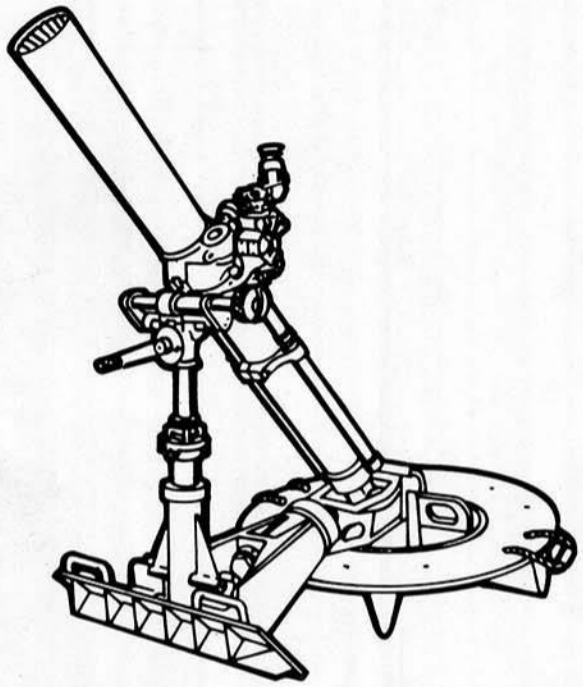
TM 9-1015-215-20&P

TECHNICAL MANUAL

ORGANIZATIONAL MAINTENANCE MANUAL INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST FOR



EQUIPMENT DESCRIPTION AND DATA	1-1
SERVICE UPON RECEIPT	2-1
TROUBLESHOOTING	2-4
MAINTENANCE PROCEDURES	2-9
LUBRICATION INSTRUCTIONS	2-18
MAINTENANCE ALLOCATION CHART	B-1
REPAIR PARTS AND SPECIAL TOOLS LIST	C-1
EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST	D-1

MORTAR, 4.2-INCH: M30 (CANNON M30 ON MOUNT M24A1) (1015-00-840-1840)

AND

TRAINER, SUBCALIBER, 60-MM: M31 (8429878)

This copy is a reprint which includes current pages from Changes 1 through 3.

HEADQUARTERS, DEPARTMENT OF THE ARMY

SEPTEMBER 1984

Digitized by:

SMALLARMS OF THE WORLD

SMALLARMSOFTHEWORLD.COM

WARNING

Do not move the rotator assembly and the mortar baseplate as a unit; move the rotator assembly by its handles and use two soldiers to move the mortar baseplate by the rope handles.

Before performing maintenance procedures, inspect the cannon barrel to make sure it is empty. Keep live ammunition out of the area during maintenance operations.

Dry cleaning solvents (SD) and paint thinners (TPM) are flammable. Do not clean parts near an open flame or in a smoking area. Dry cleaning solvents and paint thinners evaporate quickly and have a drying effect on the skin. When used without protective gloves, these chemicals may irritate or crack the skin.

Melted nylon rope can cause a severe burn.

For first aid data, see FM 21-11.

Change
No. 3

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., 15 September 1987

Organizational Maintenance Manual
(Including Repair Parts and Special Tools List)

for

MORTAR, 4.2-INCH, M30
(CANNON M30 ON MOUNT M24A1)
(1015-00-840-1840)

and

TRAINER, SUBCALIBER, 60-MM, M31
(8429878)

TM 9-1015-215-20&P, 11 September 1984, is changed as follows:

1. Remove old pages and insert new pages as indicated below.

2. New or changed material is indicated by a vertical bar in the margin of the page.

Remove Pages	Insert Pages
B-5 and B-6	B-5 and B-6

3. File this change sheet in the back of the publication for reference purposes.

By Order of the Secretary of the Army:

CARL E. VUONO
General, United States Army
Chief of Staff

Official:

R. L. DILWORTH
Brigadier General, United States Army
The Adjutant General

DISTRIBUTION:

To be distributed in accordance with DA Form 12-40, Unit Maintenance requirements for Mortar, 4.2-Inch, M30; Trainer, Subcaliber, M31.

Change
No. 2

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 21 April 1987

Organizational Maintenance Manual
(Including Repair Parts and Special Tools List)

for

MORTAR, 4.2-INCH, M30
(CANNON M30 ON MOUNT M24A1)
(1015-00-840-1840)

and

TRAINER, SUBCALIBER, 60-MM, M31
(8429878)

TM 9-1015-215-20&P, 11 September 1984, is changed as follows:

1. Remove old pages and insert new pages as indicated below.

2. New or changed material is indicated by a vertical bar in the margin of the page.

Remove Pages	Insert Pages
2-1 and 2-2	2-1 and 2-2
2-5 through 2-8	2-5 through 2-8
B-3 and B-4	B-3 and B-4

3. File this change sheet in the back of the publication for reference purposes.

By Order of the Secretary of the Army:

JOHN A. WICKHAM, JR.
General, United States Army
Chief of Staff

Official:

R. L. DILWORTH
Brigadier General, United States Army
The Adjutant General

DISTRIBUTION:

To be distributed in accordance with DA Form 12-40, Unit maintenance requirements for Mortar, 4.2-Inch, M30; Trainer, Subcaliber, M31.

Change
No. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 10 July 1986

Organizational Maintenance Manual
(Including Repair Parts and Special Tools List)

for

MORTAR, 4.2-INCH, M30
(CANNON M30 ON MOUNT M24A1)
(1015-00-840-1840)

and

TRAINER, SUBCALIBER, 60-MM, M31
(8429876)

TM 9-1015-215-20&P, 11 September 1984, is changed as follows:

1. Remove old pages and insert new pages as indicated below.

2. New or changed material is indicated by a vertical bar in the margin of the page.

Remove Pages	Insert Pages
D-1 through D-3/(D-4 blank)	D-1 through D-3/(D-4 blank)

3. File this change sheet in the back of the publication for reference purposes.

By Order of the Secretary of the Army:

JOHN A. WICKHAM, JR.
General, United States Army
Chief of Staff

Official:

R. L. DILWORTH
Brigadier General, United States Army
The Adjutant General

DISTRIBUTION:

To be distributed in accordance with DA Form 12-40, Organizational Maintenance requirements for Mortar, 4.2-Inch, M30; Trainer, Subcaliber, M31.

TECHNICAL MANUAL
No. 9-1015-215-20&P

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC 11 September 1984

Organizational Maintenance Manual (Including Repair Parts and Special Tools List) for MORTAR, 4.2-INCH: M30 (CANNON M30 ON MOUNT M24A1) (1015-00-840-1840) AND TRAINER, SUBCALIBER, 60-MM: M31 (8429878)

Current as of 11 May 1984 for appendix C

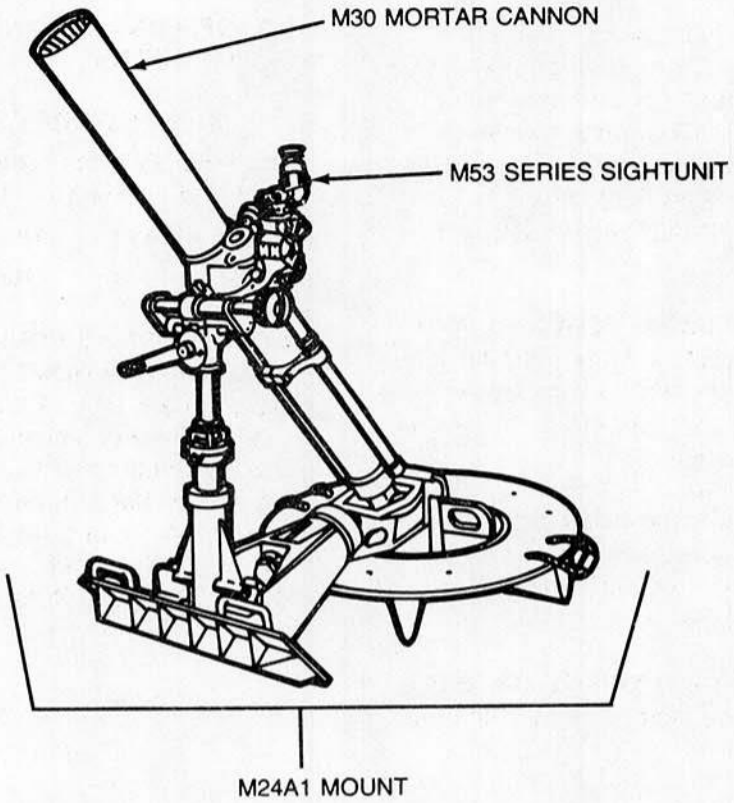
REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, US Army Armament, Munitions and Chemical Command, ATTN: DRSMC-MAS (R), Rock Island, IL 61299. A reply will be furnished to you.

		Page
CHAPTER 1	**INTRODUCTION**	**1-1**
Section I	General Information	1-1
Section II	Equipment Description and Data	1-1
CHAPTER 2	**MAINTENANCE INSTRUCTIONS**	**2-1**
Section I	Repair Parts, Special Tools, TMDE, and Support Equipment	2-1
Section II	Service Upon Receipt	2-1
Section III	Preventive Maintenance Checks and Services (PMCS)	2-2
Section IV	Troubleshooting	2-4
Section V	Maintenance Procedures	2-9
Section VI	Lubrication Instructions	2-18
Section VII	Preparation for Storage or Shipment	2-19
APPENDIX A	**REFERENCES**	**A-1**
APPENDIX B	**MAINTENANCE ALLOCATION CHART**	**B-1**

*This manual together with TM 9-1015-215-10, 11 March 1985 superseded TM 9-1015-215-20P, 17 March 1969 and TM 9-1015-215-12, 28 July 1966 including all changes.

		Page	Illus Figure
APPENDIX C	**REPAIR PARTS AND SPECIAL TOOLS LIST**	**C-1**	
Section I	Introduction	C-1	
Section II	Repair Parts List	C-6	
Group 00	Mortar, 4.2-inch, M30 8401840	C-6	C-1
	0101 Coupling and sight mount assembly 7144218	C-7	C-2
	0204 Baseplate, mortar 8401561	C-8	C-3
Group 03	Sightunit M53 series 8245971 and 10559698	C-9	C-4
	0301 Elbow telescope M109 8588780	C-10	C-5
Group 04	Special tools (repair parts)		
	0401 Light, instrument M53E1 10553463	C-11	C-6
	0402 Light, aiming post: M14 11785401	C-12	C-7
	0404 Brush, cleaning, artillery 8768698	C-13	C-8
Group 05	Trainer, subcaliber, 60-mm, M31 8429878 and		
	0501 Cannon, 60-mm mortar, M2 7238501	C-14	C-9
Section III	Special Tools List (None)	C-15	
Section IV	National Stock Number and Part Number Index	C-15	
APPENDIX D	**EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST**	**D-1**	
	ALPHABETICAL INDEX	**Index 1**	



M30 4.2-INCH MORTAR - LEFT FRONT VIEW (FIRING POSITION)

CHAPTER 1
INTRODUCTION

Section I. GENERAL INFORMATION

1-1. SCOPE.

a. *Type of Manual.* Organizational Maintenance, including Repair Parts and Special Tools List.

b. *Model Number and Equipment Name.* M30 4.2-inch Mortar.

c. *Purpose of Equipment.* Provides a high angle fire support system for use against a variety of ground targets.

1-2. MAINTENANCE FORMS, RECORDS, AND REPORTS. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750, The Army Maintenance Management System.

1-3. DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE. Procedures and materials used for the destruction of the mortar to prevent enemy use will be found in TM 750-244-7.

1-4. PREPARATION FOR STORAGE OR SHIPMENT. Requirements for storage or shipment are listed on page 2-19.

1-5. OFFICIAL NOMENCLATURE, NAMES, AND DESIGNATIONS.

NOMENCLATURE CROSS-REFERENCE LIST

This listing includes nomenclature cross-references used in this manual.

Common Name	*Official Nomenclature*
Barrel	Tube

1-6. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR). If your mortar 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. Put it on an SF 368 (Quality Deficiency Report). Mail it to us at Commander, US Army Armament, Munitions and Chemical Command, ATTN: DRSMC-MAO (R), Rock Island, Il 61299. We'll send you a reply.

Section II. EQUIPMENT DESCRIPTION AND DATA

1-7. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES.

a. *Characteristics.*

(1) A heavy mortar that is transported by vehicle.

(2) Can be emplaced on the ground or mounted in a special vehicle.

b. *Capabilities and Features.*

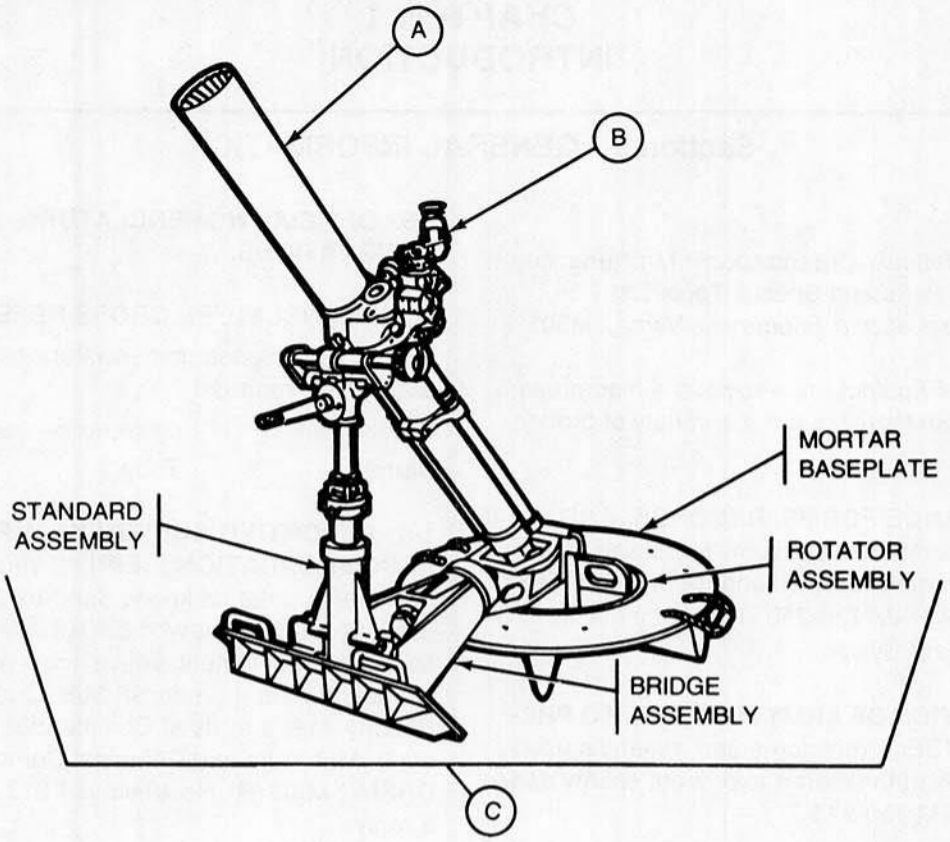
(1) Rifled bore cannon is muzzle loaded.

(2) Capable of delivering various types of ammuniton with a variety of fuzes at a rapid rate of fire.

(3) Breaks down into sections that one or two soldiers can handle.

(4) M53 series sightunit gives indirect fire capability.

1-8. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS.



(A) MORTAR CANNON M30. Fires ammunition and controls the direction of the projectile flight path.

(B) SIGHTUNIT M53 SERIES. Sighting device used to lay the mortar.

(C) MOUNT M24A1. Composed of standard assembly, bridge assembly, mortar baseplate, and rotator assembly. Assists in absorbing the forces of recoil and provides the mechanisms for elevating and traversing the weapon.

NOTE

For a more complete listing of major components' location and description, see TM 9-1015-215-10.

1-9. EQUIPMENT DATA. See TM 9-1015-215-10.

1-10. SAFETY, CARE, AND HANDLING.

a. All of the major mortar components are heavy and must be handled carefully.

WARNING

Do not move the rotator assembly and the mortar baseplate as a unit; move the rotator assembly by its handles and use two soldiers to move the mortar baseplate by the rope handles.

b. Do not drop the cannon, as this will likely:

(1) Dent the barrel or cause it to be out-of-round.

(2) Damage the shock absorber assemblies.

(3) Damage or break the coupling and sight mount assembly.

c. Keep standard assembly in the low range position when not in use.

(1) Fold the handle of the traversing wheel body in the stowed position.

(2) Be careful of the elevating handle.

d. Lift the bridge assembly by the handles. Watch for twisting between the body and bridge cup assembly.

CHAPTER 2
MAINTENANCE INSTRUCTIONS

Section I. REPAIR PARTS, SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT

2-1. COMMON TOOLS AND EQUIPMENT. For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit. For tools and test equipment used to maintain mortars refer to appendix B, section III.

2-2. SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT. None.

2-3. REPAIR PARTS. Spares and repair parts are listed and illustrated in appendix C of this manual.

Section II. SERVICE UPON RECEIPT

2-4. GENERAL. When a new or reconditioned weapon is first received, it is the responsibility of the officer-in-charge to determine whether the weapon has been properly prepared for service by the supplying organization and whether it is in proper condition to perform its mission.

2-5. INSPECTING AND SERVICING THE MATERIEL.

WARNING

Inspect the cannon barrel to make sure it is empty. Keep live ammunition out of the area during maintenance operations.

SERVICE UPON RECEIPT - 4.2-INCH MORTAR M30

LOCATION	ITEM	ACTION	REMARKS
1. Container	Mortar	Remove from container.	
2. Cannon	Barrel	Check to make sure the barrel is clear of obstructions.	
3. Container	Basic issue items	Check for missing items.	See appendix B, TM 9-1015-215-10.
4. Mortar	All items	a. Clean and lubricate.	See TM 9-1015-215-10.
		NOTE Wipe excess oil or preservatives from barrel.	
		b. Assemble major subassemblies to assure proper assembly and operation.	See TM 9-1015-215-10.
5. Container	M53 series sightunit	Check for damaged or missing parts.	See TM 9-1015-215-10.

2-6. CHECKING UNPACKED EQUIPMENT (4.2-INCH MORTAR M30).

a. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on SF 364, Report of Discrepancy (ROD).

b. Check the equipment against the packing slip to see if the shipment is complete. Report all discrepancies in accordance with DA PAM 738-750.

c. Check to see whether the equipment has been modified. Refer to the authorized equipment configuration changes listed in DA PAM 310-1 and DA PAM 750-10.

Section III. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

2-7. GENERAL. The required PMCS procedures are listed in the table below. These services should be done by the unit armorer with the crew's assistance. Perform PMCS every 90 days if the weapon has not been used during that time.

a. *Item No. Column.* Checks and services are numbered in chronological order. Use this column as a source of item numbers for the "TM Number" column on DA Form 2404, Equipment Inspection and Maintenance Worksheet, in recording results of PMCS.

b. *Item To Be Inspected Column.* The items listed in this column divide the mortar into groups. These groupings identify the item to be inspected in as few words as possible, usually by the common name.

c. *Procedures column.* This column briefly describes how to perform the check or service and uses illustrations when practical.

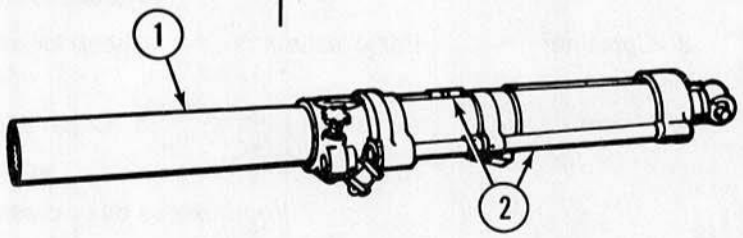
d. *Equipment Is Not Ready/Available If: Column.* This column tells you when and why your equipment cannot be used.

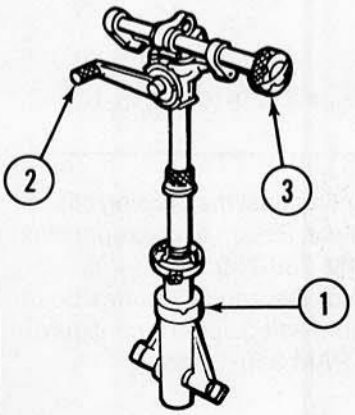
NOTE

The terms *ready/available* and *mission capable* refer to the same status: Equipment is on hand and is able to perform its combat missions (see DA PAM 738-750).

ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES QUARTERLY SCHEDULE

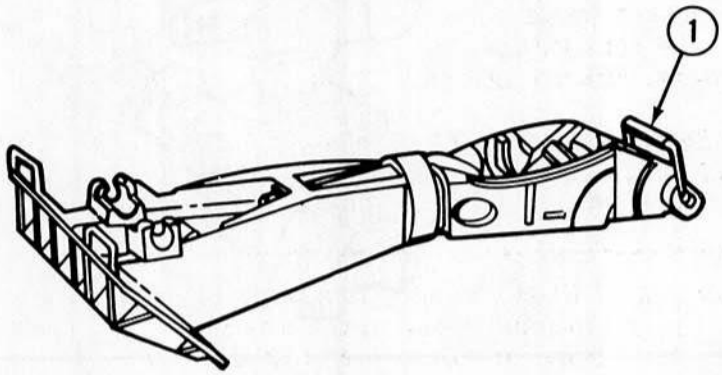
Item No.	Item To Be Inspected	Procedure	Equipment is Not Ready/Available If:
1	Cannon assembly	a. Check cannon assembly (1) for unusual wear and damage in bore or corrosion and damage to external surface.	Cannon assembly has cracks, dents, bulges, or unusual wear.
		b. Test function shock absorber assembly (2).	Shock absorber assembly is inoperative or binding.
		c. Check cannon assembly (1) and shock absorber assembly (2) for loose or missing screws or setscrews. Tighten any loose screws.	Screws or setscrews are missing.
2	Standard assembly	a. Check standard assembly (1) for cracks, broken welds, rust, and loose, missing, or damaged parts.	Standard assembly has cracks, broken welds, loose, missing or damaged parts.
		b. Elevating (2) and traversing (3) mechanism assemblies must operate smoothly and without binding through entire range of travel.	Elevating and/or traversing mechanism assemblies are inoperative or binding.
		c. Check standard assembly (1) and elevating (2) and traversing (3) mechanism assemblies for loose or missing screws or setscrews. Tighten any loose screws.	Screws or setscrews are missing.

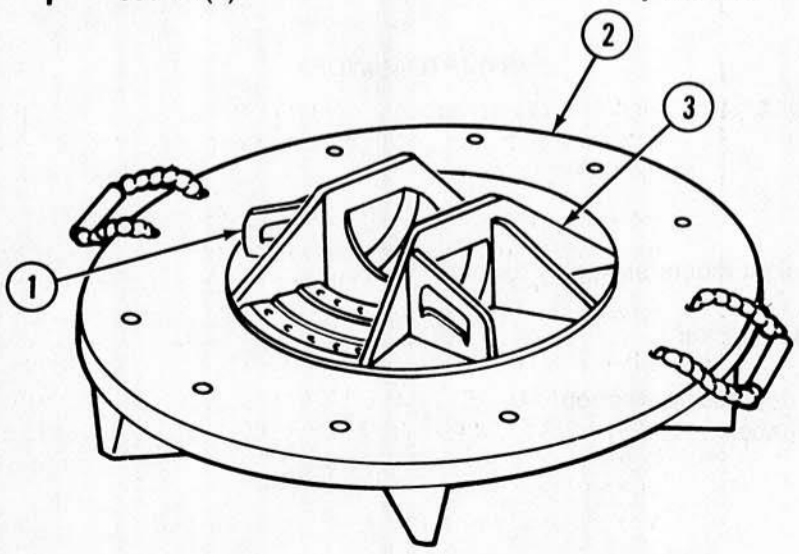




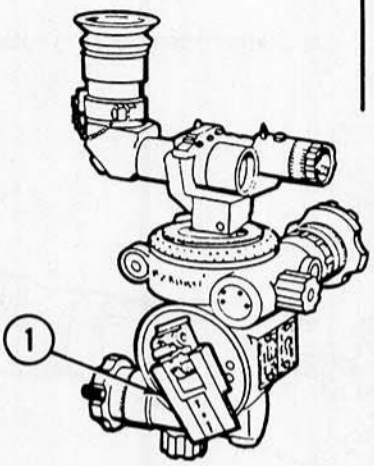
ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES QUARTERLY SCHEDULE (CONT)

Item No.	Item To Be Inspected	Procedure	Equipment is Not Ready/Available If:
3	Bridge assembly	a. Check bridge assembly (1) for cracks, broken welds, rust, and loose, missing, or damaged parts.	Bridge assembly has cracks, broken welds, loose, missing, or damaged parts.
		b. Check that bridge assembly (1) rotates freely.	Bridge assembly does not rotate freely.
4	Mortar baseplate and rotator assembly	a. Check mortar baseplate (1) for cracks, broken welds, loose, missing, or damaged parts.	Mortar baseplate has cracks, broken welds, loose, missing, or damaged parts.
		b. Check for cracked or warped bearing surface of rotator assembly (2) or mortar baseplate (1).	Bearing surfaces are warped or cracked.
		c. Rotator assembly (2) must turn freely within mortar baseplate (1).	Rotator assembly does not turn freely.
		d. Check for cracked bridge trunnion socket (3).	Bridge trunnion socket is cracked.





ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES QUARTERLY SCHEDULE (CONT)

Item No.	Item To Be Inspected	Procedure	Equipment is Not Ready/Available If:
5	Sightunit M53 series	Check that locking latch (1) secures sightunit to mortar. 	Locking latch does not secure sightunit to mortar.

Section IV. TROUBLESHOOTING

2-8. GENERAL.

a. This section contains troubleshooting information for locating and correcting most of the operating troubles which may develop in your mortar. Each malfunction for an individual component, unit, or system is followed by a list of tests or inspections which will help you to determine corrective actions to take. You should perform the tests/inspections and corrective actions in the order listed.

b. This manual cannot list all possible malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed (except when malfunction and cause are obvious) or is not corrected by listed corrective actions, notify your supervisor.

2-9. TROUBLESHOOTING PROCEDURES.

a. Refer to troubleshooting chart on page 2-5.

b. Use the symptom index for a quick reference to symptoms covered in the chart.

SYMPTOM INDEX

Troubleshooting Procedure Page

CANNON
Failure of coupling and sight mount assembly to rotate 2-5
Failure to fire 2-5
Inability to seat sightunit in socket 2-5
MOUNT
Difficulty in elevating or depressing weapon 2-6
Difficulty in traversing weapon 2-6

Failure of bridge assembly to rotate 2-8
Failure of bridge assembly to engage rotator assembly 2-8
Failure of rotator to turn freely 2-7
Improper recoil 2-6
Inability to lock standard assembly in low or high range position 2-6
Insecure standard assembly 2-7

TROUBLESHOOTING

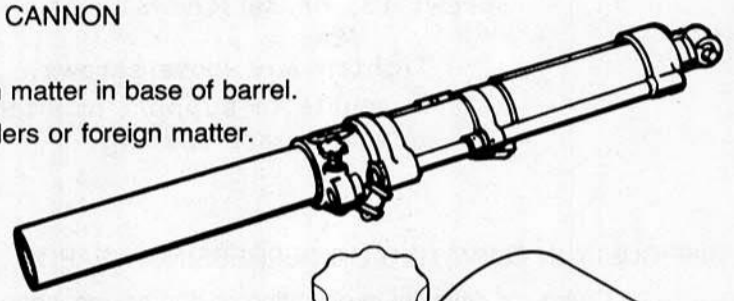
MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

CANNON

1. FAILURE TO FIRE.

Check for propellant holders or foreign matter in base of barrel.

Remove propellant holders or foreign matter.



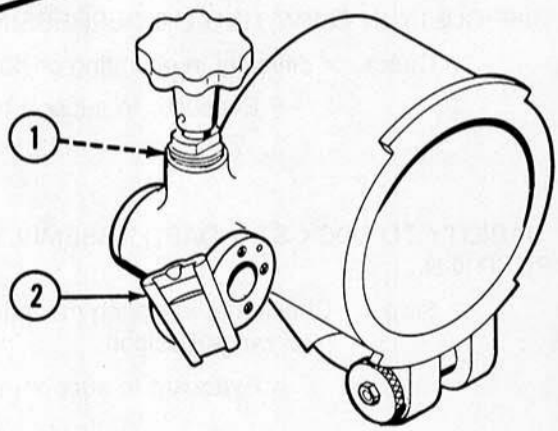
2. FAILURE OF COUPLING AND SIGHT MOUNT ASSEMBLY TO ROTATE.

Step 1 Check worm (1) for backlash or binding.

Evacuate to support maintenance.

Step 2 Check for loose or missing screws or setscrews.

Tighten any loose screws. Evacuate to support maintenance if screws are missing.



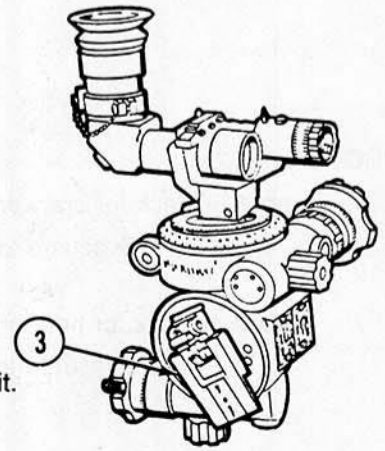
3. INABILITY TO SEAT SIGHTUNIT IN SOCKET.

Step 1. Check for broken or bent sight socket (2).

Evacuate to support maintenance.

Step 2. Check for damaged dovetail (3) on M53 series sightunit.

Evacuate to support maintenance.



MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

MOUNT

1. DIFFICULTY IN TRAVERSING WEAPON.

Step 1. Check for bent traversing slide assembly supports (1).

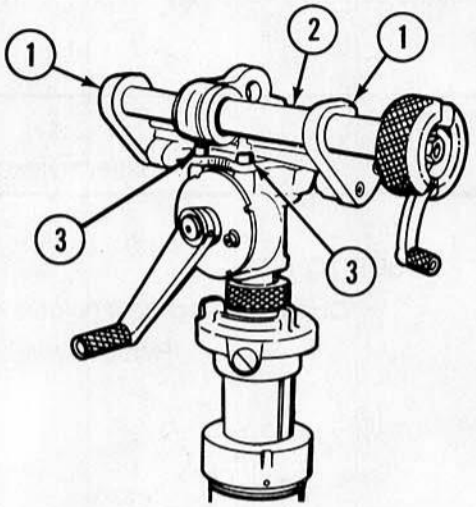
Evacuate to support maintenance.

Step 2. Check for damaged traversing sleeve housing (2).

Evacuate to support maintenance.

Step 3. Check for loose or missing screws (3) or setscrews.

Tighten any loose screws.
Evacuate to support maintenance if screws are missing.



2. DIFFICULTY IN ELEVATING OR DEPRESSING WEAPON.

Check for difficulty in elevating or depressing weapon.

Evacuate to support maintenance.

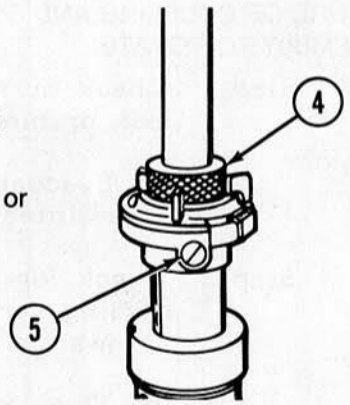
3. INABILITY TO LOCK STANDARD ASSEMBLY IN LOW OR HIGH RANGE POSITION.

Step 1. Check that elevating mechanism (4) can be locked in low or high range position.

Evacuate to support maintenance.

Step 2. Check for missing screws (5), springs, or plungers.

Evacuate to support maintenance.



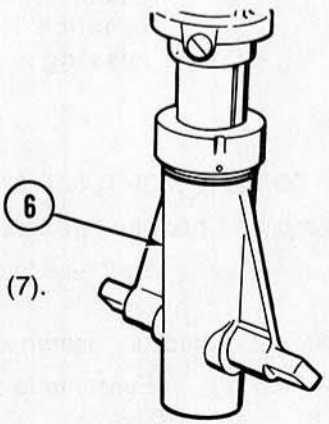
4. IMPROPER RECOIL.

Step 1. Check for cracked or deformed standard base (6).

Evacuate to support maintenance.

Step 2. Check for bent or dented shock absorber assemblies (7).

Evacuate to support maintenance.



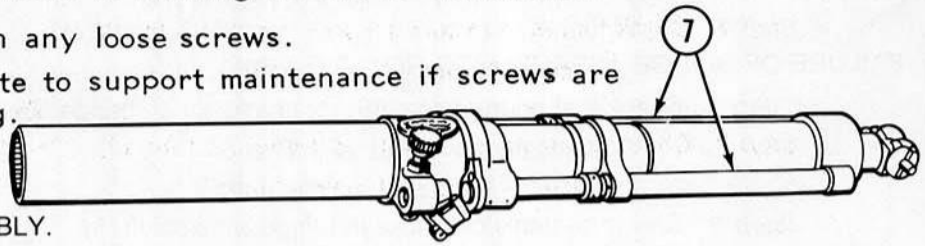
MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

MOUNT (CONT)

Step 3. Check for loose or missing screws or setscrews.

Tighten any loose screws.

Evacuate to support maintenance if screws are missing.



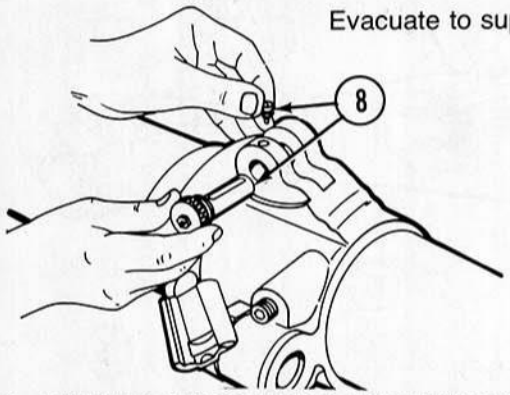
5. INSECURE STANDARD ASSEMBLY.

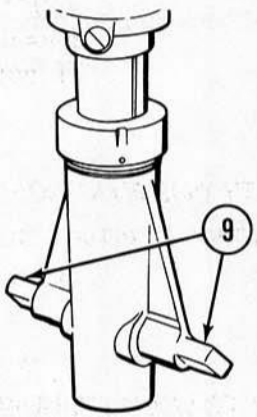
Step 1. Check for broken mortar locking pin assembly (8).

Replace pin (p 2-9).

Step 2. Check for broken or bent standard base trunnions (9).

Evacuate to support maintenance.





6. FAILURE OF ROTATOR TO TURN FREELY.

Step 1. Check for foreign matter between major components.

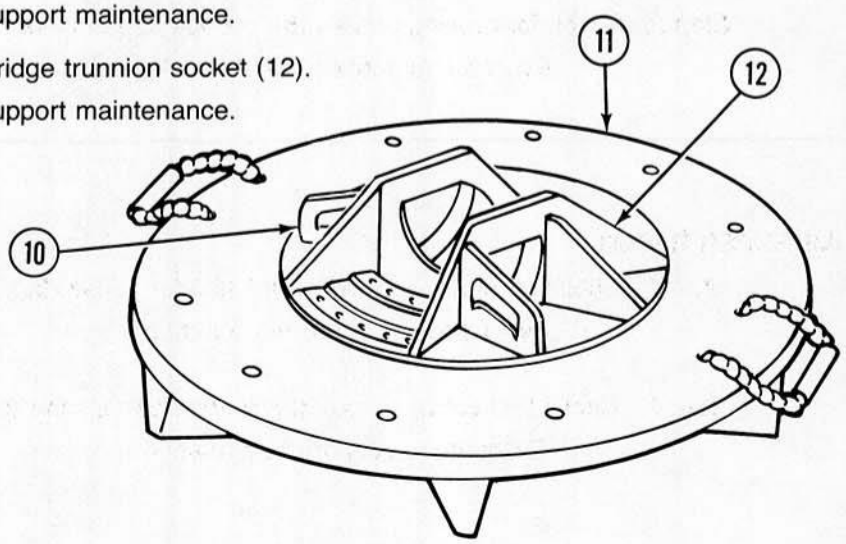
Clean and lubricate.

Step 2. Check for cracked or warped bearing surface of rotator (10) or mortar baseplate (11).

Evacuate to support maintenance.

Step 3. Check for cracked bridge trunnion socket (12).

Evacuate to support maintenance.



TROUBLESHOOTING (CONT)

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

MOUNT (CONT)

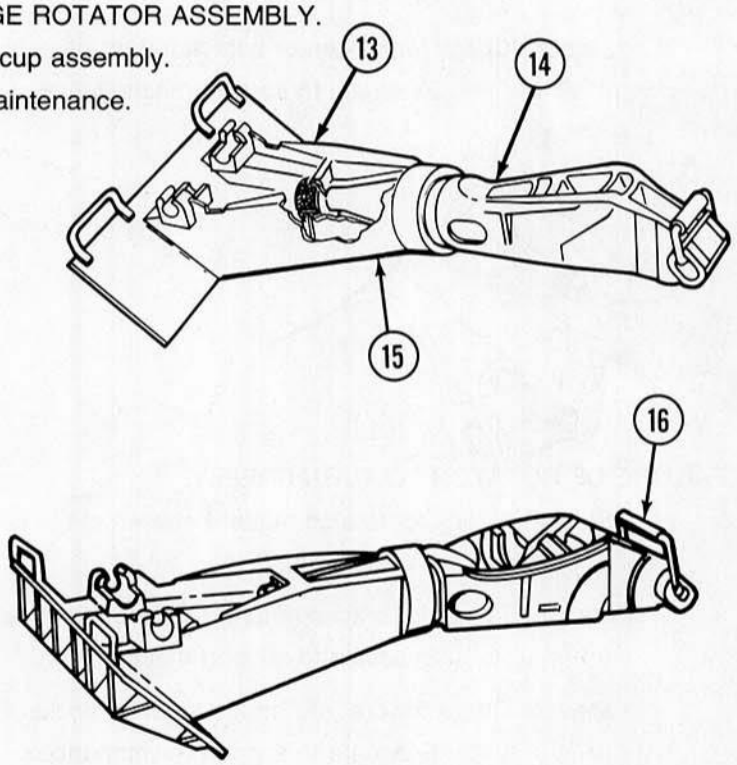
7. FAILURE OF BRIDGE ASSEMBLY TO ROTATE.

Step 1. Check that bridge body (13) rotates freely on bridge cup assembly (14).
Evacuate to support maintenance.

Step 2. Check for dents or cracks in bridge assembly (15).
Evacuate to support maintenance.

8. FAILURE OF BRIDGE ASSEMBLY TO ENGAGE ROTATOR ASSEMBLY.

Check for bent handle (16) on bridge cup assembly.
Evacuate to support maintenance.



Section V. MAINTENANCE PROCEDURES

2-10. COUPLING AND SIGHT MOUNT ASSEMBLY - MAINTENANCE INSTRUCTIONS.

This task covers disassembly/repair/reassembly.

INITIAL SETUP

Tools and Special Tools
Small Arms Repairman Tool Kit
(SC 5180-95-CL-A07)

Reference
TM 9-1015-215-10

Equipment Condition
M30 4.2-inch mortar cannon separated from M24A1 mount.

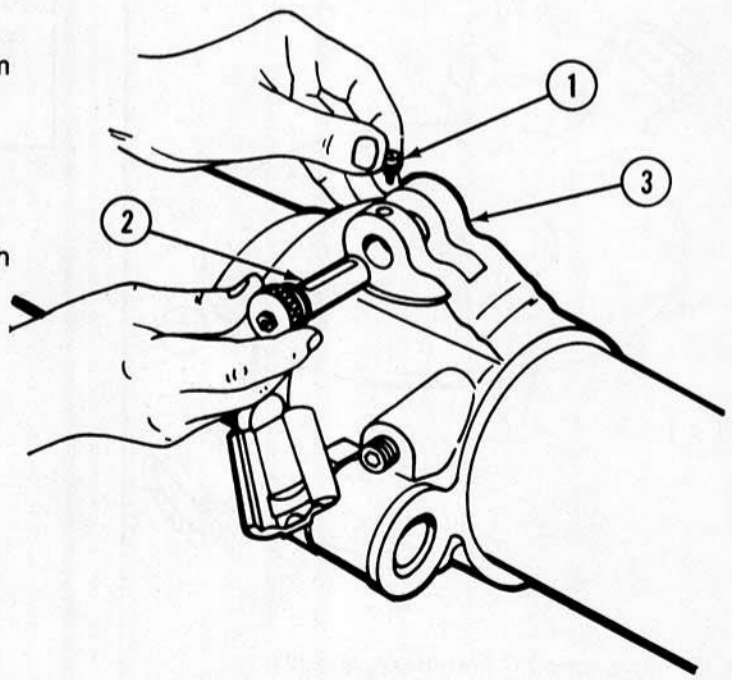
DISASSEMBLY/REPAIR/REASSEMBLY

a. Remove setscrew (1) and pin assembly (2) from coupling and sight mount assembly (3).

b. Replace authorized parts as required. See appendix C.

c. Install pin assembly (2) and aline the slot with setscrew hole in coupling and sight mount assembly (3).

d. Install setscrew (1).



2-11. MORTAR BASEPLATE - MAINTENANCE INSTRUCTIONS.

This task covers:

a. Disassembly b. Repair c. Reassembly

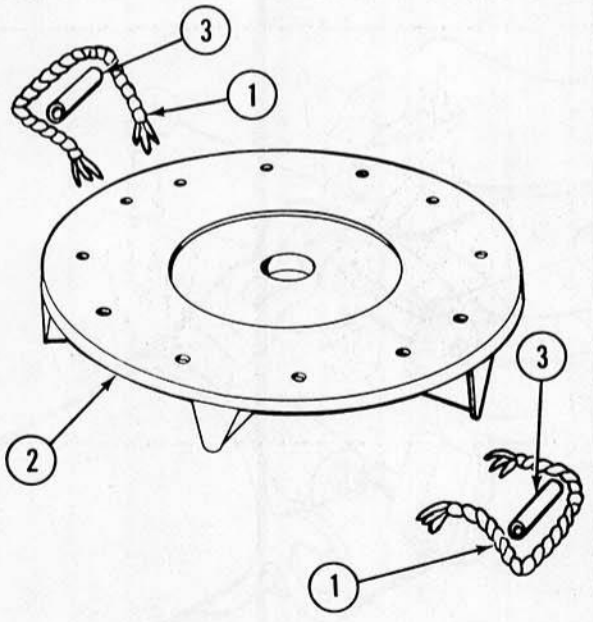
INITIAL SETUP

Tools and Special Tools
Small Arms Repairman Tool Kit
(SC 5180-95-CL-A07)

Reference
TM 9-1015-215-10

Equipment Condition
Mortar baseplate separated from M24A1 mount.

DISASSEMBLY



a. Remove rope (1) from baseplate (2).

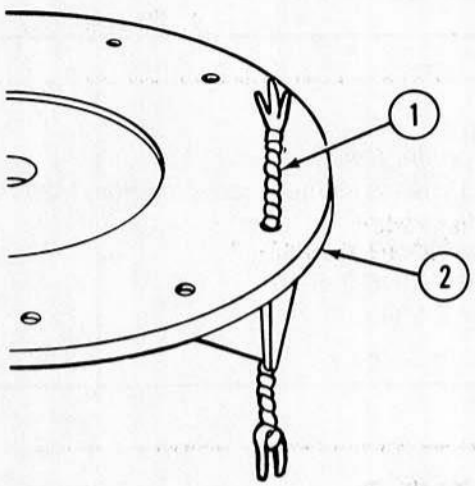
b. Remove handle (3).

REPAIR

Replace authorized parts as required. See appendix C.

REASSEMBLY

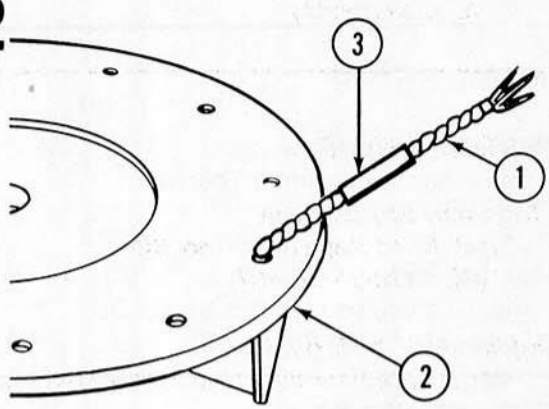
1



a. Insert unknotted end of rope (1) up through hole in baseplate (2).

b. Pull up on rope (1) until knot is against baseplate.

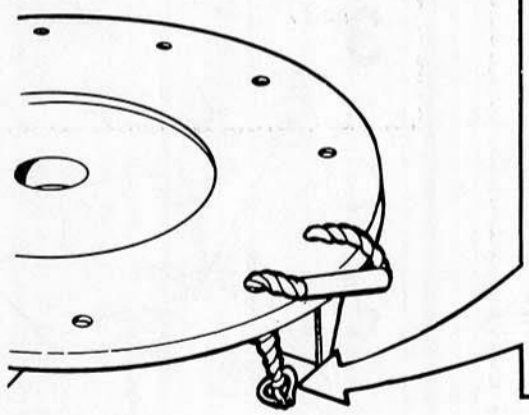
2



a. Install handle (3) on rope (1).

b. Insert unknotted end of rope (1) down through hole in baseplate (2).

3







a. Tie knot in rope (1) as shown at (A).

WARNING

Melted nylon rope can cause a severe burn.

NOTE

Use only enough heat to melt the rope strands together.

b. After tying knot, pull it tight and fuse the ends together as shown at (B).

c. To install the other handle, repeat steps 1 through 3 above.

2-12. SIGHTUNIT, M53 SERIES - MAINTENANCE INSTRUCTIONS.

This task covers:
a. Disassembly
b. Cleaning
c. Repair
d. Reassembly

INITIAL SETUP

Tools and Special Tools
Small Arms Repairman Tool Kit (SC 5180-95-CL-A07)

Materials/Parts
Cleaning compound (item 9, app D)
Lens paper (item 20, app D)

Equipment Condition
M53 series sightunit removed from M30 mortar.

References
TM 9-1015-215-10
TM 9-254

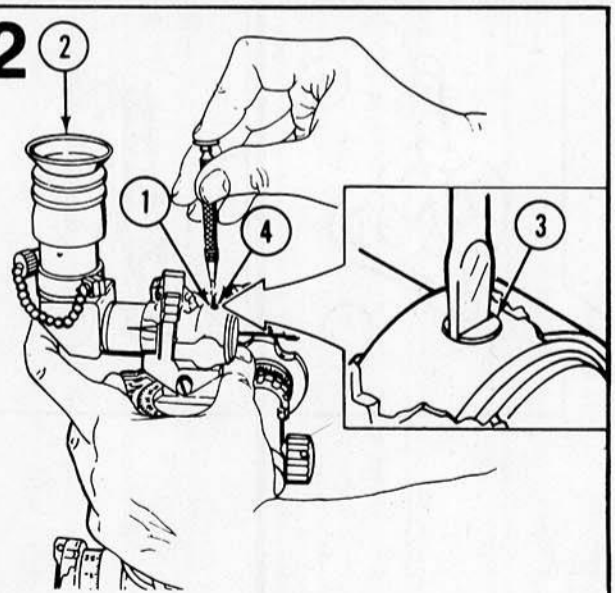
DISASSEMBLY

1

NOTE

A collar with three setscrews spaced 120° apart secures elbow telescope in the telescope mount.

2

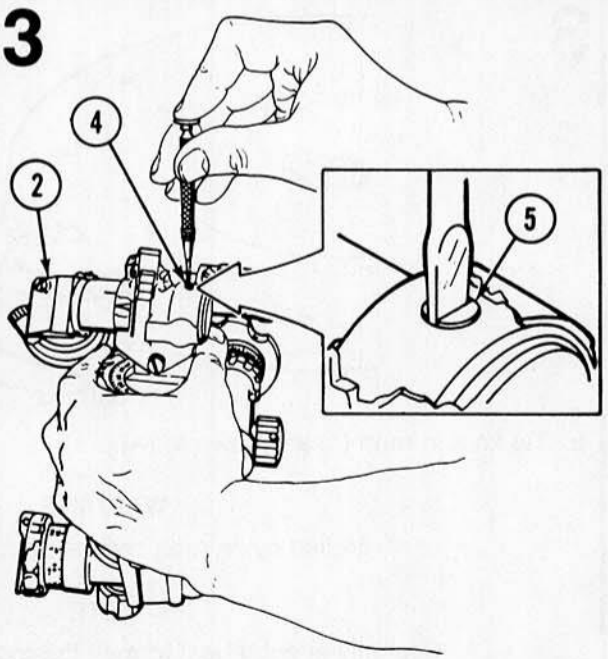


a. Release telescope locking clamp (1).

b. Turn elbow telescope (2) to the vertical position until setscrew (3) can be reached through hole (4).

c. Loosen setscrew (3).

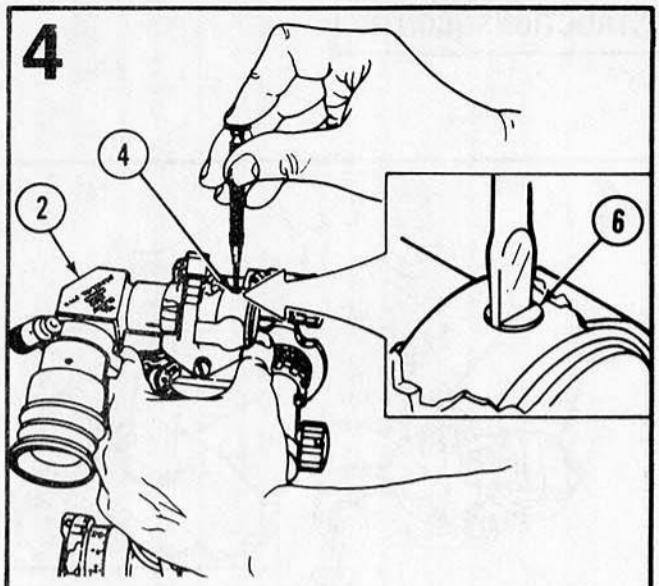
3



a. Turn elbow telescope (2) to the right until setscrew (5) can be reached through hole (4).

b. Loosen setscrew (5).

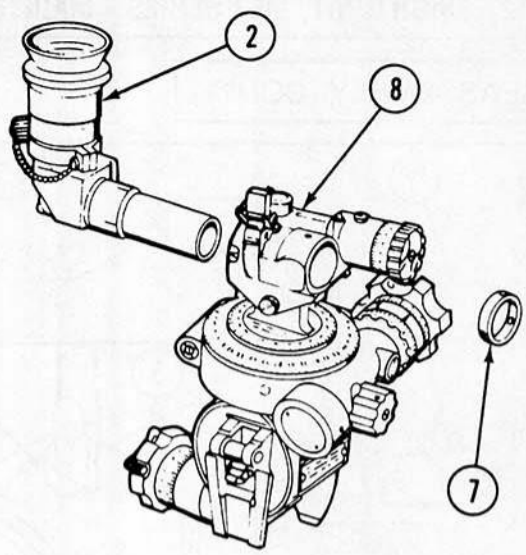
4



a. Turn elbow telescope (2) to the left until setscrew (6) can be reached through hole (4).

b. Loosen setscrew (6).

5



Remove elbow telescope (2) and collar (7) from telescope mount (8).

CLEANING

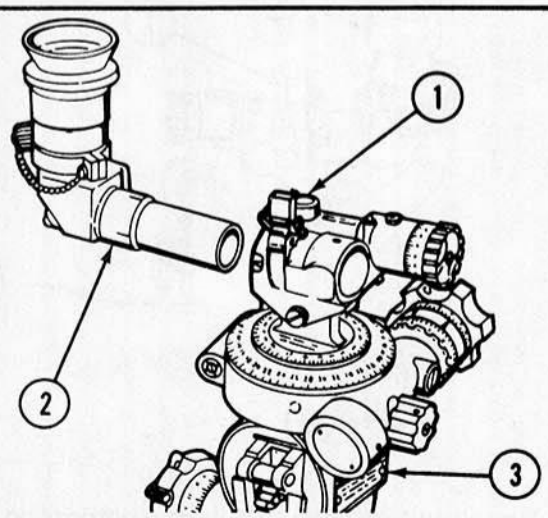
Refer to TM 9-254.

REPAIR

Replace authorized parts as required. See appendix C.

REASSEMBLY

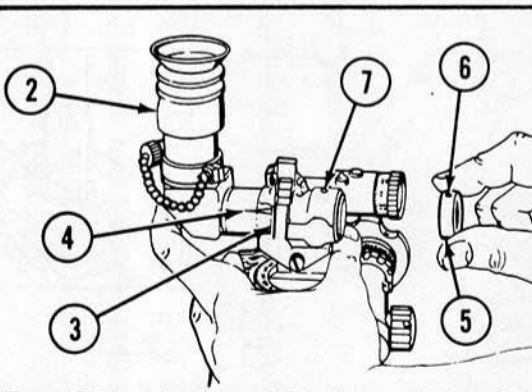
1



a. Release telescope locking clamp (1).

b. Insert elbow telescope (2) in telescope mount (3).

2



a. Turn elbow telescope (2) to the vertical position.

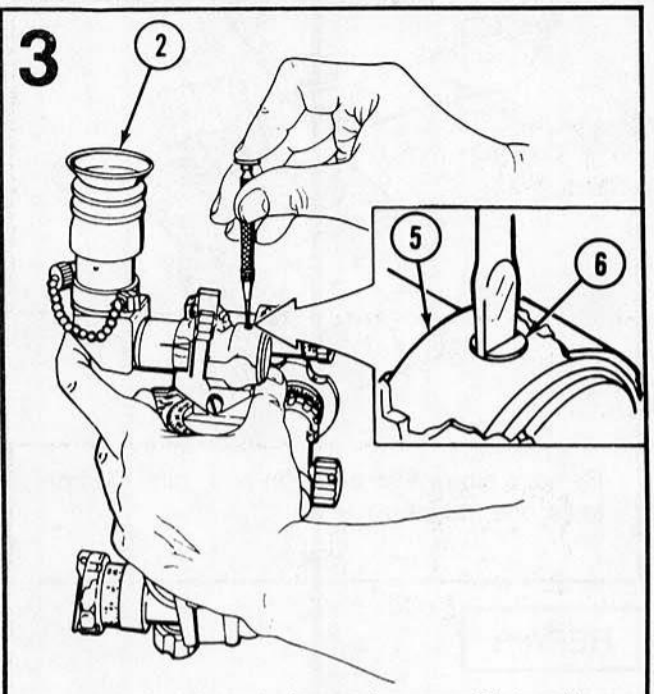
b. Aline reference mark (4) with indexing line on telescope mount (3). Hold elbow telescope in this position.

c. Start collar (5) on end of elbow telescope (2), then turn collar to aline setscrew (6) with hole (7).

2-12. SIGHTUNIT, M53 SERIES - MAINTENANCE INSTRUCTIONS (CONT).

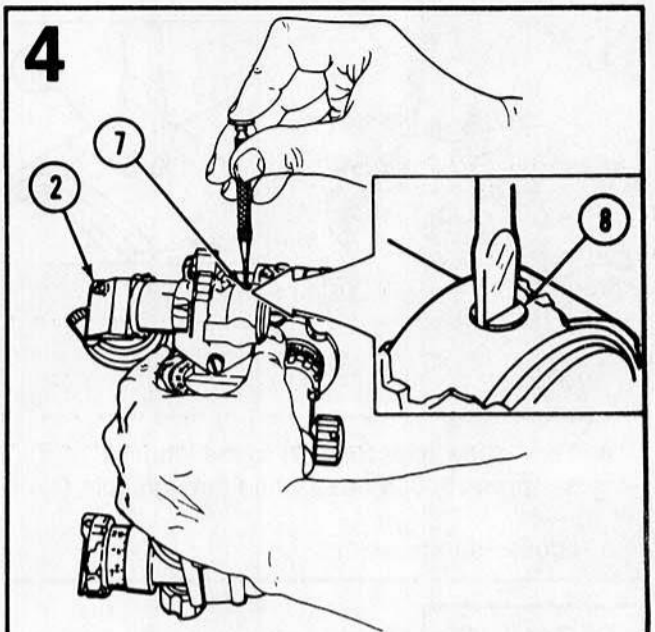
REASSEMBLY (CONT)

3



Push collar (5) and elbow telescope (2) together and tighten setscrew (6).

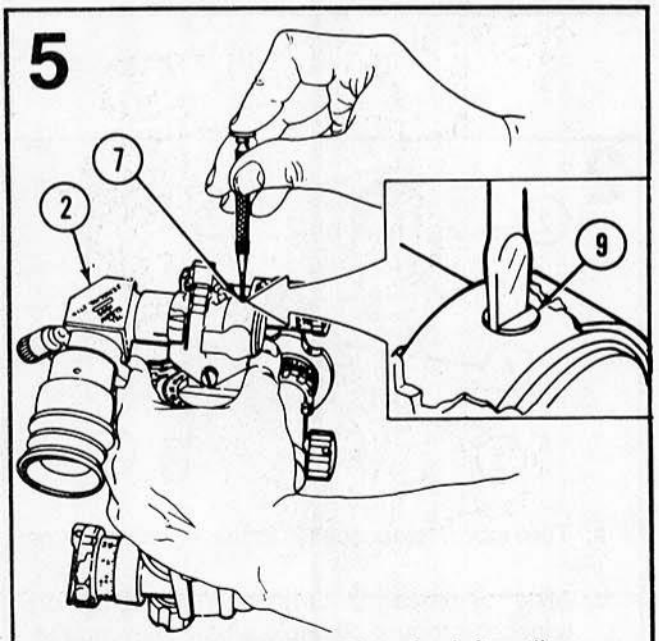
4



a. Turn elbow telescope (2) to the right until setscrew (8) can be reached through hole (7).

b. Tighten setscrew (8).

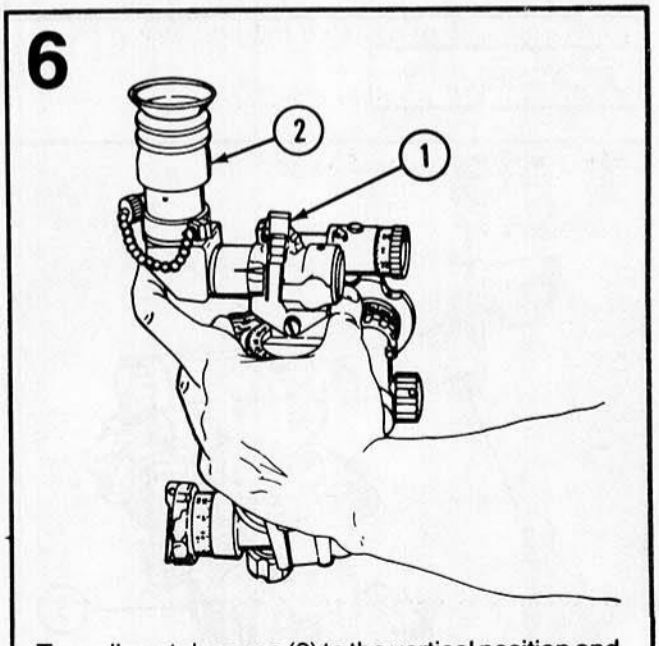
5



a. Turn elbow telescope (2) to the left until setscrew (9) can be reached through hole (7).

b. Tighten setscrew (9).

6



Turn elbow telescope (2) to the vertical position and secure telescope locking clamp (1).

2-13. ELBOW TELESCOPE, M109 - MAINTENANCE INSTRUCTIONS.

This task covers disassembly/cleaning/repair/reassembly.

INITIAL SETUP

Materials/Parts
Cleaning compound (item 9, app D)
Lens paper (item 20, app D)

References
TM 9-1015-215-10
TM 9-254

Equipment Condition
M53 series sightunit removed from M30 mortar.

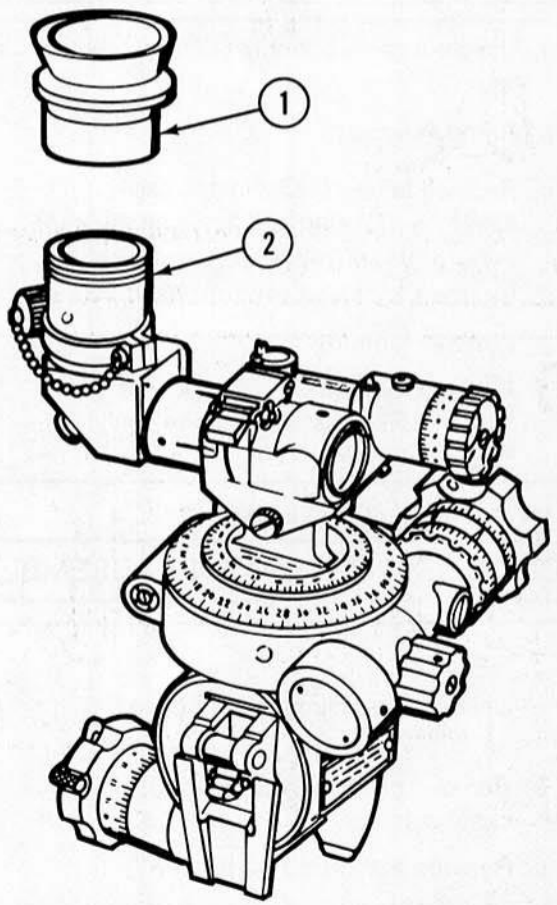
DISASSEMBLY/CLEANING/REPAIR/REASSEMBLY

a. Remove eyeshield (1) from elbow telescope (2).

b. Refer to TM 9-254 for cleaning.

c. Replace eyeshield. See appendix C.

d. Install eyeshield (1) on elbow telescope (2).



2-14. SPECIAL TOOLS (REPAIR PARTS) - MAINTENANCE INSTRUCTIONS.

This task covers disassembly/repair/reassembly of the:
a. M53E1 instrument light
b. M14 aiming post light
c. Artillery cleaning brush

INITIAL SETUP

Tools and Special Tools
Small Arms Repairman Tool Kit
(SC 5180-95-CL-A07)

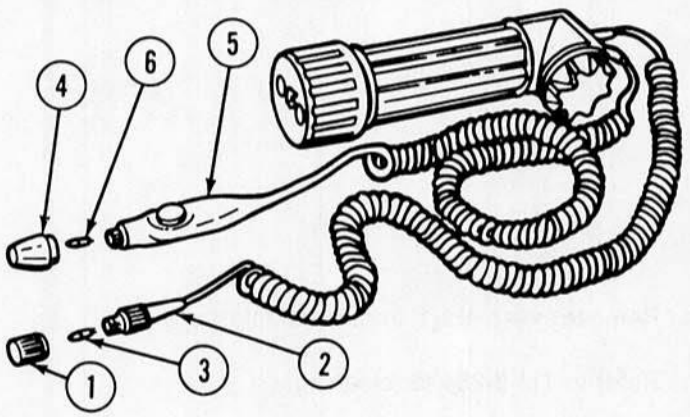
Reference
TM 9-1015-215-10

Materials/Parts
Incandescent lamp (item 17, app D)

a. M53E1 INSTRUMENT LIGHT

DISASSEMBLY/REPAIR/REASSEMBLY

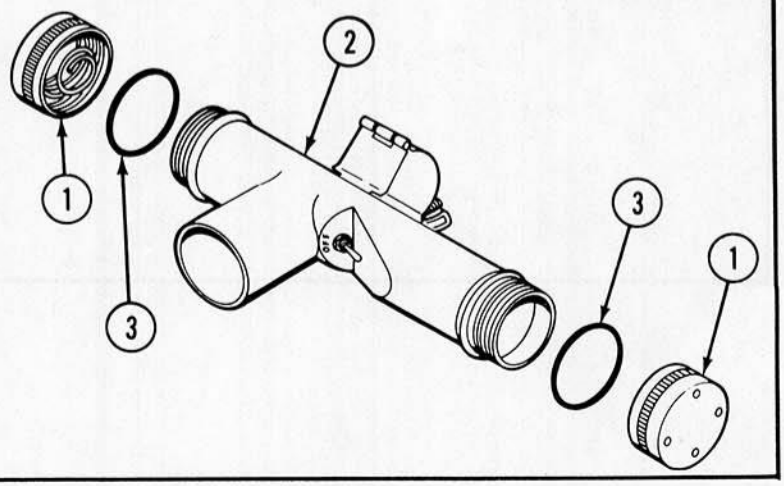
a. Unscrew cap assembly (1) from reticle light (2).
b. Remove lamp (3).
c. Replace lamp (3) and install cap assembly (1). Replace cap assembly (1) only if unserviceable.
d. Unscrew light lens (4) from hand light (5).
e. Remove lamp (6).
f. Replace lamp (6) and install light lens (4). Replace light lens (4) only if unserviceable.



b. M14 AIMING POST LIGHT

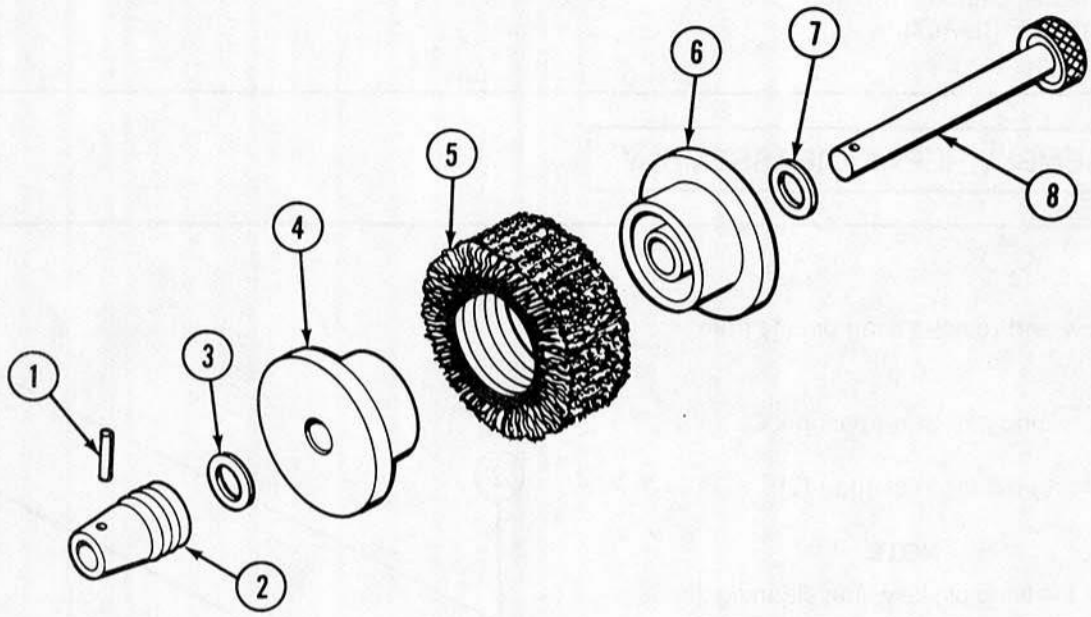
DISASSEMBLY/REPAIR/REASSEMBLY

a. Unscrew cap plug (1) from case assembly (2).
b. Remove preformed packing (3) from case assembly (2).
c. Replace authorized parts. See appendix C.
d. Place preformed packing (3) in case assembly (2) and screw cap plug (1) on case assembly (2).



c. ARTILLERY CLEANING BRUSH

DISASSEMBLY/REPAIR/REASSEMBLY



a. Drive spring pin (1) from adapter (2).

b. Remove adapter (2), washer (3), end cap (4), and artillery cleaning brush section (5).

c. Remove end cap (6) and washer (7) from pin (8).

d. Replace authorized parts. See appendix C.

e. Install washer (7), end cap (6), and new brush section (5) on pin (8).

f. Install second end cap (4), washer (3), and adapter (2) on pin (8).

g. Aline spring pin holes in adapter (2) with hole in pin (8).

h. Drive spring pin (1) into adapter (2) and pin (8). Pin should be below flush at both ends.

2-15. 60-MM MORTAR CANNON, M2 - MAINTENANCE INSTRUCTIONS.

This task covers disassembly/repair/reassembly.

INITIAL SETUP

Tools and Special Tools
Small Arms Repairman Tool Kit
(SC 5180-95-CL-A07)

Reference
FM 23-92

DISASSEMBLY/REPAIR/REASSEMBLY

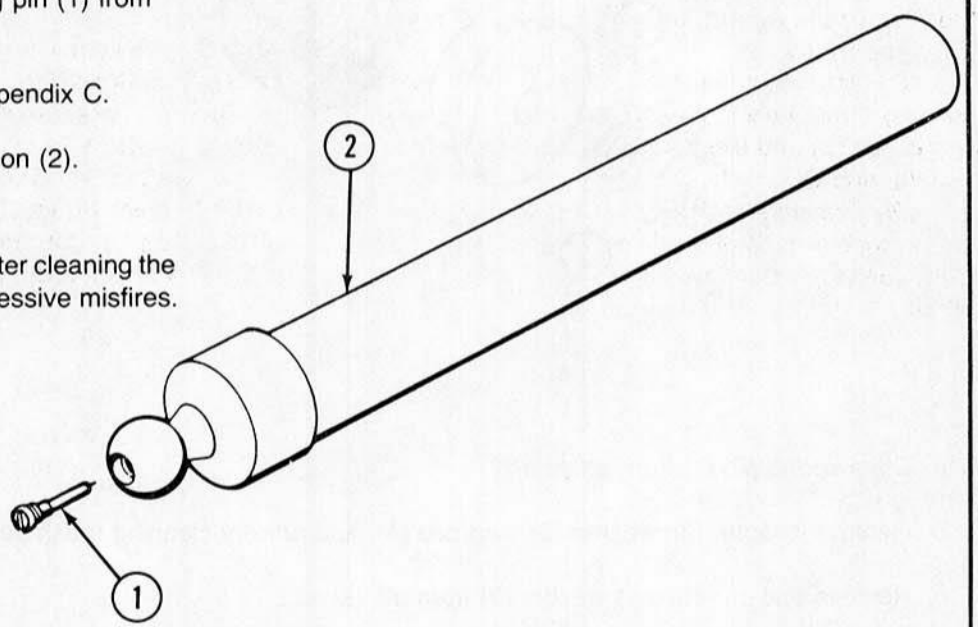
a. Unscrew and remove firing pin (1) from cannon (2).

b. Replace firing pin. See appendix C.

c. Install firing pin (1) in cannon (2).

NOTE

Seat the firing pin fully after cleaning the M2 cannon to avoid excessive misfires.



Section VI. LUBRICATION INSTRUCTIONS

2-16. LUBRICATION INSTRUCTIONS. Refer to TM 9-1015-215-10.

Section VII. PREPARATION FOR STORAGE OR SHIPMENT

2-17. ADMINISTRATIVE STORAGE. Refer to TM 740-90-1.

2-18. INTERMEDIATE STORAGE. Store the weapon under cover, in open sheds, or warehouses, whenever possible, and prepare it for storage as follows:

a. *General.*

(1) Package the mortar and equipment according to Packaging Data Sheet P11578503. If this is not possible, follow the instructions below as a minimum.

(2) Remove components and disassemble weapon prior to cleaning and packaging.

b. *Cleaning and Drying.* Clean the weapon, including the bore, with dry cleaning solvent (item 13, app D). Wipe dry using clean cloths.

c. *Preservation.* Coat the cannon bore liberally with lubricating oil (item 18, app D). Coat the other painted and unpainted surfaces of the cannon and mount assembly with artillery grease (item 16, app D).

d. *Packaging.*

(1) Wrap the mortar cannon and the mount assembly separately in greaseproof barrier material (item 2, app D) and close securely with 1 inch tape (item 23, app D).

(2) Preserve and wrap the BII and other small items in cushioning material (item 12, app D) and place in fiberboard boxes. Close with 2 inch tape (item 22, app D).

(3) Inclose a copy of DA Form 2408-4, Weapon Record Data and, when applicable, DA Form 2408-9, Proof Acceptance Record, in a plastic bag and secure to the wrapped mortar cannon with tape.

(4) Include the following information on the inside packaging sheet:

NATIONAL STOCK NUMBER
PART NUMBER
FEDERAL ITEM NAME
WEIGHT AND CUBE
SERIAL NUMBER

e. *Packing.* Pack in original shipping container (item 5, app D). Nail the box closed.

f. *Marking.* Mark shipping container with the following information:

DESTINATION
WEIGHT AND CUBE

g. *Preparation for Shipment of Small Component Items.*

(1) If a small breakable component such as a sightunit is the only item being shipped, use fast pack containers. These are available in a wide range of sizes through the GSA catalog.

(2) If the small item is durable metal, apply lubricating oil (item 18, app D) and wrap in barrier material (item 2, app D). Cushion (item 12, app D), mark, and place in a fiberboard box of appropriate size.

APPENDIX A
REFERENCES

A-1. SCOPE. This appendix lists all field manuals, technical manuals, and miscellaneous publications referenced in this manual.

A-2. FIELD MANUALS.

FM 21-11	First Aid for Soldiers
FM 23-92	Mortar, 4.2-inch

A-3. TECHNICAL MANUALS.

TM 9-254	General Maintenance Procedures for Fire Control Materiel
TM 9-1015-215-10	Operator's Manual for 4.2-inch Mortar, M30
TM 740-90-1	Administrative Storage of Equipment
TM 750-244-7	Procedures for Destruction of Equipment in Federal Supply Classifications 1000, 1005, 1010, 1015, 1020, 1025, 1030, 1055, 1090, and 1095 to Prevent Enemy Use

A-4. MISCELLANEOUS PUBLICATIONS.

CTA 8-100	Army Medical Department Expendable/Durable Items
CTA 50-970	Expendable/Durable Items (except: Medical, Class V, Repair Parts and Heraldic Items)
DA FORM 2028	Recommended Changes to Publications and Blank Forms
DA FORM 2408-4	Weapon Record Data
DA FORM 2408-9	Equipment Control Record
SC 5180-95-CL-A07	Tool Kit, Small Arms Repairman
DA PAM 310-1	Consolidated Index of Army Publications and Blank Forms
DA PAM 738-750	The Army Maintenance Management System (TAMMS)
DA PAM 750-10	US Army Equipment Index of Modification Work Orders
SF 364	Report of Discrepancy (ROD)
SF 368	Quality Deficiency Report (Category II)

APPENDIX B
MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

B-1. GENERAL.

a. This section provides a general explanation of all maintenance and repair functions authorized at various maintenance categories.

b. The Maintenance Allocation Chart (MAC) in section II designates overall authority and responsibility for the performance of maintenance functions on the identified end item or component. The application of the maintenance functions to the end item or component will be consistent with the capacities and capabilities of the designated maintenance categories.

c. Section III lists the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from section II.

d. Section IV contains supplemental instructions and explanatory notes for a particular maintenance function.

B-2. MAINTENANCE FUNCTIONS. Maintenance functions will be limited to and defined as follows: (except for ammunition MAC[1]).

a. *Inspect.* To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel).

b. *Test.* To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. *Service.* Operations required periodically to keep an item in proper operating condition, i.e., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases.

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

e. *Aline.* To adjust specified variable elements of an item to bring about optimum or desired performance.

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

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

h. *Replace.* To remove an unserviceable item and install a serviceable counterpart in its place. "Replace" is authorized by the MAC and is shown as the 3d position code of the SMR code.

[1]Exception is authorized for ammunition MAC to permit the redesignation/redefinition of maintenance function headings to more adequately identify ammunition maintenance functions. The heading designations and definitions will be included in the appropriate technical manual for each category of ammunition.

i. *Repair.* The application of maintenance services[2], including fault location/ troubleshooting[3], removal/installation, and disassembly/assembly[4] procedures, and maintenance actions[5] to identify troubles and restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

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

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

B-3. EXPLANATION OF COLUMNS IN THE MAC, SECTION II.

a. *Column 1, Group Number.* Column 1 lists functional group code numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies, and modules with the next higher assembly. End item group number shall be "00."

b. *Column 2, Component/Assembly.* Column 2 contains the names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

c. *Column 3, Maintenance Function.* Column 3 lists the functions to be performed on the item listed in Column 2. (For detailed explanation of these functions, see paragraph B-2.)

d. *Column 4, Maintenance Category.* Column 4 specifies, by the listing of a work time figure in the appropriate subcolumn(s), the category of maintenance authorized to perform the function listed in column 3. This figure represents the active time required to perform that maintenancefunction at the indicated category of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance categories, appropriate work time figures will be shown for each category. The work time figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions. This time includes preparation time (including any necessary disassembly/ assembly time), troubleshooting/fault location time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. The symbol designations for the various maintenance categories are as follows:

[2]Services - inspect, test, service, adjust, aline, calibrate, and/or replace.

[3]Fault locate/troubleshoot - The process of investigating and detecting the cause of equipment malfunctioning; the act of isolating a fault within a system or unit under test (UUT).

[4]Disassemble/assemble - encompasses the step-by-step taking apart (or breakdown) of a spare/functional group coded item to the level of its least componency identified as maintenance significant (i.e., assigned as SMR code) for the category of maintenance under consideration.

[5]Actions - welding, grinding, riveting, straightening, facing, remachinery, and/or resurfacing.

C ..... Operator or Crew
O ..... Organizational Maintenance
F ..... Direct Support Maintenance
H ..... General Support Maintenance
L ..... Specialized Repair Activity (SRA)[6]
D ..... Depot Maintenance

e. *Column 5, Tools and Equipment.* Column 5 specifies, by code, those common tool sets (not individual tools) and special tools, TMDE, and support equipment required to perform the designated function.

f. *Column 6, Remarks.* This column shall, when applicable, contain a letter code, in alphabetic order, which shall be keyed to the remarks contained in Section IV.

B-4. EXPLANATION OF COLUMNS IN TOOL AND TEST EQUIPMENT REQUIREMENTS, SECTION III.

a. *Column 1, Reference Code.* The tool and test equipment reference code correlates with a code used in the MAC, section II, Column 5.

b. *Column 2, Maintenance Category.* The lowest category of maintenance authorized to use the tool or test equipment.

c. *Column 3, Nomenclature.* Name or identification of the tool or test equipment.

d. *Column 4, National Stock Number.* The National stock number of the tool or test equipment.

e. *Column 5, Tool Number.* The manufacturer's part number.

B-5. EXPLANATION OF COLUMNS IN REMARKS, SECTION IV.

a. *Column 1, Reference Code.* The code recorded in column 6, Section II.

b. *Column 2, Remarks.* This column lists information pertinent to the maintenance function being performed as indicated in the MAC, section II.

[6]This maintenance category is not included in Section II, column (4) of the Maintenance Allocation Chart. To identify functions to this category of maintenance, enter a work time figure in the "H" column of Section II, column (4), and use an associated reference code in the Remarks column (6). Key the code to Section IV, Remarks, and explain the SRA complete repair application there. The explanatory remark(s) shall reference the specific Repair Parts and Special Tools List (RPSTL) TM which contains additional SRA criteria and the authorized spare/repair parts.

Section II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQPT	(6) REMARKS
			C	O	F	H	D		
00	MORTAR, 4.2-INCH, M30	Inspect	0.2	0.2					
		Service	1.0	1.0	16.0				
		Repair			0.5				
01	CANNON, 4.2-INCH MORTAR, M30	Inspect	0.1						
		Service	0.4	0.2					
		Replace			0.1				
		Repair			0.8			1, 2	
		Overhaul					13.0		
0101	Coupling and Sight Mount Assembly	Replace			0.1				B
		Repair		0.1	1.0			1, 2	C
010101	Gear, Worm Assembly	Replace			0.3			1, 2	
		Repair			0.1				
010102	Pin Assembly	Replace		0.1	0.1			1	
		Repair			0.2			2	
0102	Base, Coupling Assembly	Replace			0.1				
		Repair			0.1			1, 2	
0103	Shock Absorber Assembly	Service	0.1						
		Adjust			0.3			1, 2	
		Replace			1.0			1, 2	
		Repair			2.0			1, 2	
010301	Cushion Assembly	Replace			0.2			1, 2	A
		Repair			0.2			1, 2	
0104	Cannon 4.2-inch (Barrel Assembly)	Inspect			0.5			3, 4	B or I
		Replace			1.0			1, 2	
		Repair			0.2		1.0	1	
010401	Cap Assembly	Repair			0.2		0.5	1	
02	MOUNT M24A1, 4.2-INCH	Replace			0.2				
		Repair			0.8			1, 2	
		Overhaul					21.0		
0201	Standard, Mortar Mount Assembly	Inspect	0.1						
		Service	0.2	0.2					
		Replace			0.1				
		Repair			3.0			1, 2, 5	

Section II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQPT	(6) REMARKS
			C	O	F	H	D		
020101	Slide, Traversing Assembly	Replace			0.5				
		Repair			1.0			1, 2	
02010101	Wheel, Traversing Assembly	Replace			0.2				
		Repair			0.5			1, 2	
02010102	Support, Traversing Slide Assembly	Replace			0.3				
		Repair			1.0			1, 2	
0201010201	Screw and Sleeve Assembly	Replace			0.5				
		Repair			1.0			1, 2	
020102	Gear and Handle Assembly	Replace			0.5				
		Repair			1.0			1, 2	
020103	Elevating Screw and Housing Assembly	Replace			0.5				
		Repair			1.0			1, 2	
0202	Bridge Assembly	Inspect	0.1						
		Replace			0.1				
		Repair			1.0			1, 2	
020201	Nut Assembly	Replace			0.2				
		Repair			0.2			1, 2	
020202	Bridge Cup Assembly	Replace			0.1				
		Repair			0.5			1, 2	
0203	Rotator Assembly	Inspect	0.1						
		Replace			0.1				
		Repair			1.0		3.0	1, 2	
0204	Mortar Baseplate	Inspect	0.1						
		Replace			0.1				
		Repair		0.2	0.1		3.0	2	
03	SIGHTUNIT M53 SERIES	Inspect		0.1					
		Repair		0.1				2	D
		Replace		0.1					

Section II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQPT	(6) REMARKS
			C	O	F	H	D		
0301	Elbow Telescope M109	Inspect	0.1						
		Service	0.1						D
		Replace		0.1					
		Repair		0.1					
0302	Mount, Telescope M128/M128A1	Inspect	0.1						
		Adjust				1.0			C
		Service	0.1	0.1					
		Replace							
		Repair				10.0			
04	SPECIAL TOOLS (REPAIR PARTS)								
0401	Light, Instrument M53E1	Inspect	0.1						
		Replace	0.1						
		Repair	0.1	0.1					
0402	Light, Aiming Post: M14	Inspect	0.1						
		Adjust			1.0				
		Service	0.1						
		Replace	0.1		1.0				
		Repair		0.1	1.0			2	
0403	Optical Boresight M45A1								E
0404	Brush, Cleaning, Artillery	Inspect	0.1						
		Replace		0.1					
		Repair		0.2				2	
05	TRAINER, SUBCALIBER, 60-MM, M31	Inspect	0.1						H
		Service	0.2						
		Replace		0.1					
		Repair			0.1			1, 2	
0501	Cannon, 60-mm Mortar, M2	Inspect	0.1		0.5			3, 4	B or I
		Service	0.1						
		Replace			0.1				
		Repair		0.1				1, 2	
06	TRAINER, MORTAR, PNEUMATIC, M32A1								F or G

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS

(1) TOOL OR TEST EQUIP REF CODE	(2) MAINTENANCE CATEGORY	(3) NOMENCLATURE	(4) NATIONAL/NATO STOCK NUMBER	(5) TOOL NUMBER
1	F	Shop Set, Small Arms: Field Maintenance, Basic, Less Power	4933-00-754-0664	SC 4933-95-CL-A11
2	O	Tool Kit, Small Arms Repairman	5180-00-357-7770	SC 5180-95-CL-A07
3	F	Borescope: Cannon Bore Inspecting, M2 or	6650-00-587-0986	SC 6650-95-CL-E01
		Borescope M3	6650-01-063-0035	11584701
4	F	Accessory Outfit for Pullover Gages	4933-00-348-8652	SC 4933-95-CL-E09
5	F	Tool Set, Field Maintenance 4.2-inch Mortar Cannon M30, and 4.2-inch Mortar Mount M24 series	5180-00-713-2546	5910503

Section IV. REMARKS

REFERENCE CODE	REMARKS
A	Usable on shock absorber assembly 11578073 only.
B	Refer to TM 9-1000-202-14.
C	Refer to TM 9-1240-287-34.
D	Refer to TM 9-254.
E	Refer to TM 9-1240-278-12.
F	Refer to TM 9-6920-212-14.
G	Refer to TM 9-6920-212-24P.
H	Refer to FM 23-92.
I	Refer to TM 9-6650-235-13&P.

APPENDIX C
REPAIR PARTS AND SPECIAL TOOLS LIST

Section I. INTRODUCTION

C-1. SCOPE. This appendix lists and authorizes spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE); and other special support equipment required for performance of organizational maintenance of mortar. It authorizes the requisitioning, issue, and disposition of spares, repair parts and special tools as indicated by the Source, Maintenance and Recoverability (SMR) codes.

C-2. GENERAL. This Repair Parts and Special Tools List is divided into the following sections:

a. *Section II. Repair Parts List.* A list of spares and repair parts authorized by this RPSTL for use in the performance of maintenance. The list also includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending alphanumeric sequence, with the parts in each group listed in ascending figure and item number sequence. Bulk materials are listed in NSN sequence.

b. *Section III. Special Tools List.* A list of special tools, special TMDE, and other special support equipment authorized by this RPSTL for the performance of maintenance.

c. *Section IV. National Stock Number and Part Number Index.* A list, in National item identification number (NIIN) sequence, of all National stock numbers (NSN) appearing in the listings, followed by a list in alphanumeric sequence of all part numbers appearing in the listings. National stock numbers and part numbers are cross-referenced to each illustration figure and item number appearance.

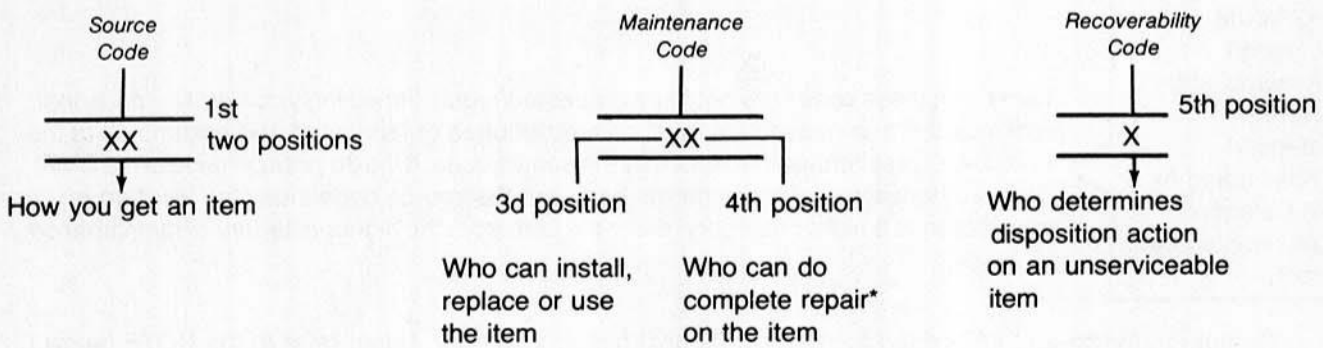
3. EXPLANATION OF COLUMNS.

a. *ILLUSTRATION (Column (1)).* This column is divided as follows:

(1) ((a) FIG NO.) Figure number. Indicates the figure number illustrating an exploded view of a functional group.

(2) ((b) ITEM NO.). Indicates the number used to identify items called out in the illustration.

b. *SMR CODE (Column (2)).* The Source, Maintenance, and Recoverability (SMR) code is a 5-position code containing supply/requisitioning information, maintenance category authorization criteria, and disposition instructions, as shown in the following breakout:



*Complete Repair: Maintenance capacity, capability, and authority to perform all the corrective maintenance tasks of the "Repair" function in a use/user environment in order to restore serviceability to a failed item.

(1) Source code. The source code tells you how you get an item needed for maintenance, repair, or overhaul of an end item/equipment. Source codes are always the first two positions of the SMR code. Explanations of source codes follow:

Code	*Explanation*
PA PB PC PD PE PF PG	Stocked items; use the applicable NSN to request/requisition items with these source codes. They are authorized to the category indicated by the code entered in the 3d position of the SMR code.
KD KF KB	Items with these codes are not to be requested/requisitioned individually. They are part of a kit which is authorized to the maintenance category indicated in the 3d position of the SMR code. The complete kit must be requisitioned and applied.
MO-(Made at Org/ AVUM Category) MF-(Made at DS/ AVIM Category) MH-(Made at GS Category) MD-(Made at Depot)	Items with these codes are not to be requested/requisitioned individually. They must be made from bulk material which is identified by NSN in the Description column and listed in the Bulk Material group in the repair parts list in this appendix. If the item is authorized to you by the 3d position code of the SMR code, but the source code indicates it is made at a higher category, order the item from the higher category of maintenance.
AO-(Assembled by Org/AVUM Category) AF-(Assembled by DS/AVIM Category) AH-(Assembled by GS Category) AD-(Assembled by Depot)	Items with these codes are not to be requested/requisitioned individually. The parts that make up the assembled item must be requisitioned or fabricated and assembled at the category of maintenance indicated by the source code. If the 3d position code of the SMR code authorizes you to replace the item, but the source code indicates the item is assembled at a higher category, order the item from the higher category of maintenance.

XA - Do not requisition an "XA"-coded item. Order its next higher assembly. (Also, refer to the NOTE below.)

XB - If an "XB" item is not available from salvage, order it using the FSCM and part number given.

XD - Item is not stocked. Order an "XD"-coded item through normal supply channels using the FSCM and part number given, if no NSN is available.

NOTE

Cannibalization or controlled exchange, when authorized, may be used as a source of supply for items with the above source codes, except for those source coded "XA" or those aircraft support items restricted by requirements of AR 700-42.

(2) Maintenance code. Maintenance codes tell you the category(s) of maintenance authorized to USE and REPAIR support items. The maintenance codes are entered in the third and fourth positions of the SMR Code as follows:

(a) The maintenance code entered in the third position tells you the lowest maintenance category authorized to remove, replace, and use an item. The maintenance code entered in the third position will indicate authorization to one of the following categories of maintenance.

Code	*Application/Explanation*
C	- Crew or operator maintenance done within organizational or aviation unit maintenance.
O	- Organizational or aviation unit category can remove, replace, and use the item.
F	- Direct support or aviation intermediate category can remove, replace, and use the item.
H	- General support category can remove, replace, and use the item.
L	- Specialized repair activity can remove, replace, and use the item.
D	- Depot category can remove, replace, and use the item.

(b) The maintenance code entered in the fourth position tells you whether or not the item is to be repaired and identifies the lowest maintenance category with the capability to do complete repair (i.e., perform all authorized repair functions). (NOTE: Some limited repair may be done on the item at a lower category of maintenance, if authorized by the Maintenance Allocation Chart (MAC) and SMR codes.) This position will contain one of the following maintenance codes.

Code	*Application/Explanation*
O	- Organizational or aviation unit is the lowest category that can do complete repair of the item.
F	- Direct support or aviation intermediate is the lowest category that can do complete repair of the item.
H	- General support is the lowest category that can do complete repair of the item.
L	- Specialized repair activity (designate the specialized repair activity) is the lowest category that can do complete repair of the item.
D	- Depot is the lowest category that can do complete repair of the item.
Z	- Nonreparable. No repair is authorized.
B	- No repair is authorized. (No parts or special tools are authorized for the maintenance of a "B"-coded item.) However, the item may be reconditioned by adjusting, lubricating, etc., at the user level.

(3) Recoverability code. Recoverability codes are assigned to items to indicate the disposition action on unserviceable items. The recoverability code is entered in the fifth position of the SMR Code as follows:

Recoverability Codes	*Definition*
Z	- Nonreparable item. When unserviceable, condemn and dispose of the item at the category of maintenance shown in 3d position of SMR Code.
O	- Reparable item. When uneconomically reparable, condemn and dispose of the item at organizational or aviation unit category.
F	- Reparable item. When uneconomically reparable, condemn and dispose of the item at the direct support or aviation intermediate category.
H	- Reparable item. When uneconomically reparable, condemn and dispose of the item at the general support category.
D	- Reparable item. When beyond lower category repair capability, return to depot. Condemnation and disposal of item not authorized below depot category.
L	- Reparable item. Condemnation and disposal not authorized below specialized repair activity.
A	- Item requires special handling or condemnation procedures because of specific reasons (i.e., precious metal content, high dollar value, critical material, or hazardous material). Refer to appropriate manuals/directives for specific instructions.

c. *NATIONAL STOCK NUMBER (Column (3)).* Lists the National stock number (NSN) assigned to the item. Use the NSN for requests/requisitions.

d. *FSCM (Column (4)).* The Federal Supply Code for Manufacturer (FSCM) is a 5-digit numeric code which is used to identify the manufacturer, distributor, or Government agency, etc., that supplies the item.

e. *PART NUMBER (Column (5)).* Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), 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.

NOTE

When you use an NSN to requisition an item, the item you receive may have a different part number from the part ordered, but go ahead and use or furnish it as the replacement part.

f. *DESCRIPTION (Column (6)).* This column includes the following information:

(1) The Federal item name and, when required, a minimum description to identify the item.

(2) Items that are included in kits and sets are listed below the name of the kit or set.

(3) Spare/repair parts that make up an assembled item are listed immediately following the assembled item line entry.

(4) NSN's for bulk materials are referenced in the description column in the line item entry for the item to be manufactured/fabricated.

(5) When the part to be used differs between serial numbers of the same model, the effective serial numbers are shown as the last line of the description.

(6) The USABLE ON CODE, when applicable (see paragraph C-4, SPECIAL INFORMATION).

(7) In the Special Tools List Section, the basis of issue (BOI) appears as the last line(s) in the entry for each special tool, special TMDE, and other special support equipment. When density of equipments supported exceeds density spread indicated in the basis of issue, the total authorization is increased proportionately.

g. *U/M (Column (7)).* The Unit of Measure (UM) indicates the measure (e.g., foot, gallon, pound) or count (e.g., each, dozen, gross) of a listed item. A two-character alpha code (e.g., FT, GL, LB, EA, DZ, GR) appears in this column to indicate the measure or count. If the U/M code appearing in this column differs from the Unit of Issue (U/I) code listed in the Army Master Data File (AMDF), request the lowest U/I that will satisfy your needs.

h. *QTY INC IN UNIT (Column (8)).* The Quantity Incorporated in Unit (QTY INC IN UNIT) indicates the quantity of the item used in the breakout shown on the illustration figure, which is prepared for a functional group, subfunctional group, or an assembly. A "V" appearing in this column in lieu of a quantity indicates that no specific quantity is applicable (e.g., shims, spacers).

C-4. SPECIAL INFORMATION. The illustrations in this appendix are identical to those published in TM 9-1015-215-30P. Only those parts coded "C" or "O" in the third position of the SMR Code are listed in the tabular listing; therefore, there may be a break in the item number sequence. Only illustrations containing organizational or aviation unit authorized items appear in this appendix.

C-5. HOW TO LOCATE REPAIR PARTS.

a. *When National Stock Number or Part Number is not Known:*

(1) First. Using the table of contents, determine the functional group or subfunctional group to which the item belongs. This is necessary since figures are prepared for functional groups and subfunctional groups, and listings are divided into the same groups.

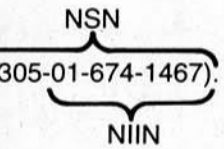
(2) Second. Find the figure covering the functional group or subfunctional group to which the item belongs.

(3) Third. Identify the item on the figure and note the item number of the item.

(4) Fourth. Refer to the Repair Parts List for the figure to find the line item entry for the item number noted on the figure.

b. *When National Stock Number or Part Number is Known:*

(1) First. Using the Index of National Stock Numbers and Part Numbers, find the pertinent National stock number or part number. The NSN index is in National Item Identification Number (NIIN)* sequence. The part numbers in the Part Number index are listed in ascending alphanumeric sequence. Both indexes cross-reference you to the illustration figure and item number of the item you are looking for.

*The NIIN consists of the last 9 digits of the NSN (i.e., 

).

(2) Second. After finding the figure and item number, verify that the item is the one you're looking for, then locate the item number in the repair parts list for the figure.

C-6. ABBREVIATIONS. Not applicable.

Section II. REPAIR PARTS LIST

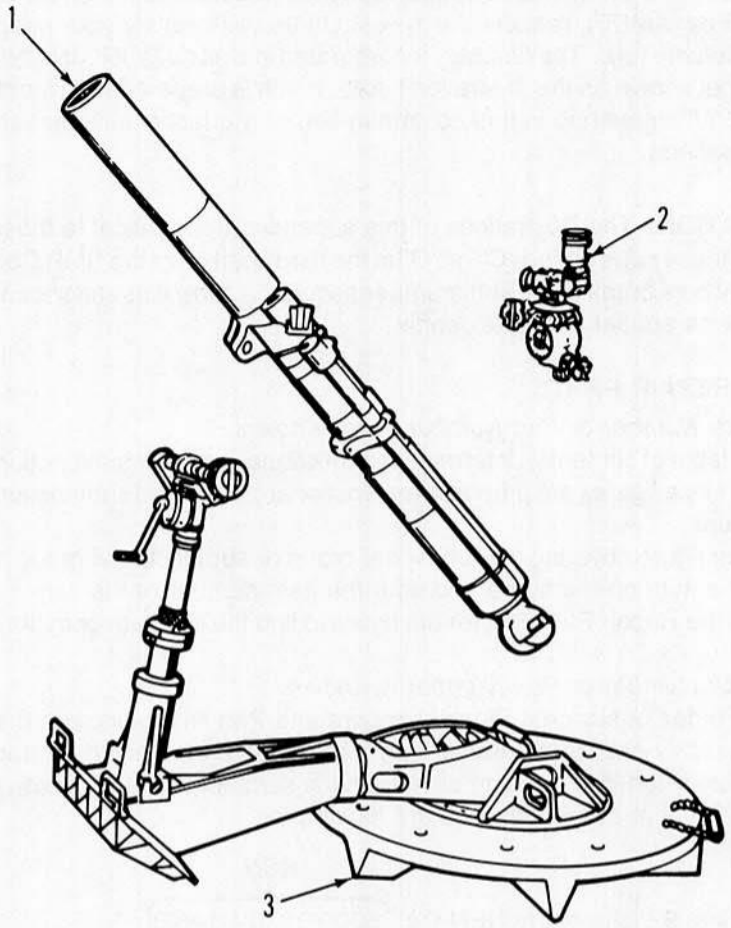


Figure C-1. Mortar, 4.2-inch, M30 8401840

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 00 MORTAR, 4.2-INCH, M30		
						8401840		
C-1	2	A0000		19200	10559698	SIGHTUNIT M53A1.....	EA	1
C-1	2	A0000		19200	8245971	SIGHTUNIT M53.....	EA	1

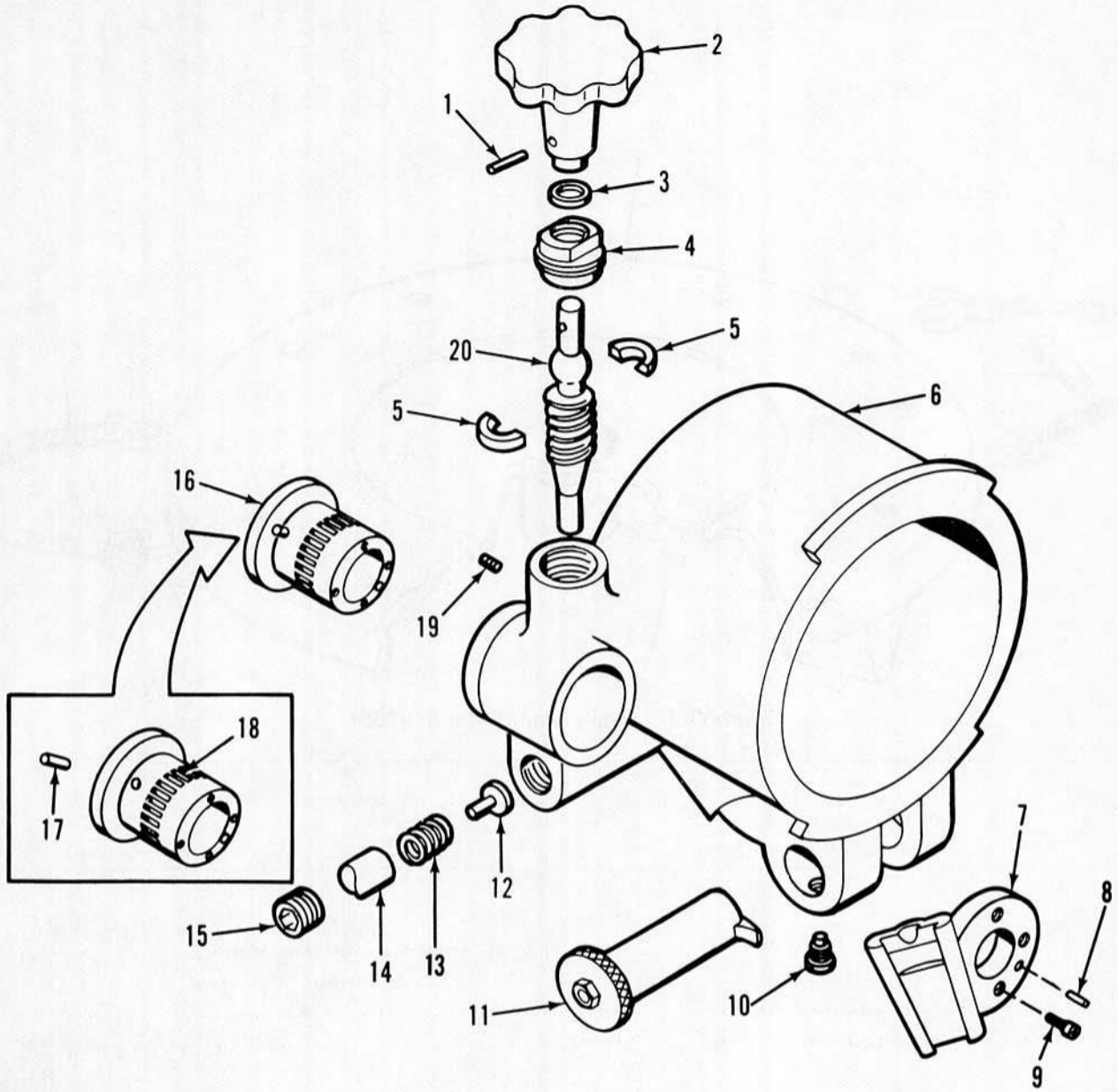


Figure C-2. Coupling and sight mount assembly 7144218

(1) ILLUSTRATION (a) FIG NO	(1) ILLUSTRATION (b) ITEM NO	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION / USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0101 COUPLING AND SIGHT MOUNT ASSEMBLY 7144218		
C-2	10	PAOZZ	5305-00-713-4364	19206	7134364	SETSCREW.....	EA	1
C-2	11	PAOFF	1015-00-713-6051	19206	7136051	PIN ASSEMBLY.....	EA	1

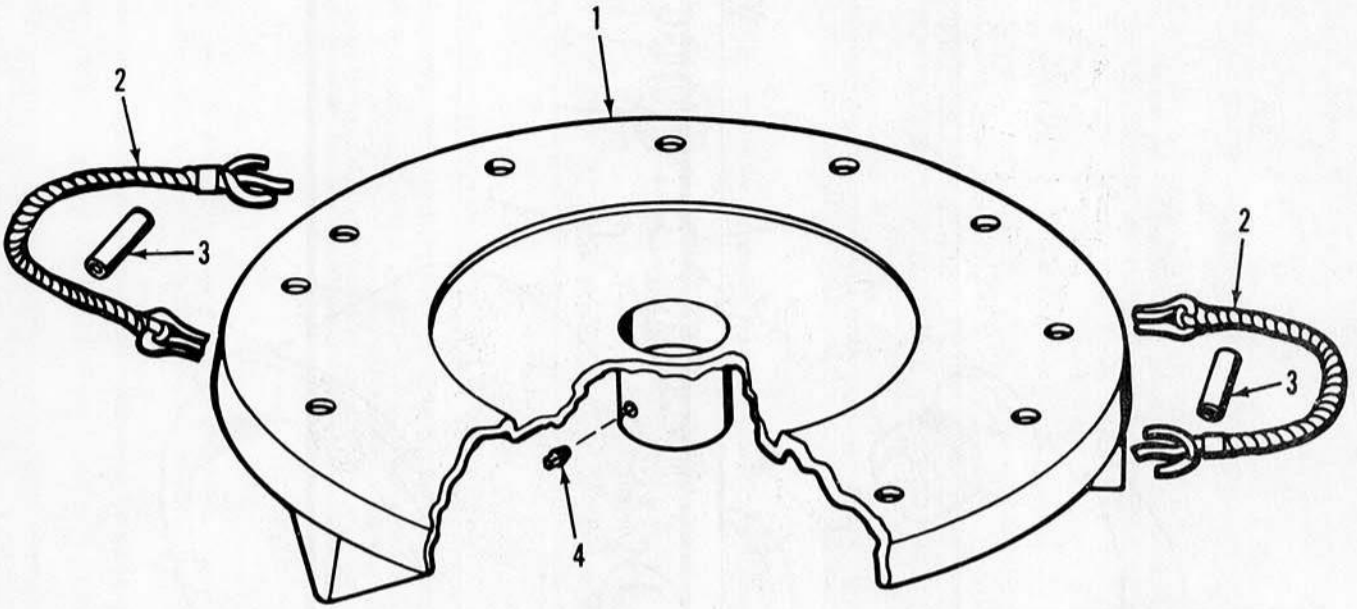


Figure C-3. Baseplate, Mortar 8401561

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION / USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0204 BASEPLATE, MORTAR		
						8401561		
C-3	2	PAOZZ	4020-00-714-4266	19206	7144266	ROPE, FIBROUS.....	EA	2
C-3	3	PAOZZ	1015-00-723-5790	19206	7235790	HANDLE.....	EA	2

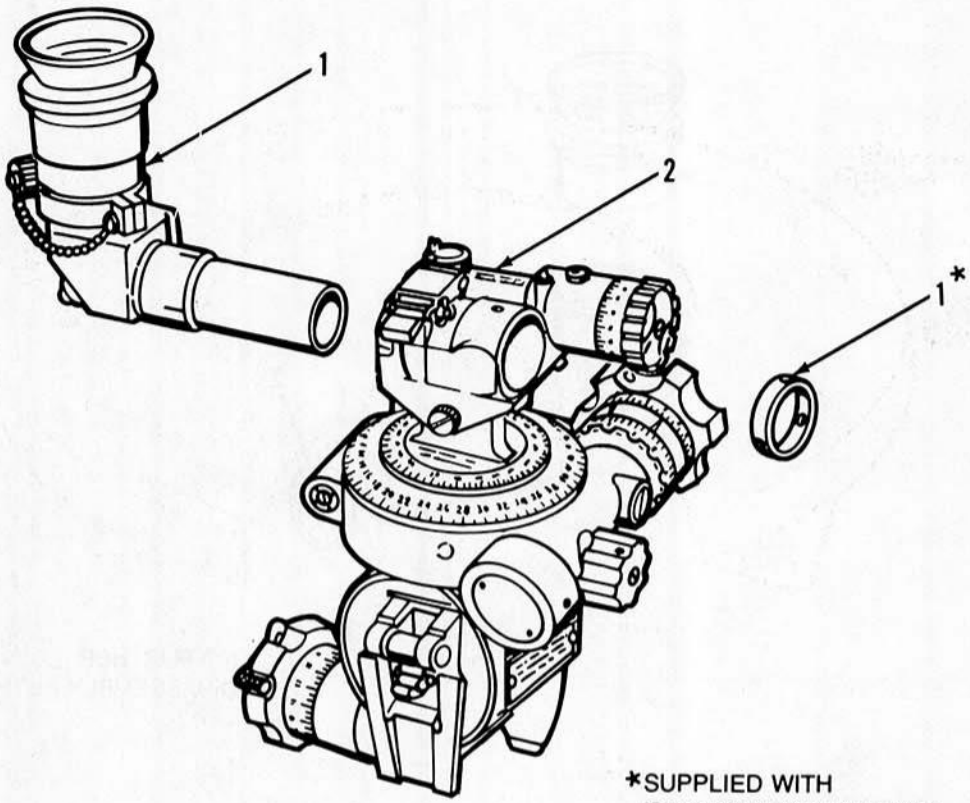
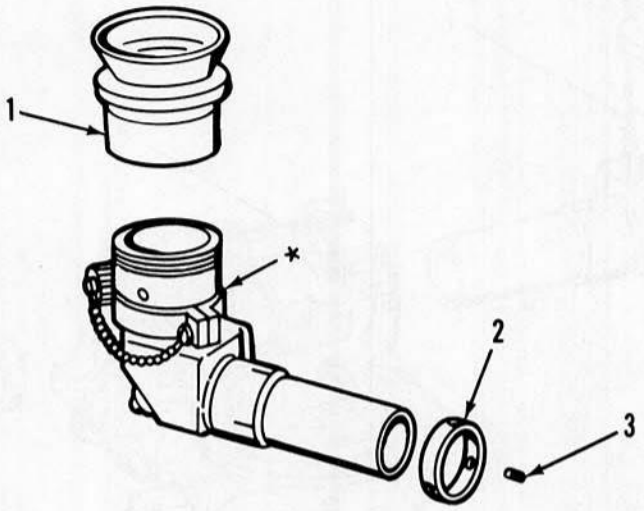


Figure C-4. Sightunit M53 series 8245971 and 10559698

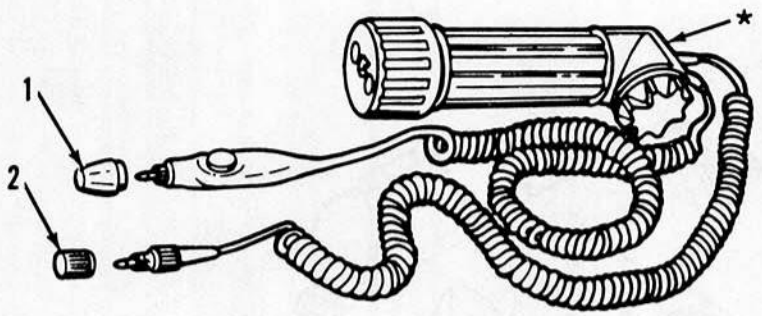
(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION / USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 03 SIGHTUNIT M53 SERIES		
						8245971 AND 10559698		
C-4	1	PAOOO	1240-00-823-5612	19200	8588780	TELESCOPE, ELBOW M109	EA	1
C-4	2	PAOHH	1240-00-181-4806	19200	10559699	MOUNT, TELESCOPE M128A1	EA	1
C-4	2	PAOHH	1240-00-823-5613	19200	8245970	MOUNT, TELESCOPE M128	EA	1



* NO FURTHER
DISASSEMBLY AUTHORIZED

Figure C-5. Elbow telescope M109 8588780

(1) ILLUSTRATION (a) FIG NO	(1) ILLUSTRATION (b) ITEM NO	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION / USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0301 ELBOW TELESCOPE M109		
						8588780		
C-5	1	PAOZZ	1240-00-892-5517	19200	8588791	EYESHIELD, OPTICAL I.....	EA	1
C-5	2	PAOZZ	3040-00-520-6438	19200	5206438	COLLAR, SHAFT.....	EA	1
C-5	3	PAOZZ	5305-00-716-8035	96906	MS51974-1	SETSCREW.....	EA	3



★ NO FURTHER
DISASSEMBLY AUTHORIZED

Figure C-6. Light, instrument M53E1 10553463

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION / USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0401 LIGHT INSTRUMENT M53E1		
						10553463		
C-6	1	PAOZZ	6230-00-460-4715	19200	8579669	LENS, LIGHT.....	EA	1
C-6	2	PAOZZ	1290-00-186-0058	19200	11731197	CAP ASSEMBLY.....	EA	1

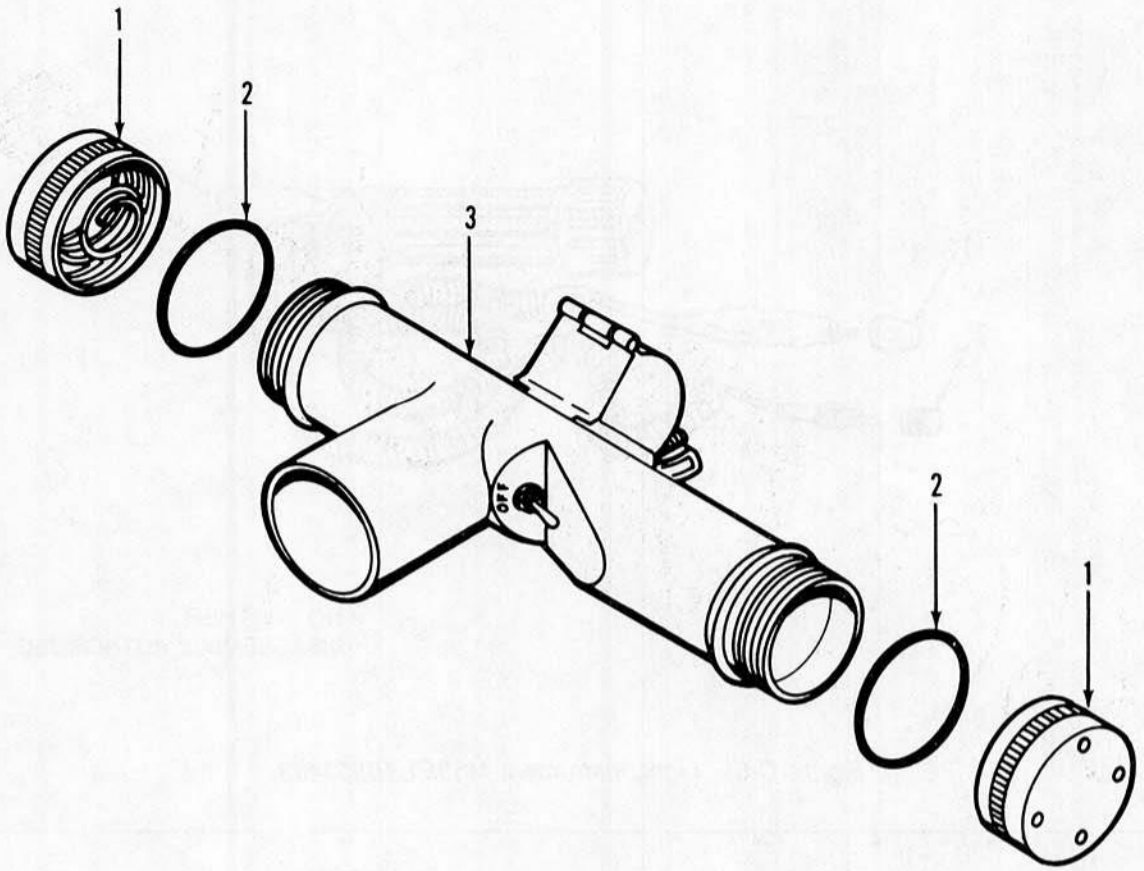


Figure C-7. Light, aiming post: M14 11785401

(1) ILLUSTRATION (a) FIG NO	(b) ITEM NO	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION / USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0402 LIGHT, AIMING POST: M14		
						11785401		
C-7	1	PAOZZ	5340-01-177-9217	19200	11785403	CAP-PLUG, PROTECTIVE.....	EA	2
C-7	2	PAOZZ	5330-00-250-0224	96906	MS29513-020	PACKING, PREFORMED.....	EA	2
C-7	3	XAOZZ		19200	11785406	CASE ASSEMBLY.....	EA	1

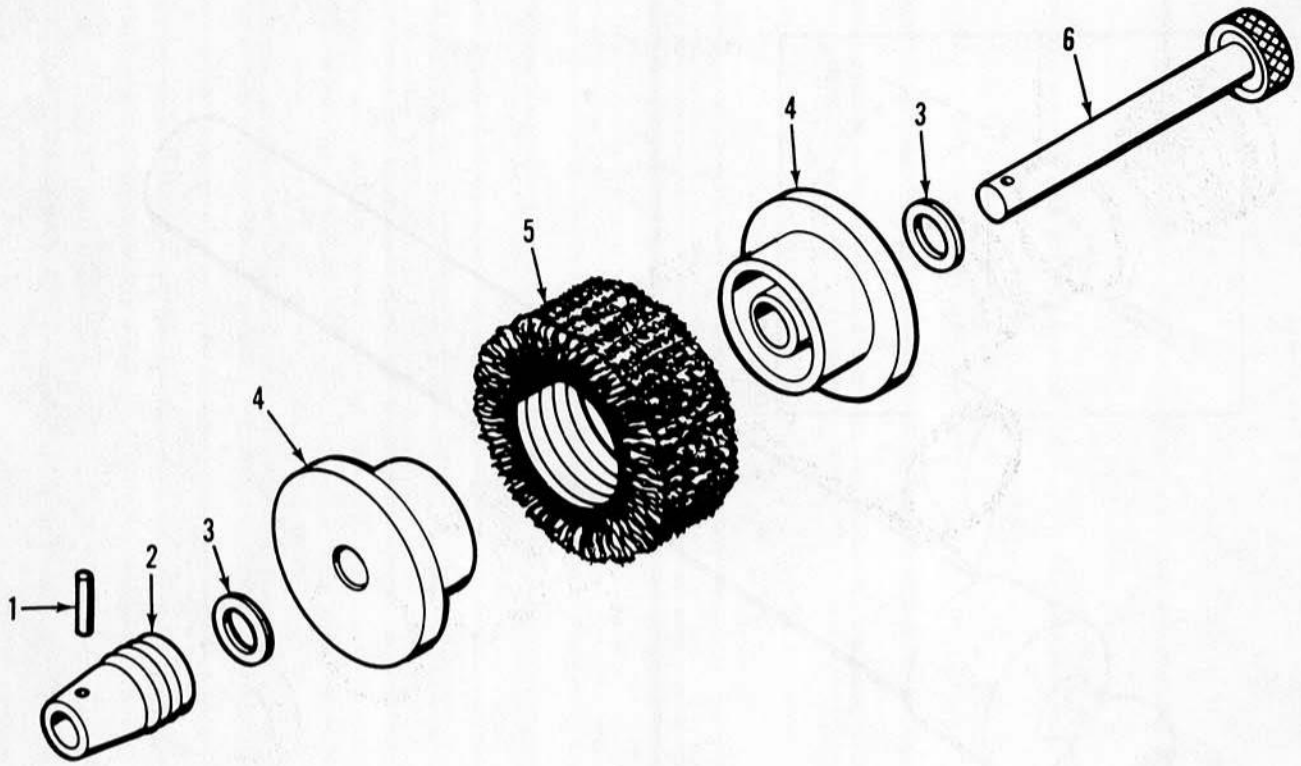


Figure C-8. Brush, cleaning, artillery 8768698

(1) ILLUSTRATION (a) FIG NO	(b) ITEM NO	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION / USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0404 BRUSH, CLEANING, ARTILLERY		
						8768698		
C-8	1	XAOZZ		96906	MS9048-138	PIN, SPRING	EA	1
C-8	2	XAOZZ		19206	8766029	ADAPTER, BORE BRUSH	EA	1
C-8	3	XAOZZ		96906	MS15795-118	WASHER, FLAT	EA	2
C-8	4	XAOZZ		19206	8766038	CAP, END	EA	2
C-8	5	PAOZZ	1015-00-615-7208	19207	6157208	BRUSH SECTION, CLEAN	EA	1
C-8	6	XAOZZ		19206	8768695	PIN	EA	1

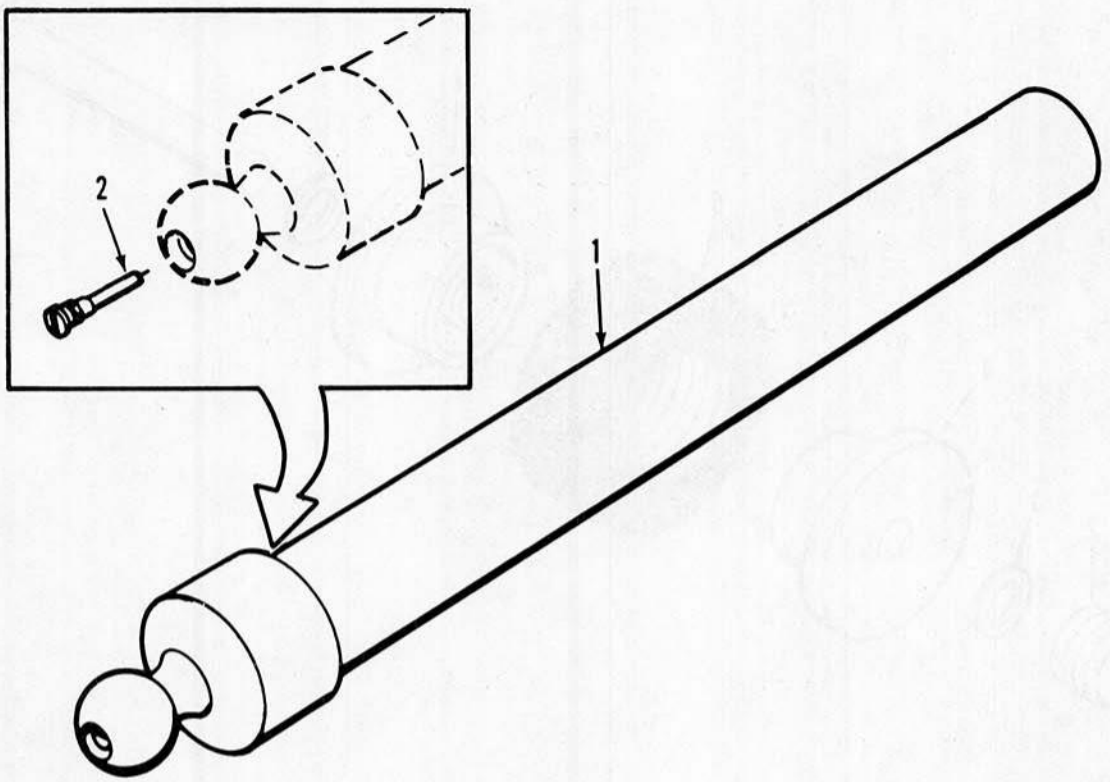


Figure C-9. Trainer, subcaliber, 60-mm, M31 8429878 and cannon, 60-mm mortar, M2 7238501

(1) ILLUSTRATION (a) FIG NO	(1) ILLUSTRATION (b) ITEM NO	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION / USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 05 TRAINER, SUBCALIBER, 60-MM, M31		
						8429878		
						AND		
						GROUP 0501 CANNON, 60-MM MORTAR, M2		
						7238501		
C-9	1	PAOFF	1010-00-723-8501	19206	7238501	CANNON, 60 MILLIMETE 60-MM MORTAR M2.....	EA	1
C-9	2	PAOZZ	1010-00-502-5272	19206	5025272	..PIN, FIRING.....	EA	1

Section III. SPECIAL TOOLS LIST

Section IV. NATIONAL STOCK NUMBER AND PART NUMBER INDEX

STOCK NUMBER	FIGURE NO.	ITEM NO.
1240-00-181-4806	C-4	2
1290-00-186-0058	C-6	2
5330-00-250-0224	C-7	2
6230-00-460-4715	C-6	1
1010-00-502-5272	C-9	2
3040-00-520-6438	C-5	2
1015-00-615-7208	C-8	5
5305-00-713-4364	C-2	10
1015-00-713-6051	C-2	11
4020-00-714-4266	C-3	2
5305-00-716-8035	C-5	3
1015-00-723-5790	C-3	3
1010-00-723-8501	C-9	1
1240-00-823-5612	C-4	1
1240-00-823-5613	C-4	2
1240-00-892-5517	C-5	1
5340-01-177-9217	C-7	1

FSCM	PART NUMBER	FIGURE NO.	ITEM NO.
96906	MS15795-118	C-8	3
96906	MS29513-020	C-7	2
96906	MS51974-1	C-5	3
96906	MS9048-138	C-8	1
19200	10559698	C-1	2
19200	10559699	C-4	2
19200	11731197	C-6	2
19200	11785403	C-7	1
19200	11785406	C-7	3
19206	5025272	C-9	2
19200	5206438	C-5	2
19207	6157208	C-8	5
19206	7134364	C-2	10
19206	7136051	C-2	11
19206	7144266	C-3	2
19206	7235790	C-3	3
19206	7238501	C-9	1
19200	8245970	C-4	2
19200	8245971	C-1	2
19200	8579669	C-6	1
19200	8588780	C-4	1
19200	8588791	C-5	1
19206	8766029	C-8	2
19206	8766038	C-8	4
19206	8768695	C-8	6

APPENDIX D
EXPENDABLE/DURABLE 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 4.2-inch mortar. This listing is for informational purposes only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items), or CTA 8-100, Army Medical Department Expendable/Durable Items.

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 (e.g., "Use cleaning compound, item 10, app D").

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

C - Operator/Crew
O - Organizational 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 Federal Supply Code for Manufacturer (FSCM) in parentheses followed by the part number.

e. *Column (5) - Unit of Measure (U/M).* Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., 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/DURABLE SUPPLIES AND MATERIALS LIST

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
1	C	6810-00-201-0906	ALCOHOL, DENATURED (81348) OE-760	PT
2	0		BARRIER MATERIAL: greaseproofed, waterproofed, flexible (81349) MIL-B-121	
		8135-00-292-9719	36 in. X 100 yds	RO
3	C	6135-00-120-1020	BATTERY, DRY (96906) MS75059 TYPE BA-30	EA
4	C	6135-00-930-0030	BATTERY, DRY: cold weather (81349) MIL-B-18 TYPE BA-3030	EA
5	0		BOX, WOOD: nailed and lockcornered (81348) PPP-B-621	
		N/A (SMR coded XB)	7.40 X 4.00 X 1.5 feet	EA

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
6	C	7920-00-205-2401	BRUSH, CLEANING TOOL AND PARTS: Chinese bristle, rd (81349) MILS43871	EA
7	C	8020-00-242-7266	BRUSH, PAINT (96906) MS16866 3 in. size	EA
8			**Deleted.**	
9			CLEANING COMPOUND, OPTICAL LENS: liquid (81349) MIL-C-43454	
	C	6850-00-227-1887	1 qt bottle	QT
	C	6850-00-392-9751	2 oz bottle	OZ
10			CLEANING COMPOUND, RIFLE BORE: (RBC) solution type (81349) MIL-C-372	
	C	6850-00-224-6657	8 oz can	OZ
	C	6850-00-224-6663	1 gal can	GL
11			CLOTH ABRASIVE: crocus (81348) P-C-458	
	C	5350-00-221-0872	50 sheet package	SH
12	O		CUSHIONING MATERIAL: cellulose (81348) PPP-C-843	
		8135-00-989-9889	20 in. X 50 feet	RO
13	C		DRY CLEANING SOLVENT: (SD) (81348) P-D-680	
		6850-00-281-1985	1 gal can	GL
14	C		ENAMEL: forest green (81349) MIL-E-52798	
		8010-00-111-7937	1 gal can	GL
15	C	8415-00-823-7457	GLOVES, CHEMICAL AND SOLVENT RESISTANT (TYPE 3) (81348) ZZ-G-381	PR

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
16	C		GREASE, AUTOMOTIVE AND ARTILLERY: (GAA) (81349) MIL-G-19204	
		9150-00-190-0905	6.5 lb can	LB
17	C	6240-00-635-9800	LAMP, INCANDESCENT (96906) MS510608-3	EA
18	C	9150-00-231-2361	LUBRICATING OIL, GENERAL PURPOSE (81349) MIL-L-3150	QT
19	C		LUBRICATING OIL, WEAPONS: (LAW) (81349) MILL14107	
		9150-00-292-9689	1 qt can	QT
20	C	6640-00-663-0832	PAPER, LENS: tissue, sheet form (81348) NNNP40	EA
21	C		RAG, WIPING (58536A) A-A-531	
		7920-00-205-1711	50 lb bale	LB
22	O		TAPE, PRESSURE SENSITIVE ADHESIVE: paperback, water resistant (81348) PPP-T-76	
		7510-00-297-6655	2 in. wide X 120 yd roll	YD
23	O		TAPE, PRESSURE SENSITIVE ADHESIVE (81348) PPP-T-42	
		7510-00-266-6712	1 in. wide X 60 yd roll	YD
24			THINNER, SYNTHETIC RESIN ENAMEL (81348) TT-T-306	
	C	8010-00-160-5791	1 pt can	PT
	C	8010-00-087-1953	1 qt can	QT
	C	8010-00-160-5794	1 gal can	GL

ALPHABETICAL INDEX

Subject *Page*

A

Administrative Storage 2-19
Aiming Post Light M14:
  Disassembly 2-16
  Reassembly 2-16
  Repair 2-16
Artillery Cleaning Brush:
  Disassembly 2-17
  Reassembly 2-17
  Repair 2-17

B

Baseplate, Mortar:
  Disassembly 2-10
  Reassembly 2-11
  Repair 2-10

C

Cannon M2, 60-mm Mortar:
  Disassembly 2-18
  Reassembly 2-18
  Repair 2-18
Coupling and Sight Mount Assembly:
  Disassembly 2-9
  Reassembly 2-9
  Repair 2-9

D

Destruction of Army Materiel to Prevent Enemy Use 1-1
Disassembly Procedures (See Specific Item)

E

Elbow Telescope M109:
  Cleaning 2-15
  Disassembly 2-15
  Reassembly 2-15
  Repair 2-15
Equipment Characteristics, Capabilities, and Features 1-1
Equipment Data 1-2
Equipment Description and Data 1-1
Expendable/Durable Supplies and Materials List D-1

G

General Information 1-1

Subject *Page*

I

Inspection Procedures (See Specific Item)
Instrument Light M53E1:
  Disassembly 2-16
  Reassembly 2-16
  Repair 2-16

L

Location and Description of Major Components 1-2
Lubrication Instructions 2-19

M

Maintenance Allocation Chart B-1
Maintenance Forms, Records, and Reports 1-1
Maintenance Instructions 2-1

N

Nomenclature Cross-Reference List 1-1

P

Preparation for Storage or Shipment 2-19
Preventive Maintenance Checks and Services (PMCS) 2-2

R

Reassembly Procedures (See Specific Item)
References A-1
Repair Parts List C-1
Repair Procedures (See Specific Item)
Reporting Equipment Improvement Recommendations (EIR) 1-1

S

Safety, Care, and Handling 1-2
Scope 1-1
Service Upon Receipt 2-1
Sightunit M53 Series:
  Cleaning 2-13
  Disassembly 2-12
  Reassembly 2-13
  Repair 2-13

T

Troubleshooting 2-4

By Order of the Secretary of the Army:

JOHN A. WICKHAM, JR.
General, United States Army
Chief of Staff

Official:

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

Distribution:
To be distributed in accordance with DA Form 12-40 Organizational Maintenance Requirements for Mortar, 4.2 inch M30 on Mount M24A1.

☆ U.S. GOVERNMENT PRINTING OFFICE : 1990 O - 261-872 (20699)

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS



THEN...JOT DOWN THE DOPE ABOUT IT ON THIS FORM, CAREFULLY TEAR IT OUT, FOLD IT AND DROP IT IN THE MAIL!

SOMETHING WRONG WITH THIS PUBLICATION?

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)
Your mailing address

DATE SENT
Date you filled out form

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 9-1015-215-20&P	11 Sep 84	Mortar, 4.2-inch: M30

BE EXACT...PIN-POINT WHERE IT IS

PAGE NO.	PARA-GRAPH	FIGURE NO.	TABLE NO.
2-1	2-5		

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

Change TM 9-1015-200-20 in Remarks column to read TM 9-1015-215-10

Reason: Wrong reference.

SAMPLE

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER E NUMBER
John Smith, S. SGT 793-XXXX

SIGN HERE: John Smith

TEAR ALONG DOTTED LINE

DA FORM 1 JUL 79 **2028-2**

PREVIOUS EDITIONS ARE OBSOLETE.

P.S. --IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS.

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS



THEN...JOT DOWN THE DOPE ABOUT IT ON THIS FORM, CAREFULLY TEAR IT OUT, FOLD IT AND DROP IT IN THE MAIL!

SOMETHING WRONG WITH THIS PUBLICATION?

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 9-1015-215-20&P	11 Sep 84	Mortar, 4.2-inch: M30

BE EXACT...PIN-POINT WHERE IT IS

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

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

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER E NUMBER

SIGN HERE:

TEAR ALONG DOTTED LINE

DA FORM 1 JUL 79 **2028-2**

PREVIOUS EDITIONS ARE OBSOLETE.

P.S. --IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS.

REVERSE OF DA FORM 2028-2

FILL IN YOUR UNIT'S ADDRESS

FOLD BACK

DEPARTMENT OF THE ARMY

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

POSTAGE AND FEES PAID
DEPARTMENT OF THE ARMY
DOD-314

U.S. MAIL

TEAR ALONG DOTTED LINE

Commander
US Army Armament, Munitions and Chemical Command
ATTN: AMSMC-MAS
Rock Island, IL 61201-9990

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS



THEN...JOT DOWN THE DOPE ABOUT IT ON THIS FORM, CAREFULLY TEAR IT OUT, FOLD IT AND DROP IT IN THE MAIL!

SOMETHING WRONG WITH THIS PUBLICATION?

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 9-1015-215-20&P	11 Sep 84	Mortar, 4.2-inch: M30

BE EXACT...PIN-POINT WHERE IT IS

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

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

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER E NUMBER

SIGN HERE:

TEAR ALONG DOTTED LINE

DA FORM 1 JUL 79 **2028-2**

PREVIOUS EDITIONS ARE OBSOLETE.

P.S. --IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS.

REVERSE OF DA FORM 2028-2

FILL IN YOUR UNIT'S ADDRESS

FOLD BACK

DEPARTMENT OF THE ARMY

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

POSTAGE AND FEES PAID
DEPARTMENT OF THE ARMY
DOD-314

U.S. MAIL

TEAR ALONG DOTTED LINE

Commander
US Army Armament, Munitions and Chemical Command
ATTN: AMSMC-MAS
Rock Island, IL 61201-9990

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS



THEN...JOT DOWN THE DOPE ABOUT IT ON THIS FORM, CAREFULLY TEAR IT OUT, FOLD IT AND DROP IT IN THE MAIL!

SOMETHING WRONG WITH THIS PUBLICATION?

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 9-1015-215-20&P	11 Sep 84	Mortar, 4.2-inch: M30

BE EXACT...PIN-POINT WHERE IT IS

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

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

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER E NUMBER

SIGN HERE:

TEAR ALONG DOTTED LINE

DA FORM 1 JUL 79 **2028-2**

PREVIOUS EDITIONS ARE OBSOLETE.

P.S. --IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS.

REVERSE OF DA FORM 2028-2

FILL IN YOUR UNIT'S ADDRESS

FOLD BACK

DEPARTMENT OF THE ARMY

OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE, $300

POSTAGE AND FEES PAID
DEPARTMENT OF THE ARMY
DOD-314

U.S. MAIL

TEAR ALONG DOTTED LINE

Commander
US Army Armament, Munitions and Chemical Command
ATTN: AMSMC-MAS
Rock Island, IL 61201-9990

THE METRIC SYSTEM AND EQUIVALENTS

LINEAR MEASURE

1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches
1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches
1 Kilometer = 1000 Meters = 0.621 Miles

WEIGHTS

1 Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces
1 Kilogram = 1000 Grams = 2.2 Lb
1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

SQUARE MEASURE

1 Sq Centimeter = 100 Sq Millimeters = 0.155 Sq Inches
1 Sq Meter = 10,000 Sq Centimeters = 10.76 Sq Feet
1 Sq Kilometer = 1,000,000 Sq Meters = 0.386 Sq Miles

CUBIC MEASURE

1 Cu Centimeter = 1000 Cu Millimeters = 0.06 Cu Inches
1 Cu Meter = 1,000,000 Cu Centimeters = 35.31 Cu Feet

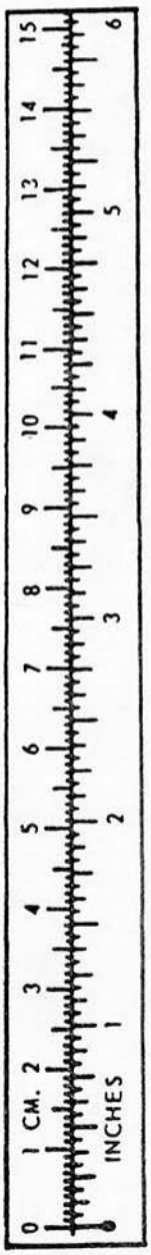
TEMPERATURE

$5/9\,(^{0}F - 32) = {}^{0}C$
212^{0} Fahrenheit is equivalent to 100^{0} Celsius
90^{0} Fahrenheit is equivalent to 32.2^{0} Celsius
32^{0} Fahrenheit is equivalent to 0^{0} Celsius
$9/5\,C^{0} + 32 = F^{0}$

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
Liters	Gallons	0.264
Grams	Ounces	0.035
Kilograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pound-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
Kilometers per Liter	Miles per Gallon	2.354
Kilometers per Hour	Miles per Hour	0.621



TA089991