

# NORMAL

MWO effective date is 1 May 1987 and completion date is 31 December 1996

MWO 9-2350-255-20-3

## MODIFICATION WORK ORDER

---

MODIFICATION OF TANK, COMBAT, FULLTRACKED:

105-MM GUN, MI (2350-01461-2445)

105-MM GUN, IPM1 (2350-01-136-8738)

---

Headquarters Department of the Army, Washington, DC

25 June 1987

### REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this MWO. If you find any mistakes or if you know of a way to improve these procedures, please let us know. Write a letter or complete and mail a DA Form 2028, Recommended Changes to Publications and Blank Forms, to: Commander, U.S. Army Armament, Munitions and Chemical Command, ATTN: AMSMC MAS. Rock Island. IL 61299-6000. A reply will be provided to you.

#### 1. PURPOSE

The purpose of this modification work order is will increase system performance, reliability,

#### 2. PRIORITY.

This modification is classified NORMAL.

Approved for public release; distribution is unlimited.

CHANGE

No. 1

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
Washington, D. C., 22 November 1993

MODIFICATION OF TANK, COMBAT, FULL-TRACKED:

105-MM GUN, M1 (2350-01-061-2445)  
105-MM GUN, IPM1 (2350-01-136-8738)

MWO 9-2350-255-20-3, dated 25 June 1987, 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.
3. This MWO is changed as a result of additional parts distribution direction and vehicle application serial numbers.

Remove Pages

1 and 2

3 and 4

Insert Pages

1 and 2

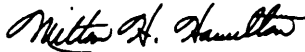
3 and 4

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

**By Order of the Secretary of the Army:**

**GORDON R. SULLIVAN**  
*General, United States Army*  
*Chief of Staff*

Official:



MILTON H. HAMILTON  
*Administrative Assistant to the*  
*Secretary of the Army*  
05482

**DISTRIBUTION:**

To be distributed in accordance with DA Form 12-37-E, block 1544 requirements for MWO 9-2350-255-20-3.

**3. END ITEM(S) OR SYSTEM(S) TO BE MODIFIED.**

See table 1.

**Table 1. End Item(s) to be Modified**

Nomenclature	NSN	Part Number and CAGE	Model Number	Serial Number
Tank, Combat, Full-Tracke: 105-MM Gun, MI	2350-01-061-2445	8750014 (19207)	M1	(1)
Tank, Combat, Full-Tracke: 105-MM Gun, IPM1	2350-01-136-8738	8750080 (19207)	IPM1	(2)

(1) All MI Tanks

(2) L-5343 through L-6132, D-5345 through D-6131

**4. MODULE(S) (COMPONENTS, ASSEMBLIES, SUBASSEMBLIES, BOARDS, AND CARDS) TO BE MODIFIED.**

The following item(s), whether installed or in depot stock, shall be modified. See table 2.

**Table 2. Item(s) to be Modified**

Nomenclature	NSN	Part Number and CAGE
Ammunition Rack	1015-01-079-8412	12304842 (19200)
Ammunition Rack	1015-01-082-8956	12304977 (19200)
Ammunition Rack	1015-01-079-8413	12304843 (19200)
Ammunition Rack	1015-01-079-8411	12304984 (19200)
Ammunition Rack	1015-01-179-9368	12315775 (19200)
Ammunition Rack Assembly	2590-01-133-6972	12305021 (19207)
Ammunition Rack Assembly	2590-01-133-6973	12305022 (19207)
Ammunition Rack Assembly	2590-01-133-6974	12305023 (19207)
Ammunition Rack Assembly	2590-01-133-6975	12305024 (19207)
Rack	1015-01-072-4209	12304840 (19200)
Rack	1015-01-079-8414	12304841 (19200)
Tube Assembly	1015-01-072-4204	12304934-1 (19200)
Tube Assembly	1015-01-072-4205	12304934-2 (19200)
Tube Assembly	1015-01-074-8932	12283030 (19200)

**5. PART(S) TO BE MODIFIED.**

Not applicable.

**6. APPLICATION.****NOTE**

Check paragraph 16 to see if all or part of this modification has already been accomplished. If the intent of the MWO has been completed, go to paragraph 14.

- a. *Time Compliance Schedule*; The effective date of this MWO is 1 May 1987 and its completion date is 31 December 1996.
- b. *Lowest Level of Maintenance Authorized to Apply this MWO*: Unit Maintenance.
- c. *Work Force and Man-hour Requirements for Application of this MWO to a Single Unit, End Item, or System is as follows*:

**REQUIREMENTS****WORK FORCE/SKILLS****MAN-HOURS**

Tank Turret Mechanic (MOS 45E) or  
Equivalent Personnel

1.5

Total man-hours required for a single application of this MWO is 1.5 hours.

- d. *MWO'S to be Applied Prior to or Concurrently with the Application of this MWO*: Not applicable.
- e. *Additional Information Deemed Necessary to Assist in the Application of this MWO*: Not applicable.

**7. TECHNICAL PUBLICATIONS AFFECTED/CHANGED.**

The following publications require change as a result of this MWO:

**TM NUMBER****DATE**

TM 9-2350-255-20-2-3-2  
TM 9-2350-255-20-1 -3-4

August 1984, w/ Change 2  
October 1983, w/ Change 4

8. MWO KIT(S)/PART(S) AND THEIR DISPOSITION.

a *Kit(s)/part(s) Needed to Apply this MWO:*

(1) The kit(s) shown *in* table 3 are required to accomplish this MWO.

Table 3. Kit(s) and Security Classification

NSN	Nomenclature	Part Number and CAGE	security Classification
TBD	Vehicle Kit, Hull and Turret, Ammo Retention Spring	12345654 (19200)	Unclassified

(2) Kit shipping data is shown in table 4.

Table 4. Shipping Data

Part Number	Weight	Dimensions	Cubic Displacement
12345654	9.44 lb	10.6 x 6.2 x 4.9 inches	318 CU. inches

b. *Contents of MWO Kit(s): See table 5 and figure 1.*

Table 5. Ammunition Spring Modification Kit 12345654

Nomenclature	NSN	Part Number and CAGE	Qty	Figure & Item No.
Ammo Storage Rack Kit	None	12543065 (19200)	1	
Composed of:				
Flat Spring	5360-01-201-6070	12312209 (19207)	47	1, 1
Hull Ammo Rack Kit	None	12345442 (19207)	1	
Composed of				
Flat Spring	5360-01-201-8070	12312209 (19207)	8	1, 1

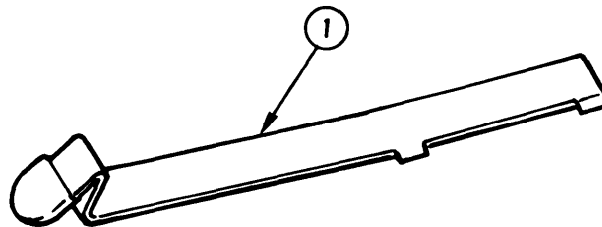


Figure 1. Ammunition Flat Spring

c. *Bulk and Expendable Material*: Not applicable.

d. *Parts Disposition*: Turn in excess parts listed in table 6 in accordance with AR 710-2, AR 735-11, and local policy.

Table 6. Excess Parts

Nomenclature	NSN	Part Number and CAGE
Flat Spring	5360-01-074-9029	12283045 (19207)

9. SPECIAL TOOLS; TOOL KITS; JIGS; TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT (TMDE); AND FIXTURES REQUIRED.

See table 7 and figure 2.

Table 7. Special Tools

Nomenclature	NSN	Part Number and CAGE	Qty	Figure & Item No.
Spring Insertion Tool	None	9338840 (19200)	1	2, 1

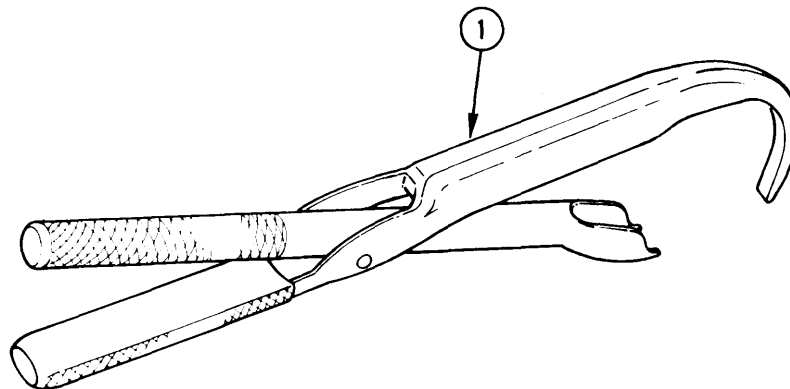


Figure 2. Spring Insertion Tool

10. MODIFICATION PROCEDURES.

WARNING

Make sure turret power and circuit breaker CB 12 on turret networks box are turned off before attempting to open ammunition door manually. If left in power and knee switch is tripped, door actuator shaft will move. Ammunition door or actuator shaft could hit you and cause injury.

a. *Remove bustle or ready rack tube locking flat spring; refer to TM 9-2350-255-20-2-3-2.*

b. *Install bustle or ready rack tube locking flat spring; refer to TM 9-2350-255-20-2-3-2.*

c. Remove ammunition flat spring; refer to TM 9-2350-255-20-1-3-4.

d. Install ammunition flat spring; refer to TM 9-2350-255-20-1-3-4.

#### 11. CALIBRATION REQUIREMENTS.

Not applicable.

#### 12. WEIGHT AND BALANCE DATA.

Weight and balance are not significantly affected.

#### 13. QUALITY ASSURANCE REQUIREMENTS.

a. *General:* The following information is supplied to insure the proper application of this modification.

b. *Physical Inspection:* Inspect metal surfaces for burrs. Remove, if present. All components installed during the procedures must be present and properly mounted.

#### 14. RECORDING AND REPORTING OF THE MODIFICATION.

a. *Records and Reports:* Records and reports will be in accordance with AR 750-10, DA PAM 738-750, DA PAM 738-751, and TB 9-1100-803-15.

b. *Marking Equipment:* Not applicable.

c. *Identification Data:* Not applicable.

#### 15. PRODUCT IMPROVEMENT PROPOSAL (PIP) NUMBER.

This MWO is authorized by PIP number 1-85-05-4075.

#### 16. MODIFICATION IDENTIFICATION.

Spring can be identified by thickness. The new spring (1) is 0.074-inch thick; the old spring (1) is 0.050-inch thick (figure 3).

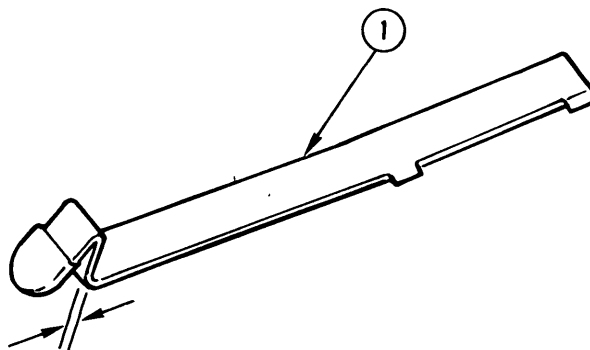


Figure 3. Flat Spring



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 12-37, Unit Maintenance requirements for Tank, Combat, Full Tracked, 105-MM, M1 Abrams.

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 PUBLICATION

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER

PUBLICATION DATE

PUBLICATION TITLE

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.

TEAR ALONG PERFORATED LINE

PRINTED NAME, GRADE OR TITLE AND TELEPHONE NUMBER

SIGN HERE

# The Metric System and Equivalents

## Linear Measure

1 centimeter = 10 millimeters = .39 inch  
 1 decimeter = 10 centimeters = 3.94 inches  
 1 meter = 10 decimeters = 39.37 inches  
 1 dekameter = 10 meters = 32.8 feet  
 1 hectometer = 10 dekameters = 328.08 feet  
 1 kilometer = 10 hectometers = 3,280.8 feet

## Weights

1 centigram = 10 milligrams = .15 grain  
 1 decigram = 10 centigrams = 1.54 grains  
 1 gram = 10 decigrams = .035 ounce  
 1 dekagram = 10 grams = .35 ounce  
 1 hectogram = 10 dekagrams = 3.52 ounces  
 1 kilogram = 10 hectograms = 2.2 pounds  
 1 quintal = 100 kilograms = 220.46 pounds  
 1 metric ton = 10 quintals = 1.1 short tons

## Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce  
 1 deciliter = 10 centiliters = 3.38 fl. ounces  
 1 liter = 10 deciliters = 33.81 fl. ounces  
 1 dekaliter = 10 liters = 2.64 gallons  
 1 hectoliter = 10 dekaliters = 26.42 gallons  
 1 kiloliter = 10 hectoliters = 264.18 gallons

## Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch  
 1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches  
 1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet  
 1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet  
 1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres  
 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

## Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch  
 1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches  
 1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

## Approximate Conversion Factors

To change	To	Multiply by	To change	To	Multiply by
inches	centimeters	2.540	ounce-inches	newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29.573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	newton-meters	1.356	metric tons	short tons	1.102
pound-inches	newton-meters	.11296			

## Temperature (Exact)

°F Fahrenheit temperature      5/9 (after subtracting 32)      Celsius temperature      °C

**PIN: 062250-001**