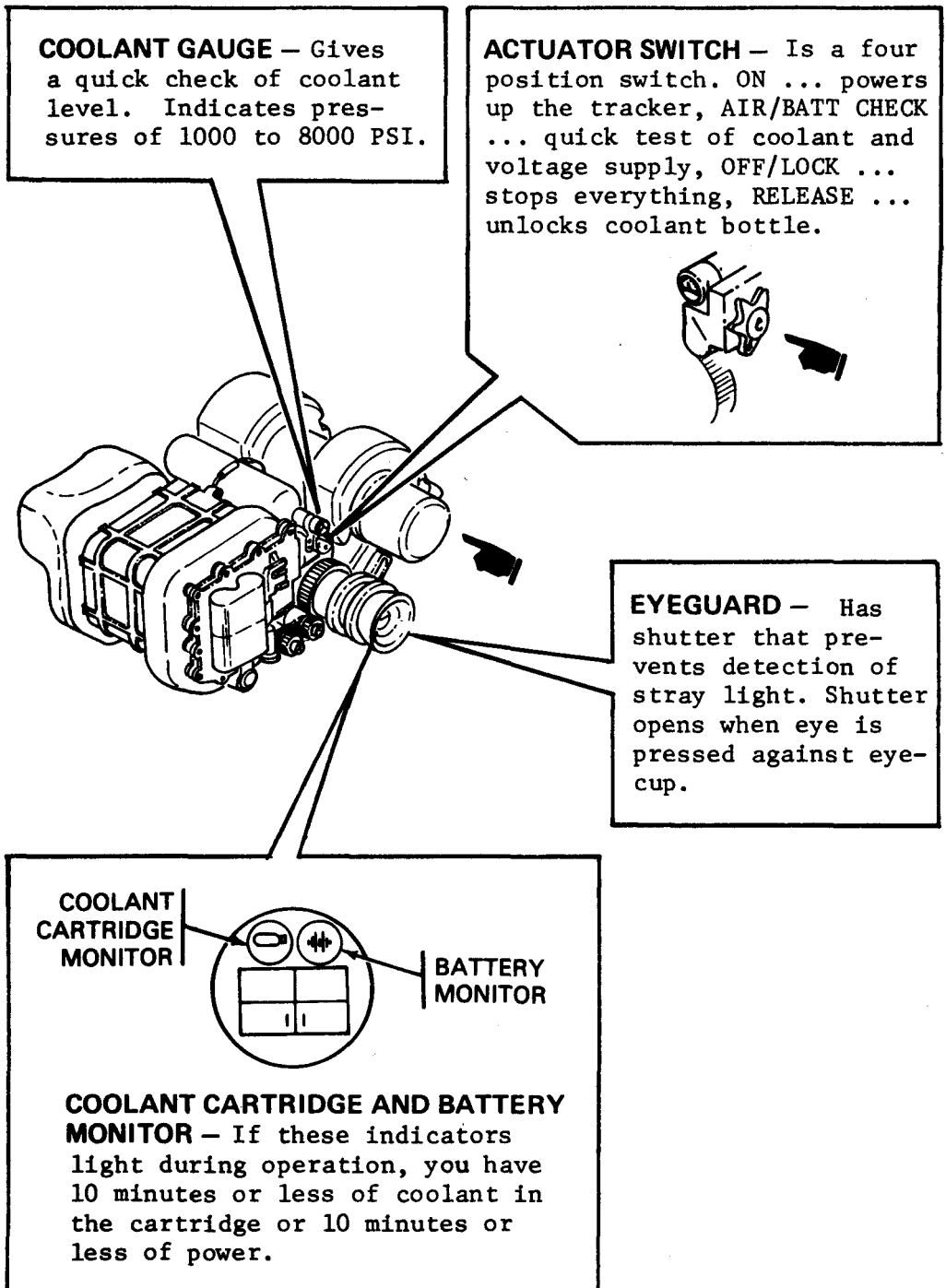
REMOTE FIRING MECHANISM — Has safety button and trigger identical to tracker. Safety button must be depressed at time the trigger is squeezed in order to fire the missile.



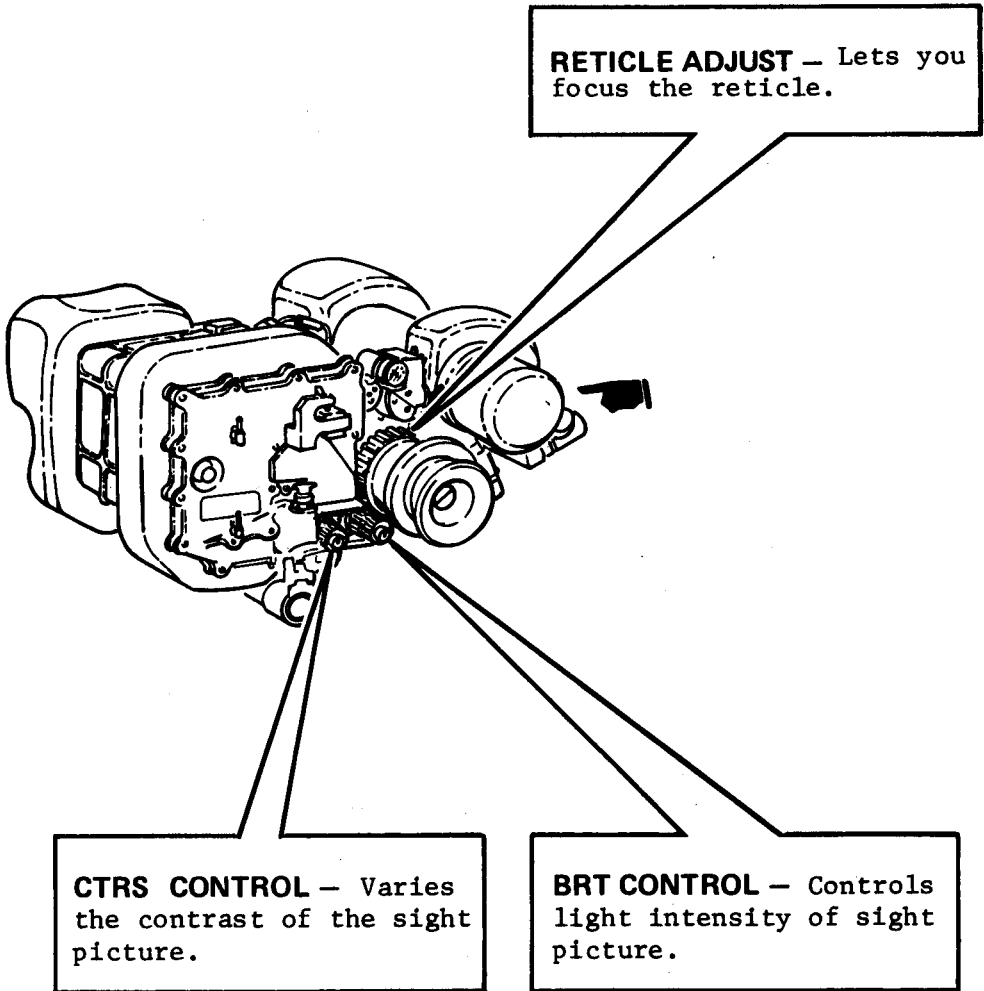
LATCH HANDLE — Locks the swingarm in either the "TRAVEL LOCK" or the "READY TO FIRE" position.

AZIMUTH DAMPER — Provides horizontal movement of the cradle during tracking and firing.

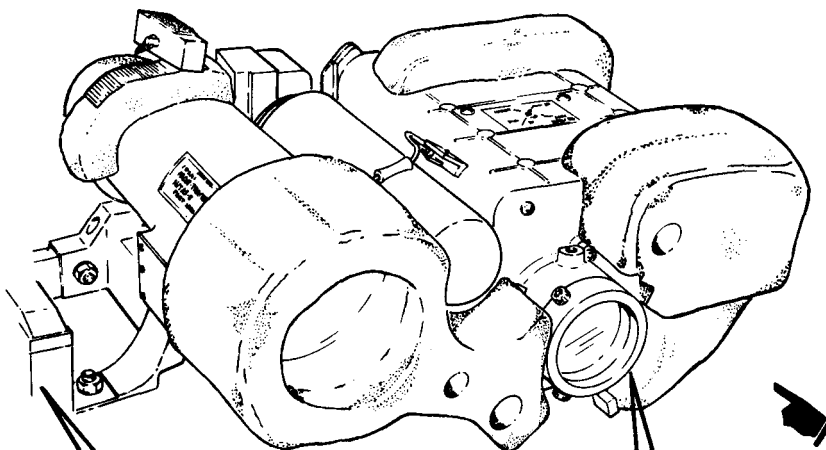
2-4. NIGHT TRACKER CONTROLS AND INDICATORS



2-4. NIGHT TRACKER CONTROLS AND INDICATORS - CONTINUED

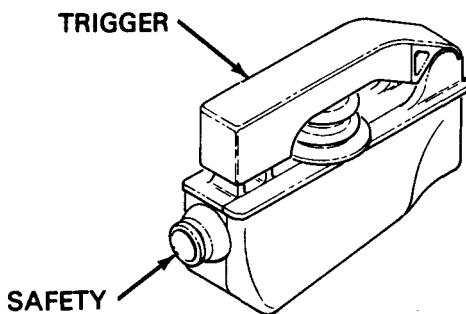


2-4. NIGHT TRACKER CONTROLS AND INDICATORS - CONTINUED



FIRING MECHANISM — Has safety button and trigger. Safety button must be depressed at time the trigger is squeezed in order to fire the missile.

RANGE FOCUS LEVER — Is used with BRT and CTRS controls to adjust for best picture.



Section II. PREVENTIVE MAINTENANCE CHECKS
AND SERVICES

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Service Upon Receipt	2-5	2-9
Preventive Maintenance Checks and Services (PMCS)	2-6	2-9
Day Tracker	Table 2-1	2-10
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M175 Mount	Table 2-4	2-17

2-5. SERVICE UPON RECEIPT

If you are issued any of the following items, inventory it. While performing the inventory, check the items for damage. If anything is missing or damaged, notify your supervisor.

<u>ITEM</u>	<u>INVENTORY PER</u>
Day Tracker	Appendix B, page B-3 to B-5
Night Tracker	Appendix B, page B-6 to B-8
M175 Mount	Appendix B, page B-9 to B-11



Shipping containers listed in Appendix B are reusable and must not be discarded.

END OF TASK

Follow-on Task: Perform PMCS (see para. 2-6)

2-6. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

a. Before you operate. Always keep in mind the CAUTIONS and WARNINGS. Perform your BEFORE (B) PMCS.

b. After you operate, be sure to perform your AFTER (A) PMCS.

c. Column entries used in PMCS.

(1) Column 1, Item No. Number the checks and services in the order they are to be performed. The column will be used as a source of item for the "TM Number" column on DA Form 2404, Equipment Inspection and Maintenance worksheet, in recording results of PMCS.

(2) Column 2, Interval. Specifies the intervals at which the PMCS will be performed. The "B" interval requires the check to be performed "Before Operation." The "A" interval requires the check to be performed "After Operation." The "Q" interval requires the check to be performed "Quarterly."

(3) Column 3, Item to be Inspected. Identifies the portion of the system to be inspected.


**2-6. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)-
CONTINUED**

(4) Column 4, Procedures. Provides the procedure for performing the check.

(5) Column 5, For Readiness Reporting. Equipment is not ready/available if: Column 5 contains the criteria which will render the system incapable of performing its primary mission.

TABLE 2-1
PREVENTIVE MAINTENANCE CHECKS AND SERVICES
FOR
DAY TRACKER


B - BEFORE A - AFTER Q - QUARTERLY

Item	Interval			Item to be Inspected	Procedures Check for and have repaired or adjusted necessary	For readiness reporting equipment is not ready/available If:
	B	A	Q			
					 <p>Some firing mechanisms are dangerous and should not be used. Inspect all firing mechanisms. Those with a "T" shaped tab on the housing should be returned to depot unless stamped with the letters RANAD. This stamp means that the firing mechanism has already been reworked and is safe to use. The unsafe firing mechanism can allow the missile to be fired without the safety being engaged.</p> <p>When inspecting the tracker firing mechanism, DO NOT install the tracker on the round.</p>	

2-6. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) - CONTINUED

TABLE 2-1
 PREVENTIVE MAINTENANCE CHECKS AND SERVICES
 FOR
 DAY TRACKER - Continued

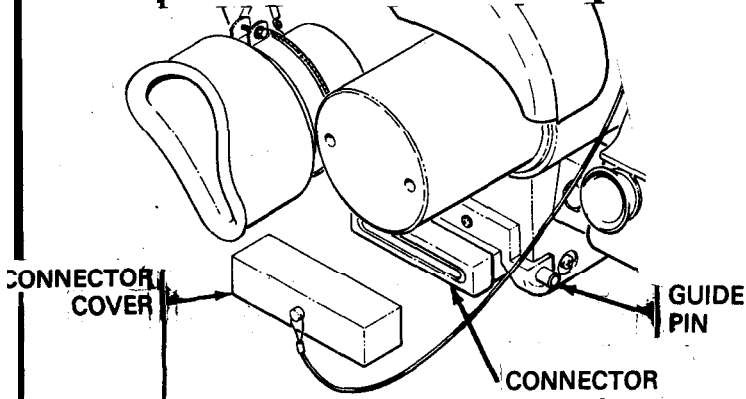
B - BEFORE A - AFTER Q - QUARTERLY

Item	Interval			Item to be	Procedures Check for and have repaired or adjusted necessary	For readiness reporting equipment is not ready/available if:
	B	A	Q			
1	●	●		Firing Mechanism	<p>Check operation of firing mechanism.</p> <p>Push the safety button in. Does it operate smoothly?</p> <p>Hold the safety in and squeeze the trigger. Did it click?</p> <p>Release the safety. Now squeeze the trigger again. The safety should prevent the trigger operation.</p>	Firing Mechanism inoperable.
						
				<div style="display: flex; justify-content: space-between; width: 100px;"> <div style="border-left: 1px solid black; height: 100px;"></div> <div style="border-left: 1px solid black; height: 100px;"></div> <div style="border-left: 1px solid black; height: 100px;"></div> <div style="border-left: 1px solid black; height: 100px;"></div> </div>		

2-6. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) - CONTINUED

TABLE 2-1
 PREVENTIVE MAINTENANCE CHECKS AND SERVICES
 FOR
 DAY TRACKER - CONTINUED


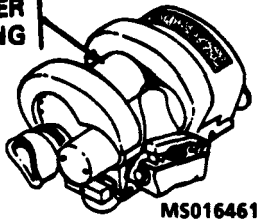
Item No.	Interval			Item to be Inspected	Procedures Check for and have repaired or adjusted as necessary	For readiness reporting equipment is not ready/available if:
	B	A	Q			
2	•	•		Optics	Make a visual inspection of lenses for dirt or for signs of internal moisture. Look through the sight and check for a clear unfogged sight picture. If dirty, clean them. See para. 3-3. If foggy, turn in to Direct Support Maintenance.	Lenses have internal moisture or sight picture not visible.
3	•			Guide Pins	Check all four guide pins for damage or missing pins.	Guide pins damaged or missing.



2-6. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) - CONTINUED

TABLE 2-1
PREVENTIVE MAINTENANCE CHECKS AND SERVICES
FOR
DAY TRACKER - CONTINUED

B - BEFORE A - AFTER Q - QUARTERLY

Item	Interval			Item to be inspected	Procedures Check for and have repaired or adjusted necessary	For readiness reporting equipment is not ready/available if:
	B	A	Q			
4	•	•		Connector	 <p>Don't poke anything inside the connector. If you do, you will damage the connector.</p> <p>Remove connector cover and visually inspect cover and connector for damage or dirt. If it's dirty, clean it, See para. 3-3.</p>	Connector is damaged.
5		ž		Tracker Housing	<p>Visually inspect and check for loose or missing bolts, screws, and shock absorbers. If any are loose or missing turn in to direct support maintenance.</p> <p>Check paint for chips or scratches. Spot paint as necessary. See para. 3-9.</p> <p>TRACKER HOUSING</p>  <p>MS016461</p>	Screws and bolts missing or loose.
6	•			Eyeguard	Rotate the eyeguard.	Eyeguard is missing.


2-6. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)-
CONTINUED

TABLE 2-2
PREVENTIVE MAINTENANCE CHECKS AND SERVICES
FOR
NIGHT TRACKER - CONTINUED

B - BEFORE

A - AFTER

Q - QUARTERLY

ITEM	Interval			Item to be Inspected	Procedures Check for and have repaired or adjusted necessary	For readiness reporting equipment is not ready/available if :
	B	A	Q			
1	•			Firing Mechanism	 <p>Some firing mechanisms are dangerous and should not be used. Inspect all firing mechanisms. Those with a "T" shaped tab on the housing should be returned to depot unless stamped with the letters RANAD. This stamp means that the firing mechanism has already been reworked and is safe to use. The unsafe firing mechanism can allow the missile to be fired without the safety being engaged.</p> <p>When inspecting the tracker firing mechanism, DO NOT install the tracker on the round.</p> <p>Check operation of firing mechanism. Push the safety button in. Does it operate smoothly?</p>	Firing Mechanism inoperable.

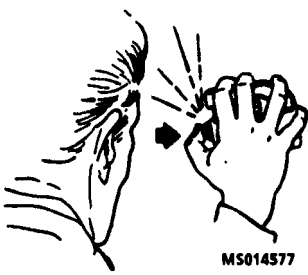
2-6. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)-
CONTINUED

TABLE 2-2
PREVENTIVE MAINTENANCE CHECKS AND SERVICES
FOR
NIGHT TRACKER - CONTINUED

B - BEFORE

A - AFTER

Q - QUARTERLY

Item	Interval			Item to be inspected	Procedures Check for and have repaired or adjusted necessary	For readiness reporting equipment is not ready/available if:
	B	A	Q			
				 <p>MS014577</p>	<p>Hold the safety in and squeeze the trigger. Did it click?</p> <p>Release the safety. Now squeeze the trigger again. The safety should prevent the trigger operation.</p>	
2	.	.		Optics	<p>Make a visual inspection of the lenses for dirt or for signs of internal moisture. If dirty, clean them. See para. 3-4. If you see internal moisture, turn in to Direct Support Maintenance</p> <p>Visually inspect the lenses for cracks or scratches. If cracks or scratches obstruct view through lenses turn in to direct support maintenance</p>	<p>Lenses have internal moisture.</p> <p>Cracks or scratches obstruct view; broken lenses.</p>

2-6. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) - CONTINUED

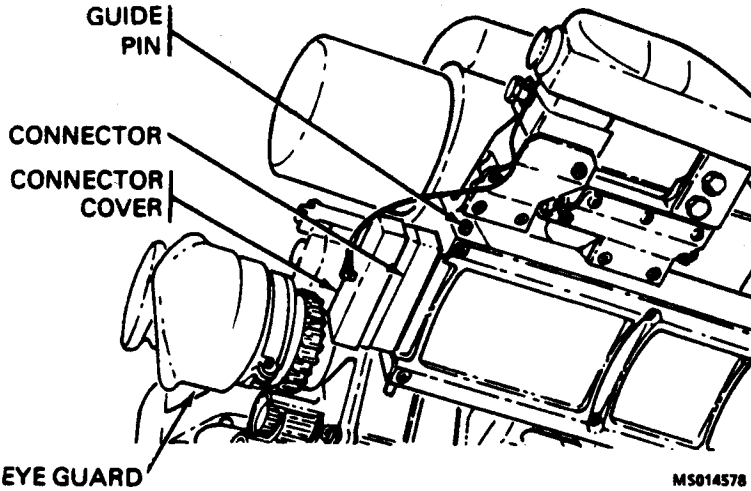
TABLE 2-2
PREVENTIVE MAINTENANCE CHECKS AND SERVICES
FOR
NIGHT TRACKER - CONTINUED

B - BEFORE

A - AFTER

Q - QUARTERLY

Item	Interval			Item to be inspected	Procedures Check for and have repaired or adjusted necessary	For readiness reporting equipment is not ready/available if:
	B	A	Q			
3	•	•		Guide Pins	Check all four guide pins for damage or missing pins.	Guide pins damaged or missing.



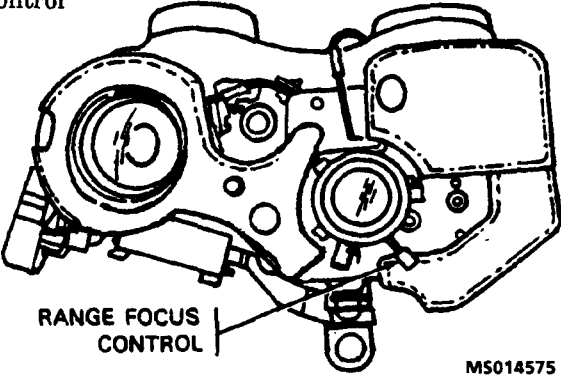
MS014578

4	~	•	Connector	<p>CAUTION Don't poke anything inside the connector. If you do you will damage the connector.</p> <p>Remove connector cover and visually inspect cover and connector for damage or dirt. If it's dirty clean it. See para. 3-4.</p>	Connector is damaged..
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2-6. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)-
CONTINUED

TABLE 2-2
PREVENTIVE MAINTENANCE CHECKS AND SERVICES
FOR
NIGHT TRACKER - CONTINUED

B - BEFORE A - AFTER Q - QUARTERLY

Item	Interval			Item to be inspected	Procedures Check for and have repaired or adjusted necessary	For readiness reporting equipment is not ready/available if:
	B	A	Q			
5	●	●		Range Focus Control	Check for freedom of movement.	Control binds.
						
6	●			Night Tracker	Perform operational check. See para 2-25 and 2-26. Visually inspect and check for loose or missing bolts, screws, and shock absorbers. If any are loose or missing, turn in to direct support maintenance.	Fails operational check. Screws and bolts missing or loose.
7	●			Eyeguard	Rotate the eyeguard.	Eyeguard is missing.
8			●	Night Tracker	Notify Support Maintenance to perform operational test.	Night tracker fails operational test or is overdue quarterly operational test by support maintenance.

2-6. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) - CONTINUED

TABLE 2-2
 PREVENTIVE MAINTENANCE CHECKS AND SERVICES
 FOR
 NIGHT TRACKER - CONTINUED

B - BEFORE A - AFTER Q - QUARTERLY

Item	Interval			item to be inspected	Procedures Check for and have repaired or adjusted necessary	For readiness reporting equipment is not ready/available if:
	B	A	Q			
9			•	Night Tracker Shipping Container	Examine cushioning material for deterioration. Notify support maintenance to replace cushioning material.	

**2-6. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) -
CONTINUED**

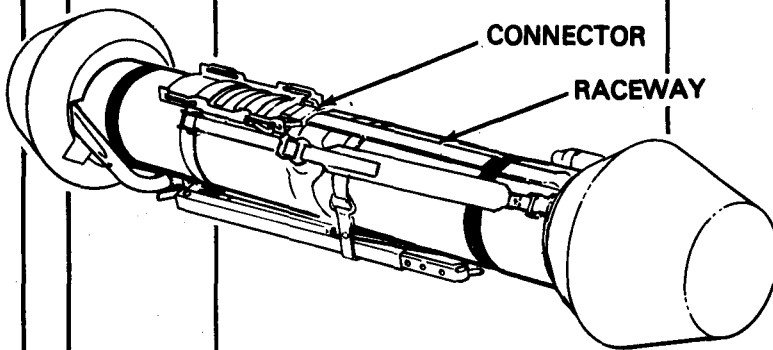
TABLE 2-1
PREVENTIVE MAINTENANCE CHECKS AND SERVICES
FOR

Item No.	B-BEFORE			A - AFTER	Q - QUARTERLY	For readiness reporting equipment is not ready/available if:
	Interval			Item to be Inspected	Procedures Check for and have repaired or adjusted as necessary	
	B	A	Q			
10	•	•		Night Tracker	If Night Tracker is dropped or receives a hard jar, notify Support Maintenance to perform an operational test.	Night Tracker fails operational test.
11	•	•		Battery Pack	Check for 5 charged batteries.	Less than 5 charged batteries.
12	•	•		coolant Cartridge Pack	Check for 5 charged coolant cartridges.	Less than 5 charged coolant cartridges.

2-6. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) - CONTINUED

TABLE 2-3
PREVENTIVE MAINTENANCE CHECKS AND SERVICES FOR ROUND


Item No.	Interval			Item to be Inspected	Procedures Check for and have repaired or adjusted as necessary	For readiness reporting equipment is not ready/available if:
	B	A	Q			
1	•			Round	Inspect for dirt or damage. If dirty, clean it. See para. 3-6. If damaged, notify your supervisor.	
2	•			Connector and raceway	Inspect connector and raceway for damage. If damaged notify your supervisor.	



2-6. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)-
CONTINUED

TABLE 2-4
PREVENTIVE MAINTENANCE CHECKS AND SERVICES
FOR
M175 MOUNT

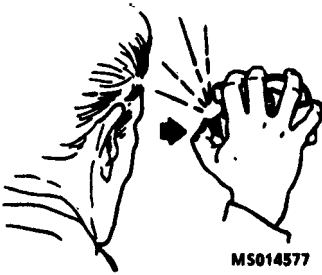
B - BEFORE A - AFTER Q - QUARTERLY

Item	Interval			Item to be Inspected	Procedures Check for and have repaired or adjusted necessary	For readiness reporting equipment is not ready/available if:
	B	A	Q			
1	•	•		Remote Firing Mechanism	 <p>Some firing mechanisms are dangerous and should not be used. Inspect all firing mechanisms. Those with a "T" shaped tab on the housing should be returned to depot unless stamped with the letters RANAD. This stamp means that the firing mechanism has already been reworked and is safe to use. The unsafe firing mechanism can allow the missile to be fired without the safety being engaged.</p> <p>When inspecting the tracker firing mechanism, DO NOT install the tracker on the round.</p> <p>Check operation of firing mechanism.</p> <p>Push the safety button in. Does it operate smoothly?</p>	Firing Mechanism inoperable.

2-6. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)-
CONTINUED

TABLE 2-4
PREVENTIVE MAINTENANCE CHECKS AND SERVICES
FOR
M175 MOUNT - CONTINUED

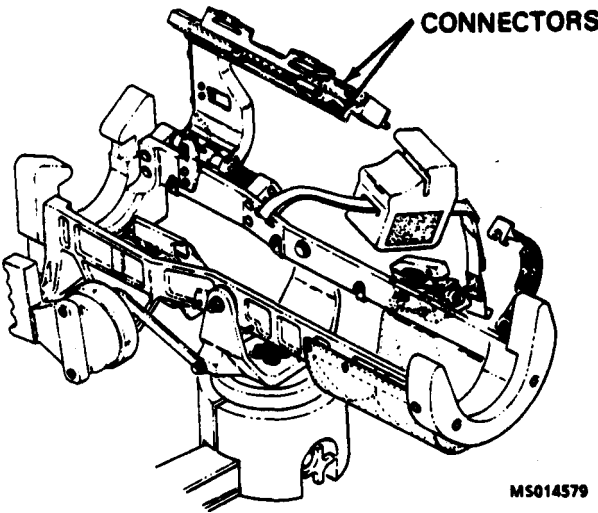
B - BEFORE A - AFTER Q - QUARTERLY

Item	Intervall			Item to be Inspected	Procedures Check for and have repaired or adjusted necessary	For readiness reporting equipment is not ready/available if:
	B	A	Q			
				 <p>MS014577</p>	<p>Hold the safety in and squeeze the trigger. Did it click?</p> <p>Release the safety. Now squeeze the trigger again. The safety should prevent the trigger operation.</p>	

B-6. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) - CONTINUED

**TABLE 2-4
PREVENTIVE MAINTENANCE CHECKS AND SERVICES
FOR
M175 MOUNT - CONTINUED**

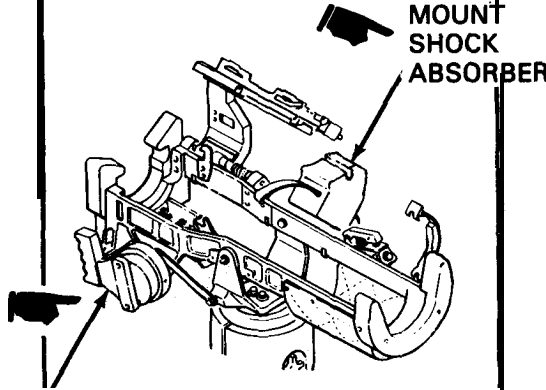
B - BEFORE A - AFTER Q - QUARTERLY

Item	Interval			Item to be Inspected	Procedures Check for and have repaired or adjusted necessary	For readiness reporting equipment is not ready/available if:
	B	A	Q			
2	•	Ž		M175 Mount	Inspect for damage. If damaged, notify your supervisor.	
						
<div style="border: 1px solid black; padding: 5px; display: inline-block;">CAUTION</div> Don't poke anything inside the connector. If you do you will damage the connector.						
3	•	•		Connectors	Inspect for dirt or damage. If dirty, clean it. See para. 3-5. If damaged, notify your supervisor.	

2-6. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) - CONTINUED

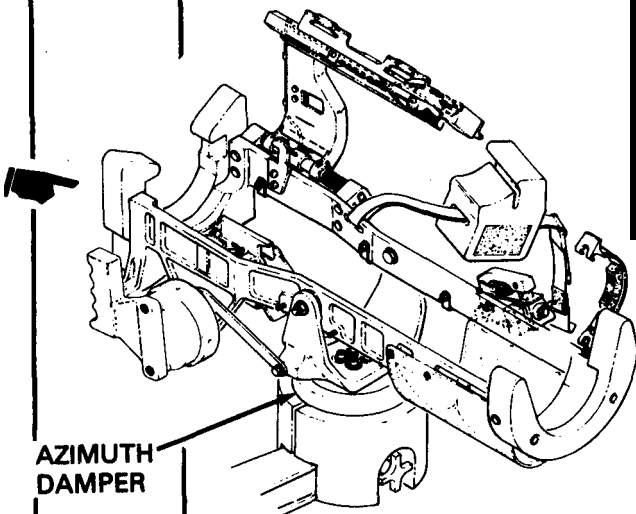
TABLE 2-4
 PREVENTIVE MAINTENANCE CHECKS AND SERVICES
 FOR
 M175 MOUNT - CONTINUED

Item No.	B-BEFORE			A-AFTER	Q- QUARTERLY	For readiness reporting equipment is not ready/available if:
	Interval			Item to be inspected	Procedural Check for and have repaired or adjusted necessary	
	B	A	Q			
4			• Ž	Mount Shock Absorber	Inspect for dirt or damage. If dirty, clean it. If damaged or missing, notify your supervisor.	
				ELEVATION CONTROL		
5	Ž	•		Elevation Control	Check that the elevation control provides smooth up and down movement of the cradle. You should feel resistance to any rapid movement of the cradle.	



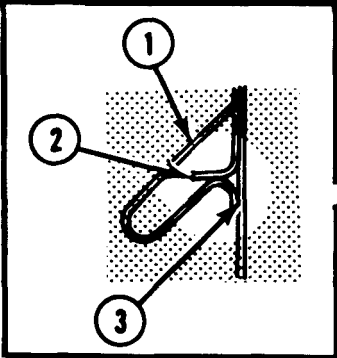
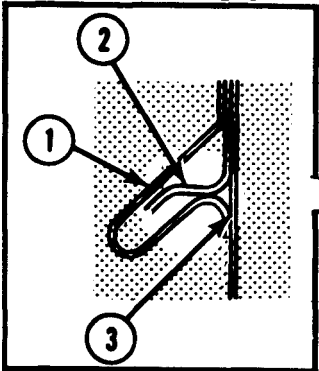
2-6 PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) -
CONTINUED

TABLE 2-4
PREVENTIVE MAINTENANCE CHECKS AND SERVICES
FOR
M175 MOUNT - CONTINUED

Item No.	B-BEFORE			A - AFTER	Q- QUARTERLY	For readiness reporting equipment is not ready/available if:
	Interval			Item to be Inspected	Procedures Check for and have repaired or adjusted as necessary	
	B	A	Q			
6.	•	•		Azimuth Damper	<p>Check that the azimuth damper provides smooth left and right movement of the cradle. You should feel resistance to any rapid movement of the cradle. If not, notify your supervisor.</p> 	


2-6. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)-
CONTINUED

TABLE 2-4
PREVENTIVE MAINTENANCE CHECKS AND SERVICES
FOR
M175 MOUNT - CONTINUED

Item No.	Interval			Item to be Inspected	Procedures Check for and have repaired or adjusted as necessary	For readiness reporting equipment is not ready/available if:
	B - BEFORE A - AFTER Q - QUARTERLY					
	B	A	Q			
7.	•	•		<p>Spring Clip</p> <p>S/N203829 AND BELOW</p>  <p>Spring clip (1), must touch both clip retainer (2) and tracker bracket (3) as shown. If not, notify your supervisor.</p> <p>S/N203830 AND UP</p> 		


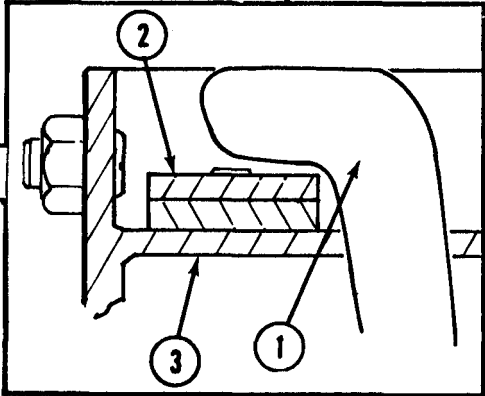
2-6. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) -
CONTINUED

TABLE 2-4
PREVENTIVE MAINTENANCE CHECKS AND SERVICES
FOR
M175 MOUNT - CONTINUED

Item No.	B - B E F O R E , A - A F T E R			Item to be Inspected	Procedures Check for and have repaired or adjusted as necessary.	For readiness reporting equipment s not ready/available if:
	B	A	Q			
8.	•	•		Check Round Fit	 <p>For steps 8 through 10, us LET if possible, If LET i not available, use an expended round or Field Handling Trainer (FHT).</p> <p>Install LET, Expended Round or FHT. See para. 2-16.</p>	



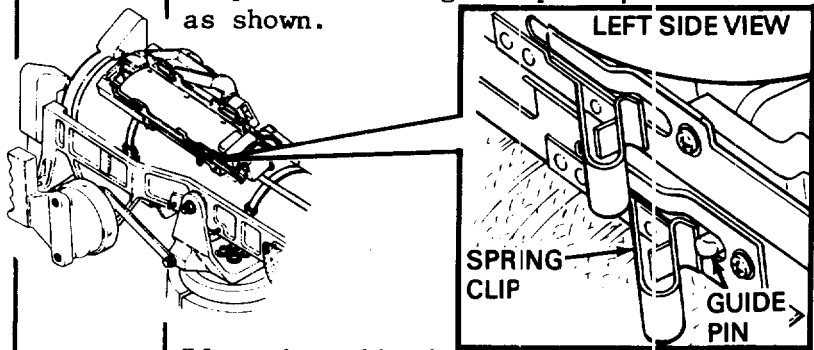
2-6. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) - CONTINUED

TABLE 2-4
 PREVENTIVE MAINTENANCE CHECKS AND SERVICES
 FOR
 M175 MOUNT - CONTINUED

Item No.	Interval			Item to be Inspected	Procedures Check for and have repaired or adjusted as necessary	For readiness reporting equipment is not ready/available if:
	B	A	Q			
8	•	•		Check Round Fit (Con't.)	 <p>Observe cradle hook (1) as tracker submount (3) is mated with LET. There must be visible clearance between hook (1) and plate (2).</p>  <p>If hook (1) will not allow proper mate of tracker submount, notify your supervisor.</p>	

2-6. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) - CONTINUED

TABLE 2-4
 PREVENTIVE MAINTENANCE CHECKS AND SERVICES
 FOR
 M175 MOUNT - CONTINUED

Item No.	Interval			Item to be Inspected	Procedures Check for and have repaired or adjusted as necessary	For readiness reporting equipment is not ready/available if:
	B	A	Q			
9.	●	●		Check Round Fit	<p> NOTES</p> <p>For steps 8 through 10, use LET if possible. If LET is not available, use an expended round or Field Handling Trainer (FHT).</p> <p>Install LET, Expended Round or FHT. See para. 2-16.</p> <p> NOTES</p> <p>Observe spring clip snaps in place behind guide pin as shown.</p> <div data-bbox="270 1228 1077 1580">  </div> <p>If spring clip does not engage guide pin as shown, notify your supervisor.</p>	


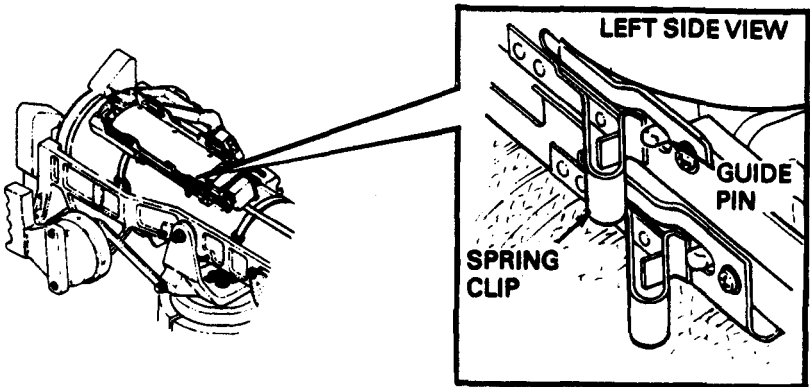
2-8. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)-
CONTINUED

TABLE 2-4
PREVENTIVE MAINTENANCE CHECKS AND SERVICES
FOR
M175 MOUNT - CONTINUED

B - BEFORE

A - AFTER

Q - QUARTERLY

Item	Interval			Item to be Inspected	Procedures Check for and have repaired or adjusted necessary	For readiness reporting equipment is not ready/available if:
	B	A	Q			
9	✓	•		Check Tracker Fit	Install tracker (day or night). See para. 2-17.  <p>NOTE MS014576</p> Observe spring clip snaps in place behind guide pin as shown.	
					 <p>LEFT SIDE VIEW GUIDE PIN SPRING CLIP MS016462</p>	
					If spring clip does not engage guide pin as shown, notify your supervisor.	

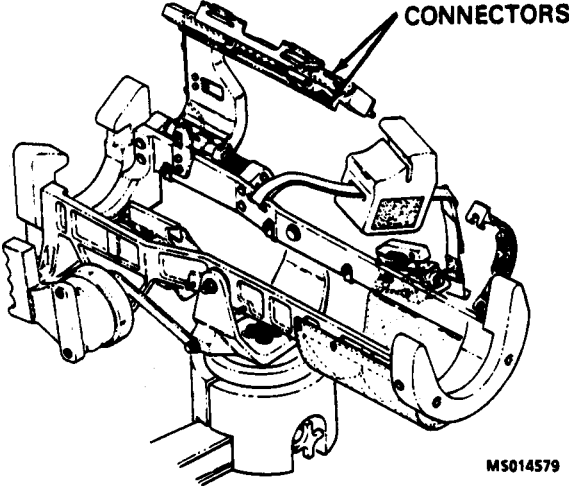

2-6. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)-
CONTINUED

TABLE 2-4
PREVENTIVE MAINTENANCE CHECKS AND SERVICES
FOR
M175 MOUNT - CONTINUED

B - BEFORE

A - AFTER

Q - QUARTERLY

Item	Interval			Item to be Inspected	Procedures Check for and have repaired or adjusted necessary	For readiness reporting equipment is not ready/available if:
	B	A	Q			
2	.	.		M175 Mount	Inspect for damage. If damaged, notify your supervisor.	
 <p style="text-align: right;">CONNECTORS</p> <p style="text-align: right;">MS014579</p>						
3	ž	ž		Connectors	Inspect for dirt or damage. If dirty, clean it. See para. 3-5. If damaged, notify your supervisor.	
 <p style="font-size: 2em; font-weight: bold; margin: 0;">CAUTION</p> <p>Don't poke anything inside the connector. If you do you will damage the connector.</p>						

2-6. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) - CONTINUED

TABLE 2-4
 PREVENTIVE MAINTENANCE CHECKS AND SERVICES
 FOR
 M175 MOUNT - CONTINUED

Item No.	Interval			Item to be Inspected	Procedures Check for and have repaired or adjusted as necessary	For readiness reporting equipment is not ready/available if:
	B	A	Q			
	Z					
11		•		Launcher Mount Adapter	Check screws (1) on launcher mount adapter (2) for safety wire installation. If loose broken, or missing, notify your supervisor.	

2-6. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) - CONTINUED

TABLE 2-4
 PREVENTIVE MAINTENANCE CHECKS AND SERVICES
 FOR
 M175 MOUNT - CONTINUED

Item No.	B-BEFORE			A-AFTER	Q - QUARTERLY	For readiness reporting equipment is not ready/available if:
	Interval			Item to be Inspected	Procedures Check for and have repaired or adjusted as necessary	
	B	A	Q			
12	•			M175 MOUNT	Operate the M175 Mount, see para. 2-19, steps 1 thru 6. If the M175 Mount does not operate as stated, notify your supervisor.	
13			•	M175 Mount	Notify Support Maintenance to perform operational check and mechanical inspection, see TM 9-4935-484-14.	

2-6. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) -
CONTINUED

TABLE 2-5
PREVENTIVE MAINTENANCE CHECKS AND SERVICES
FOR
VEHICLE POWER CONDITIONER (VPC)

Item No.	B - BEFORE			A - AFTER	Q - QUARTERLY	Procedures Check for and have repaired or adjusted as necessary	For readiness reporting equipment is not ready available If:
	Interval			Item to be			
	B	A	Q				
1	•			VPC		Perform Operational Check Using Vehicle Power Con- ditioner See para. 2-26.	
<p>NOTE</p> <p>Equipment failure does not constitute mission failure, install battery pack on night tracker and proceed with mission.</p>							

Section III. GENERAL OPERATING INSTRUCTIONS

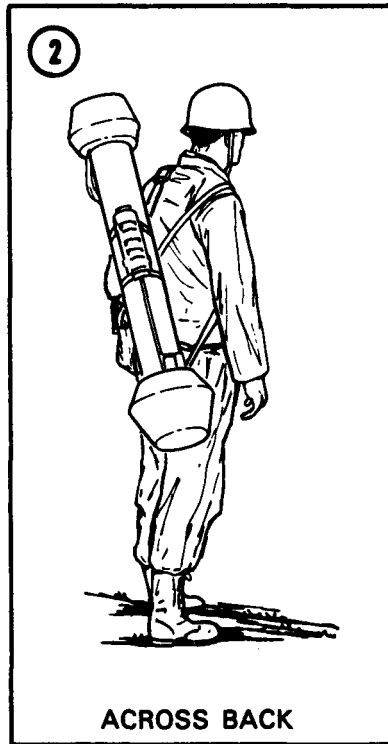
	Para	Page
Select a Carrying Position	2-7	2-22
Select a Firing Site	2-8	2-24
Select a Firing Position	2-9	2-25
Prepare the Round for Firing	2-10	2-29
Acquire Target and Evaluate Range	2-11	2-35
Tracking a Target	2-12	2-39
Firing the Missile	2-13	2-40

OVERVIEW

There are things that should be done before you get in a tactical situation. Make sure you have performed your PMCS like it tells you in para. 2-6.

2-7. SELECT A CARRYING POSITION.

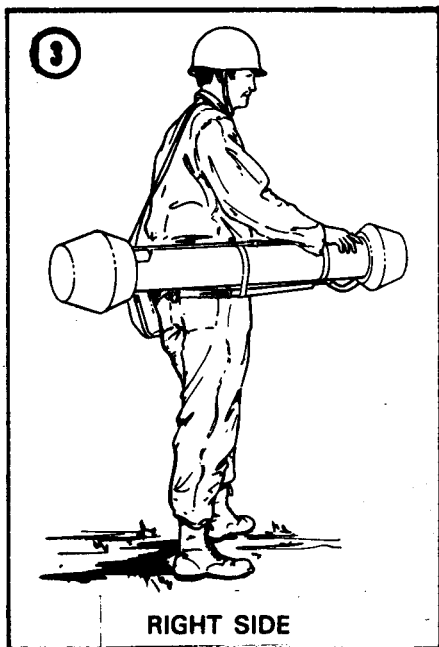
Any of five positions can be used.



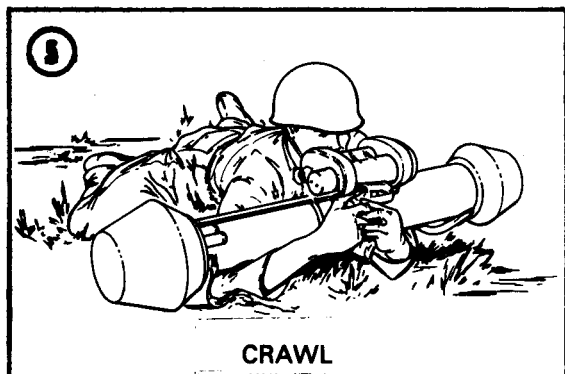
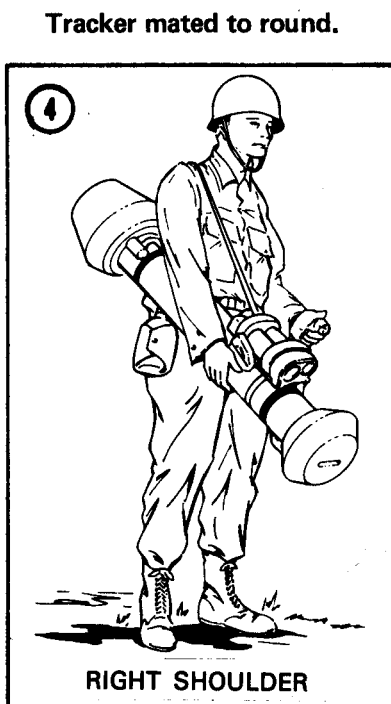
2-7. SELECT A CARRYING POSITION - CONTINUED



Careful now. If you carry your weapon with the tracker mated to the round, the DRAGON is ready-to-fire. Keep distances short, as in movement between firing positions. WATCH YOUR STEP!



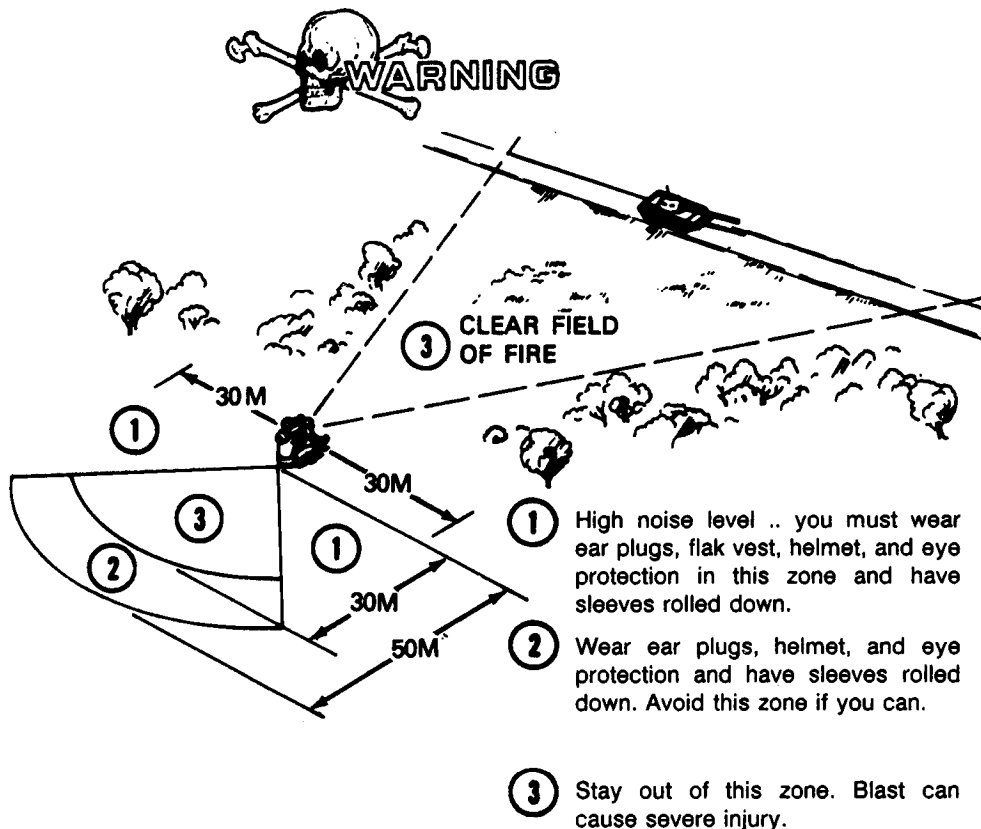
Tracker mated to round.



**YOU ARE NOW READY TO
SELECT A FIRING SITE**

GO TO NEXT PAGE

2-8. SELECT A FIRING SITE



MS016463

a. Field of fire . . . Be sure your field of fire down range is clear of obstructions, such as trees, brush, buildings, power lines or large rocks that interfere with your LOS. Premature warhead detonation could occur if the missile should hit them.

b. Rear danger area . . . Be sure no friendly troops are in zone 2 or 3. The area directly behind the launcher should be clear of obstructions and loose objects for at least 30 meters. Solid objects in the backblast danger zone can deflect shock waves or debris toward you.

c. Instructor and gunner are required to wear flak vest, helmet, ear and eye protection during DRAGON missile training firings.

YOU ARE NOW READY TO PREPARE THE ROUND FOR FIRING

TURN TO PARA. 2-10.

2-9. SELECT A FIRING POSITION

Any of four positions can be used.

**CAUTION**

DO NOT push tube forward on bipod legs, it may cause the bipod to collapse.

- A. Keep legs as straight as possible with feet against feet of bipod.
- B. Hold launcher on meaty part of shoulder and neck while leaning body forward at waist.

①



SITTING

- C. Keep right eye firmly in eyepiece.
- D. Pull down and back on the tracker.

2-9. SELECT A FIRING POSITION - CONTINUED



DO NOT push tube forward on bipod legs, it may cause the bipod to collapse.

- A. Knees on ground spread outward at a convenient angle and toes on ground.
- B. Buttocks resting on heels of boots.
- C. Body leaning forward at waist.

②



KNEELING

- D. Hold launcher on meaty part of shoulder and neck.
- E. Keep right eye firmly in eyepiece.
- F. Pull down and back on the tracker.

2-9. SELECT A FIRING POSITION - CONTINUED

- A. Legs spread a comfortable distance apart with feet pointed outward.



DO NOT push tube forward on bipod legs, it may cause the bipod to collapse.

- B. Lean body forward against wall of position and keep elbows tucked in.



STANDING-SUPPORTED

- C. Keep right eye firmly in eyepiece.
D. Pull down and back on tracker.

2-9. SELECT A FIRING POSITION - CONTINUED



WARNING

Injury to your backside and legs may occur if they extend into the backblast area.



NOTE

The prone position is the least desirable. It's difficult to track moving targets from this position.

- A. Forward end of launch tube resting on dirt mound (minimum six inches high).
- B. Body position at near 90 degree angle to the tube with elbows on ground.

④




PRONE

- C. Keep right eye firmly in eyepiece.
- D. Pull down and back on the tracker.


2-10. PREPARE THE ROUND FOR FIRING

STEP 1



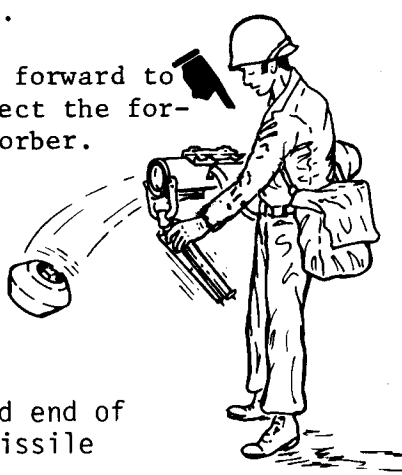
RELEASE THE BIPOD!


- A. Unsnap the bipod retainer strap.
- B. Push the bipod forward to release and eject the forward shock absorber.



WARNING

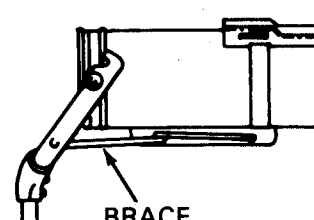
Check to make sure that the forward end of the launch tube is clear and the missile nose cone is visible.





NOTE

Make sure that the forward bipod brace is engaged in the lock position.

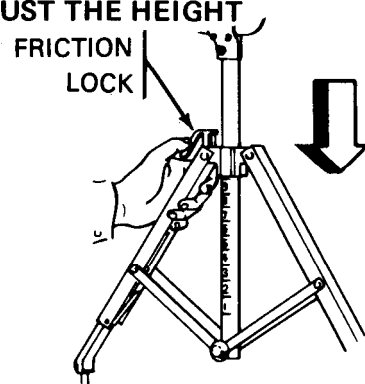


BRACE

STEP 2

EXTEND THE BIPOD LEGS AND ADJUST THE HEIGHT

- A. Grasp the legs by the friction lock.
- B. Push the legs down to number 4 or 5, and release the lock.



FRICITION LOCK

GO TO NEXT PAGE

2-10. PREPARE THE ROUND FOR FIRING -CONTINUED

STEP 3

Select a firing position that best meets your situation (see para. 2-9).

For purposes of illustration the sitting position is used in this section.

REMOVE THE DAY TRACKER FROM THE CARRYING BAG

- A. Pull the carrying bag flap open and hold it open with your right hand.



- Don't attempt to lift the day tracker using the shock absorbers as handles. They might tear off.
- Do not touch the lens! You can damage them by just touching them with your fingers.

- B. Reach in and grab the day tracker by the telescope barrel.
- C. Lift the day tracker from the bag.

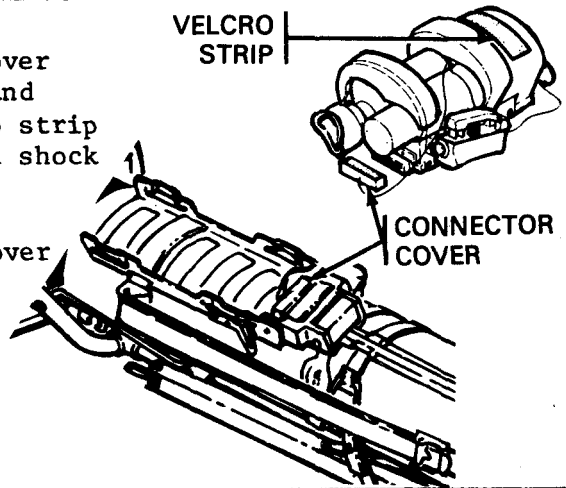


GO TO NEXT PAGE

2-10. PREPARE THE ROUND FOR FIRING - CONTINUED

STEP 4

- A. Pull the connector cover off the day tracker and stow it on the velcro strip on top of the forward shock absorber.
- B. Pull the connector cover off the round.



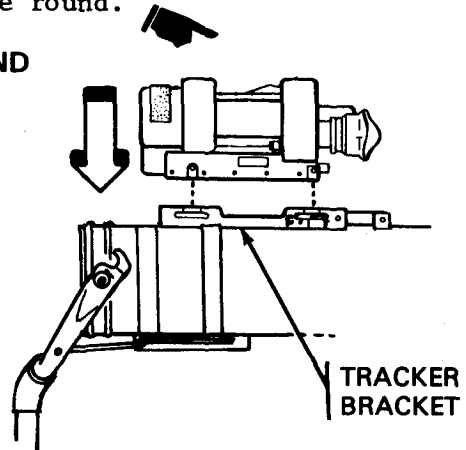
STEP 5

**WARNING**

Be careful not to press the safety and trigger while mating the day tracker to the round.

MATE DAY TRACKER TO ROUND

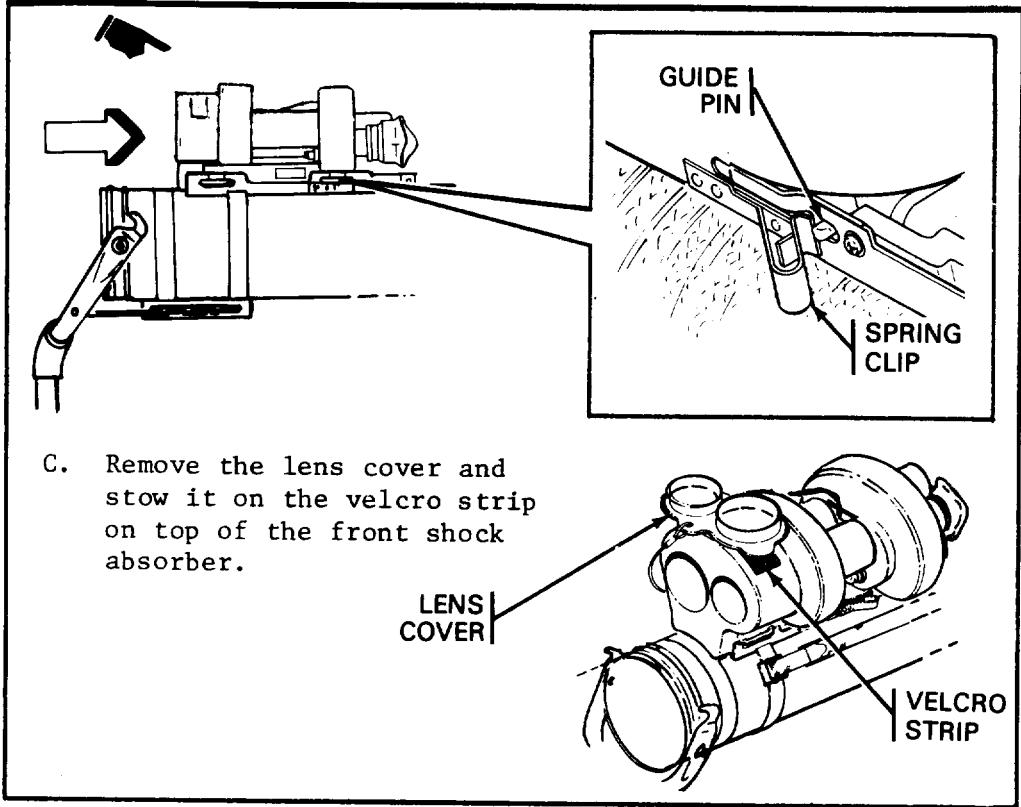
- A. Place tracker guide pins in slots of tracker bracket guide rails.
- B. Slide day tracker firmly to the rear using both hands, until the spring clip locks the guide pin in place. If the tracker won't mate, refer to para. 3-2.



GO TO NEXT PAGE

2-10. PREPARE THE ROUND FOR FIRING - CONTINUED

STEP 5 - CONTINUED



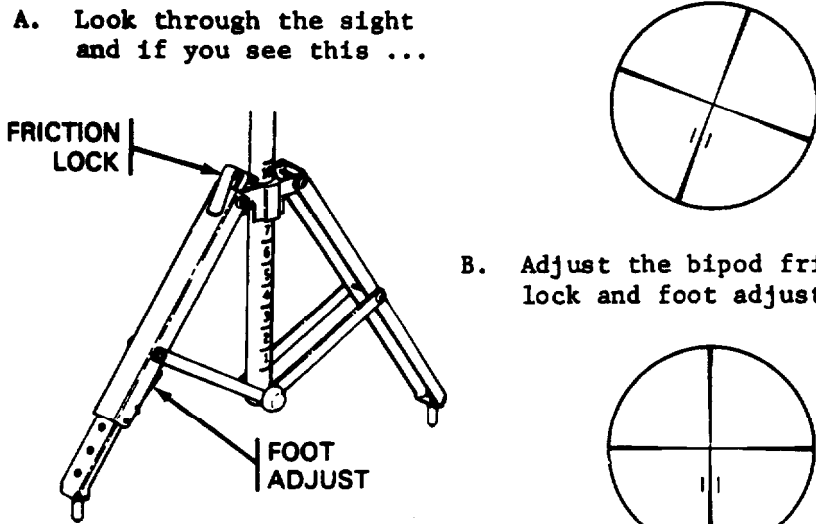
GO TO NEXT PAGE

2-10. PREPARE THE ROUND FOR FIRING - CONTINUED

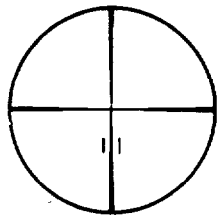
STEP 6

ADJUST FOR HEIGHT AND A LEVEL SIGHT PICTURE

A. Look through the sight and if you see this ...



B. Adjust the bipod friction lock and foot adjusts and...



C. Obtain a level sight picture.

MSO16464

STEP 7

PERFORM A FINAL CHECK

- Is danger zone clear?(see para. 2-8)
- Is launch tube clear? (see para. 2-10)
- Is tracker mated? (see para. 2-10)
- Is tracker lens cover off? (see para. 2-10)
- Are ear plugs in?(see para. 2-8)
- Are your sleeves rolled down?(see para. 2-8)
- Is your flak vest on? (see para. 2-8)
- Is your eye protection on?(see para. 2-8)
- Is your helmet on? (see para. 2-8)

STEP 8

Lock your body into a good firing position



If you wear glasses, remove them,

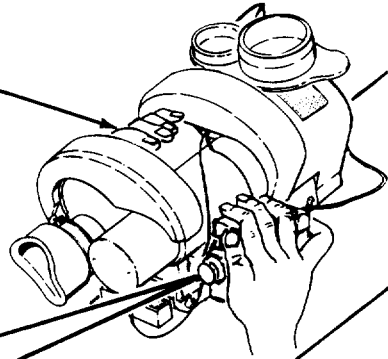
GO TO NEXT PAGE

2-10. PREPARE THE ROUND FOR FIRING - CONTINUED

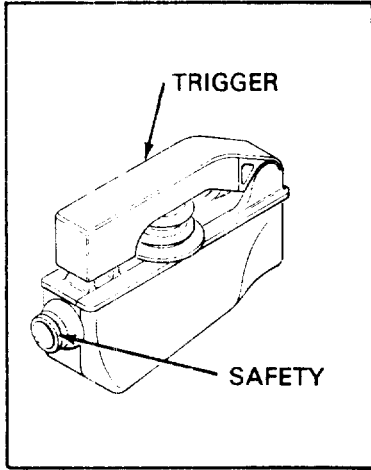
STEP 9

A. Keep hands placed correctly on tracker.

LEFT HAND ON TRACKER BARREL



DAY TRACKER

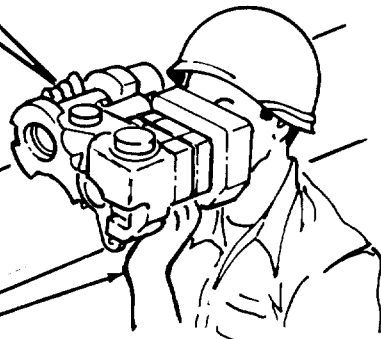


TRIGGER

SAFETY

B. Pull down and back on the tracker.

LEFT HAND ON HANDLE



NIGHT TRACKER

END OF TASK

YOU ARE NOW READY TO ACQUIRE A TARGET AND EVALUATE RANGE

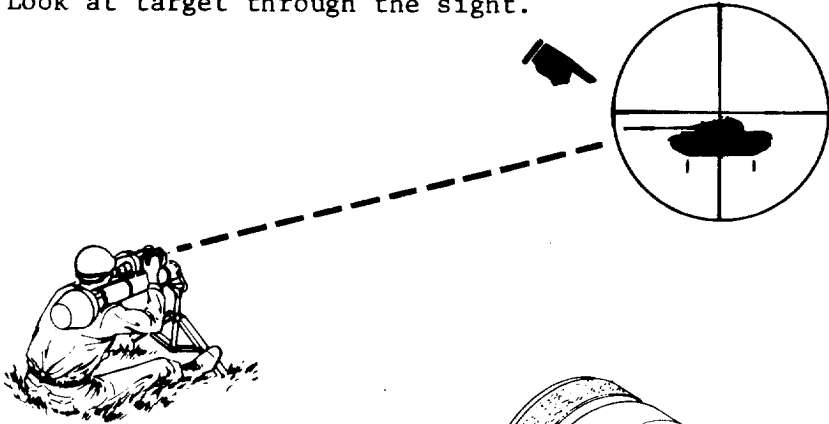
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2-11. ACQUIRE TARGET, EVALUATE RANGE AND DETERMINE ENGAGEABILITY USING DAY TRACKER.

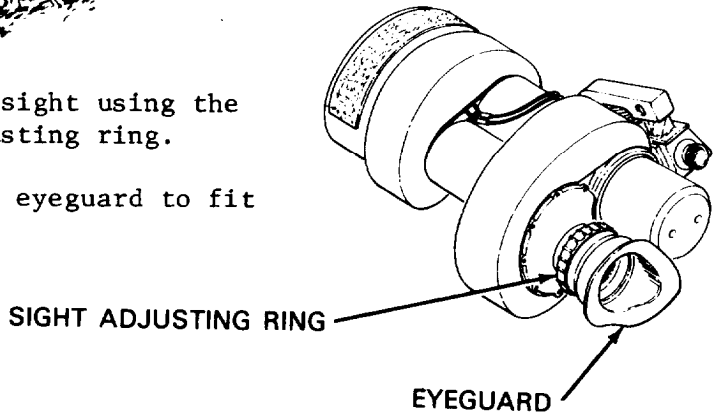
STEP 1

ACQUIRE TARGET

- A. Look at target through the sight.



- B. Focus the sight using the sight adjusting ring.
- C. Rotate the eyeguard to fit your face.



WARNING

Do not engage targets at less than 65 meters. The warhead will not be armed.



NOTE

A target 20 feet (6.09 meters) in length will completely fill the area between the stadia lines at maximum range (1,000 meters) and will exceed the stadia lines at a closer range.

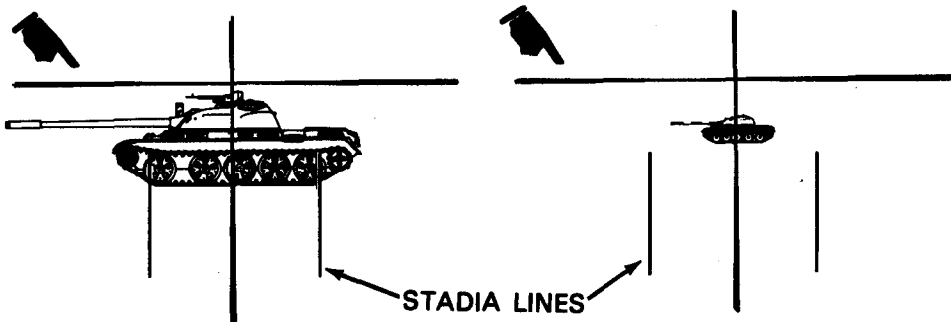
GO TO NEXT PAGE

2-11. ACQUIRE TARGET, EVALUATE RANGE AND DETERMINE ENGAGEABILITY USING DAY TRACKER - CONTINUED

STEP 2

EVALUATE RANGE

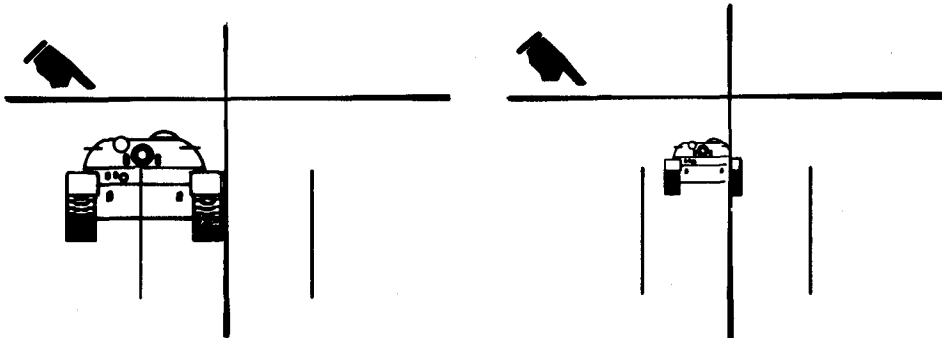
A. Flank targets.



IN RANGE

OUT OF RANGE

B. Head-on/Going-away targets.



IN RANGE

OUT OF RANGE

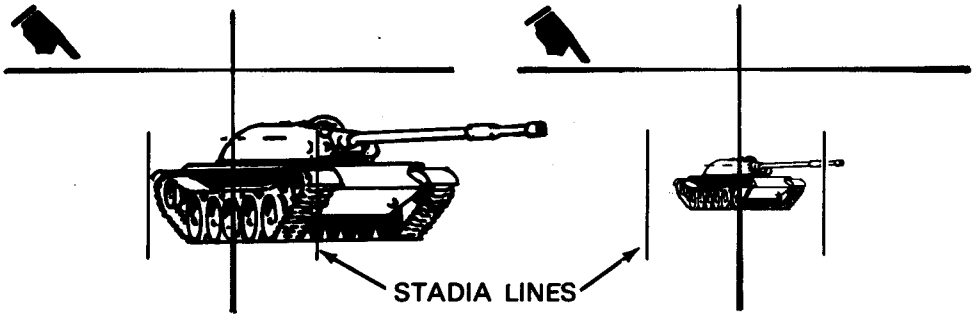
GO TO NEXT PAGE

2-11. ACQUIRE TARGET, EVALUATE RANGE AND DETERMINE ENGAGEABILITY USING DAY TRACKER - CONTINUED

STEP 2 - CONTINUED

- C. Oblique targets. To determine range to oblique targets, the rule is if more of the flank is visible, use the full distance between the stadia lines. If the front or rear shows more than the flank, use a stadia line and cross-hairs (1/2 stadia sight picture).

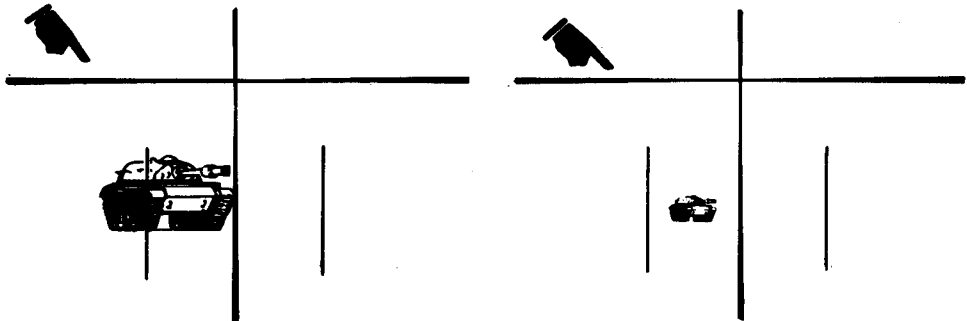
MORE FLANK VISIBLE



IN RANGE

OUT OF RANGE

MORE FRONT OR REAR VISIBLE



IN RANGE

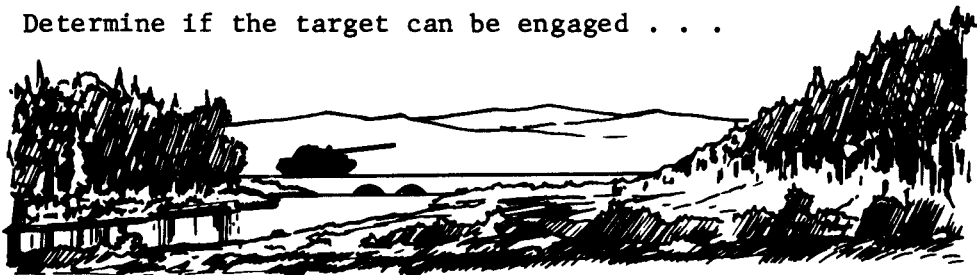
OUT OF RANGE

GO TO NEXT PAGE

2-11. ACQUIRE TARGET, EVALUATE RANGE AND DETERMINE
ENGAGEABILITY USING DAY TRACKER - CONTINUED

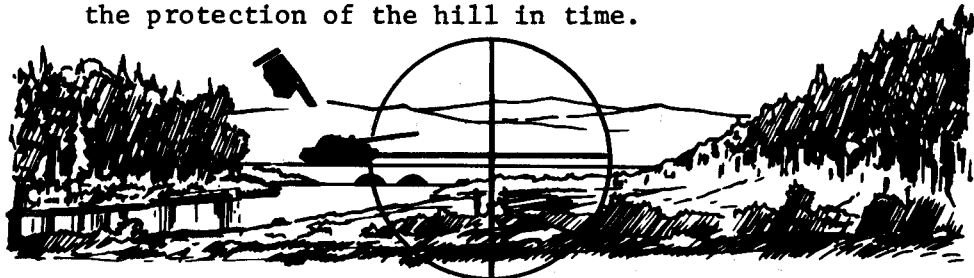
STEP 3

Determine if the target can be engaged . . .



- A. A moving target may be able to find a covered position protecting himself from your DRAGON. You must be able to judge if your missile will successfully hit the target after launch. The tracker sight can be used to help you make this determination. Line up the tracker sight directly in front of your target. If there is no obstruction or covered area along the expected path of the target and the target is moving 35kph or less, you can successfully launch and destroy him.

- B. Go ahead and fire - the target won't be able to reach the protection of the hill in time.



- C. Don't fire - the target will reach the protection of the hill before your DRAGON will hit.



END OF TASK

YOU ARE NOW READY TO TRACK A TARGET

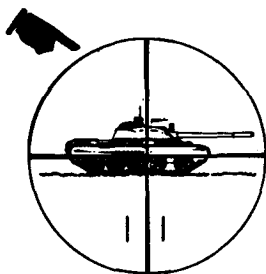
GO TO NEXT PAGE

2-12. TRACKING A TARGET

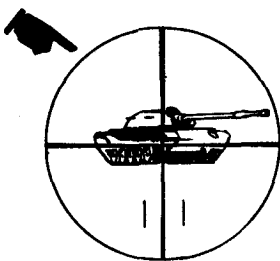
STEP 1

MOVING TARGET

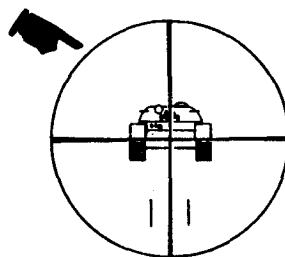
- A. Center the crosshairs on the center of visible mass of the target.



FLANK



OBLIQUE



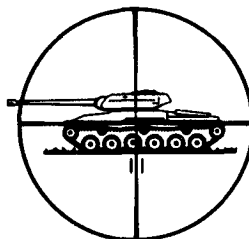
FRONT OR REAR

- B. Excessive or jerky movement of the tracker while the missile is in flight may cause you to miss the target.
- C. Track target for approximately two seconds prior to trigger squeeze. This establishes a smooth tracking rate used during missile flight.

STEP 2

STATIONARY TARGET

Center the crosshairs on the center of visible mass of the target until missile impact.



END OF TASK

YOU ARE NOW READY TO FIRE THE MISSILE

GO TO NEXT PAGE

2-13. FIRING THE MISSILE

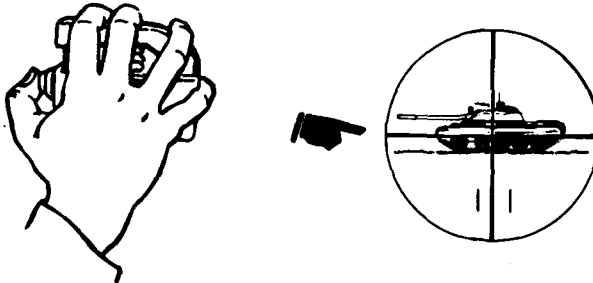


Always keep downward and rearward pressure on the round. Don't push forward against the bipod, it could collapse.



Just before you squeeze the trigger, take a breath and HOLD IT! You must hold your breath until missile impact. Normal breathing causes your shoulder to move up and down. One-eighth inch movement at the shoulder can cause a miss of two meters at maximum range.

- A. Depress the safety and squeeze the trigger. Maintain trigger pressure and keep the crosshairs on the center of visible mass until missile impact.

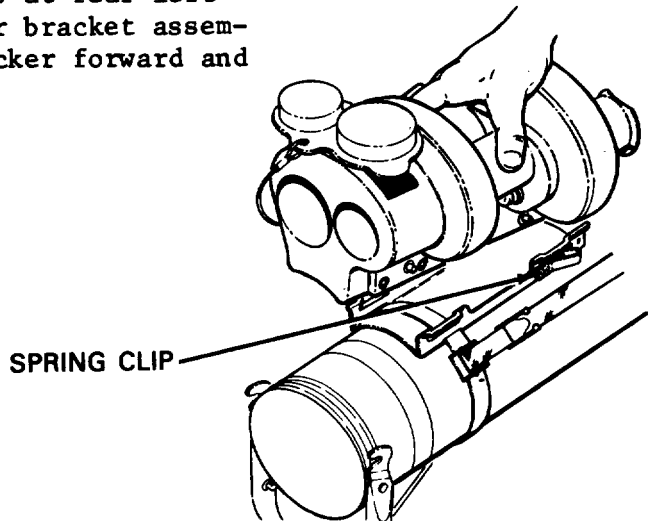


- If you have a malfunction and your missile doesn't fire, take immediate action like it tells you in para. 2-14. You can also use the troubleshooting charts in para. 3-2.
 - When the missile appears in your sight picture IGNORE IT!! DON'T TRY TO FLY THE MISSILE!
- B. Keep crosshairs on the target and let the tracker do the guiding of the missile . . .

GO TO NEXT PAGE

2-13. FIRING THE MISSILE - CONTINUED

- C. After missile impact, release the spring clip at rear left side of tracker bracket assembly, slide tracker forward and remove.

**WARNING**

The battery and rear of the launch tube are hot, so don't touch them.

**NOTE**

In combat you will want to destroy the expended launch tube so the enemy cannot use it against you as a field expedient mine or booby trap.

or

During non-combat exercises you may want to keep the expended launch tube for repair of damaged field handling trainers. Be sure to have the launch tube certified free of explosives.
(See TM 9-1410-480-34)

END OF TASK

Section IV. EMERGENCY PROCEDURES

2-14. IMMEDIATE ACTION

What do you do when your missile doesn't fire?

You may have one of two situations . . .

a MISFIRE or HANGFIRE



A hangfire cannot be immediately distinguished from a misfire. A hangfire is a delayed firing and can be hazardous.

Whatever the case you need to follow these steps.

STEP 1

- A. Squeeze the trigger again while tracking the target.
- B. If missile hasn't fired, carefully feel near the tracker battery. If battery is hot, go to step 2. If battery is cold, go to step 3.



2-14. IMMEDIATE ACTION - CONTINUED

STEP 2

HANGFIRE

- A. If your tracker battery is hot, you may have a hangfire.



In a non-combat situation wait 5 minutes before going to step B.

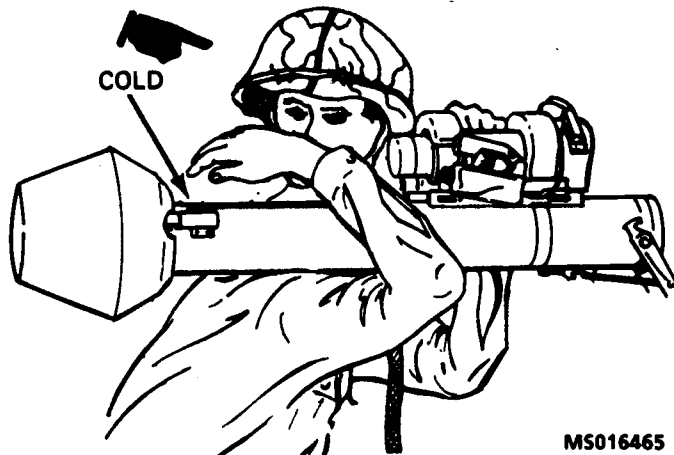
- B. Remove the tracker and carefully lay the round on the ground away from your firing site. Keep the round pointed at the enemy. Obtain another round and continue the mission.
- C. Notify your supervisor.
- D. Supervisor notify Explosive Ordnance Demolition (EOD) unit.

2-15. IMMEDIATE ACTION - CONTINUED

STEP 3

MISFIRE

- A. If your tracker battery is cold, you have a misfire.
- B. Loosen, then remate the tracker to the round. Acquire your target and squeeze the trigger again.
- C. Now if the missile hasn't fired, carefully feel near the battery. If hot, go back to step 2.



MS016465

- D. If the battery is still cold, remove the tracker. Next carefully lay the round on the ground away from your firing site. Keep the round pointed at the enemy.
- E. Obtain another round and continue the mission.
- F. Notify your supervisor. (Supervisor notify Explosive Ordnance Demolition (EOD) unit.)

**NOTE**

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If your missile fails to fire after attempting to fire with a new round, you may have a faulty tracker. Notify your supervisor.

END OF TASK

Section V. OPERATING THE M175 MOUNT ON APC

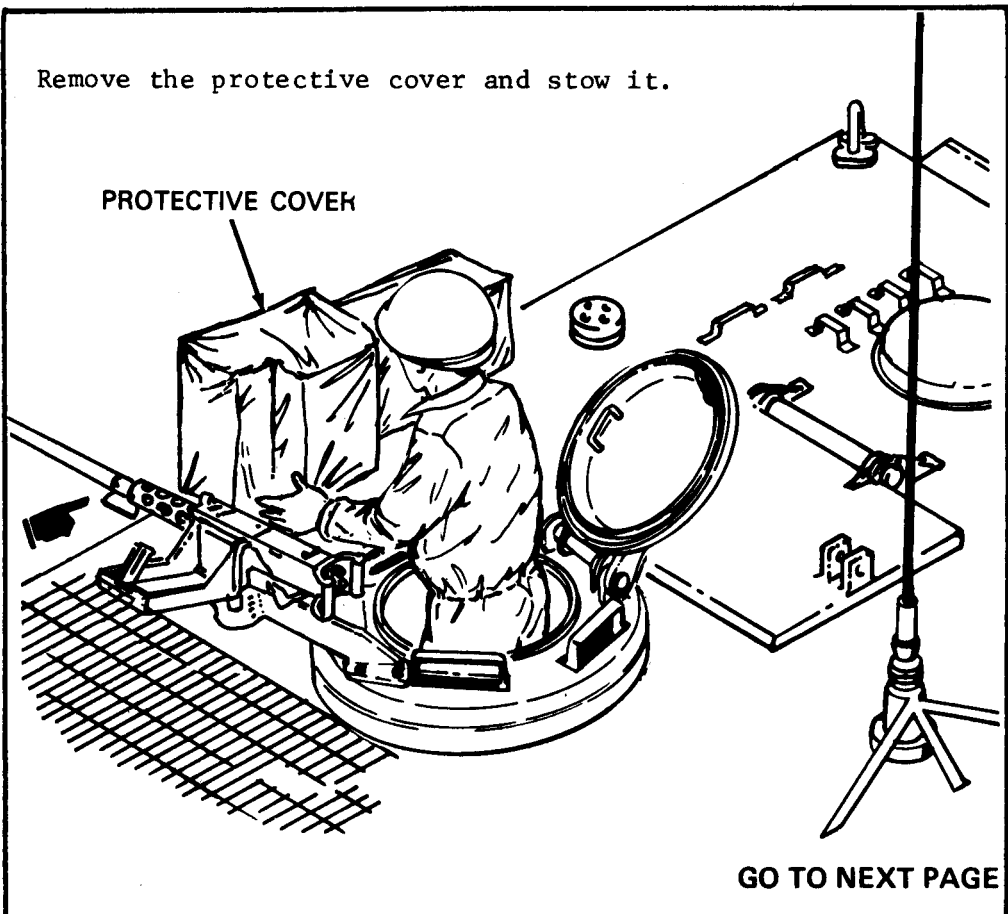
	Para	Page
Prepare the Mount for Installation of the Round	2-15	2-46
Install the Round	2-16	2-50
Install the Day Tracker	2-17	2-55
Install the Night Tracker	2-18	2-55
Operating Procedures - M175 Mount	2-19	2-56
M175 Mount - Usage/Storage Requirements	2-19.1	2-68
Preparation for Movement	2-20	2-68.2

OVERVIEW

The M175 mount provides a stable platform from which to fire the missile. The M175 mount should be installed by your track mechanic using TM 9-1425-484-24. Make sure you have performed your PMCS like it tells you in para. 2-6.

2-15. PREPARE THE MOUNT FOR INSTALLATION OF THE ROUND

Once your vehicle has reached a good firing site you will want to prepare the mount for installation of the round.

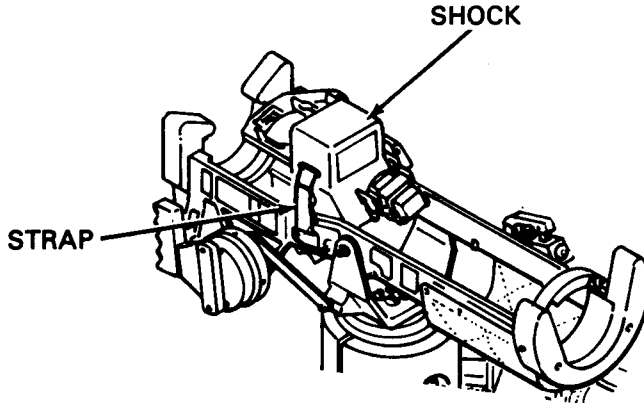
STEP 1

2-15. PREPARE THE MOUNT FOR INSTALLATION OF THE ROUND-
CONTINUED

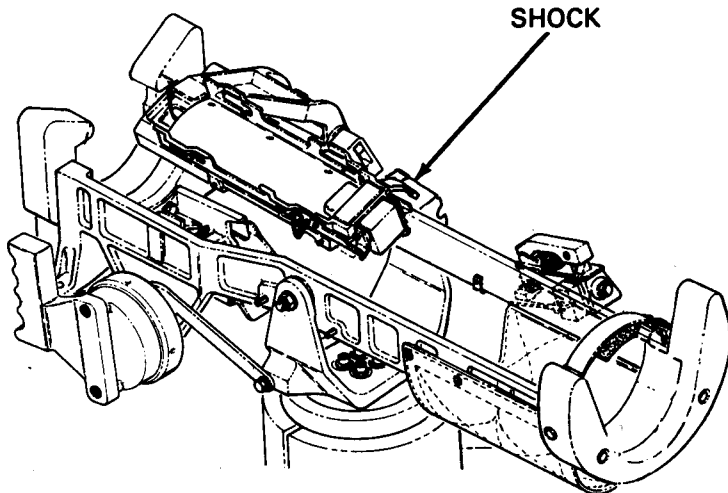
STEP 2

STOW THE SHOCK ABSORBER

- A. Pull the end of the strap that secures the shock to the cradle.



- B. Remove the shock and stow it on the velcro strip on the right side of the cradle.



GO TO NEXT PAGE

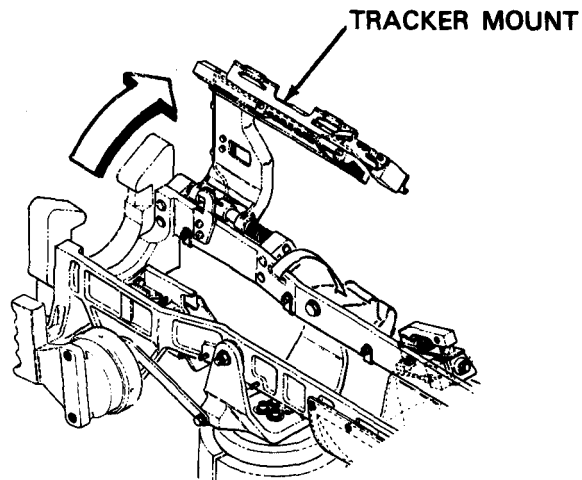
2-15. PREPARE THE MOUNT FOR INSTALLATION OF THE ROUND-
CONTINUED

STEP 3



Don't throw the tracker mount up and over, it may spring back and mash your fingers or damage the equipment.

Push forward on the tracker mount and lift it up and over to the right.

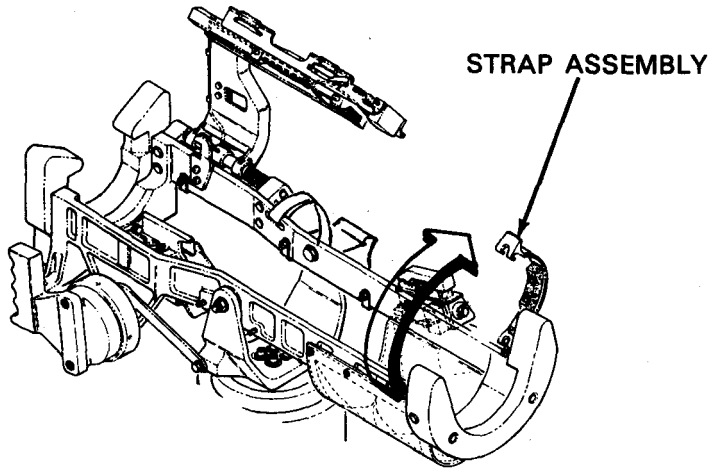


GO TO NEXT PAGE

2-15. PREPARE THE MOUNT FOR INSTALLATION OF THE ROUND-
CONTINUED

STEP 4

Lift the strap assembly up and over to the right side of the cradle.



END OF TASK

YOU ARE NOW READY TO INSTALL THE ROUND

GO TO NEXT PAGE

2-16. INSTALL THE ROUND

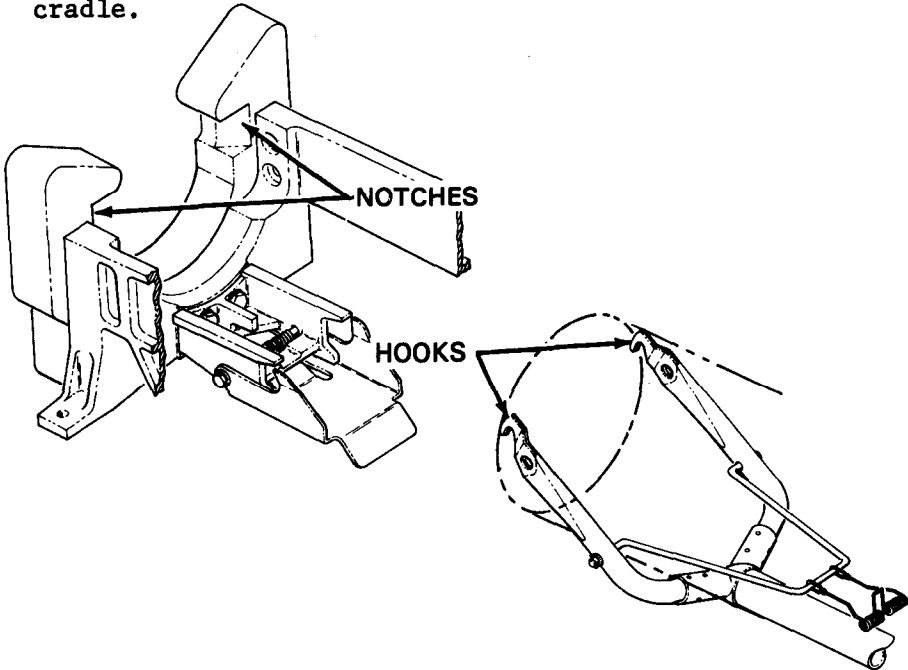
STEP 1

Remove the forward shock from the round (see para. 2-10). Fold and secure the bipod to the round with the bipod strap.



NOTE

- Keep the forward shock in case you have to remove the round from the mount. Always replace the shock to prevent excess moisture and dirt from entering the round.
- When installing the round in the mount make sure that the hooks on the bipod are aligned with the notches in the rubber shock mount on the forward end of the cradle.

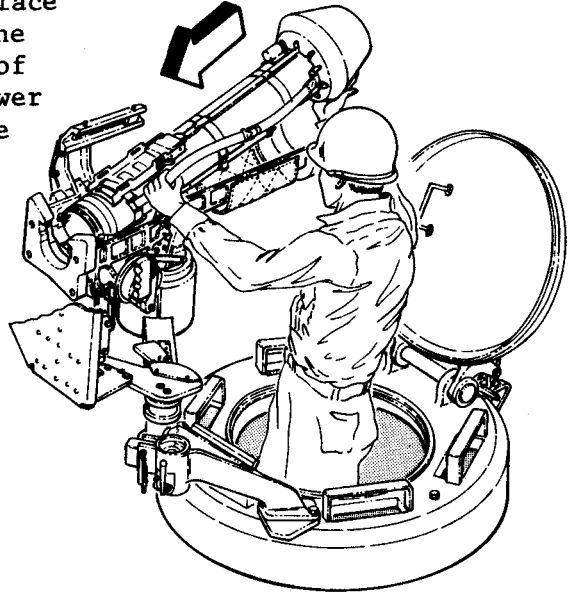


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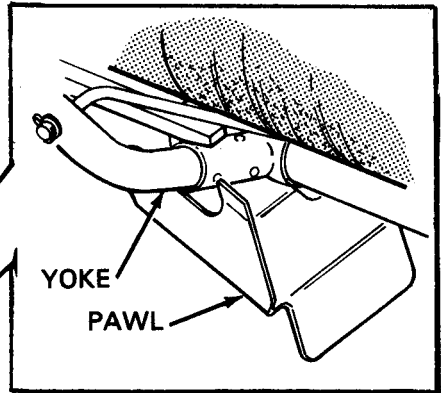
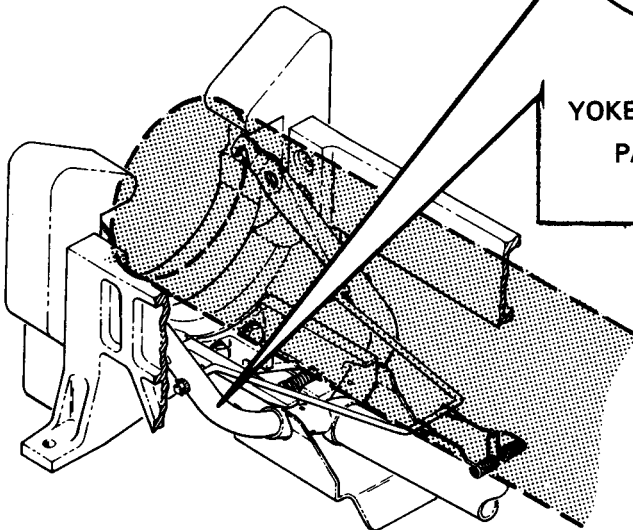
2-16. INSTALL THE ROUND - CONTINUED

STEP 2

- A. Tilt the round and place the forward end of the tube into the front of the cradle. Then lower the rear end into the cradle.



- B. As the round is lowered into the cradle the pawl will automatically engage the bipod yoke.

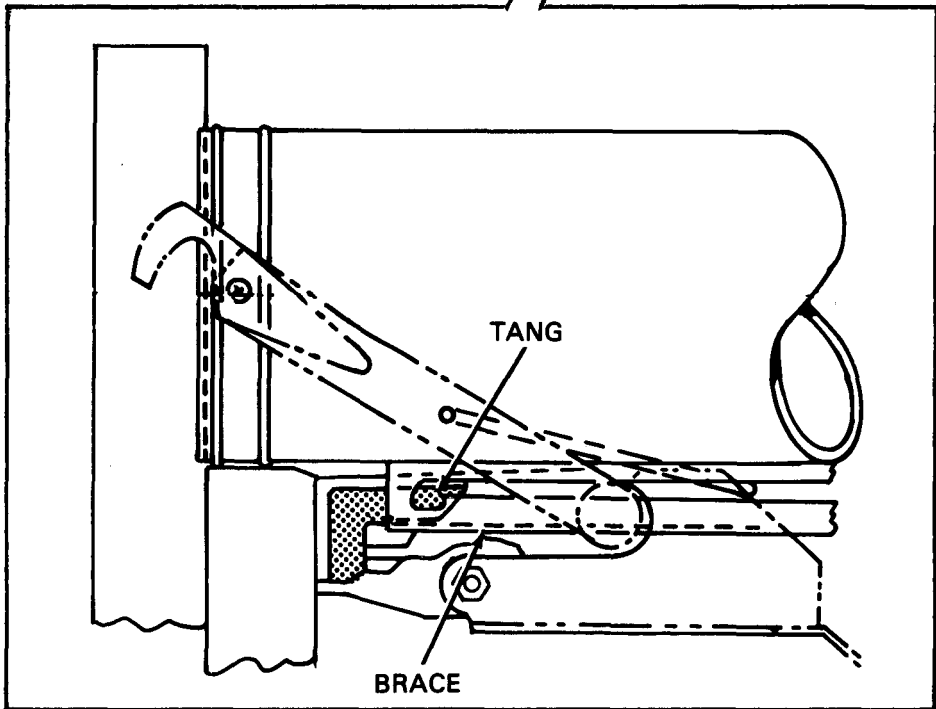
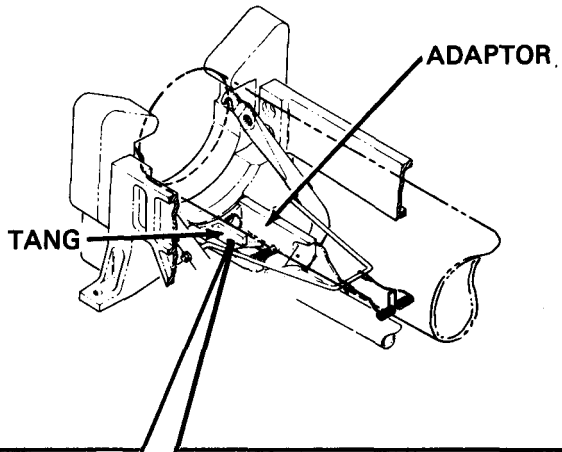


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2-16. INSTALL THE ROUND-CONTINUED

STEP 2 - CONTINUED

- C. Now push forward on the round. This will cause the tang in the center of the adaptor to engage the bipod brace. If this does not happen the tracker mount will not mate with the round.



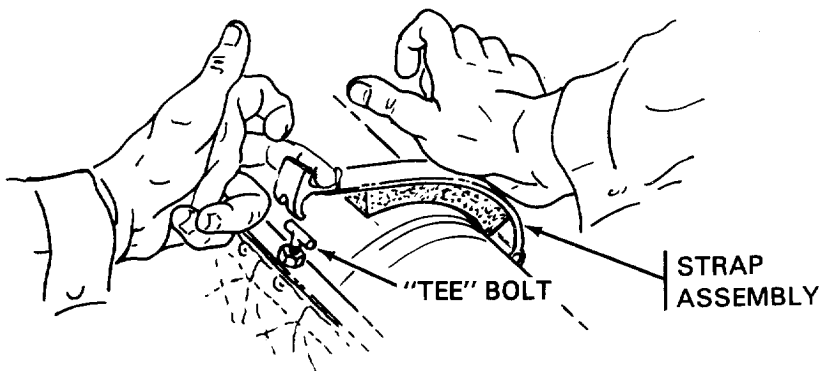
GO TO NEXT PAGE

2-16. INSTALL THE ROUND - CONTINUED

STEP 3

**NOTE**

Make sure you secure the strap assembly after you load the round in the cradle assembly. The strap must be secured when the Round is fired. The strap must also be secured while traveling.

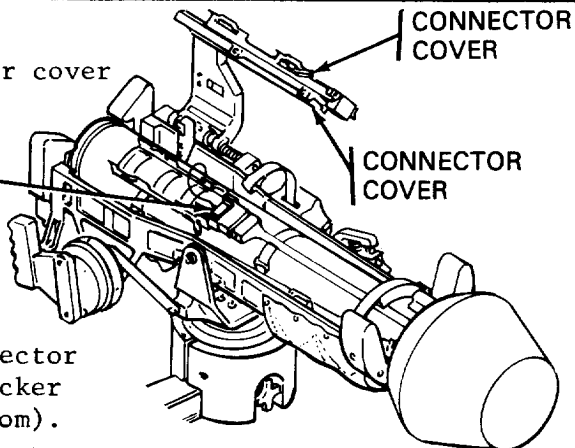


Place the strap assembly on the rear of the cradle over the rear of the round and attach it to the Tee-bolt. If the strap will not catch to the Tee-bolt, adjust it. (See TM 9-1425-484-24).

STEP 4

- A. Remove the connector cover from the round.

CONNECTOR COVER



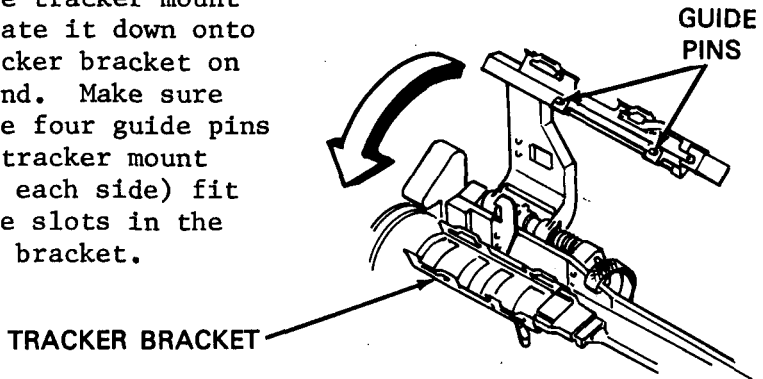
- B. Remove the two connector covers from the tracker mount (top and bottom).

GO TO NEXT PAGE

2-16. INSTALL THE ROUND - CONTINUED

STEP 5

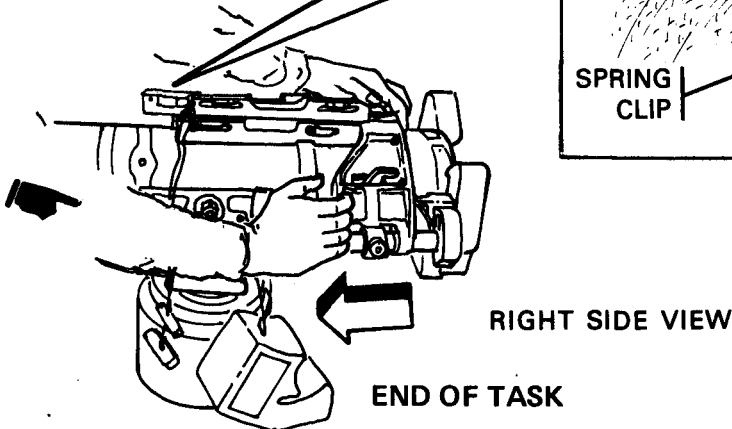
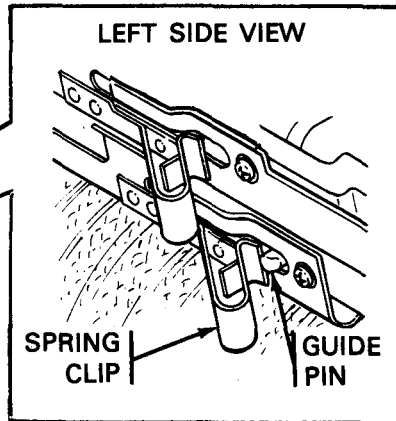
- A. Lift the tracker mount and rotate it down onto the tracker bracket on the round. Make sure that the four guide pins on the tracker mount (two on each side) fit into the slots in the tracker bracket.



 **WARNING**

Keep your hands off the remote firing mechanism until you are ready to acquire the target.

- B. Push down on the tracker mount and pull it to the rear until the spring clip on the left side of the tracker bracket engages the guide pin on the tracker mount.



YOU ARE NOW READY TO INSTALL THE TRACKER

GO TO NEXT PAGE

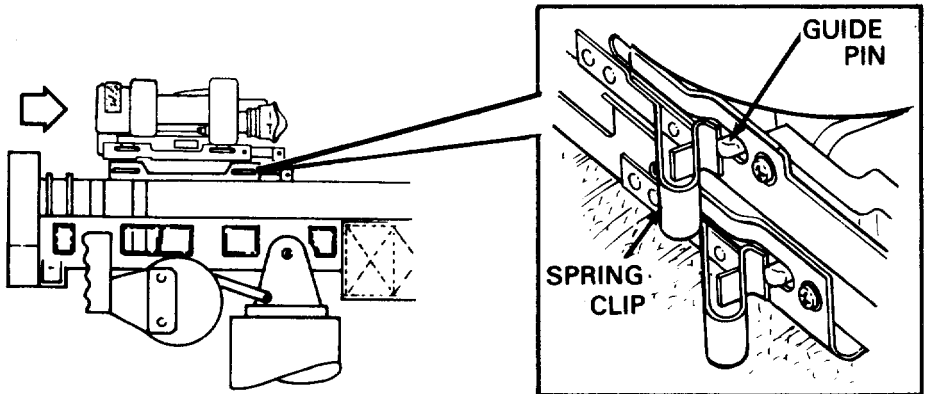
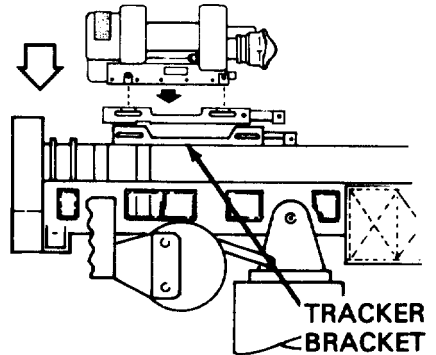
2-17. INSTALL THE DAY TRACKER



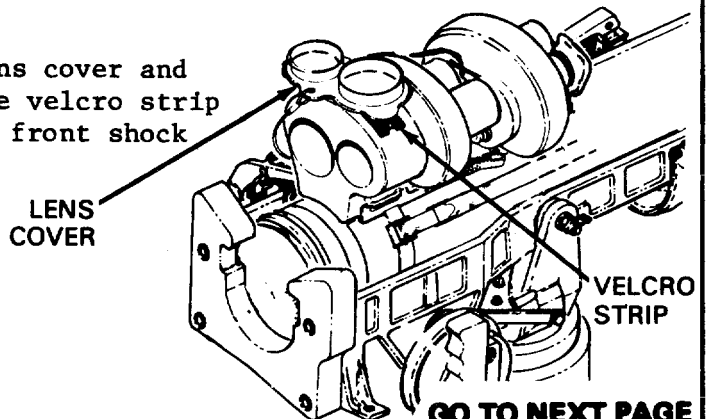
Be careful not to press the safety and trigger while mating the day tracker to the round.

MATE DAY TRACKER TO M175 MOUNT

- A. Place tracker guide pins in slots of tracker bracket guide rails.
- B. Slide day tracker firmly to the rear using both hands, until the spring clip locks the guide pin in place. If the tracker won't mate, refer to para. 3-2.



- C. Remove the lens cover and stow it on the velcro strip on top of the front shock absorber.

**GO TO NEXT PAGE**

2-18. INSTALL THE NIGHT TRACKER

Installation of night tracker is the same as the day tracker (see para. 2-17).



Now that the round and tracker have been installed on the mount you still have a few more important things to check.

Is the field of fire and firing danger zone clear?
(See para. 2-8).

Is the antenna down and secured?

Is the driver's hatch and cargo hatch closed?

Is all equipment stored on top of the APC secured?

Is all other loose debris removed?

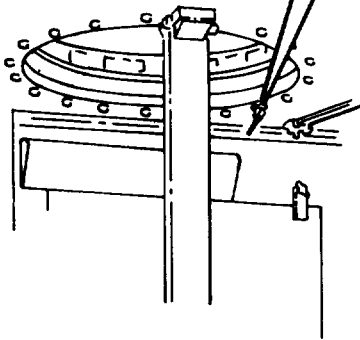
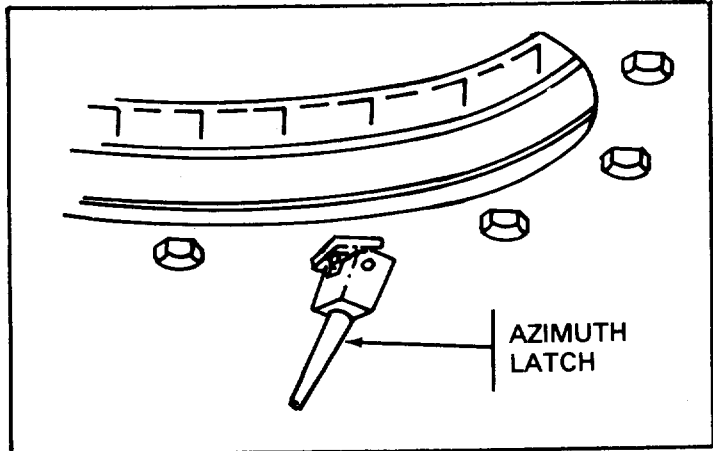
**YOU ARE NOW READY TO OPERATE
THE M175 MOUNT AND ENGAGE A
TARGET**

GO TO NEXT PAGE

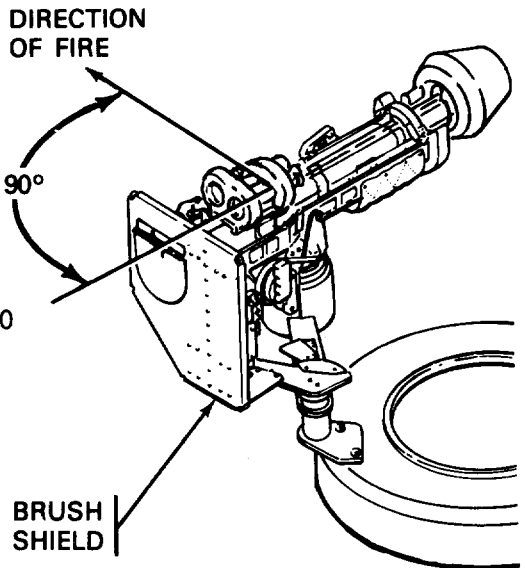
2-19. OPERATING PROCEDURES - M175 MOUNT

STEP 1

A. Reach inside the commander's hatch and on the ceiling of the APC you will find the azimuth latch.



B. Press the azimuth latch down and the turret will rotate freely.



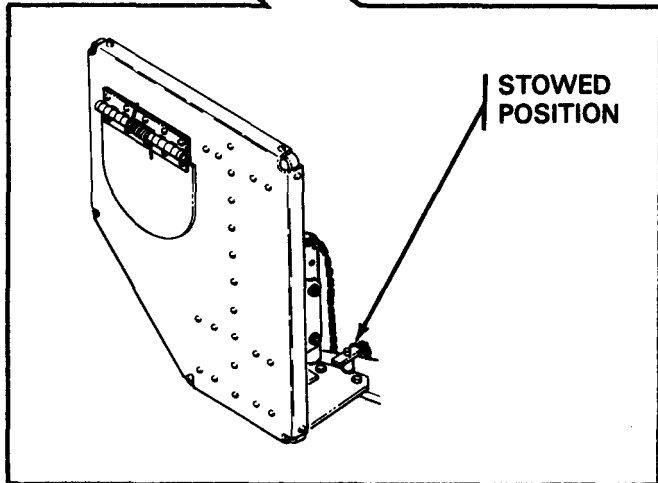
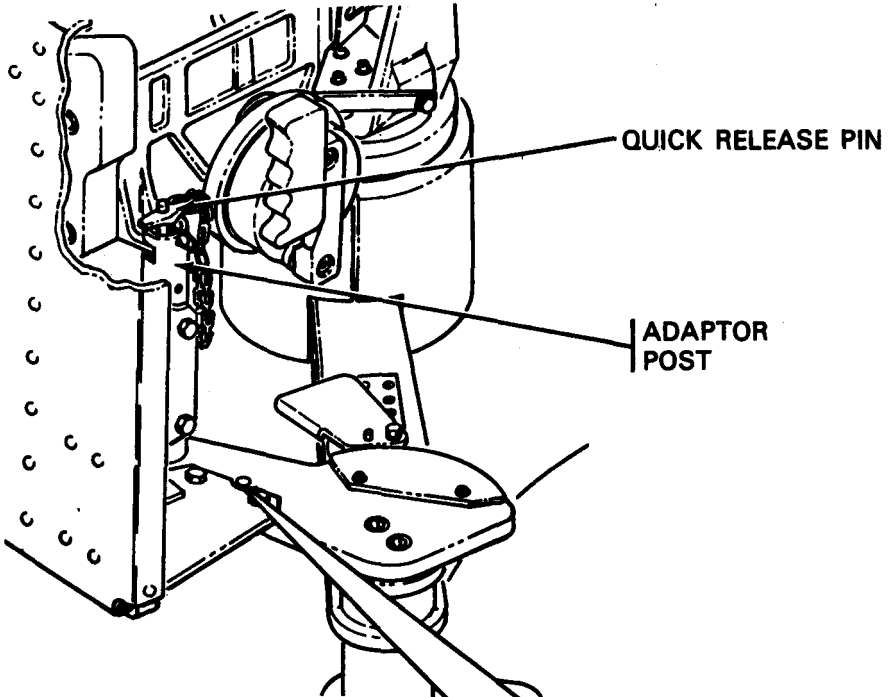
C. Rotate the turret so the brush shield is facing 90 degrees to the left of your direction of fire. Return azimuth latch to the lock position (UP).

GO TO NEXT PAGE

2-19. OPERATING PROCEDURES - M175 MOUNT - CONTINUED

STEP 2

Remove the quick release pin by depressing the button on top and remove it from the adaptor post and stow it.

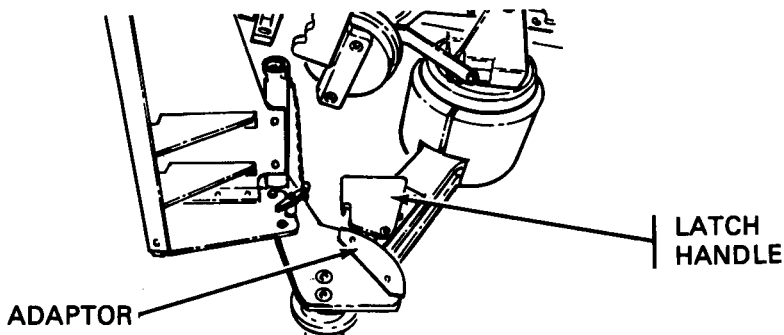


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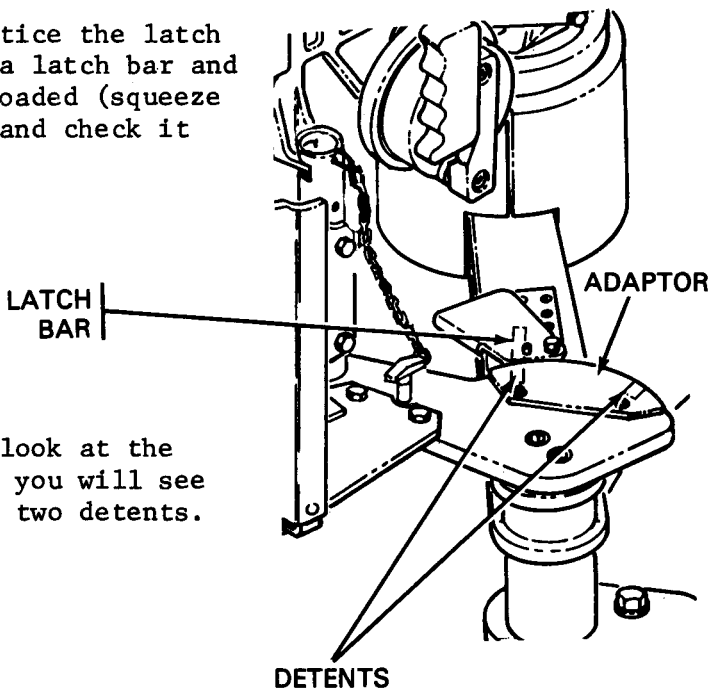
2-19. OPERATING PROCEDURES - M175 MOUNT - CONTINUED

STEP 3

- A. Before you rotate the mount and swingarm to the firing position, take a close look at the latch handle assembly and adaptor.



- B. You will notice the latch handle has a latch bar and is spring loaded (squeeze the handle and check it out).



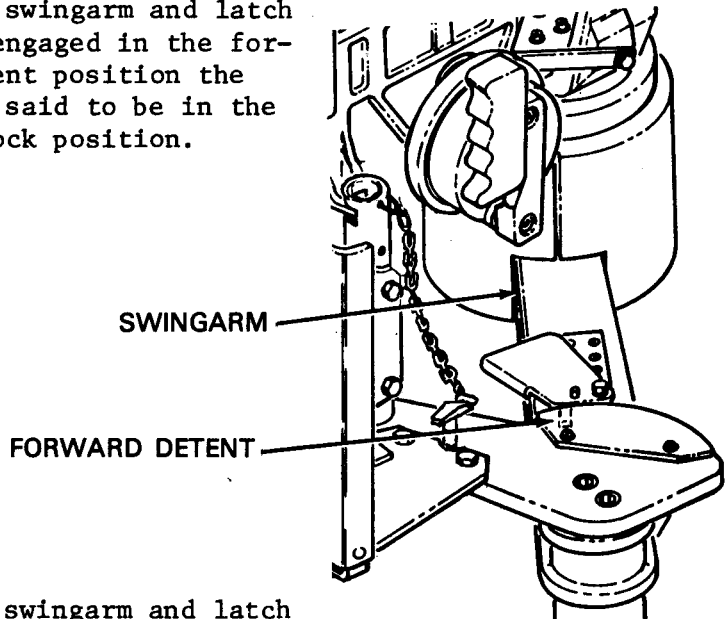
- C. Now take a look at the adaptor and you will see that it has two detents.

GO TO NEXT PAGE

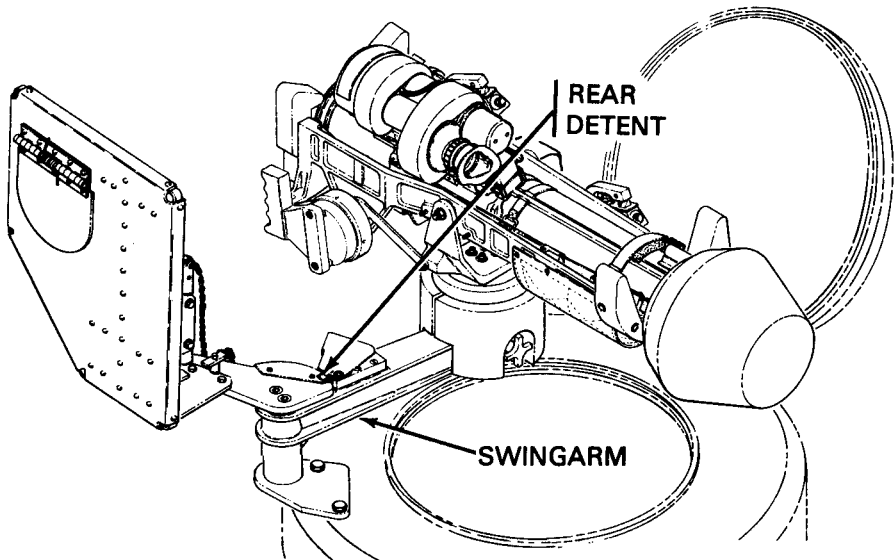
2-19. OPERATING PROCEDURES - M175 MOUNT - CONTINUED

STEP 3 - CONTINUED

- D. When the swingarm and latch bar are engaged in the forward detent position the mount is said to be in the travel lock position.



- E. When the swingarm and latch bar are engaged in the rear detent position the mount is said to be in the firing position.

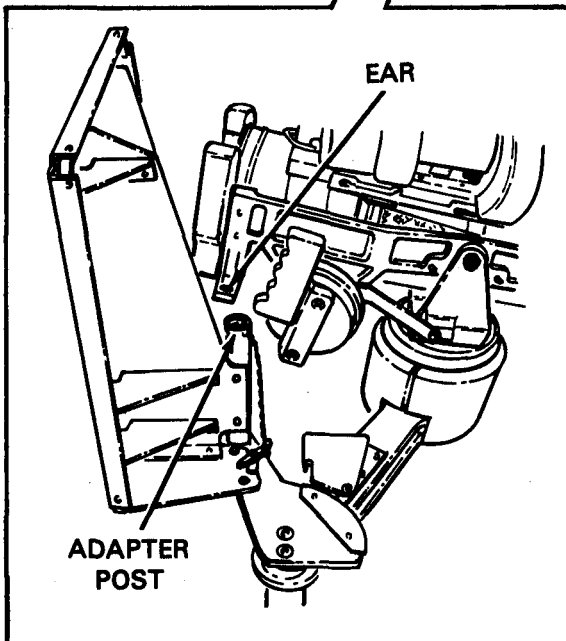
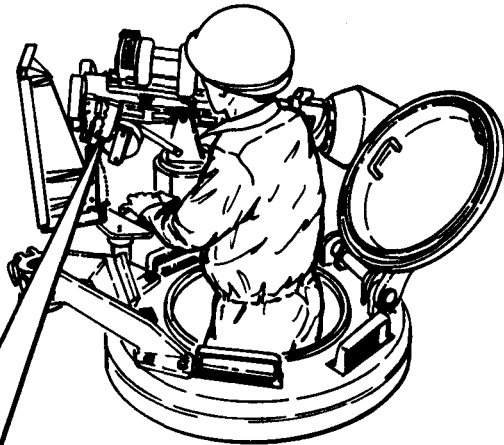


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2-19. OPERATING PROCEDURES - M175 MOUNT - CONTINUED

STEP 4

- A. Using your right hand, grasp the right rear side of the cradle and rotate the mount on the azimuth damper until the rear shock on the round butts against the hatch cover. The cradle will move just enough for the ear on the cradle to clear the adaptor post on the brush shield.

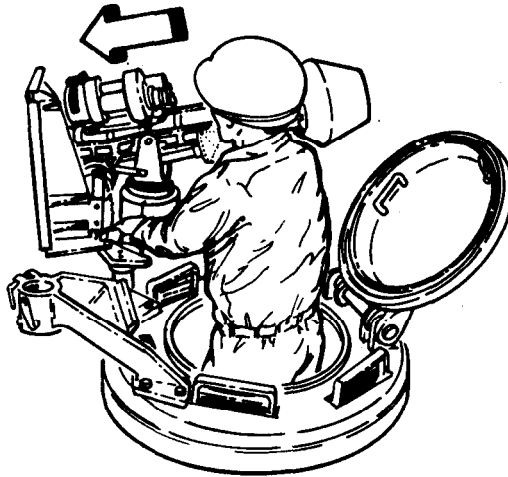


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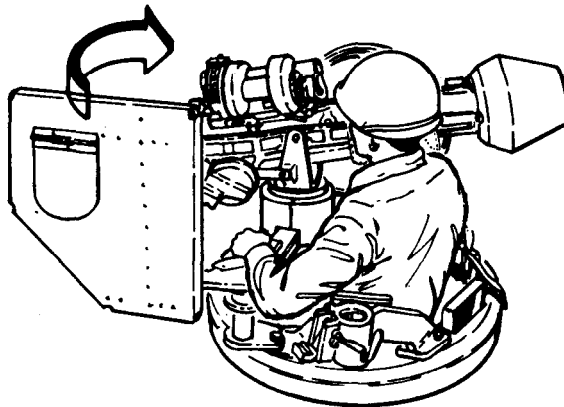
2-19. OPERATING PROCEDURES - M175 MOUNT - CONTINUED

STEP 4 - CONTINUED

- B. Squeeze the latch handle and hold it.
- C. Now push the swingarm forward until the swingarm engages the stop on the brush shield mount. As you push forward, make sure that the elevation control clears the adapter post on the brush shield.



- D. Slightly elevate the rear of the mount and pull the swingarm to the rear. Once the swingarm has passed the forward detent position (see step 3) release the latch handle and pull the swingarm back to the firing position. Be sure that you keep the rear of the mount elevated until it clears the hatch cover.

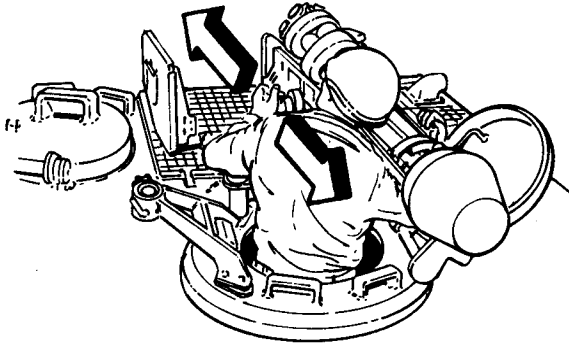
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2-19. OPERATING PROCEDURES - M175 MOUNT - CONTINUED

Step 5

AIMING CORRECTIONS IN ELEVATION

- A. Push forward on the elevation control handle to lower the aiming point.

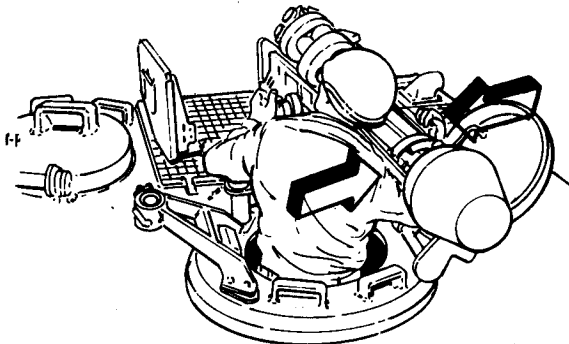


- B. Pull back on the handle to raise the aiming point.

STEP 6

AIMING CORRECTIONS IN AZIMUTH

- A. Push against the rear of the M175 mount with your neck and shoulder for right to left tracking.



- B. Pull against the remote firing mechanism with the palm of the right hand for left to right tracking.

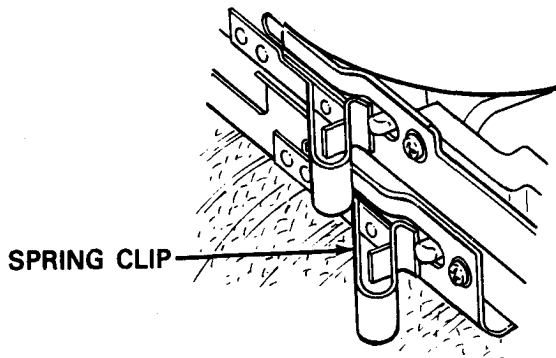
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2-19. OPERATING PROCEDURES - M175 MOUNT - CONTINUED**STEP 7**

Sighting, aiming and firing the missile are the same as you did in para. 2-11, 2-12 and 2-13 except that you use the remote firing mechanism to launch the missile.

STEP 8**UNLOAD/RELOAD**

After missile impact, release the bottom spring clip at the left rear side of the tracker mount on the round.

**NOTE**

A new round can be loaded in either the travel lock or ready to fire position.

GO TO NEXT PAGE

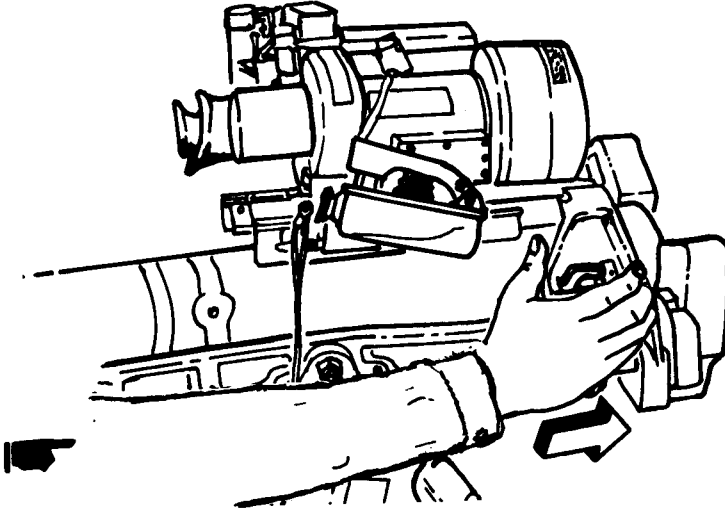
2-19. OPERATING PROCEDURES - M175 MOUNT - CONTINUED

STEP 9

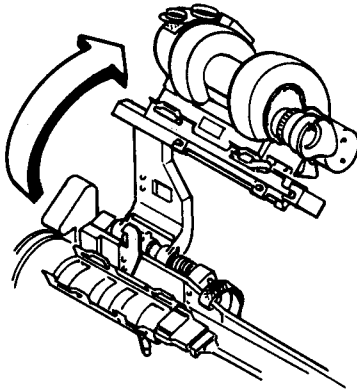


If the tracker mount is thrown up and over with too much force, it will spring back and mash your fingers or damage the equipment.

- A. Slide the tracker mount forward.



- B. Lift the tracker mount up and over to the right.

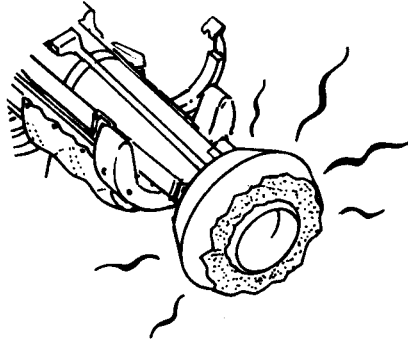
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2-19. OPERATING PROCEDURES - M175 MOUNT - CONTINUED

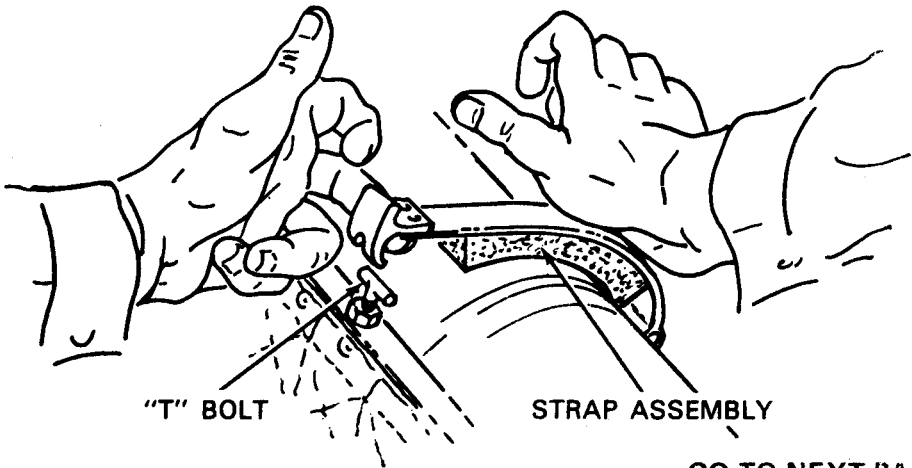
STEP 10



The tracker battery and the breech will probably be HOT! DO NOT touch or grab them or you will get burned.



If strap assembly is secured, release it by pressing down on the center of strap (it takes a lot of pressure with the ball of right hand) while lifting hook clear of "T" bolt with left hand.



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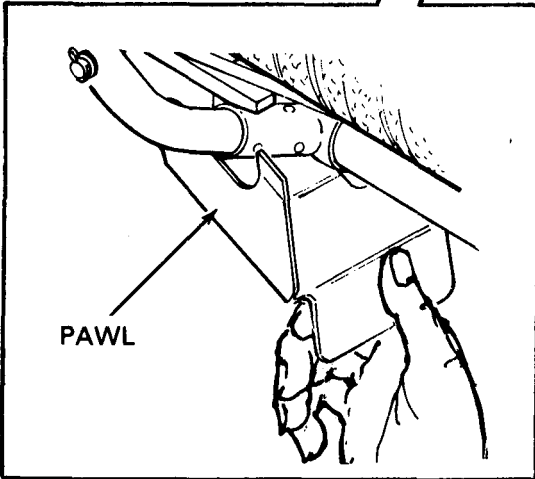
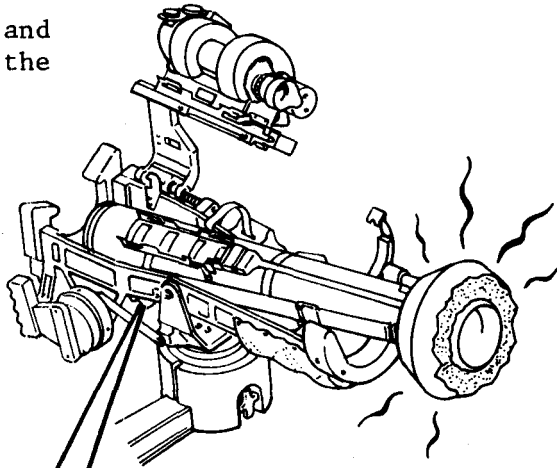
2-19. OPERATING PROCEDURES - M175 MOUNT - CONTINUED

STEP 11



Note deleted

- A. Push the pawl down and forward to release the round.

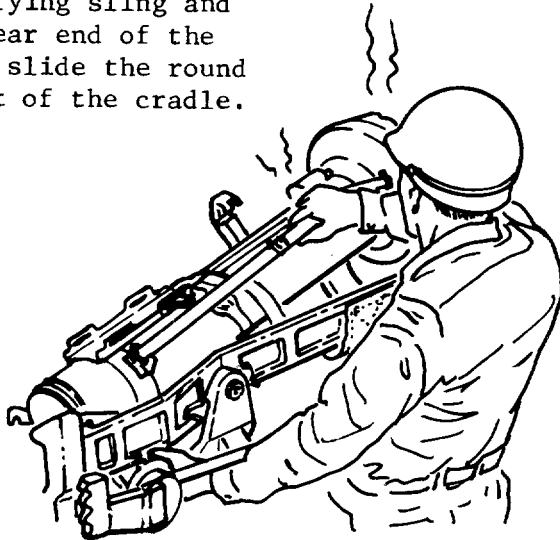


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2-19. OPERATING PROCEDURES - M175 MOUNT - CONTINUED

STEP 11 - CONTINUED

- B. Use the carrying sling and raise the rear end of the round, then slide the round back and out of the cradle.



- C. Discard the used launch tube and install a new round (see para. 2-16). Be sure the guidance wire is clear of the APC before loading a new round.

**NOTE**

In combat you will want to destroy the expended launch tube so the enemy cannot use it against you as a field expedient mine or booby trap.

END OF TASK**ONCE YOUR MISSION IS OVER PREPARE FOR MOVEMENT****GO TO NEXT PAGE**

2-19.1. M175 MOUNT - USAGE/STORAGE REQUIREMENTS

The normal usage and storage location of the M175 mount on the M113 APC is at the commander's hatch. The mount and swing arm assembly are received in a specially designed storage/shipping container is unpacked, inventoried, and installed in accordance with procedures in TM 9-1425-484-24, Chapter 2.

The storage/shipping container is maintained at the user vehicle DS/GS storage facility for future mount storage or for return of the mount to the depot for overhaul. Whenever it is anticipated that the APC will be out of service for an extended period of time or APC operations are scheduled that do not require the M175 mount, one of the following vehicle commander options shall be exercised:

a. Remove the mount and swing arm assembly per TM 9-1425-484-24 and place in its storage/shipping container. The container may be placed in a secure storage area or temporarily stored inside the secured APC, on the floor. (Any movement of the APC with the mount and container inside will be limited to 5 miles or less within local area.)

b. Remove the M175 mount from the swing arm assembly in accordance with paragraph 2-21 herein. The mount may now be stored in the storage/shipping container as outlined in a. above or hung inside the APC in accordance with procedures specified in step 1 below.

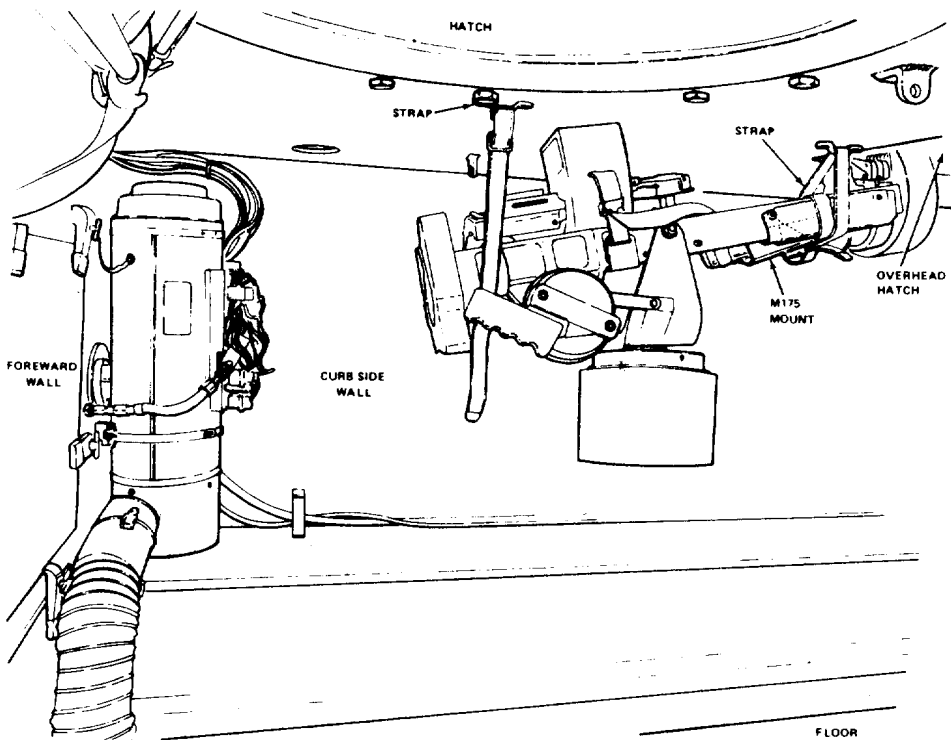


Overhead storage inside the APC shall not be used when the APC is on a cross-country or tactical mission. During tactical conditions the mount must be installed at the commander's hatch in ready-to-fire or movement positions as specified in this TM. The mount shall be installed at the commander's hatch or in the storage/shipping container during cross-country exercises.

2-19.1 M175 MOUNT - USAGE/STORAGE REQUIREMENTS- CONTINUED

Step 1.

- A. Replace two handstraps with longer equipment straps (item 15Appendix D).
- B. Strap the M175 mount to the overhead exactly as shown, trigger facing the curbside wall to protect it from walkthrough and hatch traffic.



- C. Adhere to a frequent visual inspection schedule for wear and tear on the straps and replace as required. Deterioration of straps can cause major damage to the M175 mount if dropped.

END OF TASK

2-20. PREPARATION FOR MOVEMENT

WITH ROUND AND TRACKER INSTALLED

The M175 mount may be secured in the travel lock position with the round and tracker installed, see Steps 1 through 7. With round and tracker removed, see Steps 8 through 18. The mount can also be left in the ready to fire position during movement if action is anticipated. When the mount is secured in the "travel lock" position, protection is provided by the brush shield and protective cover.



NOTE

The night tracker is powered by battery or VPC. When preparing for movement and you are using battery power, go to para. 2-28, steps 1 and 2. If you are using the VPC go to para. 2-28, steps 4, 5 and 6.

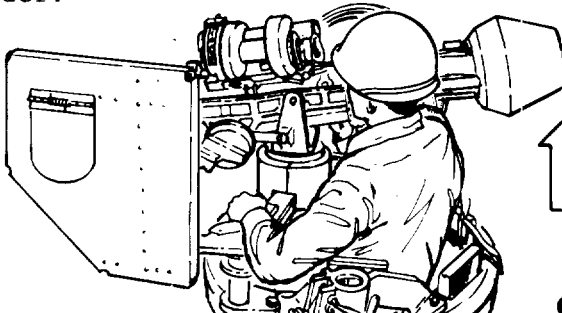
STEP 1



WARNING

- When rotating the mount to the travel lock position with the round and tracker installed, make sure you keep your hands off the firing mechanism. You don't want to accidentally fire the missile.
- Keep your left hand on the latch handle when rotating the mount or you may injure your hand.

Slightly elevate the rear of the mount using your right hand and shoulder.



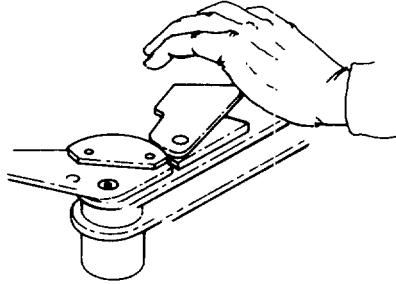
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2-20. PREPARATION FOR MOVEMENT - CONTINUED

WITH ROUND AND TRACKER INSTALLED - CONTINUED

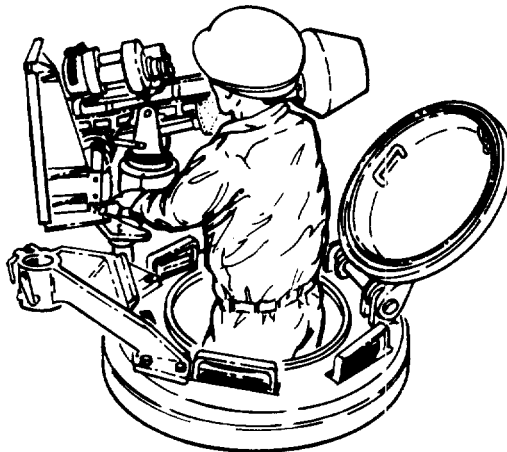
STEP 2

- A. Squeeze the latch handle and hold it.

**NOTE**

Make sure you keep the rear of the mount elevated until the rear shock on the round clears the hatch cover.

- B. Push the swingarm forward past the travel lock detent position (see para. 2-19, step 3) until the swingarm engages the stop on the brush shield mount.

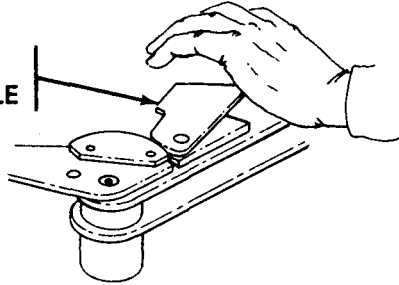
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2-20. PREPARATION FOR MOVEMENT - CONTINUED

WITH ROUND AND TRACKER INSTALLED - CONTINUED

STEP 3

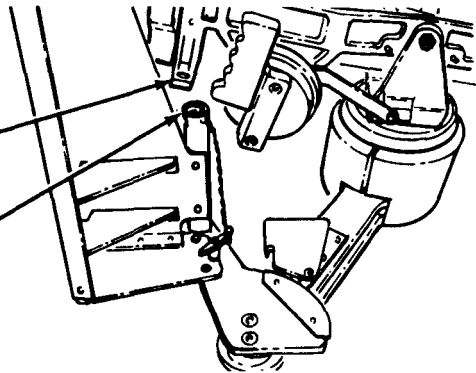
- A. Release the latch handle, but keep your hand on the swingarm.

LATCH
HANDLE

- B. Lower the rear of the mount to a near level position.



- C. Now, pull the swingarm back and maneuver the mount on the azimuth and elevation damper until the ear on the cradle engages the slot in the adaptor post and the swingarm locks in the travel lock position.

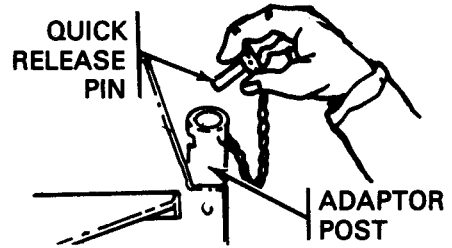
EAR
ADAPTOR POST**GO TO NEXT PAGE**

2-20. PREPARATION FOR MOVEMENT - CONTINUED

WITH ROUND AND TRACKER INSTALLED - CONTINUED

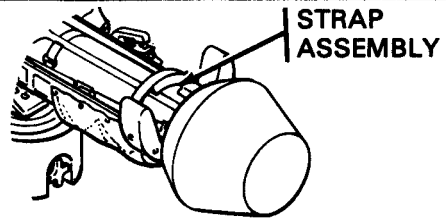
STEP 4

Remove the quick release pin from its stowed position and insert it into the hole in the top of the adaptor post.



STEP 5

If strap assembly is not secured already, do it now.



STEP 6

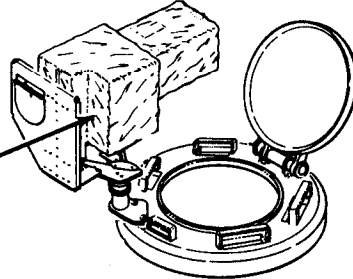


CAUTION

Protective cover must be installed to protect controls and moving parts from freezing rain and other adverse weather conditions.

Install the protective cover.

PROTECTIVE COVER



STEP 7

Rotate the turret until the brush shield is facing the front of the APC, (see para. 2-19, step 1).

YOU ARE NOW READY TO MOVE OUT

With round and tracker removed:

GO TO NEXT PAGE

2-20. PREPARATION FOR MOVEMENT - CONTINUED
 WITH ROUND AND TRACKER REMOVED

STEP 8



Keep your hands off tracker and remote firing mechanism while removing the tracker from a live round.

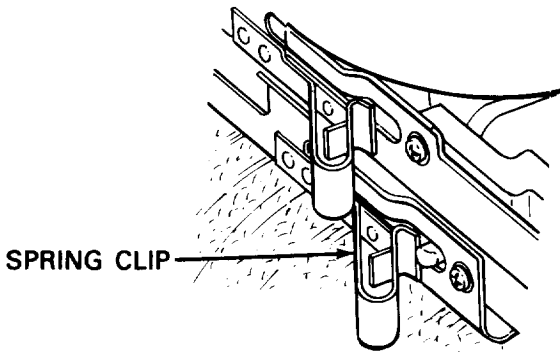
Remove the day/night tracker, see para. 2-23, step 1.

STEP 9



Removal procedure for live round is same as removal procedure for expended round.

Release the bottom spring clip at the left rear side of the tracker mount on the round.



Round can be removed in either the travel lock or ready to fire position.

GO TO NEXT PAGE

2-20. PREPARATION FOR MOVEMENT - CONTINUED

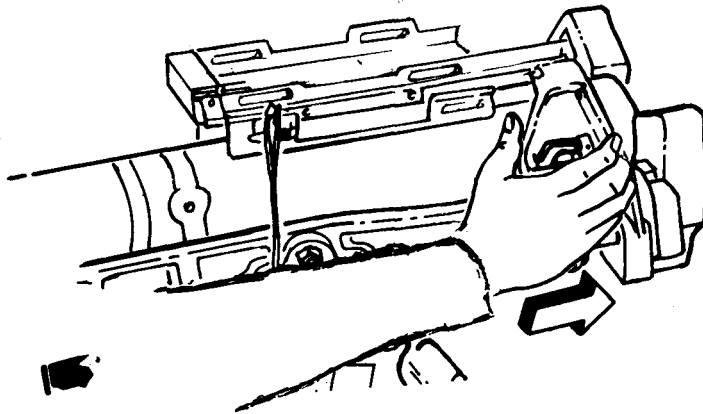
WITH ROUND AND TRACKER REMOVED - CONTINUED

STEP 10

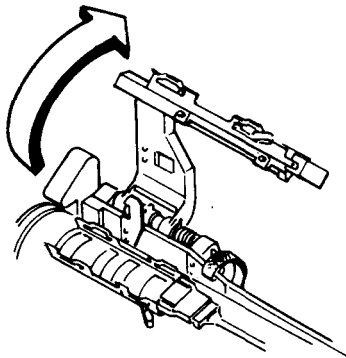


If the tracker mount is thrown up and over with too much force, it will spring back and mash your fingers or damage the equipment.

- A. Slide the tracker mount forward.



- B. Lift the tracker mount up and over to the right.



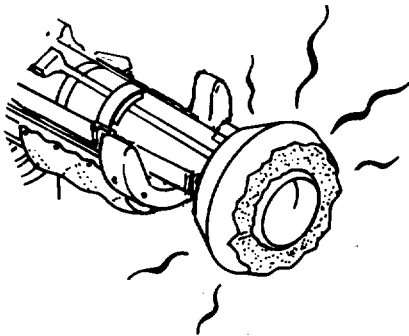
2-20. PREPARATION FOR MOVEMENT – CONTINUED

WITH ROUND AND TRACKER REMOVED – CONTINUED

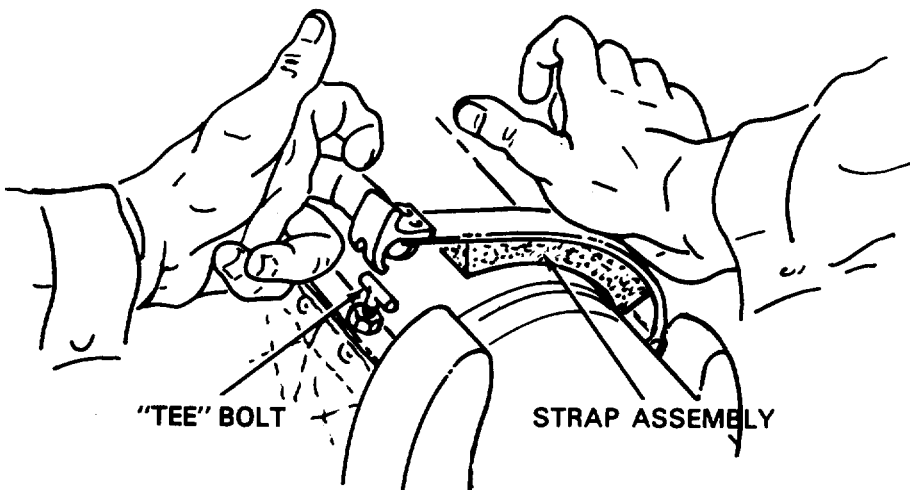
STEP 11



When removing an expended round, the tracker battery and the breech will probably be HOT! DO NOT touch or grab them or you will get burned.



If strap assembly is secured, release it by pressing down on the center of strap (it takes a lot of pressure with the ball of right hand) while lifting hook clear of "T" bolt with left hand.

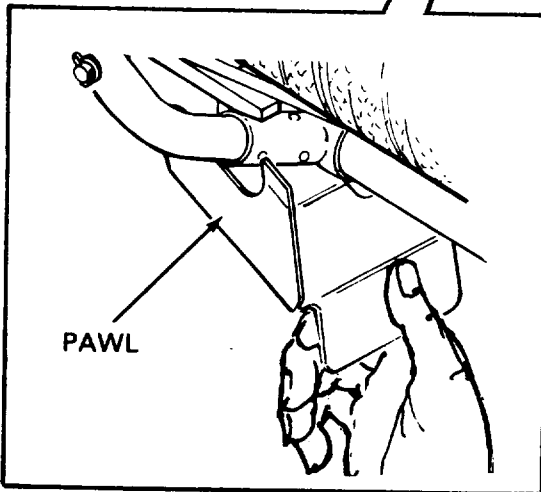
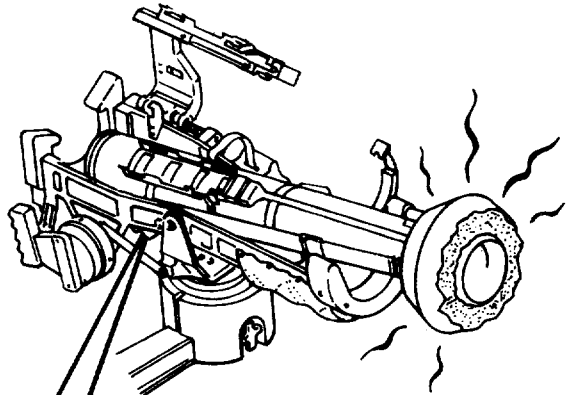
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2-20. PREPARATION, FOR MOVEMENT - CONTINUED

WITH ROUND AND TRACKER REMOVED - CONTINUED

STEP 12

- A. Push the pawl down and forward to release the round.

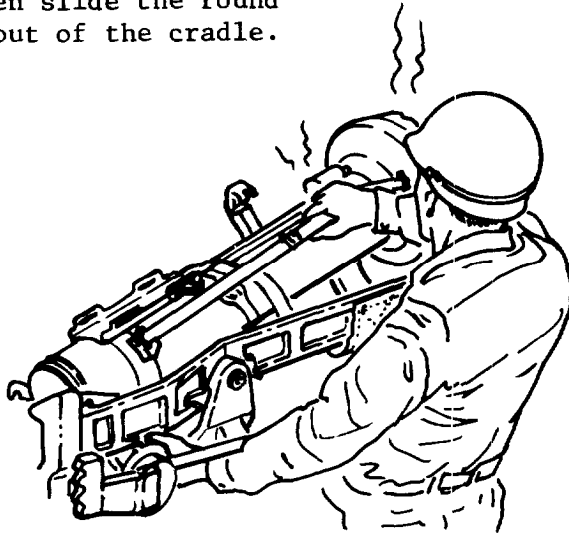
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2-20. PREPARATION FOR MOVEMENT - CONTINUED

WITH ROUND AND TRACKER REMOVED - CONTINUED

STEP 12 - CONTINUED

- B. Use the carrying sling and raise the rear end of the round, then slide the round back and out of the cradle.



- C. Discard the used launch tube. Be sure the guidance wire is clear of the APC.
- D. After removing live round, replace front shock absorber and secure bipod, see TM 9-6920-484-12. Stow round in APC.

**NOTE**

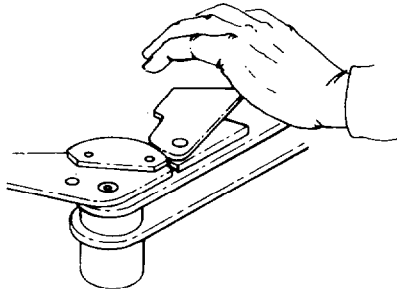
In combat you will want to destroy the expended launch tube so the enemy cannot use it against you as a field expedient mine or booby trap.

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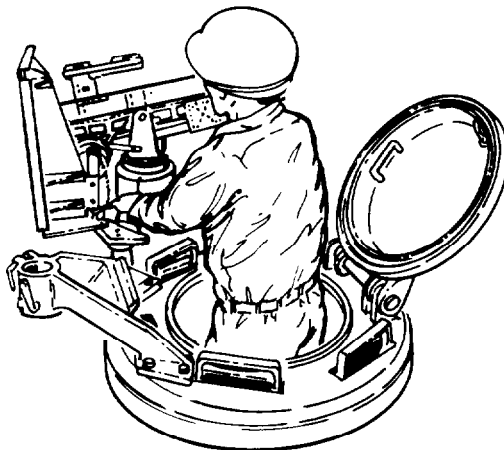
2-20. PREPARATION FOR MOVEMENT - CONTINUED
WITH ROUND AND TRACKER REMOVED - CONTINUED

STEP 13

- A. Squeeze the latch handle and hold it.



- B. Push the swingarm forward to the travel lock detent position (see para. 2-19, step 3).



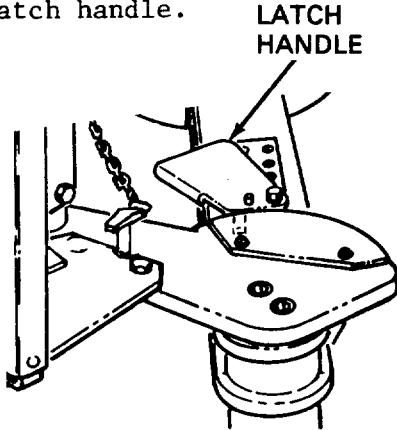
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2-20. PREPARATION FOR MOVEMENT - CONTINUED

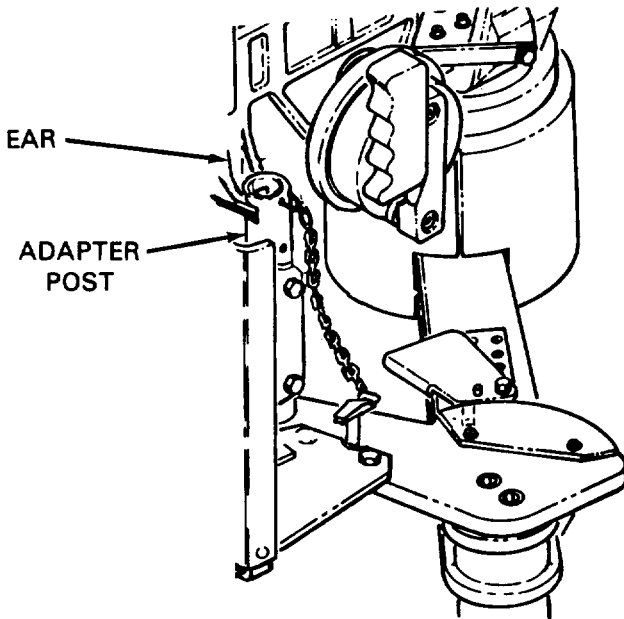
WITH ROUND AND TRACKER REMOVED - CONTINUED

STEP 14

A. Release the latch handle.



B. Maneuver the mount on the azimuth and elevation damper until the ear on the cradle engages the slot in the adapter post and the swingarm locks in the travel lock position.



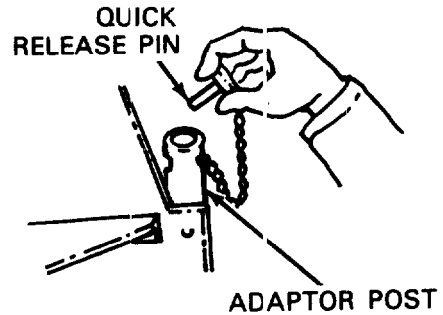
GO TO NEXT PAGE

2-20. PREPARATION FOR MOVEMENT - CONTINUED

WITH ROUND AND TRACKER REMOVED - CONTINUED

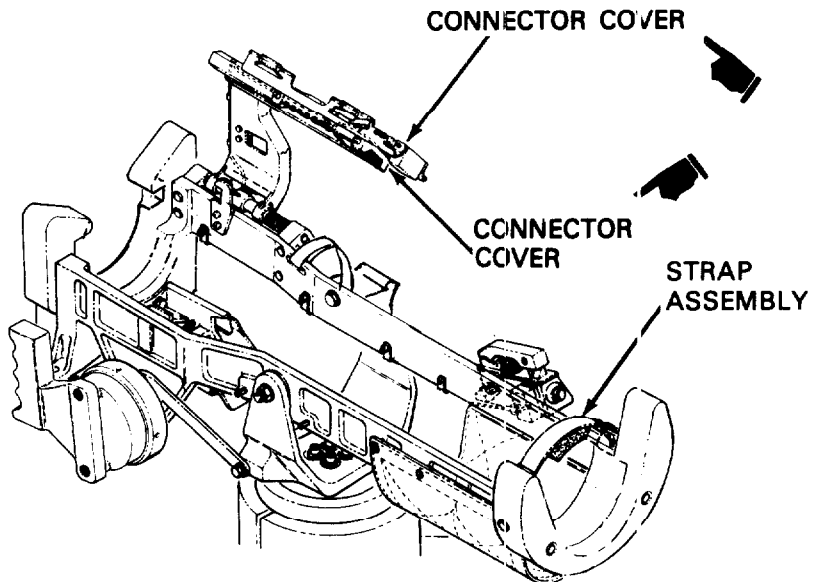
STEP 15

Remove the quick release pin from its stowed position and insert it into the hole in the top of the adaptor post.



STEP 16

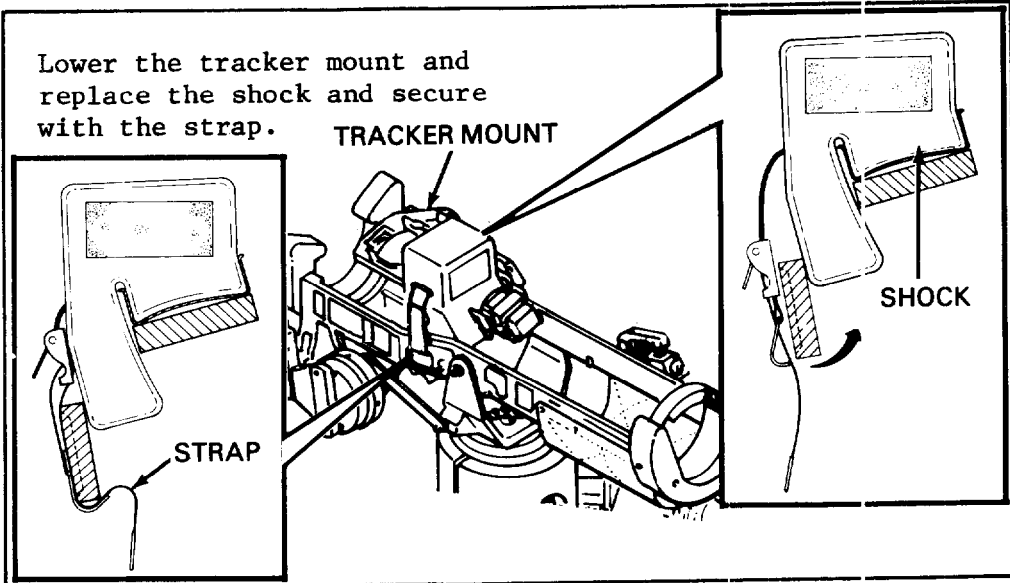
- A. Close strap assembly over mount.
- B. Replace covers on the connectors at the top and bottom of tracker mount.

**GO TO NEXT PAGE**

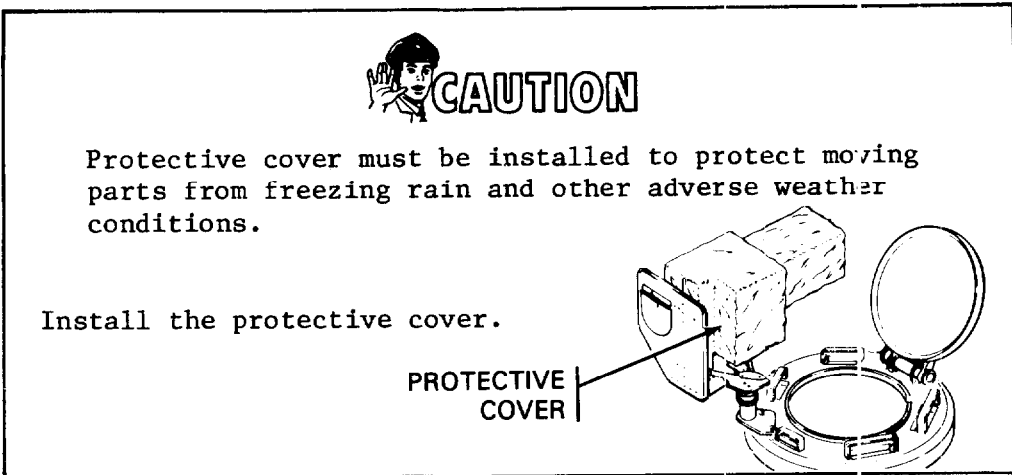
2-20. PREPARATION FOR MOVEMENT - CONTINUED

WITH ROUND AND TRACKER REMOVED - CONTINUED

STEP 17



STEP 18



STEP 19

Rotate the turret until the brush shield is facing the front of the APC, (see para. 2-19, step 1).

C 1 Section VI. OPERATING THE M175 MOUNT ON TRIPOD

	Para	Page
Prepare the M175 Mount for Use on Tripod	2-21	2-73
Firing Positions	2-22	2-81
Preparation for Movement	2-23	2-83

OVERVIEW

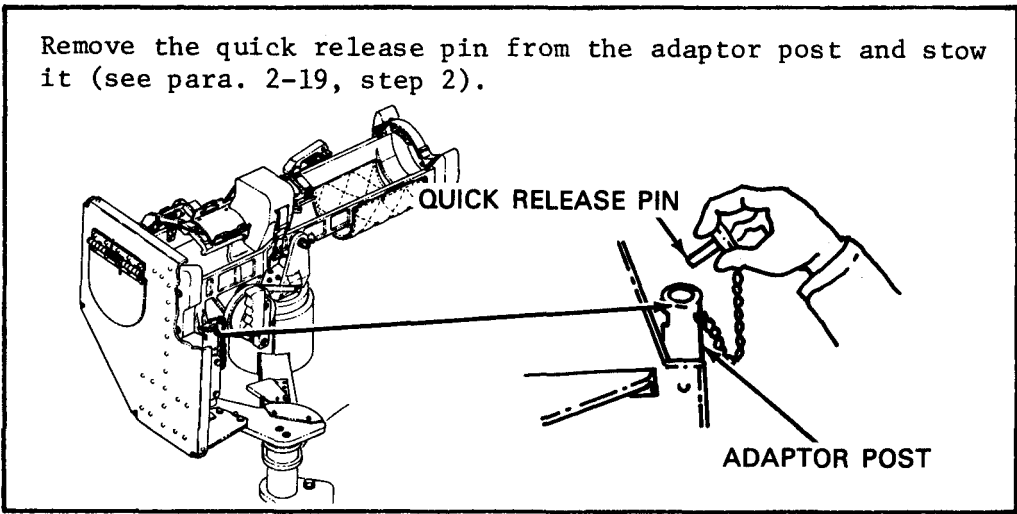
When necessary, you can remove the M175 mount from the swing-arm mounted on the APC and mount it on the M3 or M122 machine gun tripod. This gives you an added capability of firing the DRAGON from another stable mount. Make sure you have performed your PMCS like it tells you in para. 2-6.

2-21. PREPARE THE M175 MOUNT FOR USE ON TRIPOD

REMOVE THE M175 MOUNT FROM THE SWINGARM

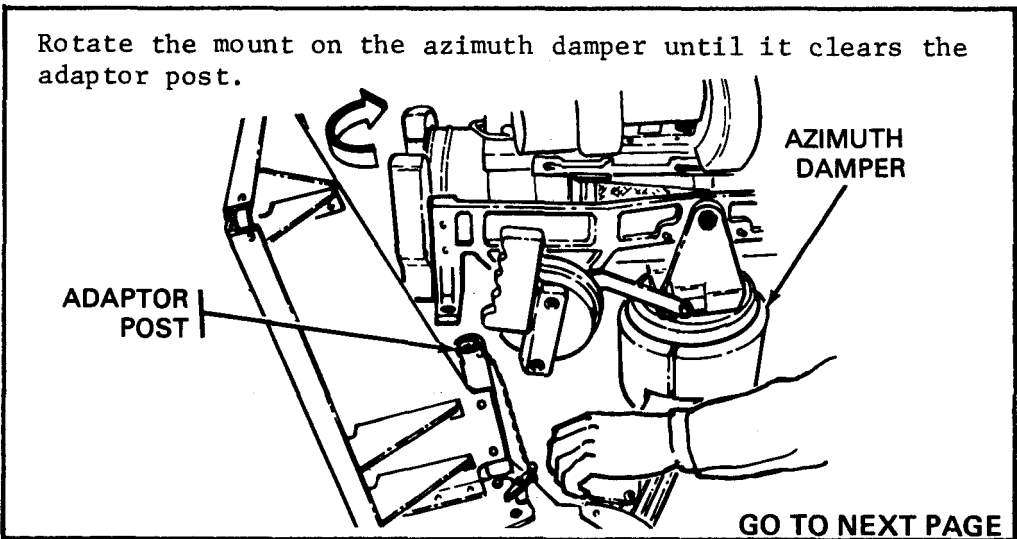
STEP 1

Remove the quick release pin from the adaptor post and stow it (see para. 2-19, step 2).



STEP 2

Rotate the mount on the azimuth damper until it clears the adaptor post.

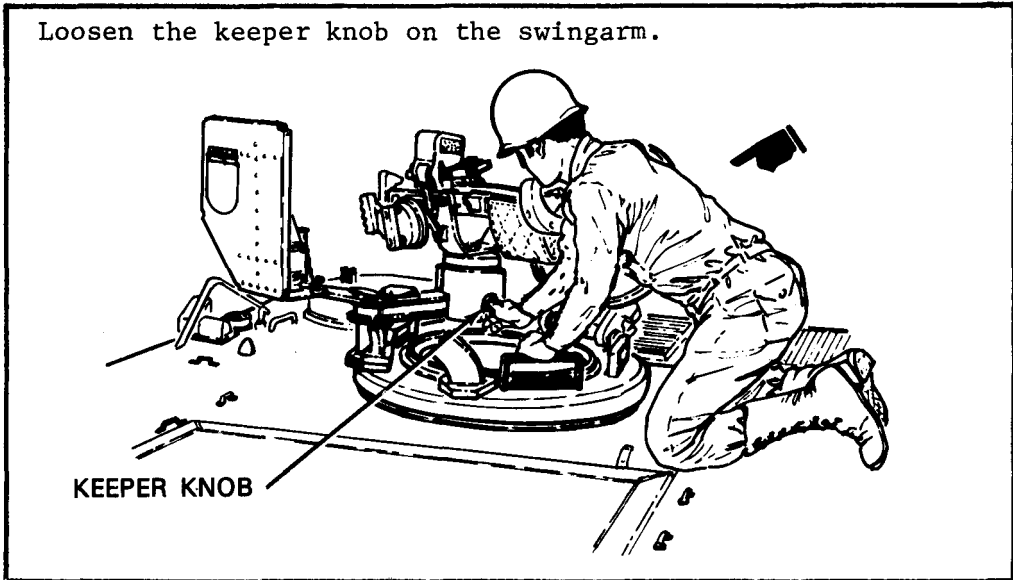


2-21. PREPARE THE M175 MOUNT FOR USE ON TRIPOD - CONTINUED

REMOVE THE M175 MOUNT FROM SWINGARM - CONTINUED

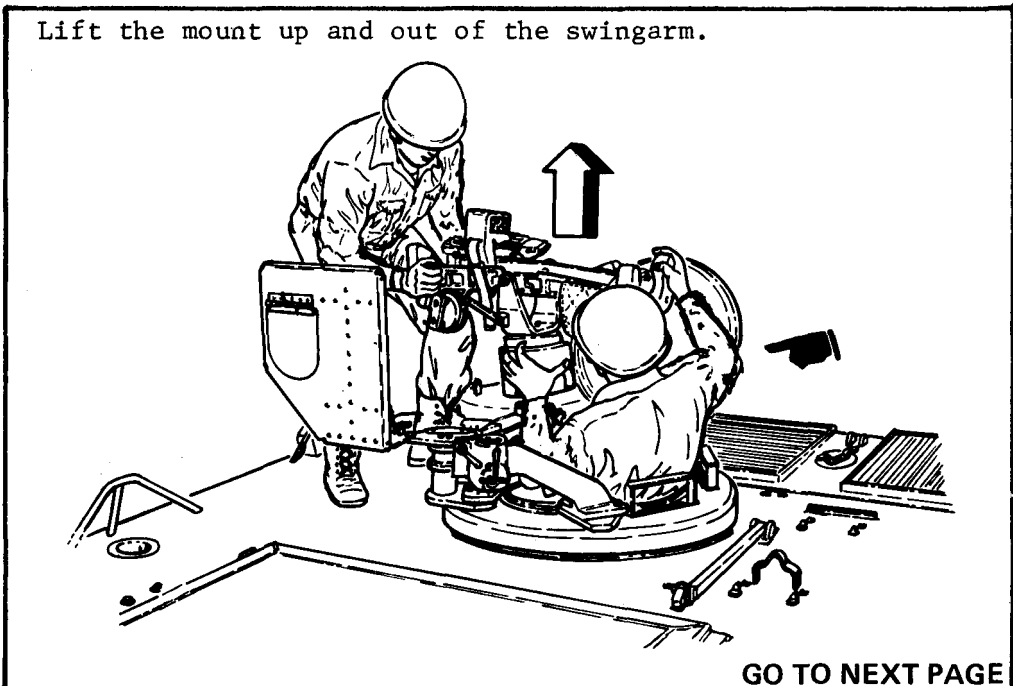
STEP 3

Loosen the keeper knob on the swingarm.



STEP 4

Lift the mount up and out of the swingarm.



GO TO NEXT PAGE

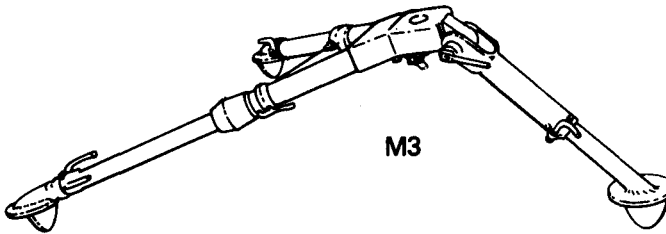
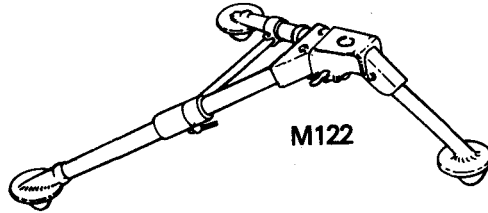
2-21. PREPARE THE M175 MOUNT FOR USE ON TRIPOD - CONTINUED

STEP 5

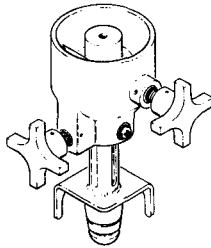
MOVE YOUR EQUIPMENT TO A NEW FIRING SITE

You will need . . .

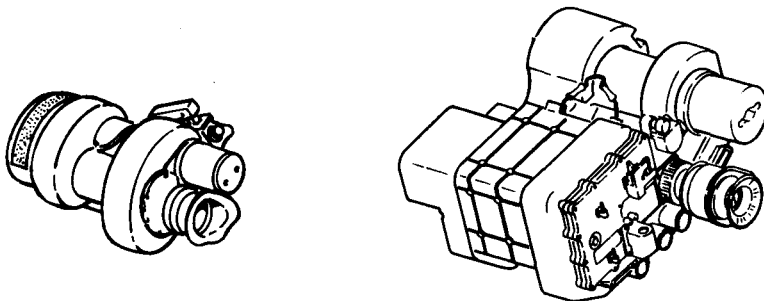
A. M3 or M122 tripod.



B. Adaptor.



C. Day or Night tracker.

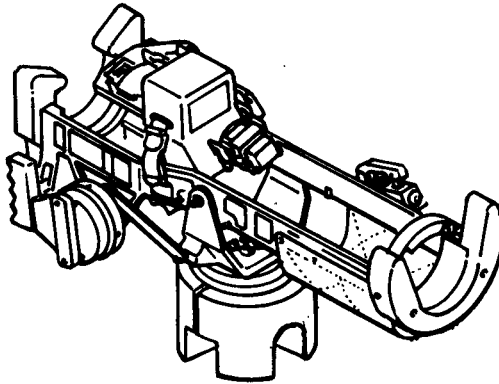


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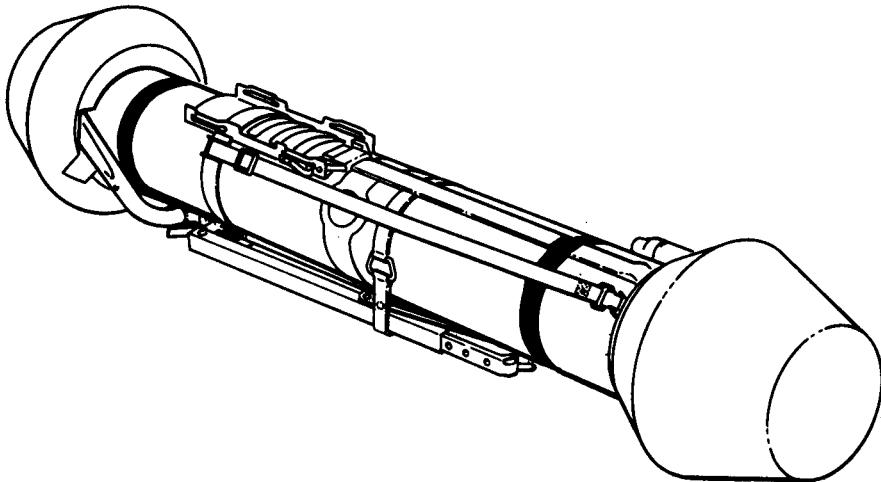
2-21. PREPARE THE M175 MOUNT FOR USE ON TRIPOD - CONTINUED

STEP 5 - CONTINUED

D. M175 Mount.



E. Round.



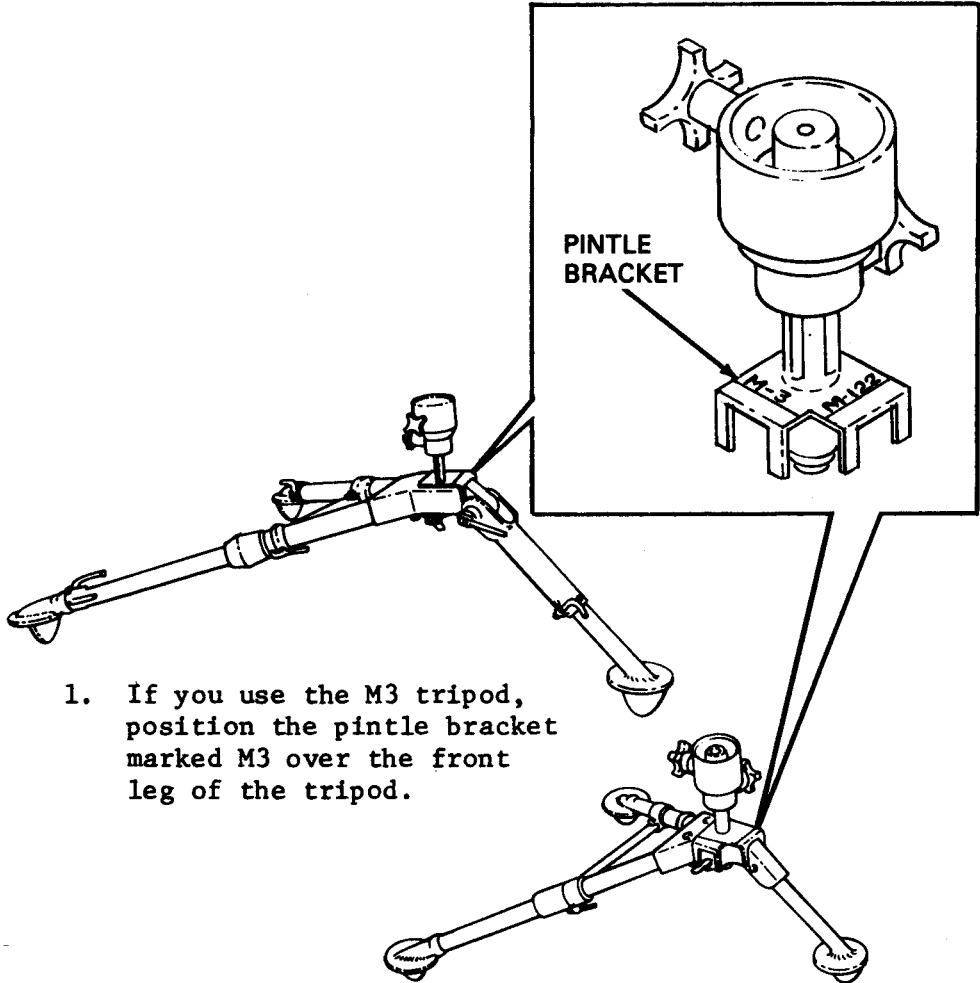
GO TO NEXT PAGE

2-21. PREPARE THE M175 MOUNT FOR USE ON TRIPOD - CONTINUED

STEP 6

SET UP THE TRIPOD AND INSTALL THE ADAPTOR

- A. Unfold your tripod and position it in your firing site.
- B. Insert the adaptor into the hole in the tripod and push down so that the keeper engages.



1. If you use the M3 tripod, position the pintle bracket marked M3 over the front leg of the tripod.

2. If you use the M122 tripod, position the pintle bracket marked M122 over the front leg of the tripod.

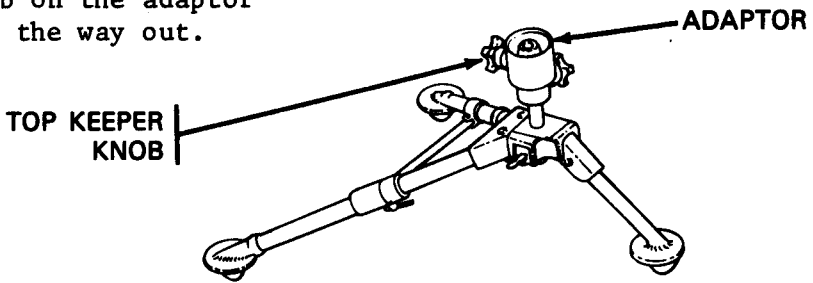
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2-21. PREPARE THE M175 MOUNT FOR USE ON TRIPOD - CONTINUED

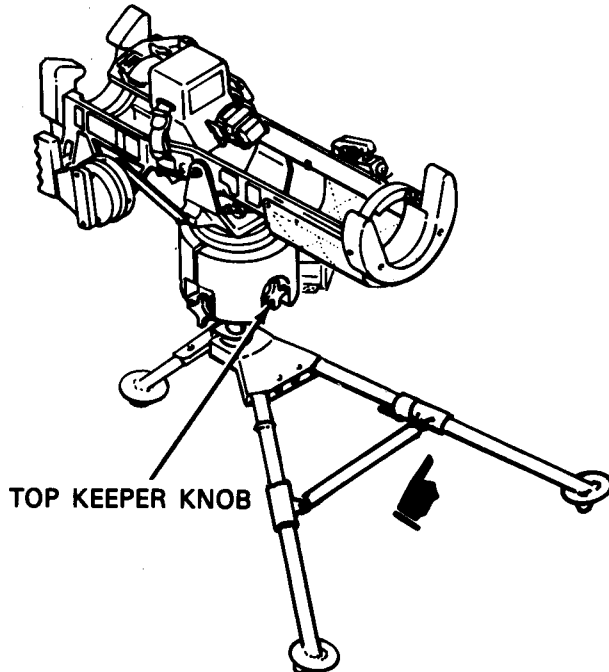
STEP 7

INSTALL THE M175 MOUNT INTO THE TRIPOD

- A. Loosen the top keeper knob on the adaptor all the way out.



- B. Install the mount on the tripod mount adaptor.



- C. Tighten the top keeper knob. This will lock the mount into the adaptor.

GO TO NEXT PAGE

2-21. PREPARE THE M175 MOUNT FOR USE ON TRIPOD - CONTINUED

STEP 8

- A. Prepare the mount (see para. 2-15).
- B. Install the round (see para. 2-16).
- C. Install the tracker (see para. 2-10, steps 5, 6 and 7).

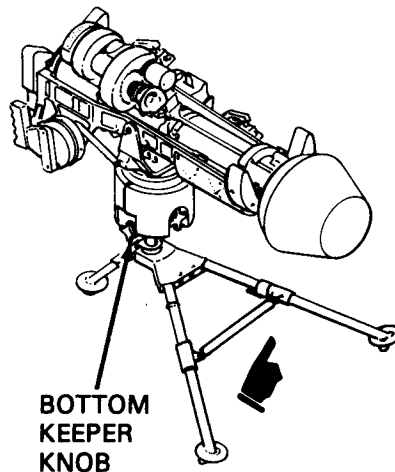


If the M122 tripod is used with the night tracker you must sand bag the legs of the tripod.

STEP 9

ADJUST THE HEIGHT OF THE M175 MOUNT

- A. Once you have installed your round and tracker you may need to adjust the height of the mount so you can see through the sight and handle the controls comfortably.
- B. Assume a firing position . . . if you cannot see through the sight, adjust the height as it tells you in C and D.

**GO TO NEXT PAGE**

2-21. PREPARE THE M175 MOUNT FOR USE ON TRIPOD - CONTINUED

STEP 9 - CONTINUED



Keep your hands off the remote firing mechanism.

- C. Loosen the bottom keeper knob, then using both hands, grasp the cradle on both sides directly over the azimuth damper and pull down until you can see through the sight (it will only move about 2 1/2 inches). Now tighten the bottom keeper knob.
- D. If you still cannot see through the sight, adjust the forward tripod leg or dig the tripod into the ground.

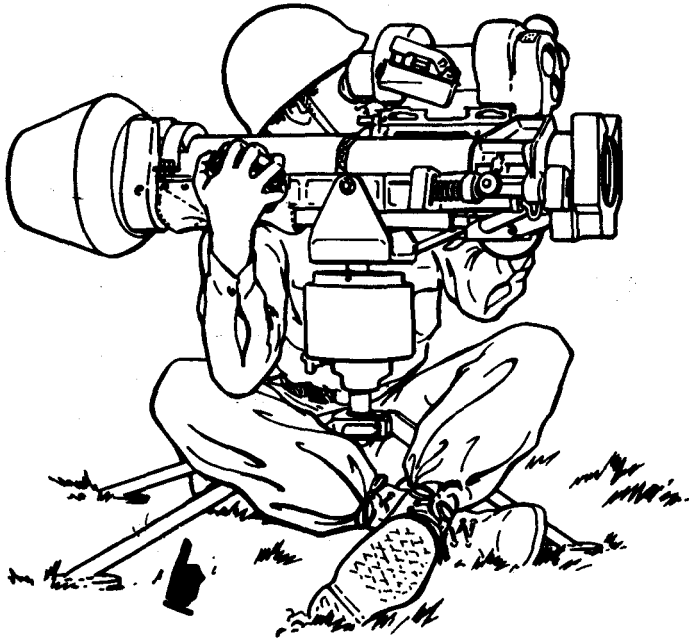
END OF TASK

**YOU ARE NOW READY TO ASSUME A GOOD
FIRING POSITION AND ENGAGE A TARGET**

GO TO NEXT PAGE

2-22. FIRING POSITIONS

The sitting position is used with the M3 and M122 tripod. You will note that there are minor differences in positioning the body under the round.

STEP 1**SITTING-M122 TRIPOD**

- A. Right leg is over the top of the two rear tripod legs.
- B. Left leg is over the top of the front tripod leg.
- C. Sighting, aiming and firing are the same as when mounted on the APC.

GO TO NEXT PAGE

2-22. FIRING POSITIONS - CONTINUED

STEP 2



SITTING-M3 TRIPOD

- A. Gunner sits along the left side of the tripod.
- B. Sighting, aiming, and firing are the same as when mounted on the APC.

ONCE YOUR MISSION IS OVER PREPARE FOR MOVEMENT

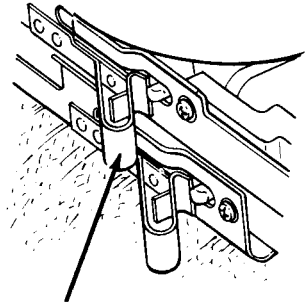
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2-23. PREPARATION FOR MOVEMENT

STEP 1

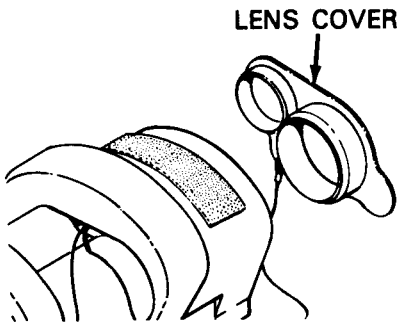
REMOVE THE TRACKER

- A. Locate the top spring clip on the left rear side of the tracker mount and push it forward to release the guide pin. At the same time slide the tracker forward and lift it out of the bracket.

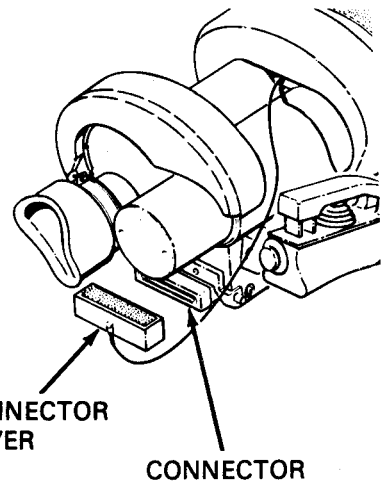


SPRING CLIP

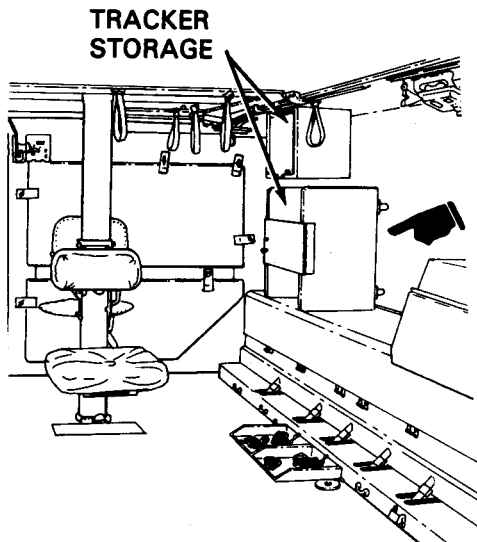
- B. Replace the lens cover over the lens . . .



- C. Replace the connector cover over the electrical connector.



- D. Stow the tracker in the APC.

**GO TO NEXT PAGE**

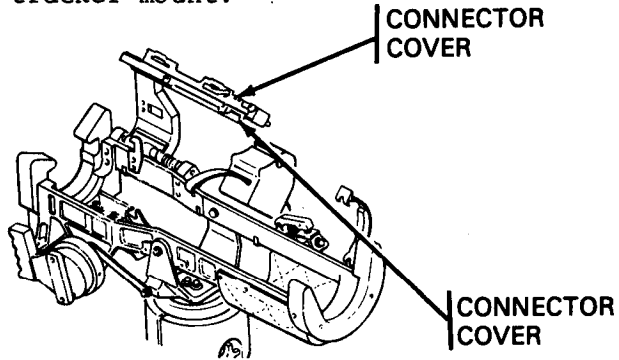
2-23. PREPARATION FOR MOVEMENT-CONTINUED

STEP 2

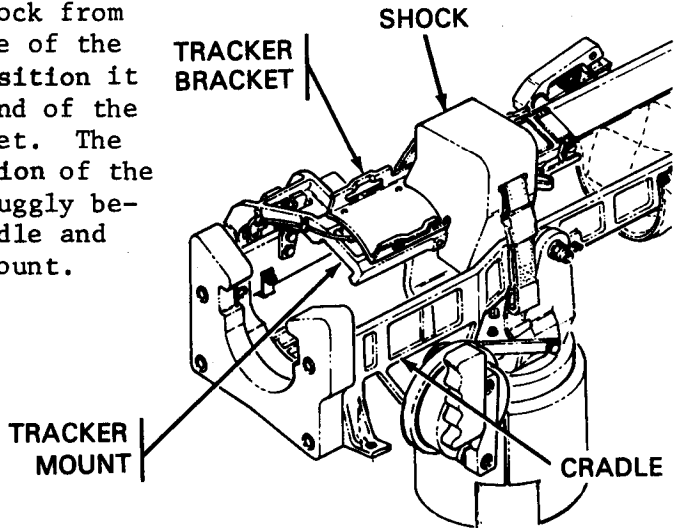
Remove the round from the mount like it tells you in paragraph 2-19, steps 8, 9, 10 and 11.

STEP 3

- A. Replace the covers on the connectors at the top and bottom of the tracker mount.



- B. Lift the tracker mount up and rotate it down nearly into the cradle. Remove the shock from the right side of the cradle and position it on the rear end of the tracker bracket. The extended portion of the shock fits snugly between the cradle and the tracker mount.

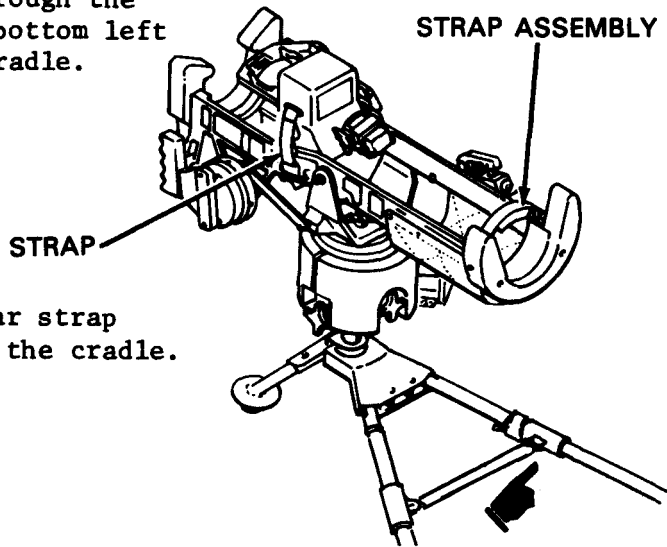


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2-23. PREPARATION FOR MOVEMENT - CONTINUED

STEP 3 - CONTINUED

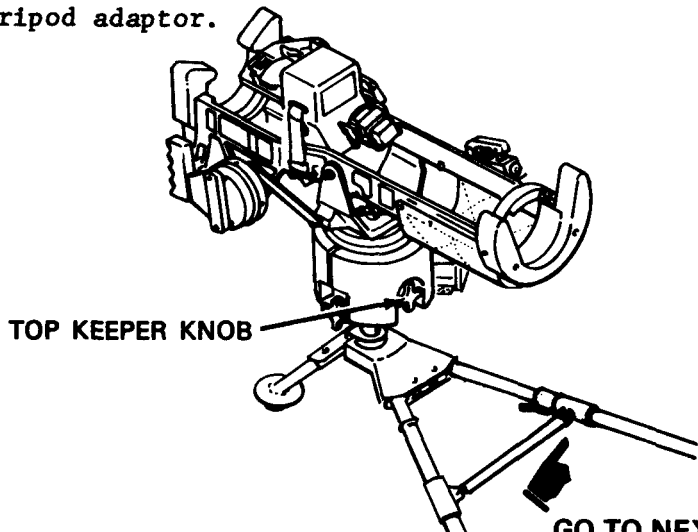
- C. Attach the strap and hook that feeds through the shock to the bottom left side of the cradle.



STEP 4

REMOVE THE M175 MOUNT FROM THE TRIPOD

- A. Loosen the top keeper knob and lift the mount out of the tripod adaptor.



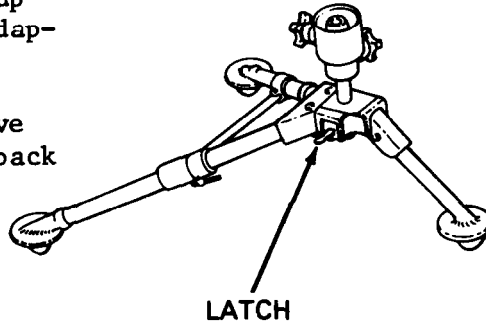
2-23. PREPARATION FOR MOVEMENT-CONTINUED

STEP 4 - CONTINUED



Before you remove the adaptor be sure you have released the tension on the adaptor height adjust. Place the palm of your left hand over the top of the adaptor and apply downward pressure. At the same time loosen the bottom keeper and allow the adaptor to rise slowly to its top position.

- B. Pull the tripod latch up while you remove the adaptor from the tripod.
- C. Fold the tripod and move all of your equipment back to your vehicle.



END OF TASK

Section VII. OPERATING THE NIGHT TRACKER

	Para	Page
Prepare the Night Tracker for Use	2-24	2-88
Operational Check Using Battery Power	2-25	2-93
Operational Check Using Vehicle Power Conditioner (VPC)	2-26	2-98
Sighting, Aiming and Firing, Using the Night Tracker	2-27	2-101
Preparation for Movement	2-28	2-102
Operating In Freezing Conditions	2-29	2-105

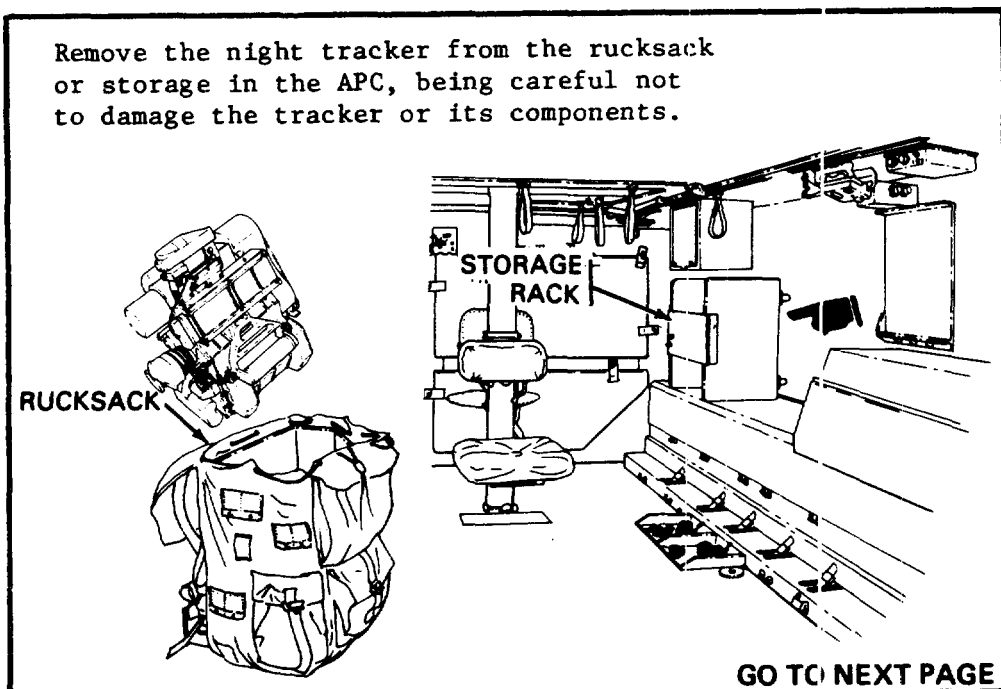
OVERVIEW

The night tracker lets you acquire, track and fire at targets during periods of reduced visibility in day or night operations. It is self contained. When employed with the Mechanized Infantry on the APC it is capable of the same self contained operation or can be operated using vehicle power and associated equipment installed in the APC.

a. The night tracker is carried in a rucksack which has space for spare batteries and coolant cartridges.

b. The APC has three cases of coolant cartridges each containing five cartridges and one case of batteries with five batteries for sustained operations. The vehicle power conditioner (VPC) can be used instead of batteries to provide power for the night tracker. A battery charger in the APC is used to recharge weak batteries. Empty coolant cartridges are returned to the unit supply to be recharged.

c. Make sure you have performed your PMCS on the night tracker like it tells you in para. 2-6.

2-24. PREPARE THE NIGHT TRACKER FOR USE**STEP 1**

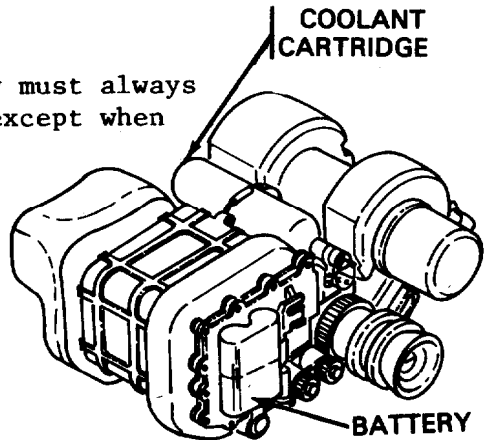
2-24. PREPARE THE NIGHT TRACKER FOR USE - CONTINUED

STEP 2

**CAUTION**

A coolant cartridge and battery must always be installed on night tracker except when exchanging cartridges. Damage to actuator may occur.

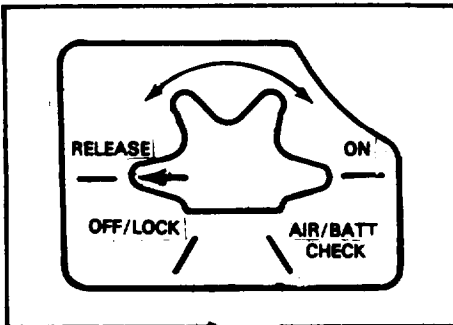
Check the night tracker for mounting of a coolant cartridge and battery. If cartridge and battery are installed go to para. 2-25 or 2-26.



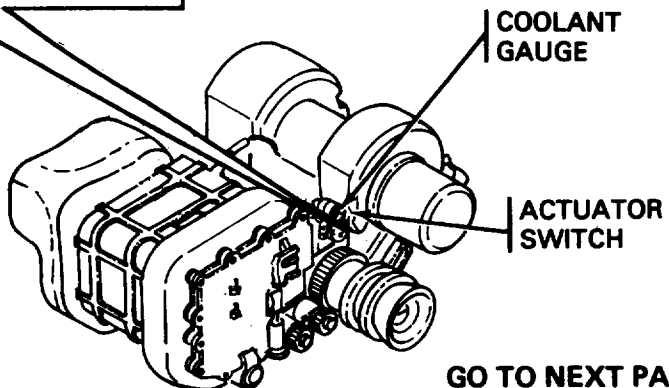
STEP 3

COOLANT CARTRIDGE INSTALLATION

A. Install a coolant cartridge as follows.



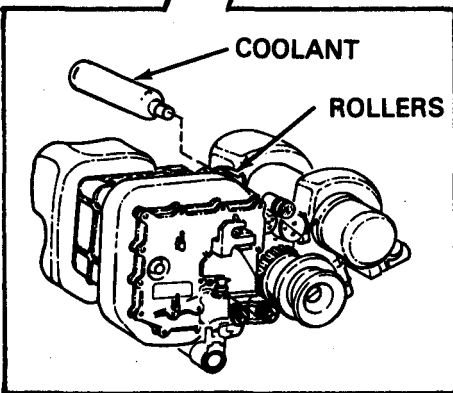
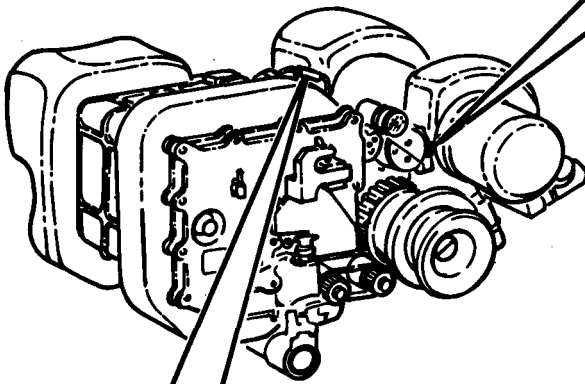
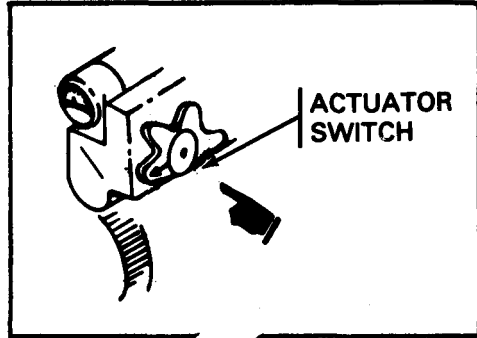
B. Locate the actuator switch on the right side of the coolant gauge. This switch has four positions. A decal is located at the rear of the tracker showing these positions.

**GO TO NEXT PAGE**

2-24. PREPARE THE NIGHT TRACKER FOR USE - CONTINUED

STEP 3 - CONTINUED

C. Place the actuator switch straight out. This is the RELEASE position.



D. Slide a coolant cartridge in from the front of the night tracker, under the rollers, and back into the actuator assembly. While holding the cartridge in place, rotate the actuator switch counter-clockwise to the first click. This is the OFF/LOCK position.

GO TO NEXT PAGE

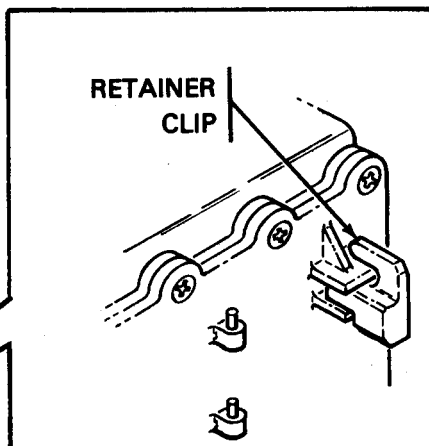
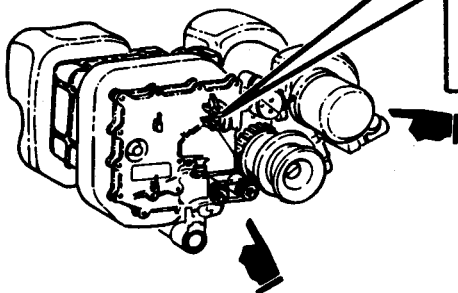
2-24. PREPARE THE NIGHT TRACKER FOR USE - CONTINUED

STEP 4

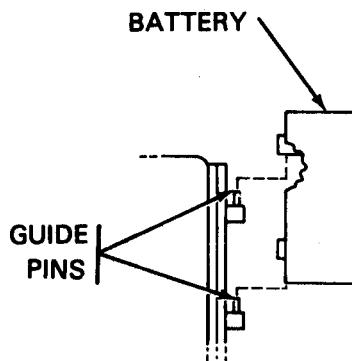
BATTERY INSTALLATION

A. Install a battery as follows.

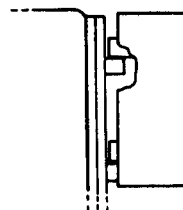
B. Move the battery retainer clip to the open position.



C. Align the battery over the battery guide pins.



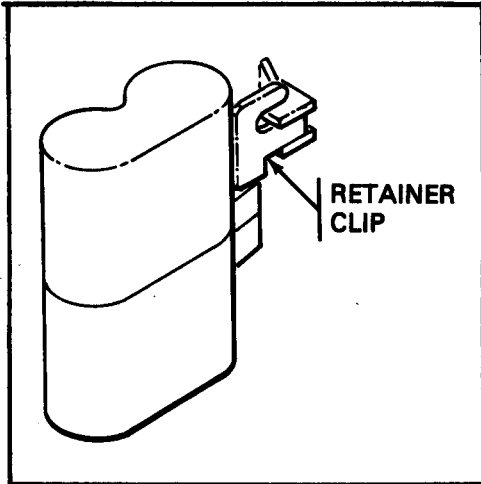
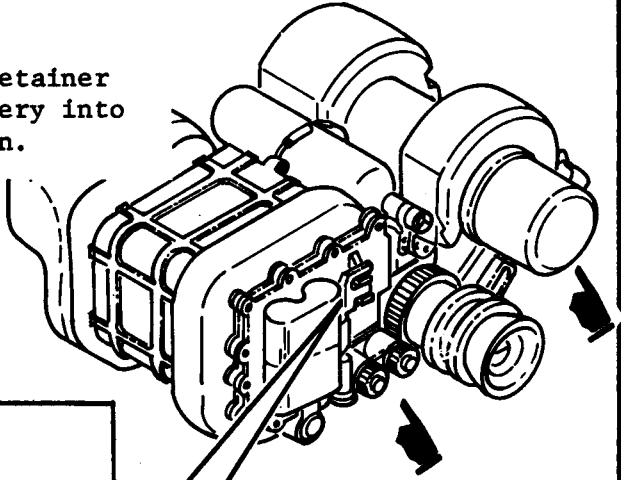
D. Slide the battery down onto the guide pins until the battery connector has seated properly.

**GO TO NEXT PAGE**

2-24. PREPARE THE NIGHT TRACKER FOR USE - CONTINUED

STEP 4 - CONTINUED

E. Move the battery retainer clip over the battery into the closed position.



END OF TASK

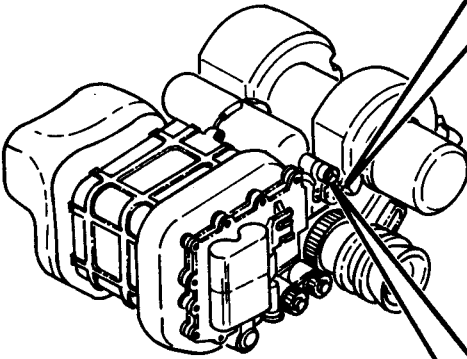
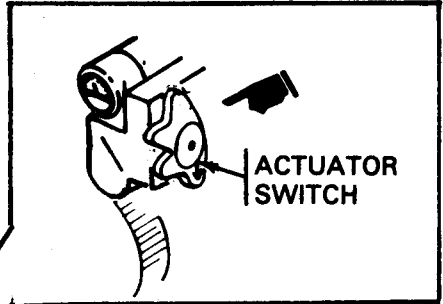
IF YOU ARE USING BATTERY POWER, TURN TO PARA. 2-25 AND CONDUCT YOUR OPERATIONAL CHECK.

IF YOU ARE USING THE VPC, TURN TO PARA. 2-26 AND CONDUCT YOUR OPERATIONAL CHECK.

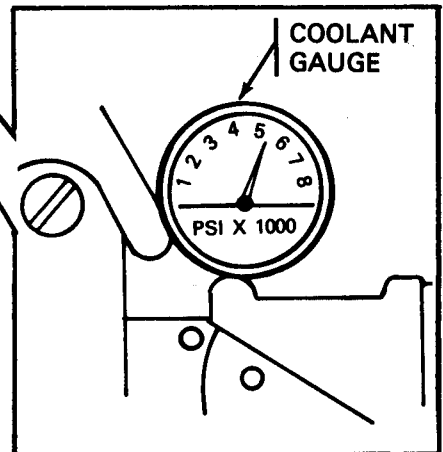
2-25. OPERATIONAL CHECK USING BATTERY POWER

STEP 1

- A. Rotate the actuator switch counterclockwise to the next click, from the OFF/LOCK position to the AIR/BATT CHECK position.



- B. Look at the coolant pressure gauge. The gauge indicates from 1,000 psi to 8,000 psi. If the gauge reads less than 2,500 psi, replace the coolant cartridge (see para. 2-24).

**GO TO NEXT PAGE**

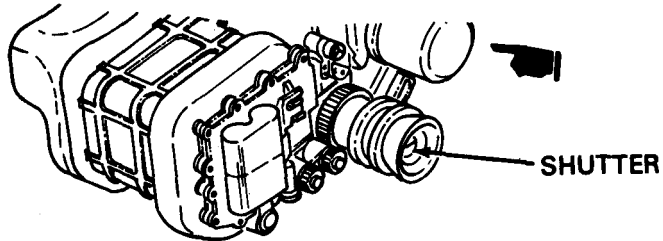
2-25. OPERATIONAL CHECK USING BATTERY POWER - CONTINUED

STEP 2



NOTE

A security shutter is molded into the eyepiece to prevent detection of stray light by the enemy. The shutter will open when your eye is pressed against the eyecup.



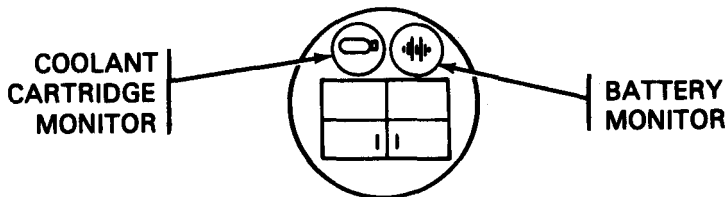
- A. Now sight through the eyepiece.



NOTE

If monitor lights come on, you have ten minutes or less operating time. If the lights are still on after replacing battery or coolant cartridge, see para. 3-2.

- B. If the coolant cartridge monitor light is on, replace the coolant cartridge. Return empty coolant cartridges to your unit supply for recharging.



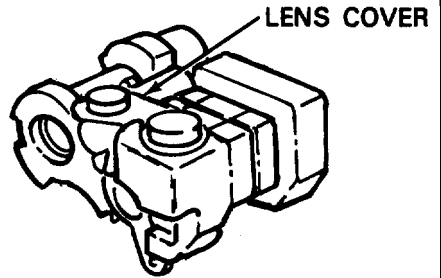
- C. If the battery monitor light is on or the reticle is not lighted, replace the battery. Recharge all weak batteries using the PP-7382/TAS battery charger and follow the operating procedures in TM 9-5855-254-14.

GO TO NEXT PAGE

2-25. OPERATIONAL CHECK USING BATTERY POWER –CONTINUED

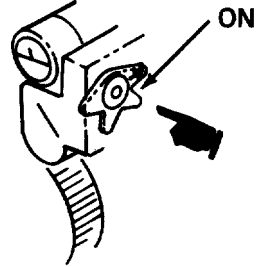
STEP 3

Remove the lens cover and store it on the velcro strip on top of the front shock absorber.



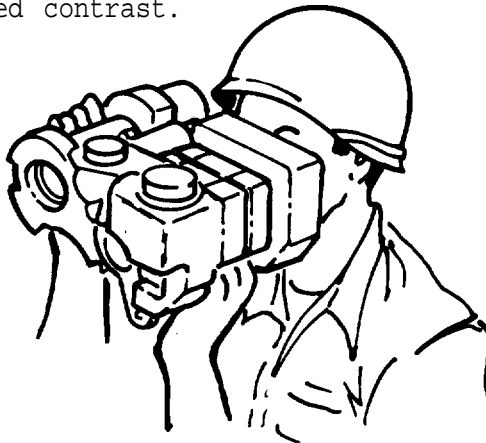
STEP 4

Move the actuator switch one more click so that the pointer is aimed straight back going from the AIR/BATT CHECK position to the ON position and wait 15 seconds for cool down.



STEP 5

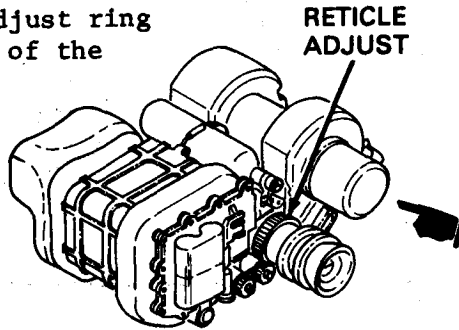
Sight through the eyepiece and train the night tracker on a scene with infrared contrast.

**GO TO NEXT PAGE**

2-25. OPERATIONAL CHECK USING BATTERY POWER - CONTINUED

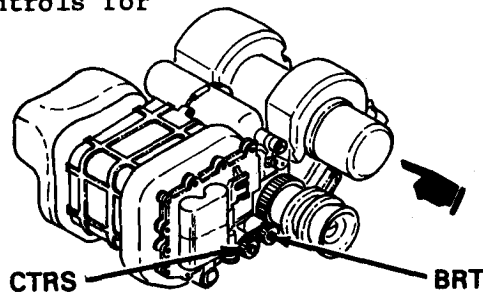
STEP 6

Turn the reticle adjust ring for the best focus of the reticle.



STEP 7


Adjust BRT (brightness) and CTRS (contrast) controls for best viewing.



GO TO NEXT PAGE

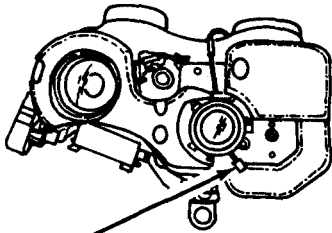
2-25. OPERATIONAL CHECK USING BATTERY POWER - CONTINUED

STEP 8

 **NOTE**

If black, bright red or shakey horizontal lines and/or dark vertical bars are visible in the display, notify your supervisor.

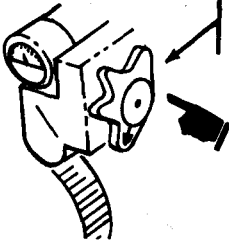
Adjust range focus lever for sharpest image.



RANGE FOCUS LEVER

STEP 9

Now turn the actuator switch to the OFF/LOCK position.



ACTUATOR SWITCH

STEP 10

Install the night tracker on the round or M175 mount if you haven't already done so (see para. 2-10, steps 6 and 7).

ENDOFTASK

YOU ARE NOW READY TO ENGAGE A TARGET SO

TURN TO PARA. 2-27

2-26. OPERATIONAL CHECK USING VEHICLE POWER CONDITIONER (VPC)

STEP 1



When performing the operational check of the night tracker, remember to keep your hands off the firing mechanism.

Prepare the night tracker as you did in para. 2-24 and install it on the M175 mount like you did in para. 2-18.

STEP 2

Insure that circuit breaker CB1 on the VPC is in the OFF position.

STEP 3

A. Connect P2 of cable 2W1 to the vehicle power source.

B. Connect P1 of cable 2W1 to J1 on the VPC.

GO TO NEXT PAGE

2-26. OPERATIONAL CHECK USING VEHICLE POWER CONDITIONER (VPC) - CONTINUED

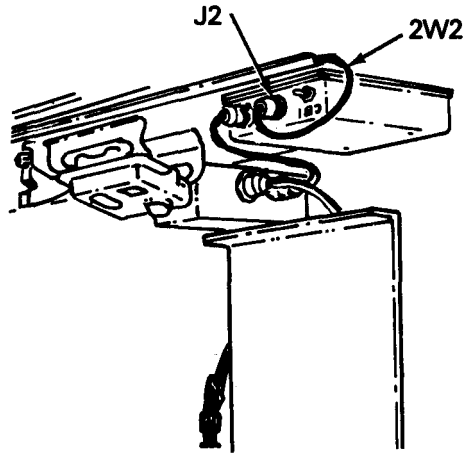
STEP 4



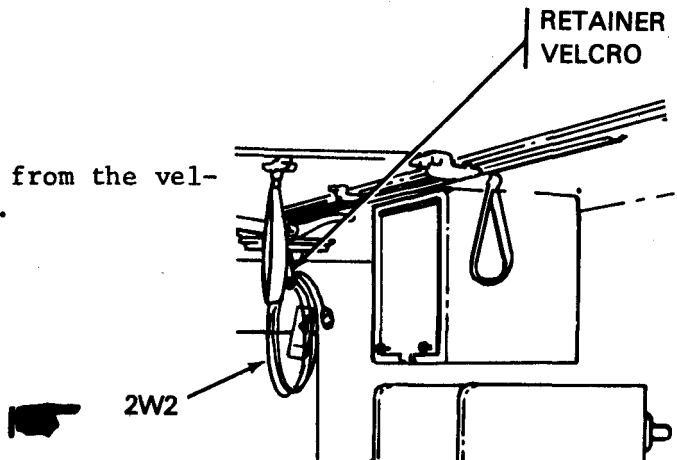
NOTE

If there is a battery on the night tracker, remove it.

- A. Connect P1 of cable 2W2 to J2 on the VPC.



- B. Remove cable from the velcro retainer.

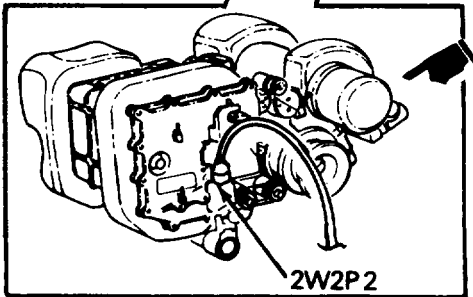
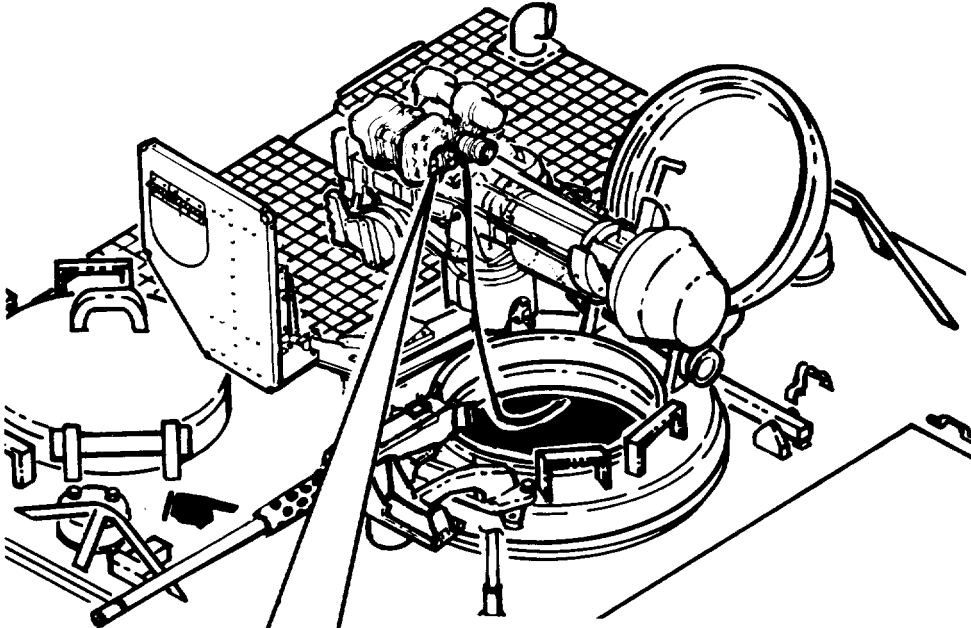


GO TO NEXT PAGE

2-26. OPERATIONAL CHECK USING VEHICLE POWER CONDITIONER (VPC) - CONTINUED

STEP 4 - CONTINUED

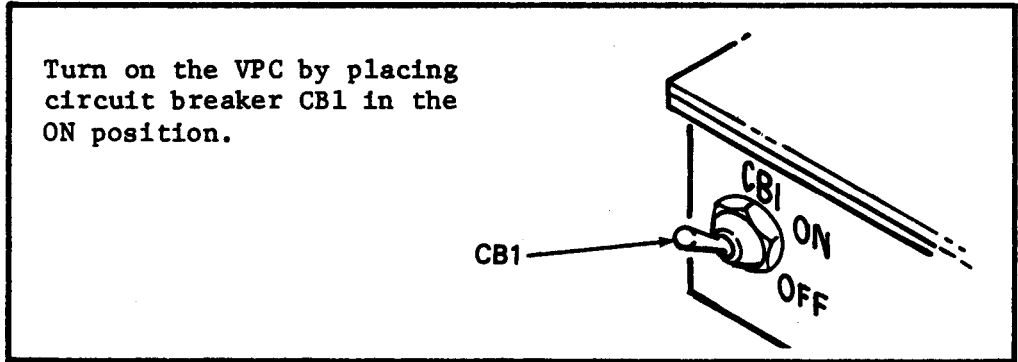
- C. Connect P2 of cable 2W2 to the night tracker battery connector.



GO TO NEXT PAGE

**2-26. OPERATIONAL CHECK USING VEHICLE POWER CONDITIONER
(VPC) - CONTINUED**

STEP 5



STEP 6

Conduct the remainder of your operational checks as you did in para. 2-25.

END OF TASK**YOU ARE NOW READY TO ENGAGE A T ARGET****GO TO PARA. 2-27****2-27. SIGHTING, AIMING AND FIRING, USING THE NIGHT TRACKER**

The procedures for sighting, aiming and firing with the night tracker are the same as you did with the day tracker in para. 2-11, 2-12 and 2-13. If your missile fails to fire, perform immediate action (see para. 2-14).

2-28 PREPARATION FOR MOVEMENT

The night tracker can be removed from the round/M175 mount or it can remain on the round during movement under the following conditions.

- a. Short moves from one firing position to another.
- b. When the round is installed in the M175 mount and the mount is secured in the travel lock position.

CAUTION

A coolant cartridge and battery must always be installed on night tracker except when exchanging cartridges. Damage to actuator may occur.



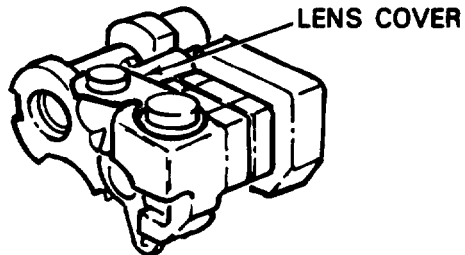
NOTE

The night tracker is powered by battery or VPC. When preparing for movement and you are using battery power go to step 1. If you are using the VPC go to step 4.

REMOVE THE NIGHT TRACKER - BATTERY POWERED

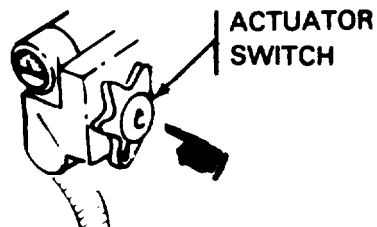
STEP 1

Remove the lens cover from the velcro strip on top of the night tracker and place it over the lens.



STEP 2

Rotate the actuator switch two clicks in the clockwise direction, moving from the ON position to the OFF/LOCK position.



STEP 3

Remove the night tracker from the round/M175 mount as you did on para. 2-13/2-23 and place it in the rucksack or storage rack inside the APC.

GO TO NEXT PAGE

2-28. PREPARATION FOR MOVEMENT – CONTINUED

REMOVE THE NIGHT TRACKER – VPC POWERED

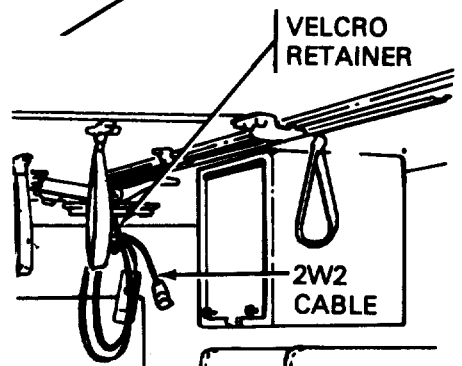
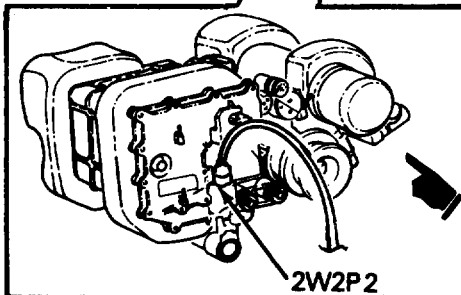
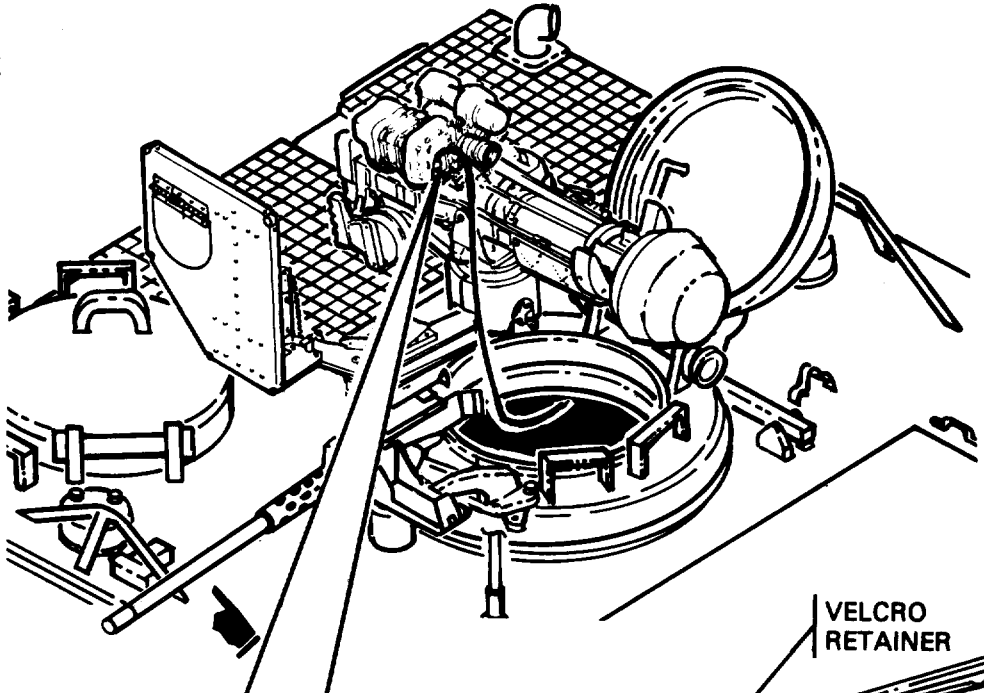
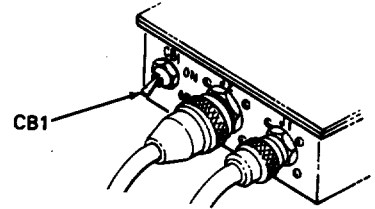
STEP 4

Follow the procedures in step .1 and 2.

STEP 5

A. Place CB1 in the OFF position.

B. Disconnect cable 2W2P2 from the night tracker and secure the loose end of cable to the velcro retainer inside the APC.



GO TO NEXT PAGE

2-28. PREPARATION FOR MOVEMENT - CONTINUED**REMOVE THE NIGHT TRACKER - VPC POWERED - CONTINUED**

STEP 6

Install a battery on the night tracker (see para. 2-24, step 4).

STEP 7

Remove the night tracker from the M175 mount as you did in para. 2-23, step 1.

STEP 8

Place the night tracker in the rucksack, and stow it in the storage rack inside the APC.

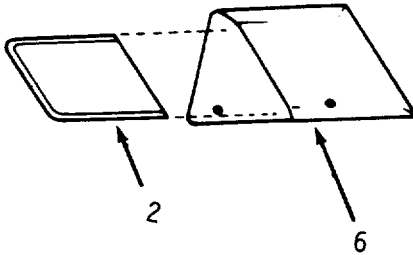
END OF TASK

2-29. OPERATING IN FREEZING TEMPERATURES

Extra batteries are required at sub-zero temperatures. At -20°C (-5°F), battery life is one hour. At -32°C (-25°F), battery life is two hours.

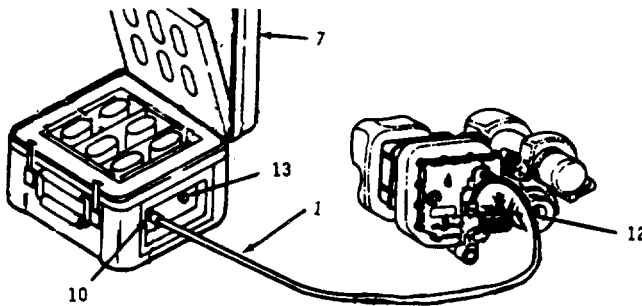
2-29. OPERATING IN FREEZING TEMPERATURES - CONTINUED

Step 2

REMOVING FROST OR ICE FROM NIGHT TRACKER LENS

- A. Remove heating pad (2) from pad cover (6), and add water to heating pad per directions printed on pad cover.
- B. Hold heating pad (2) against lens surface until frost or ice is melted. Do not rub heating pad on lens.
- C. Clean lens (paragraph 3-4).

Step 3

PREPARATION FOR MOVEMENT

- A. Set arctic kit switch S1 (13) to OFF.
- B. Disconnect power cable (1) from night tracker connector J1 (12).
- C. Disconnect power cable (1) from arctic kit connector J7 (10) and stow in arctic kit cover (7).
- D. Install cover (7) on arctic kit.

END OF TASK

CHAPTER 3

MAINTENANCE INSTRUCTIONS

	Page
Section I. TROUBLESHOOTING	3-1
Section II. MAINTENANCE PROCEDURES	3-13

Section I. TROUBLESHOOTING

	Para	Page
Use of Troubleshooting Charts	3-1	3-2
Symptom Index Contents	3-2	3-2



3-1. USE OF TROUBLESHOOTING CHARTS

The symptom index lists the common malfunction which you may find during the operation or maintenance of the DRAGON M47 or its components. You should perform the tests/inspections and corrective actions in the order listed.

3-2. SYMPTOM INDEX CONTENTS

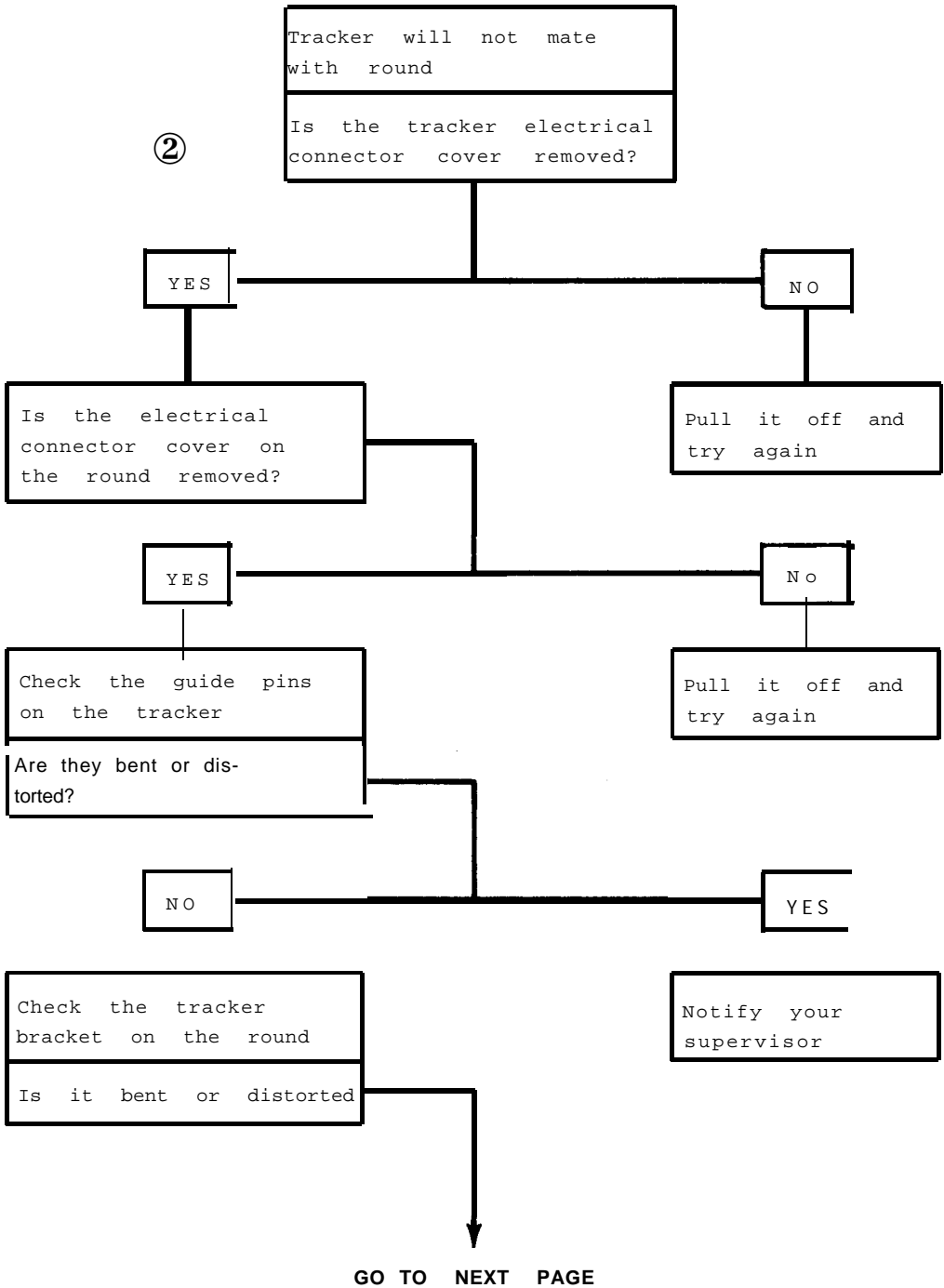
This manual cannot list all malfunctions that may occur, nor all test or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions notify your supervisor.

SYMPTOM INDEX

- ① Deleted
- ② Day/Night tracker - Tracker will not mate with round.
- ③ Night tracker - Bottle light ON.
- ④ Night tracker (battery powered) - Actuator switch to ON -
No power.
- ⑤ Night tracker (battery powered) -Actuator switch ON -
Battery monitor light
ON.
- ⑥ Night tracker (VPC powered) - Actuator switch to ON -
No power.
- ⑦ M175 Mount - Elevation or azimuth damper weeps (slight
leak) .
- ⑧ M175 Mount - Tracker mount won't mate with round.

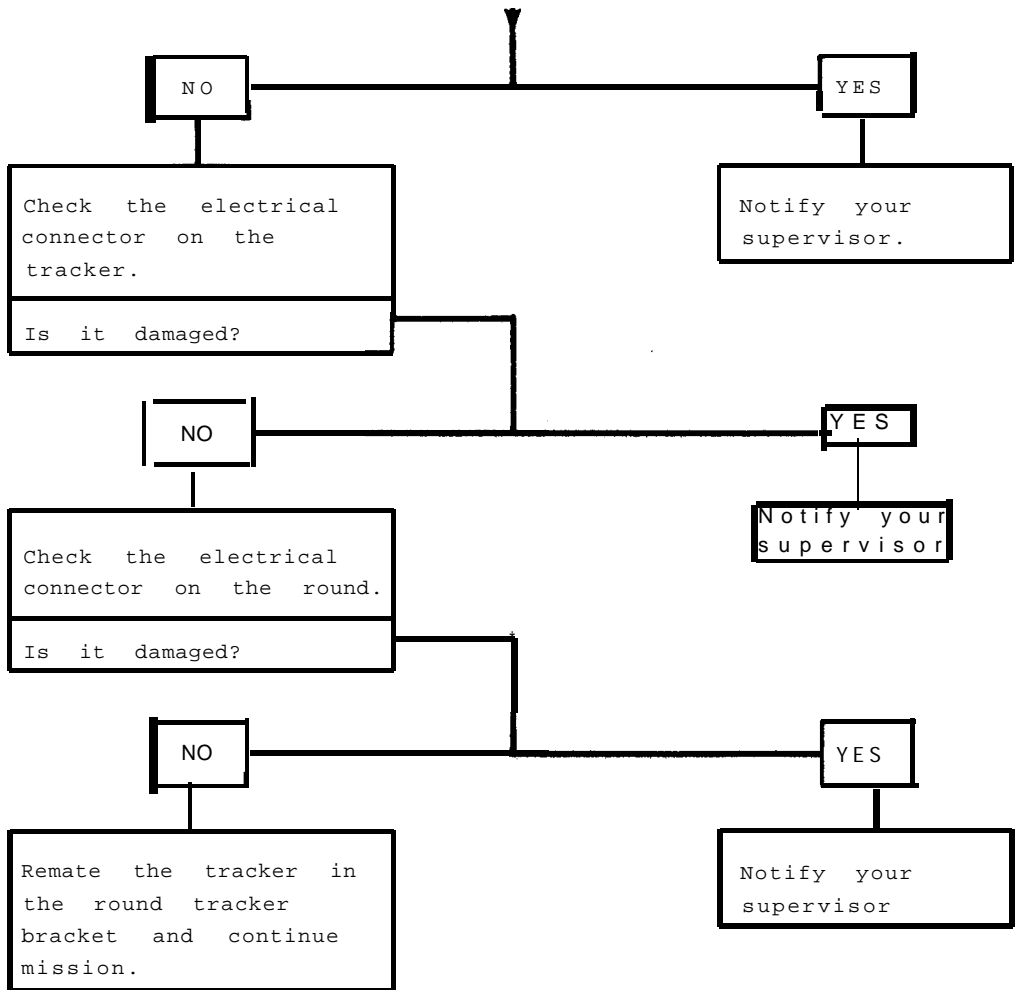
① DELETED

DAY TRACKER

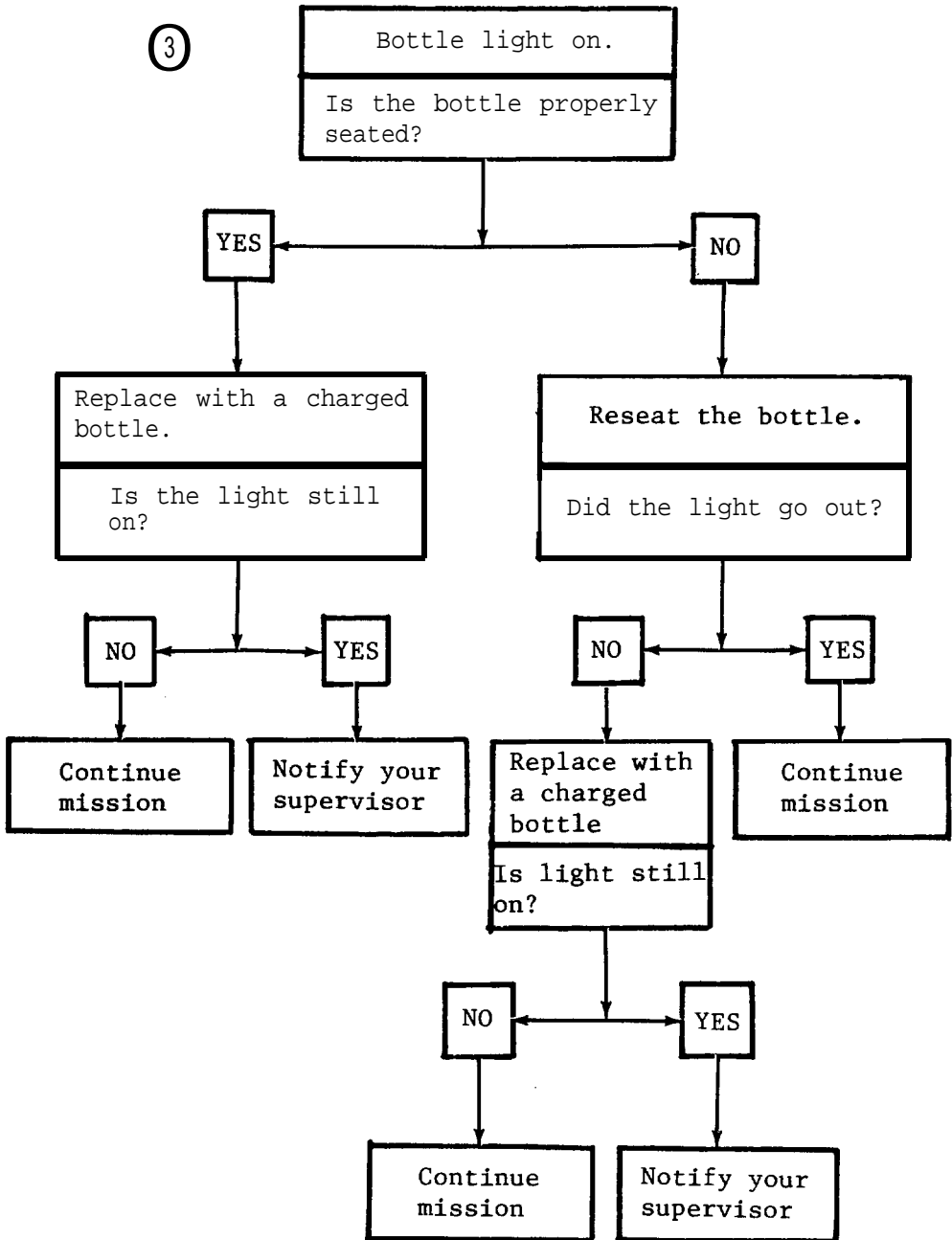


DAYTRACKER

② Continued from previous page

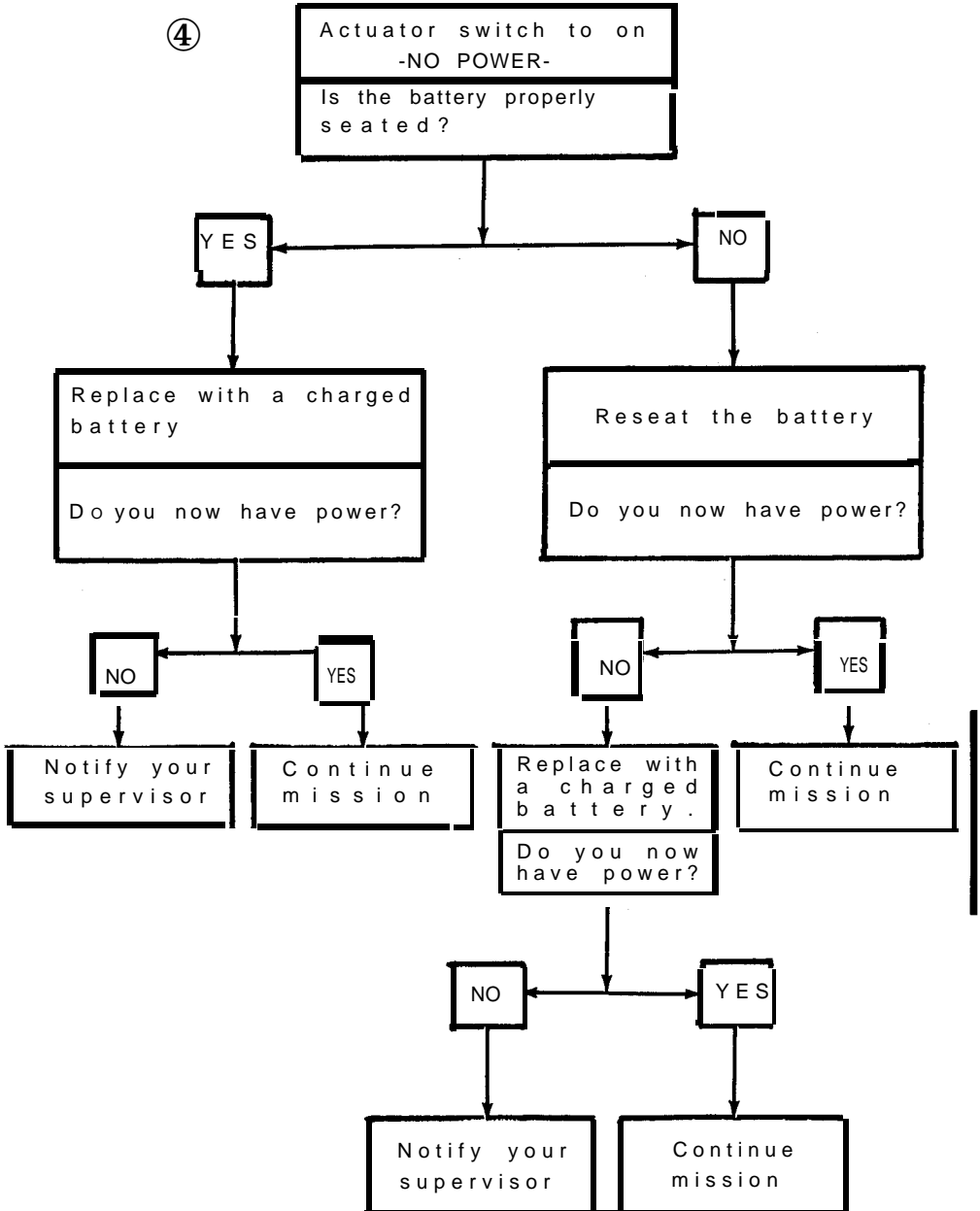


NIGHT TRACKER



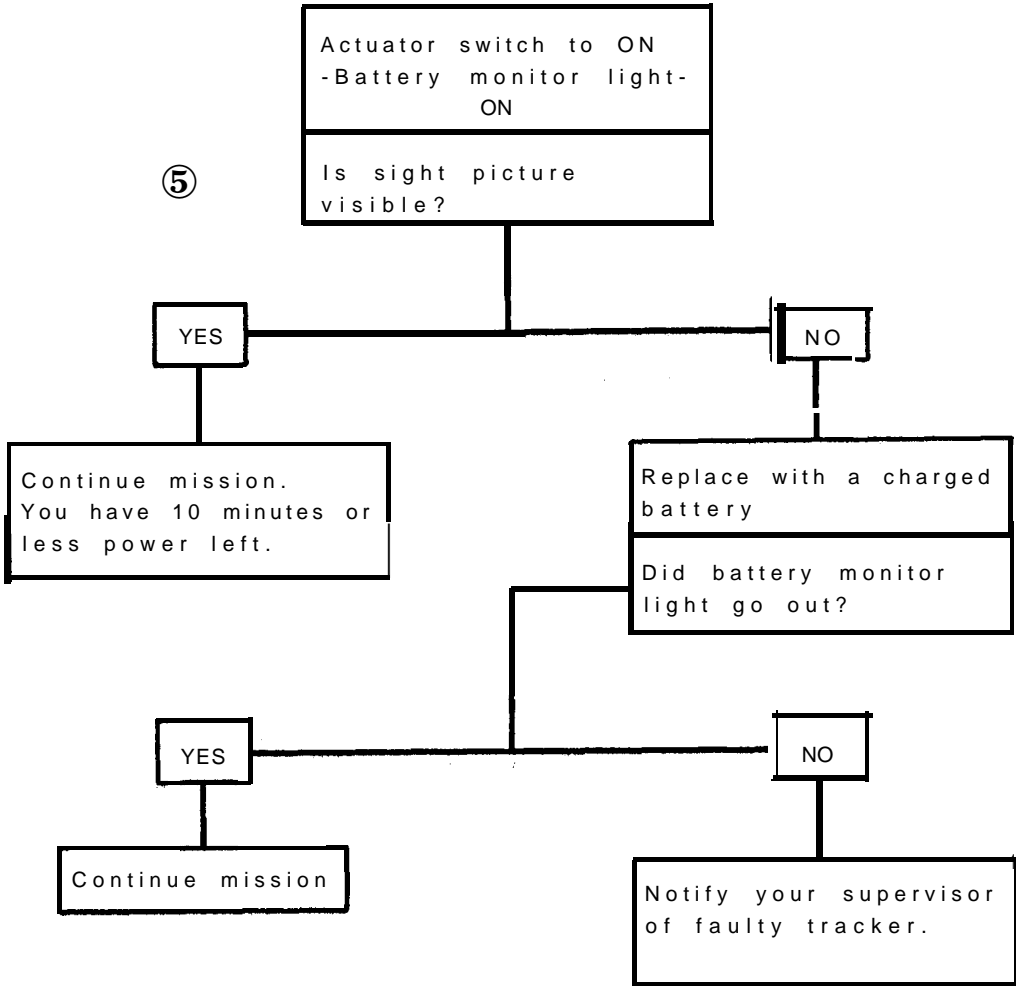
NIGHT TRACKER

(Battery Powered)



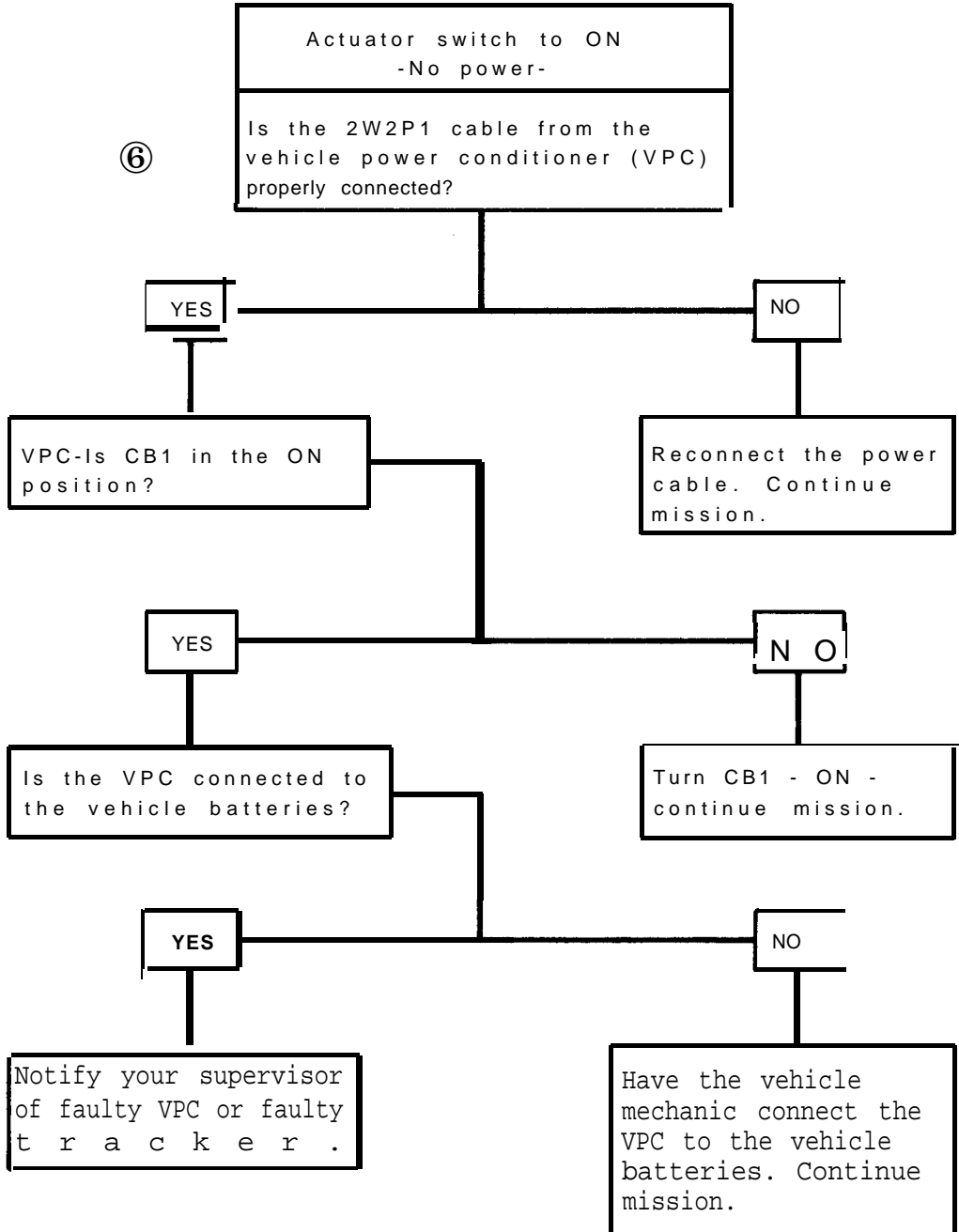
NIGHT TRACKER

(Battery Powered)

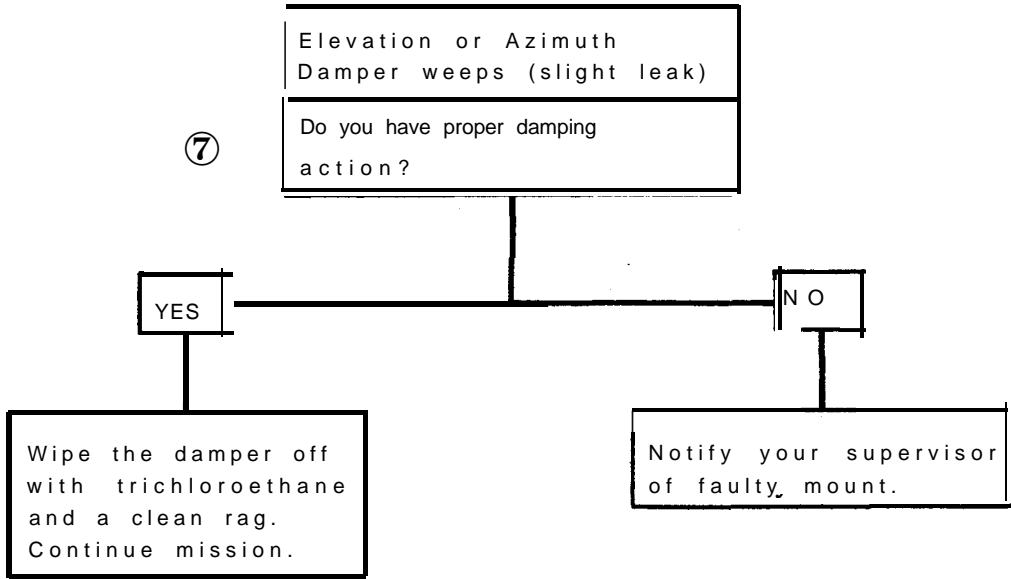


NIGHT TRACKER

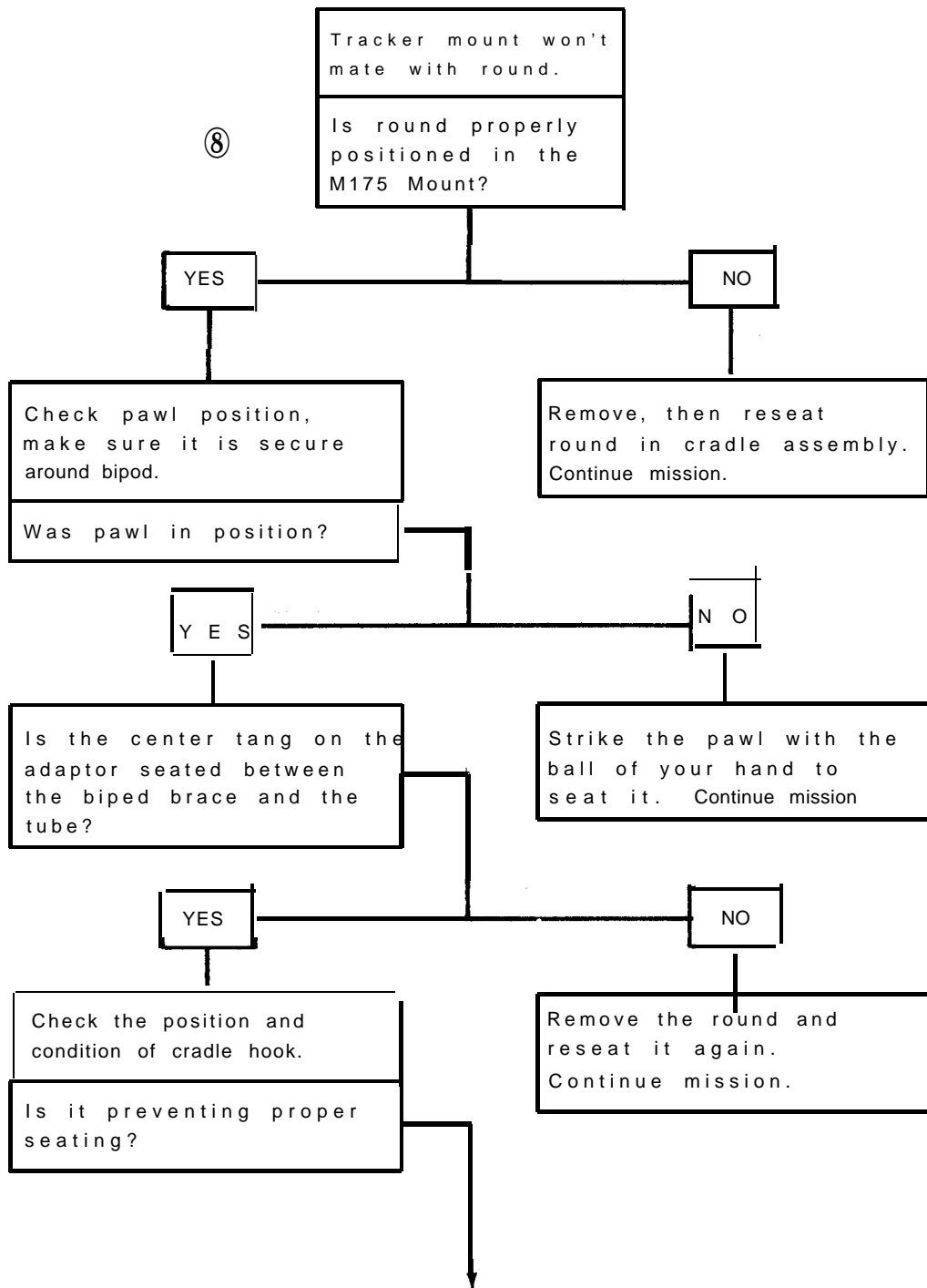
(VPC Powered)



M175 MOUNT



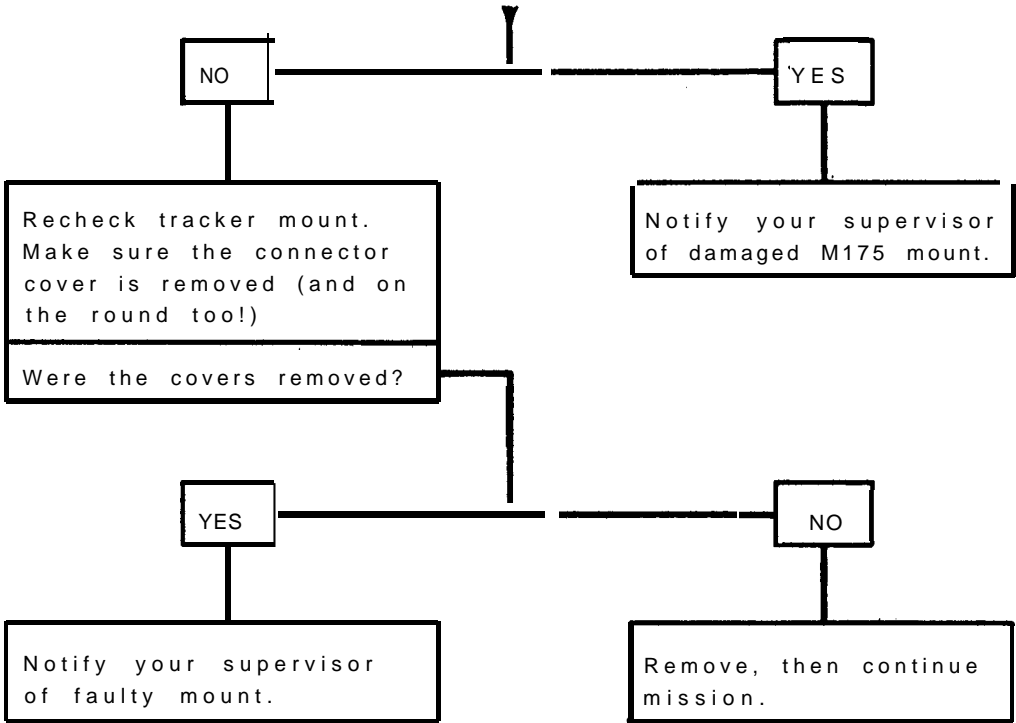
M175 MOUNT



GO TO NEXT PAGE

M175 MOUNT

⑧ Continued from previous page



Section II. MAINTENANCE PROCEDURES

	Para	Page
Clean the Day Tracker and Carrying Bag	3-3	3-14
Clean the Night Tracker and Rucksack	3-4	3-16
Clean the M175 Mount	3-5	3-18
Clean the M222/MK1 Mod0/M223 Round	3-6	3-20
Clean the Day/Night Tracker Storage Box and Case	3-7	3-21
Clean the Vehicle Power Conditioner (VPC)	3-8	3-21
Spot Painting	3-9	3-22
Spot Paint the Day/Night Tracker, M175 Mount, and the M222/MK1MOD0/M223 Round	3-10	3-22
Spot paint the M213 Tracker Storage Box	3-11	3-23

3-3. CLEAN THE DAY TRACKER AND CARRYING BAG

<u>MATERIALS</u>	<u>ITEM NO.</u>	<u>APPENDIX</u>
Ethyl alcohol	1	D
Lens brush	2	D
Lens tissue	3	D
Cleaning cloth	4	D
Detergent	8	D
Wood dowels	11	D
Brush	12	D

STEP 1

- A. Remove the day tracker and other contents from the carrying bag.
- B. Clean the carrying bag. Wipe the inside and outside of the carrying bag with a damp cleaning cloth. To clean more difficult stains use detergent, water and a brush. Allow time for bag to air dry.



STEP 2

- A. Clean all metal parts on the day tracker with a dry cleaning cloth.
- B. Clean rubber or synthetic parts using detergent and water.
- C. Dry all parts with a dry cleaning cloth.

STEP 3



Don't touch the lenses! You can damage them by just touching them with your fingers.

- A. To clean the lens on the tracker, use the lens brush and gently brush away any dirt, dust, or lint.

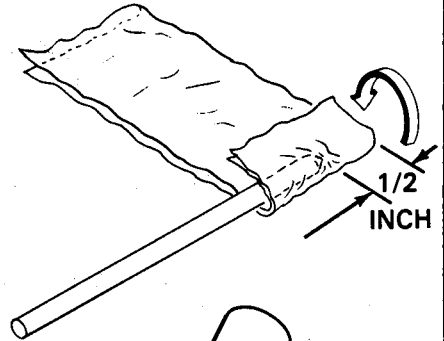


GO TO NEXT PAGE

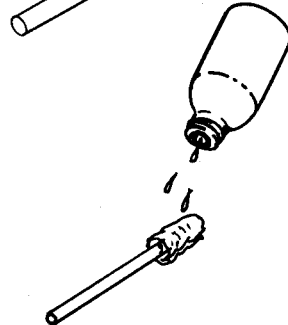
3-3. CLEAN THE DAY TRACKER AND CARRYING BAG - CONTINUED

STEP 3 - CONTINUED

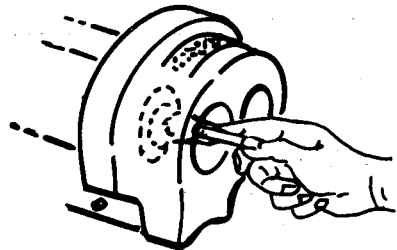
B. Fold a sheet of lens tissue in half. Insert the wood dowel between the tissue about 1/2 inch from the end and about 1/2 inch from the folded edge.



C. Now, fold the end of the tissue nearest the wood dowel over tightly and roll the tissue on to the dowel like rolling a cigarette. You will have to hold the tissue when cleaning the lens.



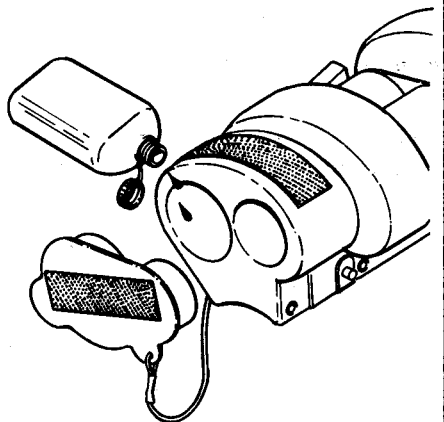
D. Put a few drops of ethyl alcohol on the lens tissue.



E. Beginning at the center of the lens, wipe in an expanding circular motion with a light pressure.

F. Repeat if necessary. (Use fresh lens paper).

G. The tracker lenses can be cleaned in an emergency by rinsing with drinking water, temperature permitting. This comes in handy if you need to flush mud from the lenses prior to normal cleaning.



GO TO NEXT PAGE

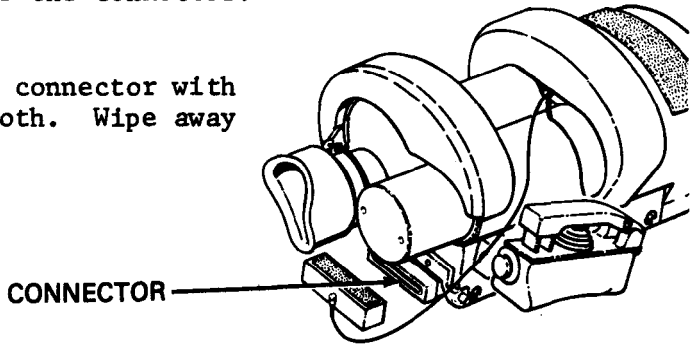
3-3. CLEAN THE DAY TRACKER AND CARRYING BAG - CONTINUED

STEP 4



Don't poke anything inside the connector. If you do you will damage the connector.

Clean the tracker connector with a dry cleaning cloth. Wipe away all visible dirt.



END OF TASK

3-4. CLEAN THE NIGHT TRACKER AND RUCKSACK

<u>MATERIALS</u>	<u>ITEM NO.</u>	<u>APPENDIX</u>
Ethyl alcohol	1	D
Cleaning cloth	4	D
Detergent	8	D
Brush	12	D
Cotton pads	13	D

STEP 1

A. Remove the night tracker and other contents from the rucksack.



Do not intermix charged and discharged batteries or coolant bottles.

GO TO NEXT PAGE

3-4. CLEAN THE NIGHT TRACKER AND RUCKSACK - CONTINUED

STEP 1 - CONTINUED

B. Clean the rucksack. Wipe the inside and outside of the rucksack with a damp cleaning cloth. To clean more difficult stains use detergent, water, and a brush. Allow time for the rucksack to air dry.

STEP 2

A. Clean all metal parts on the night tracker with a dry cleaning cloth.

B. Clean rubber or synthetic parts using detergent and water.

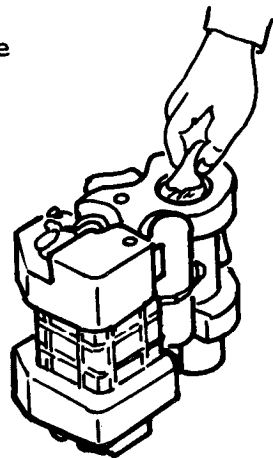
C. Dry all parts with a dry cleaning cloth.

STEP 3



Don't touch the lenses! You can damage them by just touching them with your fingers.

- A. Remove the lens cover.
- B. To clean the lens on the night tracker . . . take a good deep breath and blow whatever you can off the lens.
- C. If you still have dust or smudges on the lens, put a little alcohol on one of the cotton pads.
- D. Start in the center of the lens using a circular motion and work to the outside edge to remove any trash from the lens. If necessary clean it again using another clean cotton pad and a few drops of alcohol and repeat the above procedure.



GO TO NEXT PAGE

3-4. CLEAN THE NIGHT TRACKER AND RUCKSACK-CONTINUED

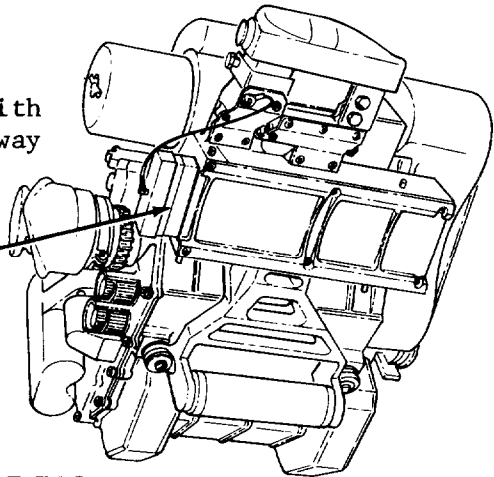
STEP 4



Don't poke anything inside the connector. If you do you will damage the connector.

Clean the tracker connector with a dry cleaning cloth. Wipe away all visible dirt.

CONNECTOR



END OF TASK

3-5. CLEAN THE M175 MOUNT

<u>MATERIALS</u>	<u>ITEM NO.</u>	<u>APPENDIX</u>
Cleaning cloth	4	D
Detergent	8	D
Trichloroethane	10	D

A. Clean all metal parts with a dry cleaning cloth.

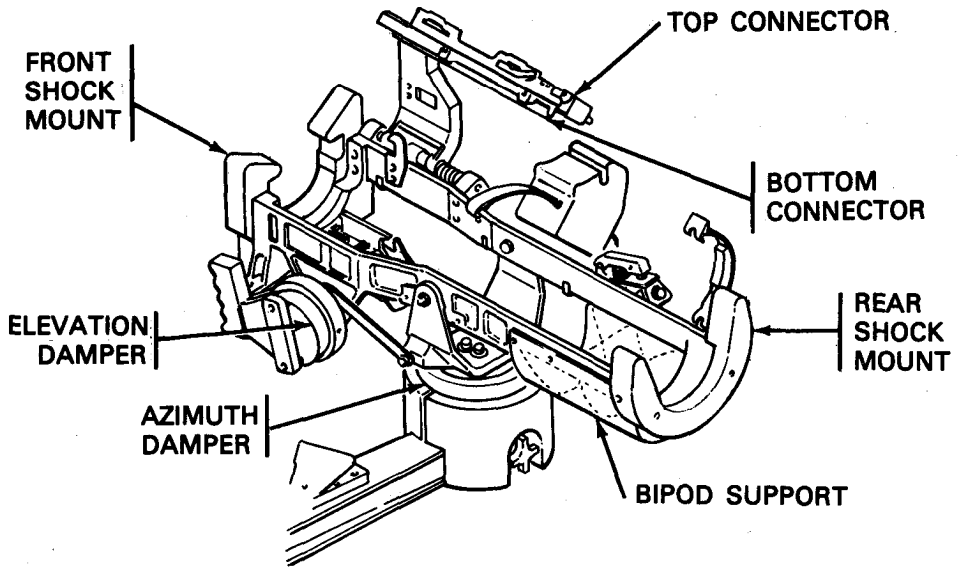


Trichloroethane may be hazardous if handled improperly. Avoid prolonged or repeated breathing of vapor. The work area must have adequate ventilation. Avoid prolonged or repeated contact with skin, by wearing suitable protective gloves and goggles.

GO TO NEXT PAGE

3-5. CLEAN THE M175 MOUNT - CONTINUED

- B. If elevation and azimuth dampers show signs of weeping (slight leak) . . .
1. Dampen a cleaning cloth with trichloroethane and wipe it away.
 2. Then wipe it dry with a dry cleaning cloth.



- C. Clean the bipod support with detergent and water. Allow time for material to dry.
- D. Clean the front and rear shock mounts with detergent and water. Wipe dry with a dry cleaning cloth.



Don't poke anything inside the connector. If you do you will damage the connector.

- E. Clean the top and bottom connectors on the tracker mount with a dry cleaning cloth. Wipe away all visible dirt.

END OF TASK

3-6. CLEAN THE M222/MK1 MOD0/M223 ROUND

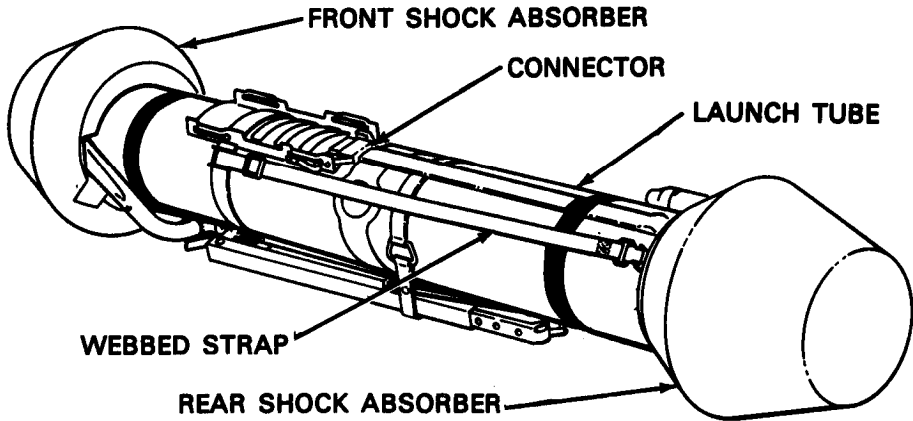
MATERIALS	ITEM NO.	APPENDIX
Cleaning cloth	4	D
Detergent	8	D
Brush	12	D



NOTE

Do not use excess water when cleaning the round.

- A. Clean the fiberglass launch tube and the forward and rear shock absorbers using a mild detergent and water.
- B. Take a clean dry cleaning cloth and wipe away any excess moisture.
- C. Clean all metal parts with a clean dry cleaning cloth.



- D. Clean the webbed strap using a brush and a mild detergent and water. Scrub it clean and let it air dry.



CAUTION

Don't poke anything inside the connector. If you do you will damage the connector.

- E. Clean the connector with a dry cleaning cloth. Wipe away all visible dirt.

END OF TASK

3-7. CLEAN THE DAY/NIGHT TRACKER STORAGE BOX AND CASE

<u>MATERIALS</u>	<u>ITEM NO.</u>	<u>APPENDIX</u>
Cleaning cloth	4	D
Detergent	8	D

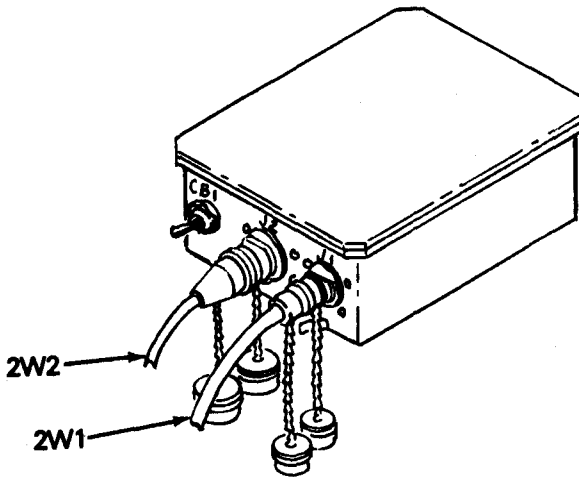
Clean the day tracker storage case and night tracker storage rack inside the APC using detergent and water. Wipe dry with a clean dry cleaning cloth.

END OF TASK

3-8. CLEAN THE VEHICLE POWER CONDITIONER (VPC)

<u>MATERIALS</u>	<u>ITEM NO.</u>	<u>APPENDIX</u>
Cleaning cloth	4	D
Detergent	8	D

A. Clean all metal parts with a clean dry rag.



B. Clean the 2W2 and 2W1 cables using a mild detergent and water.

C. Dry the cables with a dry cleaning cloth. Make sure you wipe away any excess water.

END OF TASK

3-9. SPOT PAINTING



Most paints are flammable. Be sure your workplace has good ventilation. Don't inhale fumes and don't smoke when painting.



DO NOT use spray paint.

A. Spot painting of the day/night tracker, M175 mount, and the M213 tracker storage box is limited to spot painting of exposed metal.

B. Spot painting of the M222/MK 1 Mod 0/M223 round is limited to the OD portion of the launch tube. Don't get paint on colored bands or ID markings.

C. Use only the materials listed in Appendix D.

3-10. SPOT PAINT THE DAY/NIGHT TRACKER M175 MOUNT, AND THE M222/MK1 MOD 0/M223 ROUND

<u>MATERIALS</u>	<u>ITEM NO.</u>	<u>APPENDIX</u>
Paint, Forest green, polyurethane (night tracker only)	14	D
Paint	5	D
Acid swabbing brush	9	D



When spot painting the day/night tracker, keep the lens cover and connector cover in place while painting and until paints dry.

Apply paint over chips, scratches and nicks where metal is exposed and allow time for paint to dry.

END OF TASK

3-11. SPOT PAINT THE M213 TRACKER STORAGE BOX

<u>MATERIALS</u>	<u>ITEM NO.</u>	<u>APPENDIX</u>
Paint GR, Enamel	7	D
Acid swabbing brush	9	D

Using the brush and gray enamel paint, apply paint over chips, scratches, and nicks where metal is exposed and allow time for paint to dry.

**CHEMICAL AGENT RESISTANT COATING (CARC)**

This coating is extremely toxic during mixing/application! Proper clothing and protection devices must be worn to prevent absorption through the skin or inhalation of vapors. See TM 43-0139.

3-12. APPLICATION OF CHEMICAL AGENT RESISTANT COATING (CARC) AND PRIMERS.

When missile system and support equipment has been previously painted with this new coating material it shall be identified with the word 'CARC' stenciled on the body of the part or major component. This paint and primer is extremely hazardous to health during mixing/application. Organizational and Direct Support levels are authorized to spot paint ONLY using this material. Application and personnel protection procedures are provided in TM 43-0139, Painting Instructions for Field Use.

END OF TASK

CHAPTER 4
AMMUNITION

	Para	Page
Ammunition Care and Handling	4-1	4-2
M222 Round Identification (HEAT)	4-2	4-3
M223 Round Identification (PRACTICE)	4-3	4-3
MK1 MOD 0 Round Identification (HEAT)	4-4	4-4

4-1. AMMUNITION CARE AND HANDLING

a. Hazard Classification

1. The M222 tactical round, DODAC 1427 -PL23, is classified Quantity-Distance (Q-D) Class/Division (04) 1.2, Compatibility Group E, and Department of Transportation (DOT) Class A for shipping.

2. The MK 1 MOD 0 tactical round, DODAC 1427-PM80, is classified Q-D Class/Division (04) 1.2, Compatibility Group E, and DOT Class A.

3. The M223 practice round, DODAC 1427-PL22, is classified Q-D Class/Division 1.3, Compatibility Group C, and DOT Class B.

b. The DRAGON round is shipped and stored in a wooden container.

c. The round should always be handled as a complete round of ammunition.



DO not attempt to remove the missile from the launcher.



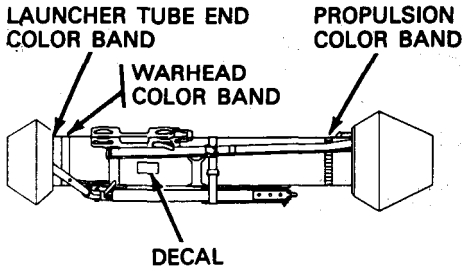
Do not subject the round to rough handling or dropping. Mishandling may damage the launch propulsion system or missile components and cause a malfunction at launch or in flight.

d. Always protect rounds in storage from sun, weather, and moisture. Use at least 6 inches of dunnage underneath the containers, and place a waterproof covering over and around the stack.

e. The shelter provided should be adequate, well ventilated, and easily accessible so the round will remain in a serviceable condition, ready for immediate use.

f. The nose end of all shipping containers in the storage area must be pointed in the direction presenting the least danger to personnel and equipment in case of fire or accidental explosion.

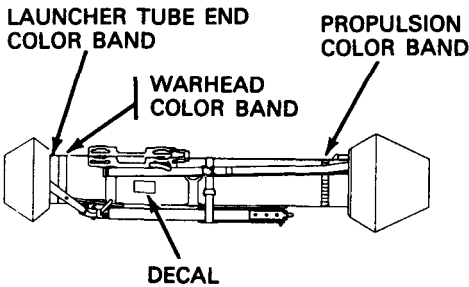
4-2. M222 ROUND IDENTIFICATION (HEAT)



GUIDED MISSILE AND LAUNCHER, SURFACE ATTACK: M222	
FIRING TEMP LIMITS	<input type="text"/>
LOT NO	DATE MFD <input type="text"/>
SER NO	<input type="text"/>
MANUFACTURER	<input type="text"/>
CONTRACT NO	<input type="text"/>
PN	NSN <input type="text"/>

ROUND NOMENCLATURE	LAUNCHER TUBE END BAND	1" WARHEAD BAND	1" PROPULSION BAND	BASIC COLOR
GUIDED MISSILE AND LAUNCHER SURFACE ATTACK-M222 (HEAT WHD.)	BLACK	YELLOW	BROWN	OLIVE DRAB

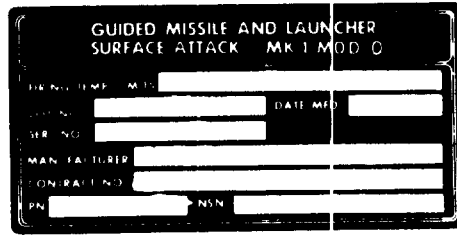
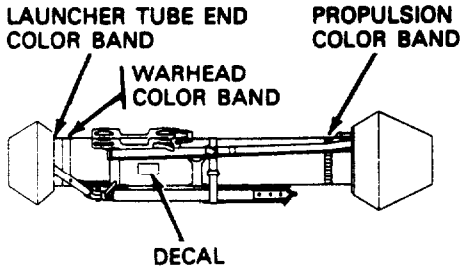
4-3. M223 ROUND IDENTIFICATION (PRACTICE)



GUIDED MISSILE AND LAUNCHER, SURFACE ATTACK, PRACTICE: M223	
FIRING TEMP LIMITS	<input type="text"/>
LOT NO	DATE MFD <input type="text"/>
SER NO	<input type="text"/>
MANUFACTURER	<input type="text"/>
CONTRACT NO	<input type="text"/>
PN	NSN <input type="text"/>

ROUND NOMENCLATURE	LAUNCHER TUBE END BAND	1" WARHEAD BAND	1" PROPULSION BAND	BASIC COLOR
GUIDED MISSILE AND LAUNCHER SURFACE ATTACK-PRACTICE M223 (INERT. WHD.)	OLIVE DRAB	BLUE	BROWN	OLIVE DRAB

4-4. MK1 MOD 0 ROUND IDENTIFICATION (HEAT)



ROUND NOMENCLATURE	LAUNCHER TUBE END BAND	1" WARHEAD BAND	1" PROPULSION BAND	BASIC COLOR
GUIDED MISSILE AND LAUNCHER SURFACE ATTACK MK 1 MOD 0 (HEAT WHD.)	BLACK	YELLOW	BROWN	OLIVE DRAB

APPENDIX A

REFERENCES

A-1. GENERAL

For applicable publications refer to TM 9-1425 -480L, List of Applicable Publications (LOAP).

APPENDIX B

COMPONENTS OF END ITEM LIST

Section I. INTRODUCTION

B-1. SCOPE

This appendix lists integral components of the basic issue items for the DRAGON M47 to help you inventory items required for safe and efficient operation.

B-2. GENERAL

This Components of End Item list is divided into the following sections:

a. Section II. Integral Components of End Item. These items, when assembled, comprise the DRAGON M47 and must accompany it whenever it is transferred or turned in. The illustrations will help you identify these items.

b. Section III. Basic Issue Items. THERE ARE NO BII FOR DRAGON WEAPON SYSTEM.

B3. EXPLANATION OF COLUMNS

a. Illustration. This column is divided as follows:

(1) Figure Number. Indicates the figure number of the illustration on which the item is shown.

(2) Item Number. The number used to identify item called out in the illustration.

b. National Stock Number. Indicates the National Stock Number assigned to the item and which may be used for referencing purposes when using this manual.

B-3. EXPLANATION OF COLUMNS - CONTINUED

c. Part Number. Indicates the primary number used by the manufacturer, which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

d. Description. Indicates the Federal item name, and, if required, a minimum description to identify the item.

e. Location. The physical location of each item listed is given in this column. The lists are designed to inventory all items in one area of the major item before moving on to an adjacent area.

f. Usable on Code. "USABLE ON" codes are included to help you identify which component items are used on all models.

g. Quantity Required (Qty. Reqd.). This column lists the quantity of each item required for a complete major item.

h. Quantity. This column is left blank for use during an inventory. Under the Recv'd column, list the quantity you actually receive on your major item. The Date columns are for your use when you inventory the major item at a later date; such as for shipment to another site.

Section II. INTEGRAL COMPONENTS OF END ITEMS

ILLUS		STOCK NUMBER	PART NO.	DESCRIPTION	LOCATION	USABLE ON CODE	QTY REQD	QUANTITY		
FIG No.	ITEM NO.							RECVD	DATE	DATE
B1		1430-00-078-8340	5422779	TRACKER, INFRARED GUIDED MISSILE: SU-36/P AND CARRYING BAG		BAA	1 EA			
	1		10276500	TRACKER, INFRARED		BAA	1 EA			
	2	1430-00-237-1838	10679932	CARRYING BAG		BAA	1 EA			
	3	5510-00-240-0067	10276598	DOWEL, WOOD			3 EA			
	4	7920-01-032-3624	10276224	BRUSH, DUSTING, LENS			1 EA			
	5	5640-00-097-6745	NNN-P40, FY II	PAPER, LENS			50 SH			
	6	8105-00-L37-9133	PPP-B-26	BAG, PLASTIC, TYPE 2, STYLE 3 6" X 8"			1 EA			

C6

TM 9-1425-494-10

Section II. INTEGRAL COMPONENTS OF END ITEMS – CONTINUED

ILLUS		STOCK NUMBER	PART NO.	DESCRIPTION	LOCATION	USABLE ON CODE	QTY REQD	QUANTITY		
FIG NO.	ITEM NO.							RECVD	DATE	DATE
B1	7	8125-00-824-9058	L-B-00560	BOTTLE, SCREW CAP			1 EA			
	8		TM 9-1425-484-10	TECHNICAL MANUAL DRAGON WEAPON SYSTEM MEDIUM ANTITANK/ASSAULT WEAPON M47			1 EA			
	9		MS27683-1	DRUM, SHIPPING			1 EA			

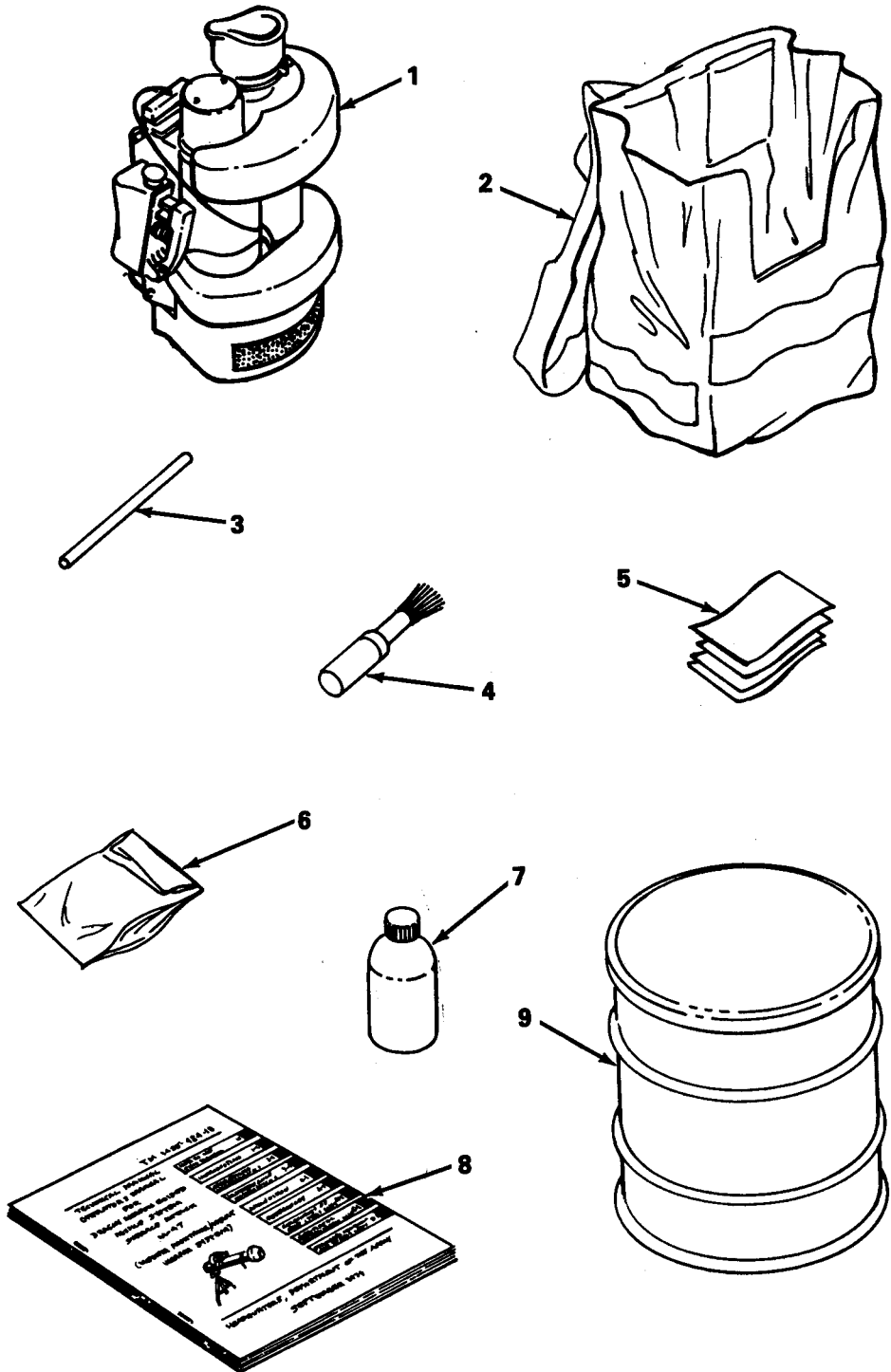


Figure B-1. Integral Components - Day Tracker

Section II. INTEGRAL COMPONENTS OF END ITEMS - CONTINUED

ILL FIG NO	JS ITEM NO.	STOCK NUMBER	PART NO.	DESCRIPTION	LOCA- TION	USABLI ON CODE	QTY REQD	QUANTITY		
								RECVD	DATE	DATE
B2		1430-01- 046-9594	13036203	NIGHT VISION SIGHT TRACKER INFRARED, AN/TAS-5		BAS	1 EA			
	1		13036204	NIGHT VISION SIGHT		BAS	1 EA			
	2	6140-01- 056-5321	SM-C-772052	BATTERY ¹		BAS	1 EA			
	3	8120-01- 070-3959	SM-C-804790	CARTRIDGE ASSY ²		BAS	1 EA			
	4	8465-01- 019-9103	13036246	RUCK SACK ASSY		BAS	1 EA			
	5	5855-01- 143-4488	SM-C-804452	KIT, LENS, CLEANING		BAS	1 EA			
	6*	8105-01- 071-3658	SM-C-804747 -1	PLASTIC BAG		BAS	1 EA			
	7*	5855-01- 072-4276	SM-C-804738 -1	PADS, COTTON		BAS	AS REQ.			

Section II. INTEGRAL COMPONENTS OF END ITEMS -- CONTINUED

C11

ILLUS FIG NO	ITEM NO.	STOCK NUMBER	PART NO.	DESCRIPTION	LOCA- TION	USABLI ON CODE	QTY REQD	QUANTITY		
								RECVD	DATE	DATE
B2	8*	6640-01- 104-3368	SM-C-804739 -1	BOTTLE, PLASTIC		BAS	1 EA			
	9		TM 9-1425- 484-10	TECHNICAL MANUAL DRAGON WEAPON SYSTEM MEDIUM ANTITANK/ ASSAULT WEAPON M47			1 EA			
	10	13170609	DRUM, SHIPPING, ASSY		BAS	1 EA				
		*Item	6, 7, and 8	make up kit (item 5).						

¹Space container with 5-pack batteries may be ordered by NSN 6140-01-049-5342.

²Spare container with 5-pack coolant cartridges may be ordered by NSN 5855-01-047-2136.

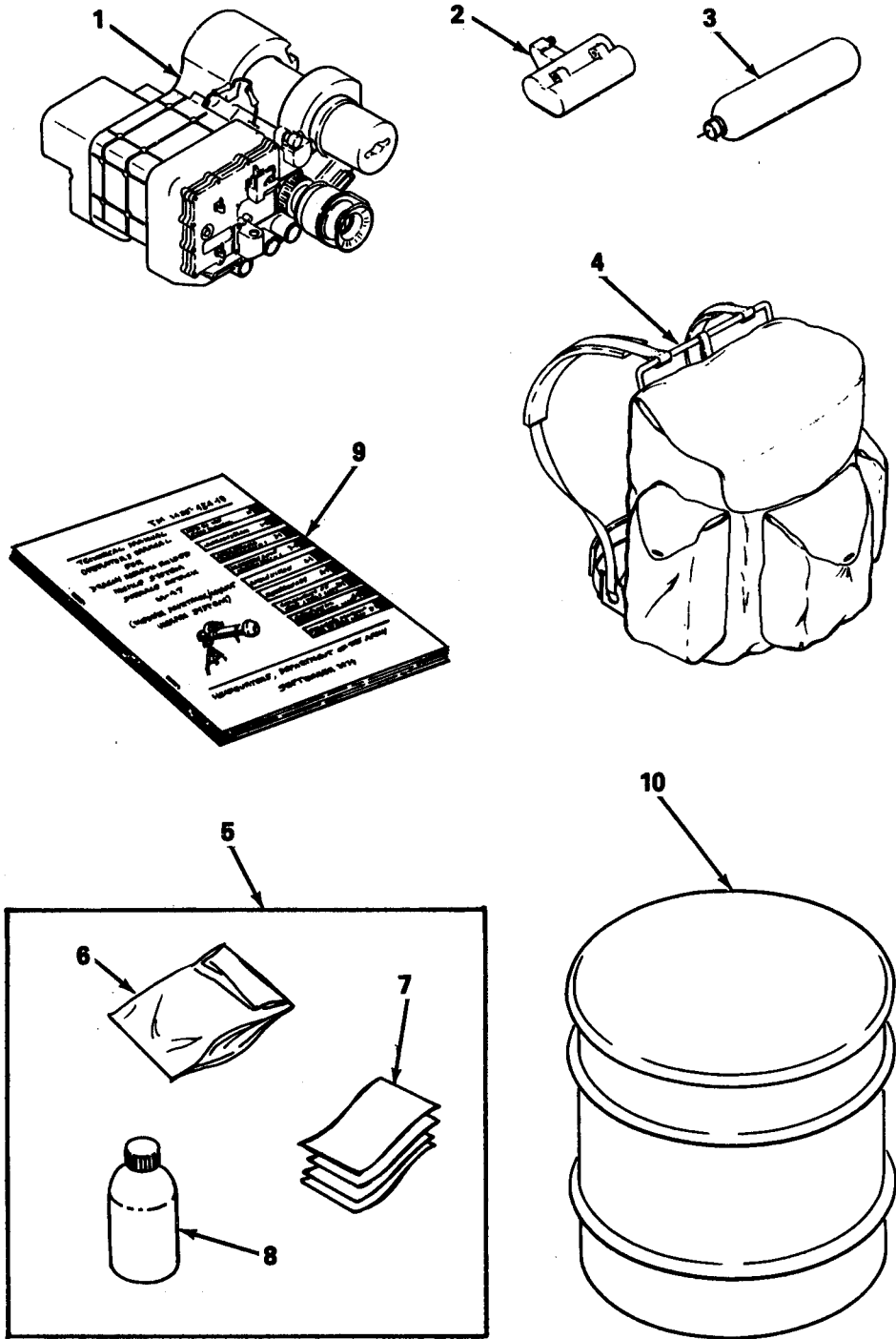


Figure B-2. Integral Components - Night Tracker

Section II. INTEGRAL COMPONENTS OF ENDITEMS

C11

ILLUS		STOCK NUMBER	PART NO.	DESCRIPTION	LOCATION	USABLE ON CODE	QTY REQD	QUANTITY		
FIG NO.	ITEM NO.							RECVD	DATE	DATE
83		1440-01-030-8438	10277377	MOUNT, GUIDED MISSILE LAUNCHER M175		BAR	1 EA *			
	1		10277325	MOUNT, GUIDED MISSILE LAUNCHER M175		BAR	1 EA			
	2	1420-01-049-5358	10277400	COVER, PROTECTIVE		BAR	1 EA			
	3	1440-01-050-4880	10277391	ADAPTER, TRIPOD		BAR	1 EA			
	4	5305-00-725-4114	MS90726-166	SCREW, CAP, HEX-HEAD		BAR	1 EA			
	5	5365-01-050-9961	10277399	SPACER, PLATE		BAR	1 EA			
	6		10277378	ARM ASSEMBLY, GM LAUNCHER MOUNT		BAR	1 EA			
	7		10277160	CONTAINER		BAR	1 EA			

B-9

*MECHANIZED UNITS ONLY

TM 9-1425-484-10

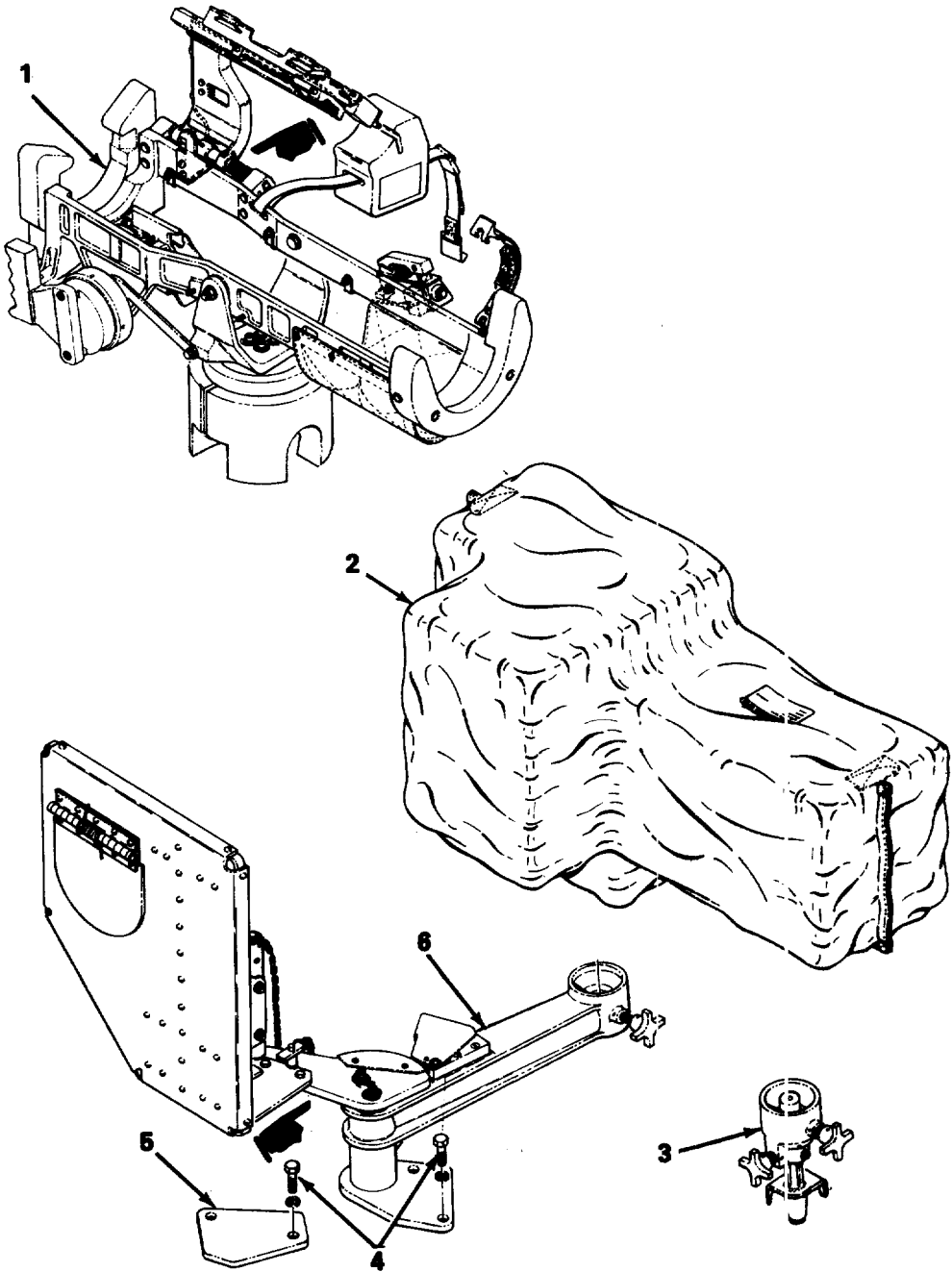
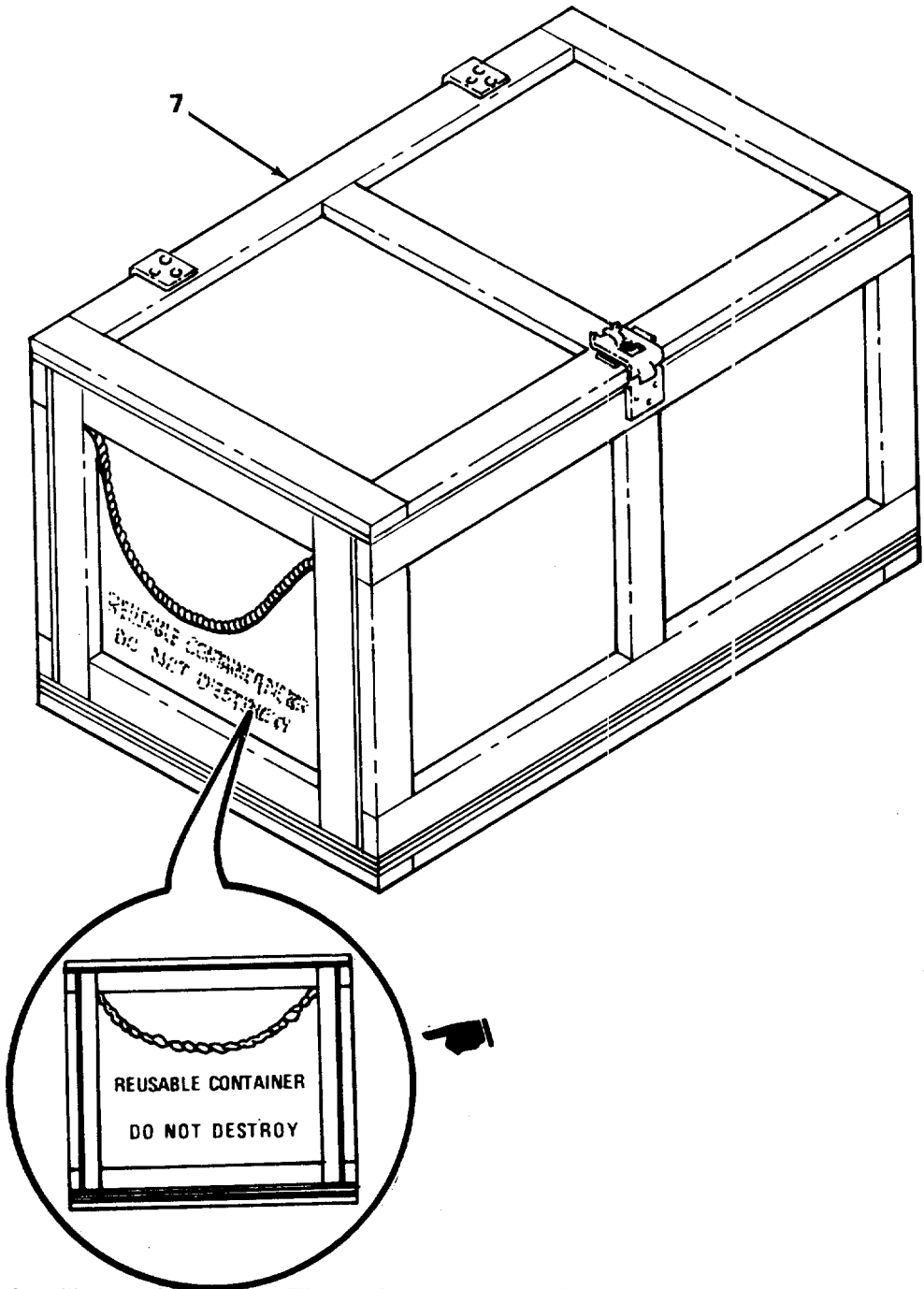


Figure B-3. Integral Components - M175 Mount
(SHEET 1 OF 2)



Stenciling requirement see TM 9-1425-484-24, para 2-4d.

Figure B-3. Integral Components - M175 Mount
(SHEET 2 OF 2)

APPENDIX C

ADDITIONAL AUTHORIZATION LIST

Section I. INTRODUUCTION

C-1. SCOPE

This appendix lists additional items you are authorized for the support of the DRAGON M47.

C-2. GENERAL

This list identifies items that do not have to accompany the DRAGON M47 and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA, or JTA.

C-3. EXPLANATION OF LISTING

National stock numbers, descriptions, and quantities are provided to help you identify and request the additional items you require to support this equipment. If the item you require differs between serial numbers of the same model, effective serial numbers are shown in the last line of the description.

Section 1. ADDITIONAL AUTHORIZATION LIST

National Stock Number	Description		U/M	Qty Auth
	Part Number & FSCM	Usable on Code		
6130-01 056-1955	BATTERY CHARGER PP-7382,TAS SM-D-774998 80063		ea.	**
6140-01- 049-5342	BATTERY PACK SM-C-804438 80063		ea.	1* 3-
5855-01- 047-2136	COOLANT CARTRIDGE PACK SM-C-804439 80063		ea.	3

Section II. ADDITIONAL AUTHORIZATION LIST - CONTINUED

<p>1005-00-710-5599</p>	<p>MACHINE GUN TRIPOD M122</p>	<p>ea.</p>	<p>1</p>
<p>-OR -</p>			
<p>1005-00-322-9716</p>	<p>MACHINE GUN TRIPOD M3</p>	<p>ea.</p>	<p>2</p>
<p>1430-01-049-5354</p>	<p>VEHICLE POWER CONDITIONER SM-D-772049 8063</p>	<p>ea.</p>	<p>1</p>

*Mechanized Units Only

**Non-mechanized Units Only

***Battery charger authorization is one charger for every group of one to four AN/TAS-5 Night Vision Sight trackers assigned to a unit.

NSN 1440-01-106-8447
Kit comprises:

three 5-pack coolant cartridge containers
NSN 5855-01-047-2136

one 5-pack battery assembly container,
NSN 6140-01-049-5342

one vehicle power conditioner
NSN 1430-01-049-5354

NSN 1440-01-107-8120
Kit comprises:

three 5-pack coolant cartridge containers
NSN 5855-01-047-2136

three 5-pack battery assembly containers,
NSN 6140-01-049-5342

APPENDIX D

EXPENDABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

D-1. SCOPE

This appendix lists expendable supplies and materials you will need to operate and maintain the DRAGON M47. These items are authorized to you by CTA 50-970, Expendable Items (Except Medical, Class V, Repair Parts, and Heraldic items).

D-2. EXPLANATION OF COLUMNS

a. Column 1 - Item number. This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material (for example, "Use cleaning cloth, item 4, App. D").

b. Column 2 - Level. This column identifies the lowest level of maintenance that requires the listed item.

(Enter as applicable)

C - Operator/Crew

O - organizational Maintenance

F - Direct Support Maintenance

H - General Support Maintenance

c. Column 3 - National Stock Number. This is the National stock number assigned to the item; use it to request or requisition the item.

d. Column 4 - Description. Indicates the Federal item name, and, if required, a description to identify the item. The last line for each item indicates the part number followed by the Federal Supply Code for Manufacturer (FSCM) in parentheses, if applicable.

D-2. EXPLANATION OF COLUMNS -- CONTINUED

e. Column 5 - Unit of Issue (U/I). Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (for example, ea., in., pr.). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

Section II. EXPENDABLE SUPPLIES AND MATERIALS LIST

Item No.	Level	National Stock Number	Description	U/I
1	C	6810-00-264-6614 or 6810-00-205-6786	ALCOHOL, ETHYL MIL-E-163 ALCOHOL, DENATURED, GRADE IV (O-E-760b)	PT QT
2	C	7920-01-032-3624	BRUSH, LENS	EA
3	C	6640-00-597-6745	BOOK PAPER, LENS	BK
4	C	8305-00-272-1800	CLOTH, CLEANING	Mx
5	C	8010-00-965-2081	PAINT O.D. - ENAMEL, QUICK DRYING	GL
6			DELETED	
7	C	8010-00-087-0103	PAINT GR -ENAMEL	QT
8	C	7930-00-282-9699	DETERGENT	GL
9	C	7920-00-514-2417	BRUSH, ACID SWABBING	GR
10	C	6810-00-223-2734	TRICHLOROETHANE MIL-T-7003	GL

Section II. EXPENDABLE SUPPLIES AND MATERIALS LIST - CONTINUED

Item No.	Level	National Stock Number	Description	U/I
11	C	5510-00-240-0067	DOWEL, WOOD	EA.
12	C	7920-00-282-2470	BRUSH, SCRUB	EA.
13	C	SMC 804739-001	PADS, COTTON	AS REQ.
14	C	8010-01-039-5939	PAINT, FOREST GREEN, ALPHA-TIC POLYURETHANE	AS REQ.
15	C	5340-00-753-3745	STRAP, EQUIPMENT, WEB	AS REQ.



By Order of the Secretary of the Army:

E. C. MEYER
General, United States Army
Chief of Staff

Official:

ROBERT M. JOYCE
Brigadier General, United States Army
The Adjutant General

Distribution:

To be distributed in accordance with DA Form 12-32, Section II,
Organizational Maintenance requirements for DRAGON Weapon System.

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RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL MANUALS



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ATTN: SP4 John Doe
Key West, FL 33040

DATE 14 January 1975

PUBLICATION NUMBER

TM 9-1430-550-34-1

DATE

7 Sep 72

TITLE

Unit of Radar Set AN/MPQ-50
Tested at the HFC

BE EXACT... PIN-POINT WHERE IT IS

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

PAGE NO.	PARA-GRAPH	FIGURE NO.	TABLE NO.
9-19		9-5	
21-2	step 1C		21-2

"B" Ready Relay K11 is shown with two #9 contacts. That contact which is wired to pin 8 of relay K16 should be changed to contact #10.

Reads: Multimeter B indicates 600 K ohms to 9000 K ohms.

Change to read: Multimeter B indicates 600 K ohms minimum.

Reason: Circuit being checked could measure infinity. Multimeter can read above 9000 K ohms and still be correct.

NOTE TO THE READER:

Your comments will go directly to the writer responsible for this manual, and he will prepare the reply that is returned to you. To help him in his evaluation of your recommendations, please explain the reason for each of your recommendations, unless the reason is obvious.

All comments will be appreciated, and will be given immediate attention. Handwritten comments are acceptable.

For your convenience, blank "tear out" forms, preprinted, addressed, and ready to mail, are included in this manual.

TEAR ALONG DOTTED LINE

SAMPLE

TYPED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

SP4 John Doe, Autovon 222-2222

SIGN HERE:

John Doe

DA FORM 2028-2 (TEST)

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TITLE Operator's Manual: DRAGON
Weapon G.M. System Surface Attack:
M47

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PAGE NO.	PARA-GRAPH	FIGURE NO.	TABLE NO.

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PAGE NO.	PARA-GRAPH	FIGURE NO.	TABLE NO.
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