MODIFICATION OF COMBAT VEHICLE, ANTI-TANK IMPROVED TOW VEHICLE, M901/M901A1 (2350-01-045-1123) (2350-01-103-5641)

REPLACEMENT OF AUXILIARY HYDRAULIC RESERVOIR AND INSTALLATION OF FLOOR PLATE CLEATS FOR IMPROVED CREW FOOTING

HEADQUARTERS, DEPARTMENT OF THE ARMY

29 MAY 1985

W A R N I N G

CARBON MONOXIDE CAN KILL. Never operate heater or engine of vehicle in an enclosed area unless it is ADEQUATELY VENTILATED.

HIGH VOLTAGE is used in the operation of this equipment. DEATH ON CONTACT may result if personnel fail to observe safety precautions.

EAR PROTECTION MUST BE WORN when vehicle is in operation or when using air chisel or riveting tools.

Wear face and eye protection when using powered grinders.

Do not WEAR WATCHES and JEWELRY while working on the BATTERY or on OTHER ELECTRIC COMPONENTS. Always DISCONNECT GROUND CABLE FIRST and CONNECT IT LAST. Make sure POLARITY (+ and -) is NOT REVERSED.

DRY CLEANING SOLVENTS are poisonous. Don't BREATHE IN FUMES. Make sure there is plenty of VENTILATION. Avoid contact with skin.

LEAVE VEHICLE at once when FIRE EXTINGUISHER is USED. CARBON DIOX-IDE used in fire extinguishers displaces oxygen in enclosed spaces and can result in suffocation.

Do not OPERATE TURRET with PERSONNEL or LOOSE OBJECTS on deck.

Low battery voltage during erection of launcher from stow or load position could cause failure of erection arm locks to engage and result in injury to personnel and damage to equipment. Before operating in stow or load mode, ensure battery is charged.

Disconnect power source before performing any corrective maintenance actions and at the completion of test procedures.

NORMAL

MWO effective date April 1985 and completion date September 1989

MWO 9-2350-259-20-1

MODIFICATION WORK ORDER

No 9-2350-259-20-1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, *29 MAY 1985*

MODIFICATION OF COMBAT VEHICLE, ANTI-TANK, IMPROVED TOW VEHICLE, M901/M901Al (2350-01-045-1123) (2350-01-103-5641)

REPLACEMENT OF THE AUXILIARY HYDRAULIC RESERVOIR AND FLOOR PLATE CLEATS FOR IMPROVED CREW FOOTING

REPORTING OF 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 directly to: Commander, US Army Tank-Automotive Command, ATTN: AMSTA-MB, Warren, MI 48397-5000. A reply will be furnished to you.

TABLE OF CONTENTS

TABLE OF CONTENTS — Continued

1. Purpose of Modification. The purpose of this modification is twofold. First is to install a molded nylon auxiliary hydraulic reservoir in place of the current reservoir. Second is to install traction cleats to the vehicle floor plate. The first modification will provide for a more reliable method of checking hydraulic fluid by deleting the present gage rod and, in its place, utilize ADD and FULL marks on the exterior of the new translucent reservoir. In addition, the hydraulic reservoir servicing tool, used for adding hydraulic fluid, will no longer be a necessary piece of Peculiar Support Equipment (PSE). This item will be replaced by a standard funnel which is currently part of a standard ITV tool kit. The second modification will improve crew footing.

2. Priority Classification. This modification is classified as NORMAL.

a. Equipment in Use (including equipment in supply or maintenance activities below depot level and equipment in administrative storage). Equipment in use will be modified as soon as practical but no later then the scheduled completion date. Equipment not modified after expiration of the Modification Work Order (MWO) completion data will be reported as NORM/NOT READY in accordance with applicable Army regulations.

b. Equipment in Wholesale Depot Supply or Maintemance Activities. All MWO, including MWO which have been incorporated into Depot Maintenance Work Requirement (DMWR), will be accomplished on serviceable materiel prior to issue and/or subsequent to scheduled completion data. Operational project stock stored at the depot will be modified concurrently with depot stock. Issue of unmodified materiel is prohibited. The MWO will be applied to unserviceable materiel during scheduled depot maintenance.

c. Propositioned Stock. Equipment which is propositioned will be modified during cycle maintenance and will be consistent with TM 38-450. Modification shall be accomplished prior to the MWO completion date.

3. End Item or System to be Modified. Modification will be in accordance with table 1.

Table 1. Vehicles to Be Modified

Nomenclature	NSN	Part No.	Serial No.
Combat Vehicle, Anti-Tank, Improved TOW Vehicle, M901/ M901A1	2350-01-045-1123 2350-01-103-5641	8736977 or 676000 8750063	0013 and Subsequent

4. Modules (Components, Assemblies, Subassemblies, Boards, and Cards) to Be Modified. Not applicable.

5. Part(s) to Be Modified. The following items, whether installed or in depot stock shall be modified. Items in stock shall be modified before issuing and so marked that it can be easily determined if modification has been accomplished.

a. Hydraulic Reservoir Modification Kit. Not appli - cable.

b. Floor Plate Cleat Modification Kit. Refer to table 2.

Table 2. Assemblies to Be Modified

Nomenclature	NSN	Part No.
Aft (rear) Floor Plate Assembly	2510-01-068-4050	19207-12266472
Left Floor Plate Assembly	2510-01-071-9815	19207-12266132
Right Floor Plate Assembly	2540-01-105-0776	19207-12265736

6. Application. Application of the modification is described in the following paragraphs.

a. Time Compliance Schedule. The MWO effective date is April 1985 and the completion date is September 1989.

b. Level of Maintenance. The lowest level of maintenance authorized to perform modification described by this MWO is organizational maintenance level.

c. Applied By. This modification shall be performed by the personnel listed in table 3.

Table 3. Personnel Required for Modification

Skill	Manhours
ITV/IFV/CFV Systems Mechanic (MOS 63T) or Equivalent	3

d. Time Required.

(1) Time for Completion of MWO Application to One End Item. Time for completion of MWO application to one end item is as follows:

NOTE

Hours indicated do not include administrative time.

(a) Total of 3 manhours using one man.

(b) Total of approximately 3 hours downtime for one end item.

(2) Time for Completion of One Assembly or Component. Not applicable.

(3) Time for Completion of One Part. Not applicable.

(4) MWOs *to be Applied Prior to the MWO.*

MWO 9-2350-259-50-1,	TOW Vehicle Power Conditioner (TVPC)
MWO 9-2350-259-50-2,	To convert the Combat Vehicle, Anti-Tank, Improved TOW Vehicle M901 to the M901A1 (TOW 2) configuration
MWO 9-2350-259-50-3,	Additional M901 modifications to be completed in conjunction with MWO 9-2350-259-50-2

7. Technical Publications Affected/Changed. Publications affected by this MWO are listed in table 4.

Table 4. Publications Affected

Publication	Date	Change No.
TM 9-2350-259-10	July 1979	Change 5
TM 9-2350-259-20	June 1979	Change 5
TM 9-2350-259-34	June 1979	Change 5
TM 9-2350-259-20P	December 1979	Change 4
TM 9-2350-259-34P	December 1979	Change 4
LO 9-2350-259-12	June 1981	Change 1
DMWR 9-2350-259	May 1983	
TM 9-2300-257-20	June 1979	Change 7

8. **Supply Kits, Parts, and Disposition.**

a. Kits/Parts Required to Accomplished MWO.

(1) General. The parts required to accomplish the MWO are described in table 5 and shown in figure 1.

(2) Parts. Information required to ship and store parts is provided in table 6.

b. Distribution and Issue Instructions.

(1) U.S. Forces. Requisition parts from depot.

(2) U.S. Army Depots. Requisition required parts through supply channels.

(3) Multiservice. Not applicable.

(4) *MAP/MAS Countries.* Not applicable.

c. *Bulk and Consumable Materials.* Bulk and consumable materials required to accomplish this MWO, but not supplied, are described in table 7.

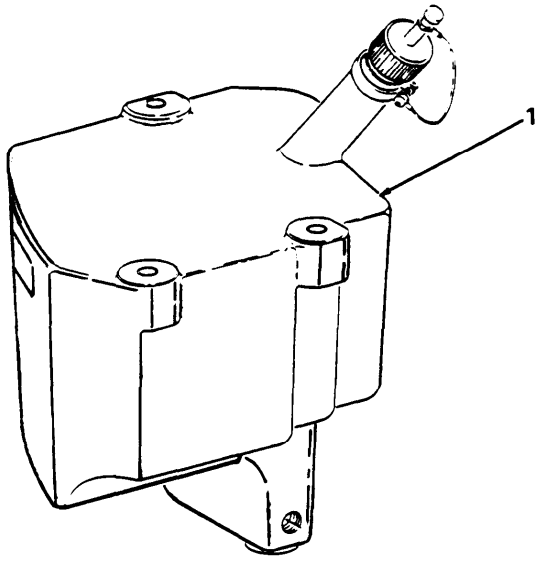
d. Parts Disposition. Dispose of all removed parts in accordance with local salvage regulations.

9. Common Tools; Special Tools; Jigs; Test, Measurement and Diagnostic Equipment (TMDE); and Fixtures Required. No special tools, jigs, TMDE, and fixtures are required to accomplish the modification. Table 8 provides a list of common tools. Tools in the common tools list may have several NSN, although only one is given. However, in most cases, similar tools may be substituted.

Table 5. Modification Parts

NSN	Item Name and Part No.	Qty Req'd per End Item	Figure and Item No.	
			Fig.	Item
	HYDRAULIC RESERVOIR MODIFICATION KIT (5705540)	1	1	
2590-01-172-7907	Reservoir Assembly, Auxiliary (12327896)	1	1	1
	Plate, Instruction (12327897)	1	1	2
	FLOOR PLATE CLEAT MODIFICATION KIT (5705533)	1	1	
5340-01-154-9997	Aft (rear) Floor Plate Traction Cleat (12298740)	2	1	3
5340-01-154-9998	Left Floor Plate Traction Cleat (12298741-1)	2	1	4
5340-01-154-9999	Right Floor Plate Traction Cleat (12298741-2)	2	1	5
5305-00-267-8975	Screw (MS90726-9)	14	1	6
5310-00-550-5054	Washer (MS15795-809)	25	1	7
5310-00-877-5796	Nut (MS21044N4)	11#	1	8

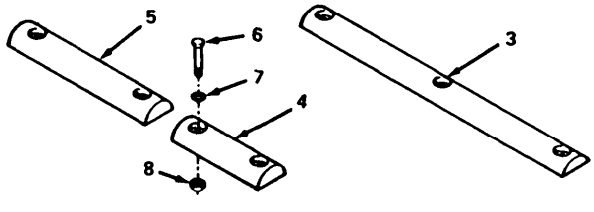
#Three bolts in aft floor plate have no nut because they go through the traction cleats and help secure the floor plate to the hull.



2

CHECKING/FILLING HYDRAULIC RESERVOIRS

1. PLACE VEHICLE ON LEVEL GROUND.
2. APPLY POWER AND ERECT LAUNCHER.
3. POSITION LAUNCHER AT ZERO DEGREES ELEVATION.
4. PLACE EPWR SWITCH TO EPWR POSITION AND BLEED DOWN HYDRAULIC PRESSURE BY MOVING CONTROL HANDLES IN AZIMUTH ONLY.
5. INSPECT ACCUMULATOR PRESSURE FOR 1000 +100 PSIG. IF LOW, SERVICE ACCUMULATOR BEFORE CONTINUING.
6. CHECK RESERVOIR SIGHT CLASS ON PRIMARY RESERVOIR. IF FLUID DOES NOT COVER GLASS, IS DISCOLORED. MILKY OR HAS BUBBLES PURGE AND REPLACE HYDRAULIC OIL.
7. CHECK FLUID LEVEL IN RESERVOIR, IF LOW ADD OIL TO FULL LINE.



TA 158273

Figure 1. Modification Parts.

Table 6. Part Number, Weight, Dimensions, Cube, and Security Classification

Part No.	Weight	Dimensions	Cube	Security Classification
5705540	3.0 lbs	1.04 X 0.77 X 0.85 ft	0.68 cubic ft	None
5705533	6.0 lbs	3.0 x 1.0 x 0.5 ft	1.5 cubic ft	None

Table 7. Bulk and Consumables

NSN	Nomenclature	Quantities
6810-00-184-4796	Acetone, Technical (O-A-51)	1 oz (approx)
7920-00-514-2417	Brush, Acid Swabbing (H-B-643)	2 (approx)
8305-00-267-3015	Cloth, Cheesecloth, Cotton, Bleached and Unbleached (CCC-C-44D, Type II, Class 2)	6 (approx)
8030-00-685-4961	Conversion Coating (MIL-C-5541, Class 1A)	5 oz (approx)
9150-00-111-6254	Hydraulic Fluid, Rust Inhibited, Fire Resistent Synthetic Hydrocarbon Base (MIL-H-46170)	2 gal (approx)
6810-00-664-0387	Trichloroethane (O-T-620)	1 oz (approx)

Table 8. Common Tools

Nomenclature	Part/Ref No.	NSN
Drill		
Portable Pneumatic	WRL 82972 MPT2	5130-01-045-4866
Drill Bit		
3/8 in.	MS15444-124	5133-00-227-9666
Funnel	RR-F-800	7240-00-559-7364
Screwdriver		
No. 2 Phillips 6 in. Blade	SSDP62	5120-01-035-3345
Wrenches		
1/4 in. Ratchet	GGG-W-641	5120-00-948-6538
1/4 in. Extension, 14 in.	TMX140	5120-00-517-7808
7/16 in. Socket, 1/4 in. Drive	GGG-W-641	5120-00-189-7924
1/8 in. Allen	AW4	5120-00-240-5292
5/32 in. Hex T Handle, Long	GAW-1910	4931-01-083-2032
Open Box End 3/8 in.	G243079-S	5120-00-228-9505
Open Box End 11/16 in.	GGG-W-636	5120-00-228-9509
Open Box End 7/8 in.	GGG-W-636	5120-00-228-9512

10. Modification Procedure.

a. Hydraulic Reservoir Modification.

(1) Preparation of Modification.

(a) Prior to start of modification, ensure that all parts, table 5; bulk and consumable items, table 7; and tools, table 8, are available.

NOTE

Retain and label all attaching hardware.

(b) Erect the launcher, bleed down system hydraulic pressure (in azimuth), and support launcher in accordance with TM 9-2350-259-20.

(c) Refer to figure 2 and remove 3 screws (9),3 lockwashers (8), screw (13), washer (12), washer (11), and nut (10) to allow gunner's level/nightsight controls chassis assembly (14) to move down enough to remove 2 hydraulic lines (1) and (2).

(d) Remove drain plug (7) on bottom of reservoir (5) and drain fluid into a container and discard fluid. Ensure that washers remains on drain plug (7). Retain drain plug (7) and washer for reinstallation.

(e) Loosen hydraulic line (1) from bottom of reservoir (5) and remove hydraulic line (2) from bottom of reservoir (5). Cap lines and ports.

(f) Loosen 2 setscrews (17) and remove right hand control grip (18) from the hand control assembly (19) to allow access to reservoir (5).

(g) Remove 3 bolts (3), 3 washers (4), and reservoir (5) from cupola (6).

(2) lnstallation *of Hydraulic Reservoir.*

NOTE

Use the attaching hardware which was removed and tagged in the removal procedure.

(a) Refer to figure 3 and install reservoir (5) on cupola (6) and attach with 3 washers (4) and 3 bolts (3).

(b) Insert right hand control grip (18) onto shaft of hand control assembly (19). Hold securely and tighten 2 setscrews (17) ensuring they engage the flat edge of shaft.

(c) Uncap 2 hydraulic lines (1) and (2) and connect to bottom of reservoir (5).

(d) Install drain plug (7), with washer attached on bottom of reservoir (5).

(e) Move gunner's level/nightsight controls chassis assembly (14) back in place and install nut (10), washer (11), washer (12), screw (13), 3 lockwashers (8), and 3 screws (9).

(f) Fill the hydraulic system as follows:

1 Unscrew attached cap from filler tube on top of reservoir.

2 Insert funnel into filler tube and add fluid until the FULL line on the outside of the reservoir is reached.

3 Remove funnel and screw cap back onto filler tube on top of reservoir.

(g) Apply power allowing accumulator to reach normal operating pressure (1850 ± 50 psi) and check system for leaks.

(h) Remove old instruction plate (15) and install new one on gunner's hatch cover (16) as follows:

WARNING

Use trichloroethane in a well-ventilated area only. Avoid prolonged breathing of vapors and skin contact. Wash exposed skin areas immediately with soap and water.

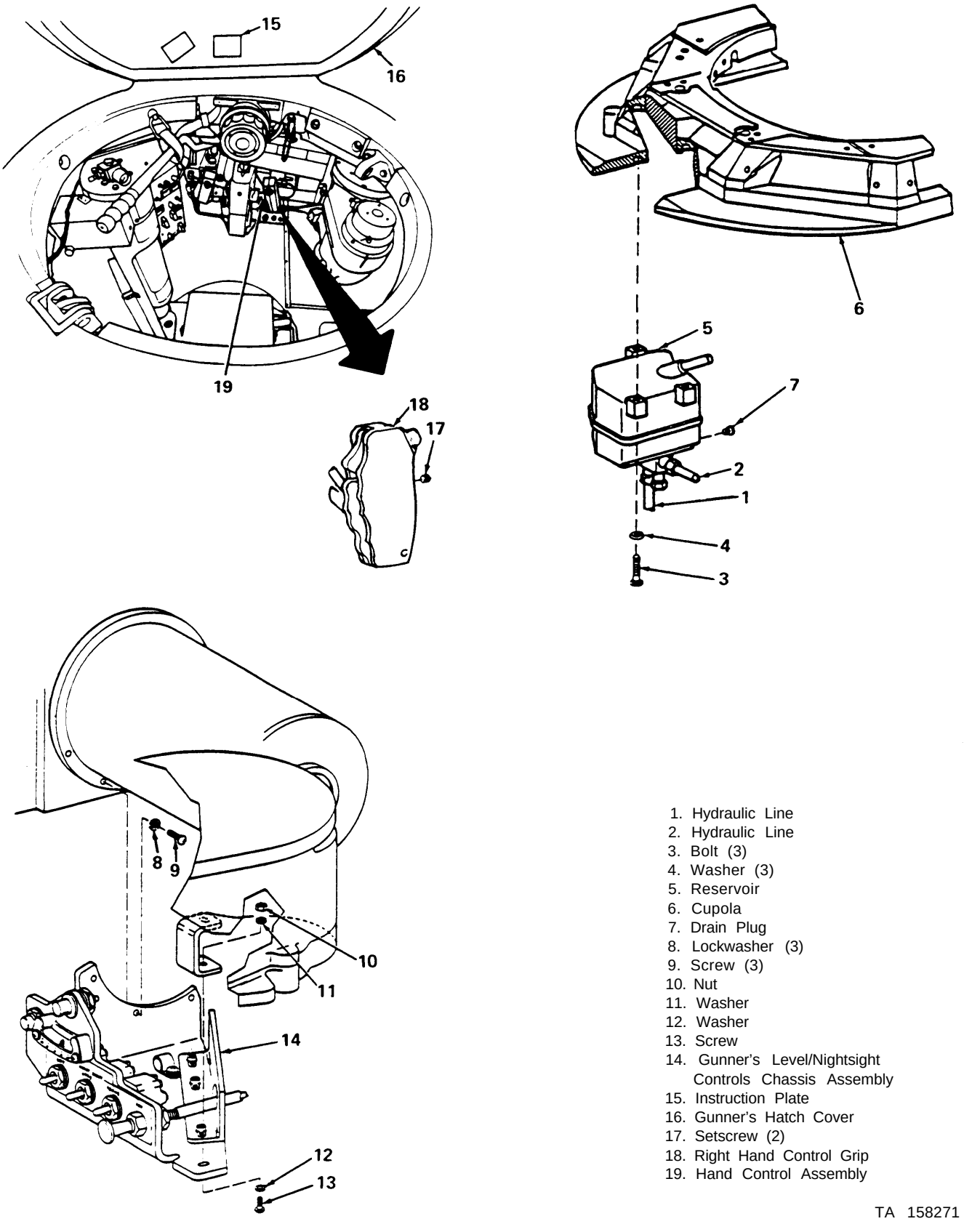
1 Clean area where old instruction plate was removed using trichloroethane (NSN 6810-00-664-0387).

2 Attach instruction plate (15) to gunner's hatch cover (16) per MIL-P-19834, Type H, Style VII.

b. Floor Plate Cleat Modification.

(1) Preparation for Modification. The 6 traction cleats installed on the M901/M901Al vehicle floor plate increase traction for crew members while they load missiles.

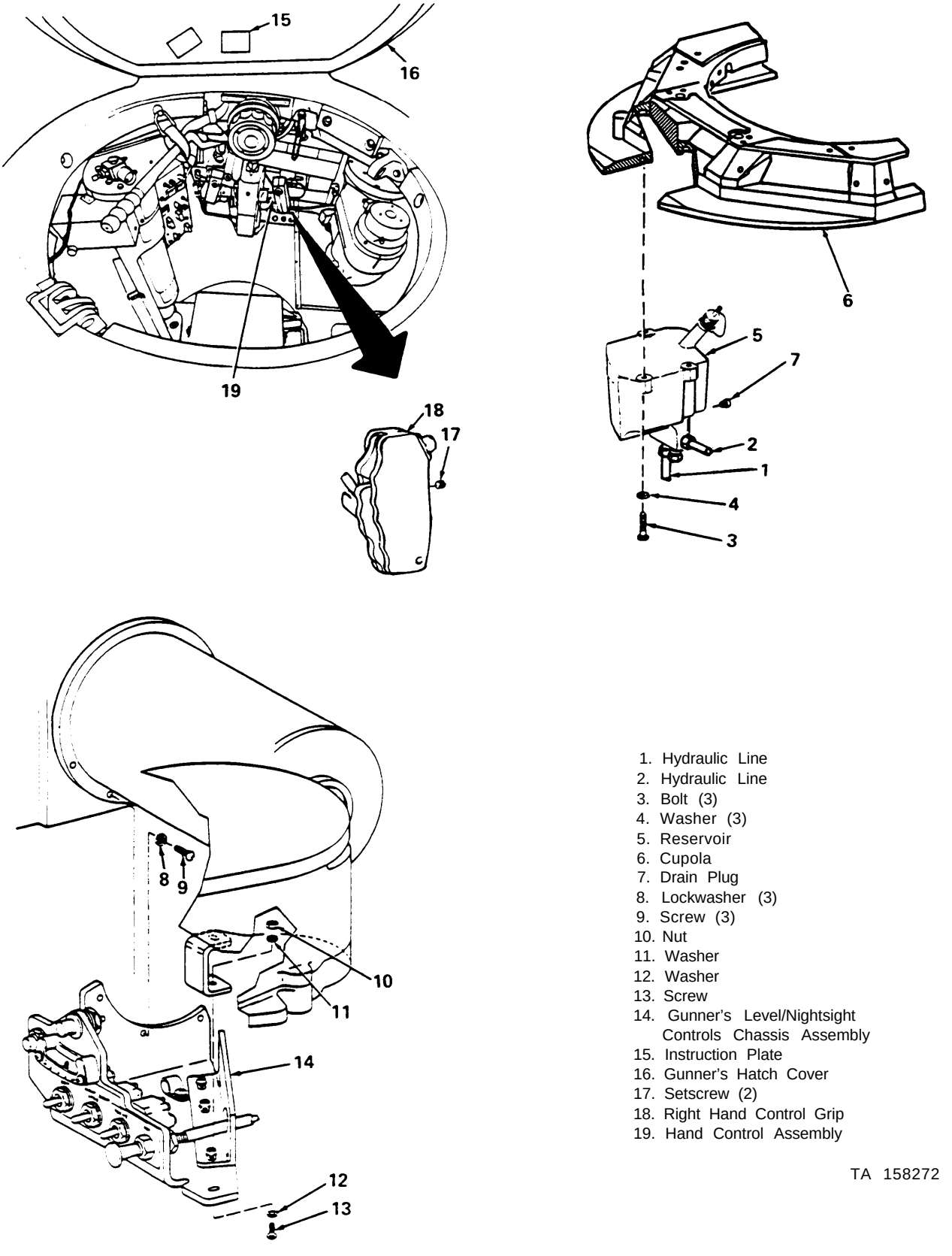
(a) Floor Plate Removal Procedure. To remove floor plates from the M901/M901Al vehicle floor plate, see TM 9-2350-259-20.



1. Hydraulic Line
2. Hydraulic Line
3. Bolt (3)
4. Washer (3)
5. Reservoir
6. Cupola
7. Drain Plug
8. Lockwasher (3)
9. Screw (3)
10. Nut
11. Washer
12. Washer
13. Screw
14. Gunner's Level/Nightsight Controls Chassis Assembly
15. Instruction Plate
16. Gunner's Hatch Cover
17. Setscrew (2)
18. Right Hand Control Grip
19. Hand Control Assembly

TA 158271

Figure 2. Removal of Existing Auxiliary Hydraulic Reservoir and Instruction Plate.



1. Hydraulic Line
2. Hydraulic Line
3. Bolt (3)
4. Washer (3)
5. Reservoir
6. Cupola
7. Drain Plug
8. Lockwasher (3)
9. Screw (3)
10. Nut
11. Washer
12. Washer
13. Screw
14. Gunner's Level/Nightsight Controls Chassis Assembly
15. Instruction Plate
16. Gunner's Hatch Cover
17. Setscrew (2)
18. Right Hand Control Grip
19. Hand Control Assembly

TA 158272

Figure 3. Installation of New Auxiliary Hydraulic Reservoir and Instruction Plate.

(b) Remove gunner's seat in accordance with TM 9-2350-259-20.

WARNING

Disconnect power source before performing any corrective maintenance actions and at the completion of test procedures.

(c) Refer to figure 4 and disconnect cable from connector (4) on slipring A4A1 (5) housing.

(d) Remove 2 bolts (1), 2 washers (2), and platform (3). Note that cutaway portion on platform (3) allows movement past connector (4) on slipring A4A1 (5).

(e) Remove heater duct (6), if installed, in accordance with TM 9-2300-257-20.

(f) Remove debris guards in accordance with TM 9-2300-257-20.

(g) Remove floor plate (19) in accordance with TM 9-2300-257-20.

NOTE

All traction cleat floor plate drilled holes will be 0.375 diameter +0.010 inch – 0.001.

(2) Right Floor Plate.

(a) The traction cleat closer to the rear of the floor plate should be 10-1/4 inches ± 0.06 from the rear edge to the center of the cleat and 2 inches ± 0.06 in from the left edge to the center of the bolt hole.

(b) The traction cleat closer to the front of the floor plate should be either 22, 27, or 31-1/2 inches (± 0.06) from the rear edge to the center of the cleat depending on your particular chassis, channel, torsion bar configuration and 2 inches ± 0.06 in from the left edge to the center of the bolt hole.

(3) Left Floor Plate.

(a) The traction cleat closer to the rear of the floor plate should be 10-1/4 inches ± 0.06 from the rear edge to the center of the cleat and 2-1/4 inches ± 0.06 in from the right edge to the center of the bolt hole.

(b) The traction cleat closer to the front of the floor plate should be either 22, 27, or 31-1/2 inches (± 0.06) from the rear edge to the center of the cleat depending on your particular chassis, channel, torsion bar configuration and 2-1/4 inches ± 0.06 in from the right edge to the center of the bolt hole.

(4) Aft *(rear) Floor Plate.*

(a) The traction cleat closer to the ramp should be 18-1/2 inches ± 0.06 from the front edge of the floor plate to the center of the cleat and 9-1/2 inches ± 0.06 from the right edge to the center of the bolt hole.

(b) The traction cleat farther away from the ramp should be either 9-1/2, 7-1/2, or 5-1/2 inches (± 0.06) from the front edge of the floor plate to the center of the cleat and 9-1/2 inches ± 0.06 from the right edge to the bolt hole.

NOTE

Three of the six bolts for the aft floor plate cleats do not have locknuts and have only one washer each as they help secure the plate to the hull.

(5) Installation of Traction Cleat. To install traction cleats to the M901/M901Al vehicle floor plate, refer to figure 4 and proceed as follows:

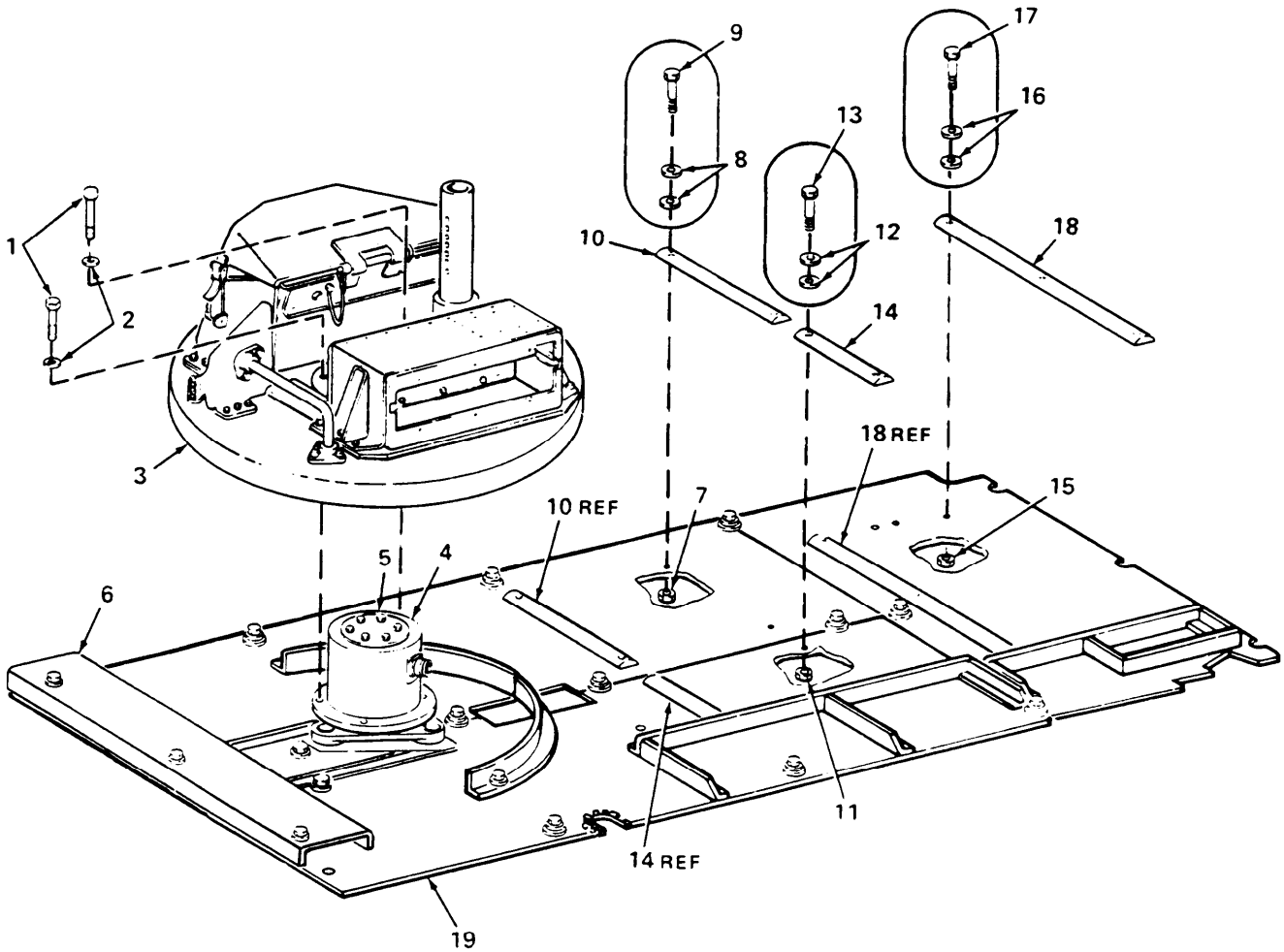
(a) Individually position 2 traction cleats (10) over holes in floor plate (19) as shown in figure 4.

(b) Install 8 washers (8) and 4 bolts (9) in 2 traction cleat (10) holes and through floor plate (19).

(c) Install 4 locknuts (7) on 4 bolts (9) and secure 2 traction cleats (10) in place.

(d) Individually position 2 traction cleats (14) over holes in floor plate (19) as shown in figure 4.

(e) Install 8 washers (12) and 4 bolts (13) in 2 traction cleat (14) holes and through floor plate (19).



1. Bolt (2)
2. Washer (2)
3. Platform
4. Connector
5. Slipring A4A1
6. Heater Duct
7. Locknut (4)
8. Washer (8)
9. Bolt (4)
10. Traction Cleat (2)
11. Locknut (4)
12. Washer (8)
13. Bolt (4)
14. Traction Cleat (2)
15. Locknut (3)
16. Washer (6)
17. Bolt (3)
18. Traction Cleat (2)
19. Floor Plate

TA 158274

Figure 4. Installation of Floor Plate Cleat.

(f) Install 4 locknuts (11) on 4 bolts (13) and secure 2 traction cleats (14) in place.

(g) Individually position 2 traction cleats (18) over holes in floor plate (19) as shown in figure 4.

NOTE

Only 3 of the 6 bolts and washers should be installed on the traction cleats and secured in place with locknuts and washers. The remaining 3 holes in the two traction cleats will be used for securing the floor plate on the vehicle. These require no locknut and only 1 washer.

(h) Assemble 6 washers (16) on 3 bolts (17) and install the assembled bolts and washers in 3 end holes of 2 traction cleats (18). Refer to figure 4 for bolt locations.

(i) Install 3 locknuts (15) on 3 bolts (17) to secure 2 traction cleats (18) in place on floor plate (19).

NOTE

When installing the floor plate on the M901/M901A1 vehicle, make sure that 3 of the attaching bolts and 3 washers are inserted through traction cleats (18) to secure them in place as the floor plate is installed.

(j) Install floor plate (19) on M901/M901A1 vehicle in accordance with TM 9-2350-257-20.

(h) Verify that all cable clamps are in place, as required, and connect cable to connector (4).

(l) Install debris guards and heater duct (6), if removed, in accordance with TM 9-2350-257-20.

(m) Install platform (3) over slipring A4A1 (5) and secure in place with 2 washers (2) and 2 bolts (1).

(n) Install gunner's seat on platform (3) in accordance with TM 9-2350-259-20.

(6) Final Inspection.

(a) Ensure that all marred painted areas are touched up in accordance with TM 43-0139.

(b) Ensure that all debris and foreign objects are removed from the vehicle.

11. Calibration Requirements. No calibration is required of modified components.

12. Weight and Balance Data. Weight and balance are not significantly affected.

13. Quality Assurance Requirements. Perform quality assurance inspection, including performance testing, appearance and uniformity, in accordance with TM 750-245-4.

14. Recording and Reporting of the Modification. The following are instructions for recording and reporting the modification:

a. DA Form 2408-5 or DA Form 2409. Record the modification on DA Form 2408-5, Equipment Modification Record, when multiple form assembled equipment logbook is applicable or DA Form 2409, Equipment Maintenance Log (Consolidated), as indicated in TM 38-750.

b. *Completion of DA Form 2407, Maintenance Request.* The serial number to be reported in Block 2 must be in the serial range stated in paragraph 3 of the MWO. The NSN for End Items to be reported in Block 6 must be the same as the NSN shown in paragraph 3. The NSN for components, assemblies, and subassemblies to be reported in Block 6 must be the same as the NSN shown in paragraphs 4 and 5. The NSN of the item actually modified will be entered in Block 20h. This NSN must match the NSN shown in Block 6. The UIC to be reported in Block 1C must be the 6 character code that is put on the Unit/Organization shown in Block la. (Normally, this will be the code that is put on the Unit/Organization Morning Report.) List by NSN the number of kits used to accomplish the MWO using Block 20 and/or Block 35. If more space is needed, use DA 2407-1, Continuation Sheet. After completing the form, mail the NMP copy (Copy 2) to: Commander, U.S. Army Tank-Automotive Command, ATTN: AMSTA-MR, Warren, MI 48397-5000.

Mail the Control Copy (Copy 3) to: Commander, U.S. Army Depot System Command, ATTN: DRSDS-PM Chambersburg, PA 17201, for PAC98 (Non-AIF Field activities). Forward the Organizational Copy (Copy 4) as directed by local commander. (See Appendix A, figures A-1 and A-2 for examples to be followed.)

c. *DA Form 2408-2408-9.* Not applicable.

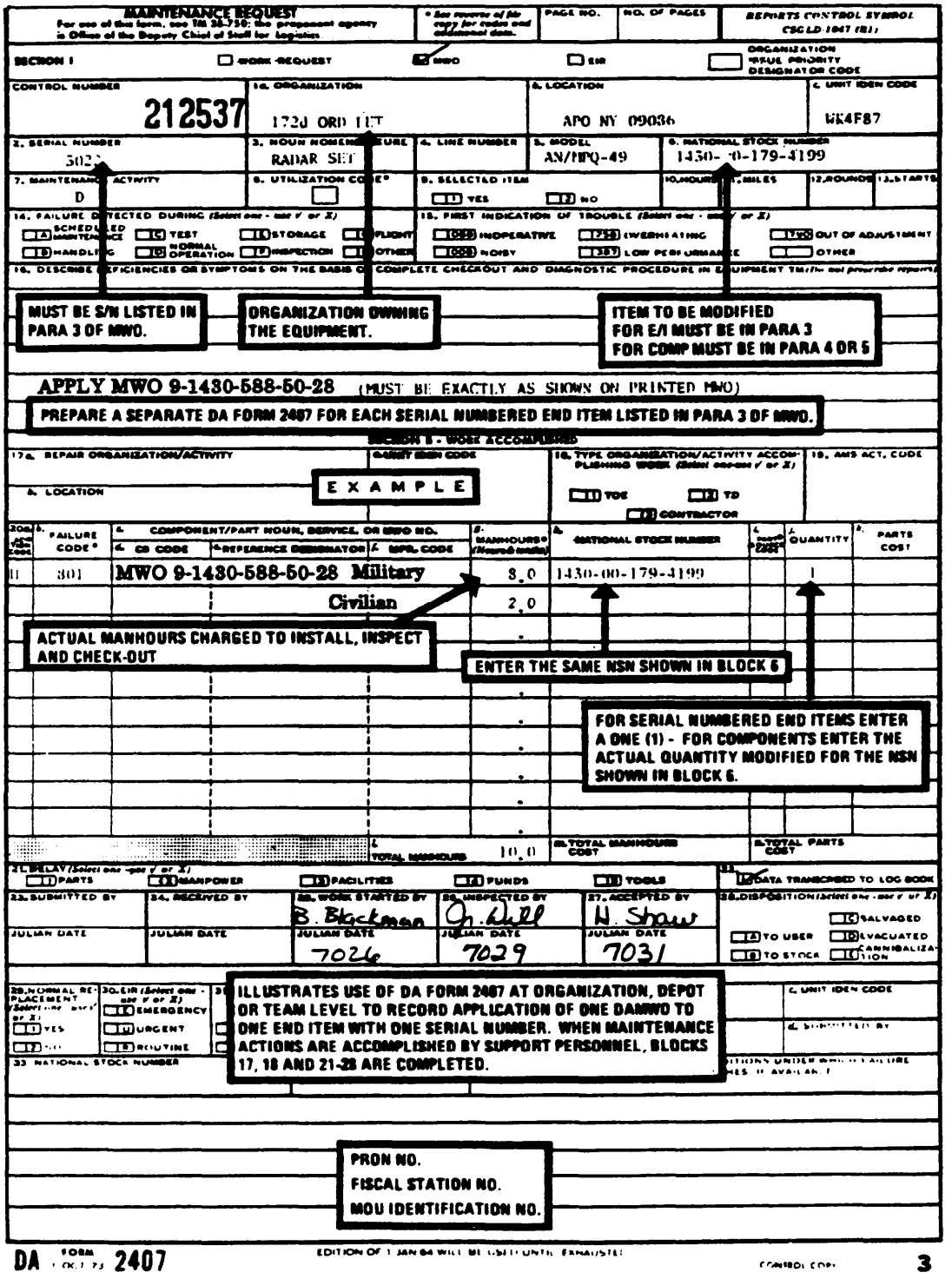
d. Marking Equipment. Not applicable.

15. Complete Product Improvement Proposal (PIP) Number. 1-81-05-6610.

APPENDIX A

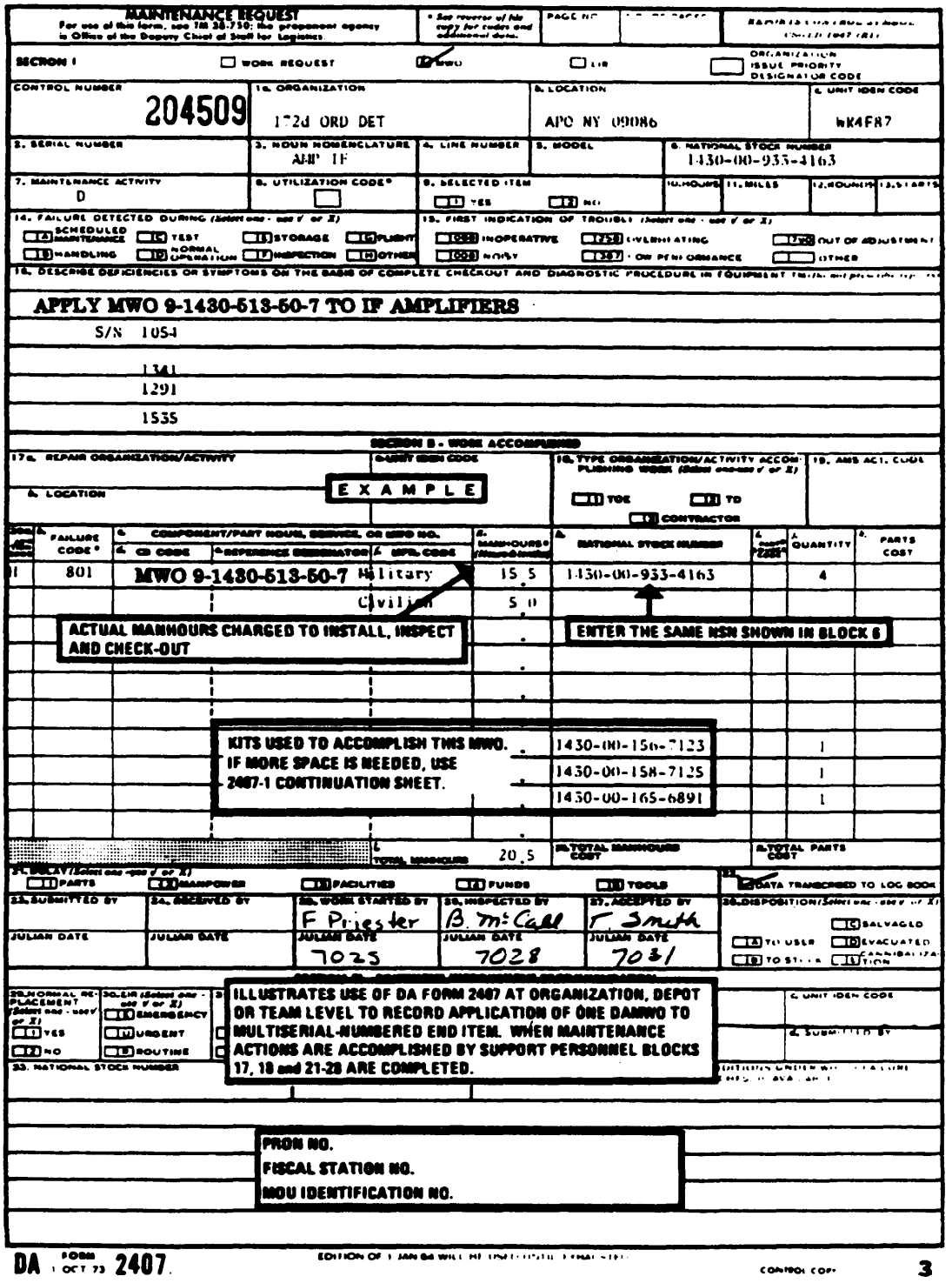
RECORDING AND REPORTING FORMS

Appendix A contains figure A-1, Maintenance Request Single MWO to Single Item of Equipment and figure A-2, Maintenance Request Single MWO to Multiserial-Number Item.



TA 112758

Figure A-1. Maintenance Request Single MWO to Single Item of Equipment.



TA 112759

Figure A-2. Maintenance Request Single MWO to Multiserial-Numbered Item.

HEADQUARTERS

US ARMY TANK-AUTOMOTIVE COMMAND

WARREN, MICHIGAN

This Modification Work Order (MWO) has been prepared under the supervision and control of the Commanding General, US Army Tank-Automotive Command, Warren, Michigan, by the Maintenance Directorate, National Maintenance Point (NMP) and is published for the information and guidance of all concerned.

FOR THE COMMANDER:

OFFICIAL:

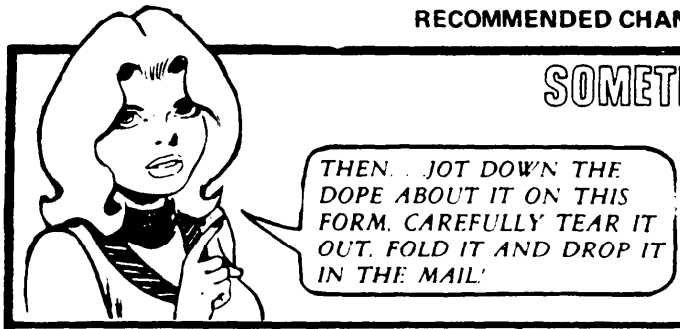
JAMES W. BEST
Colonel, GS
Chief of Staff

HARRY D. OWENS, JR.
CPT, GS
Adjutant

DISTRIBUTION:
Special

☆U.S. GOVERNMENT PRINTING OFFICE : 1987 0 - 201-421 (71022)

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS



SOMETHING WRONG WITH THIS PUBLICATION?

FROM (PRINT YOUR UNIT'S COMPLETE ADDRESS)
PFC John Doe
Co A, 3d Engineering Bn
Ft. Leonard Wood, Mo. 63108

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
MWO 9-2350-259-20-1	MAY 1985	MODIFICATION OF COMBAT VEHICLE, ANTI-TANK ITV, M901/M901A1 TO REPLACE THE AUXILIARY HYDRAULIC RESERVOIR AND INSTALLATION OF FLOOR PLATE CLEATS FOR IMPROVED CREW FOOTING.

BE EXACT PIN-POINT WHERE IT IS

PAGE NO	PARAGRAPH	FIGURE NO	TABLE NO
2			3

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

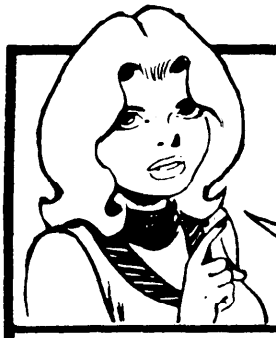
Date of change for TM 9-2350-259-20-1 should be September 1983

SAMPLE

PRINTED NAME GRADE OR TITLE AND TELEPHONE NUMBER
John Doe, PFC (268) 314-8200

SIGN HERE
John Doe

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS



SOMETHING WRONG WITH THIS PUBLICATION?

FROM (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
MWO 9-2350-259-20-1	MAY 1985	MODIFICATION OF COMBAT VEHICLE, ANTI-TANK ITV, M901/M901A1 TO REPLACE THE AUXILIARY HYDRAULIC RESERVOIR AND INSTALLATION OF FLOOR PLATE CLEATS FOR IMPROVED CREW FOOTING.

BE EXACT PIN-POINT WHERE IT IS

PAGE NO	PARAGRAPH	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

SIGN HERE

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

TEAR ALONG PERFORATED LINE

Commander
U.S. Army Tank-Automotive Command
ATTN: AMSTA-MB
Warren, MI 48397-5000

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

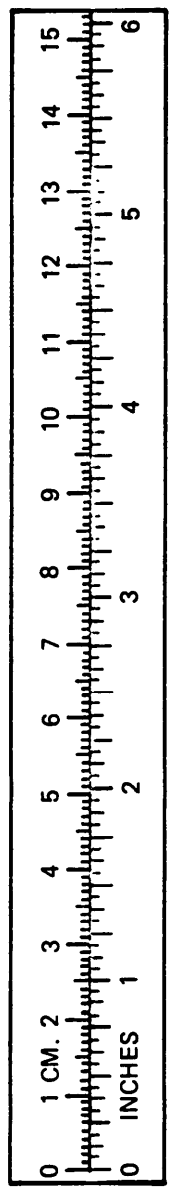
TEMPERATURE

5/9 (^{o}F − 32) = ^{o}C
212^{o} Fahrenheit is equivalent to 100^{o} Celsius
90^{o} Fahrenheit is equivalent to 32.2^{o} Celsius
32^{o} Fahrenheit is equivalent to 0^{o} Celsius
9/5 C^{o} + 32 = F^{o}

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	2.741
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



PIN: 057987-000