LUBRICATION ORDER

LO 9-1015-203-10

21 JANUARY 1972 (Supersedes LO 9-1015-203-10 4 DEC 1964)

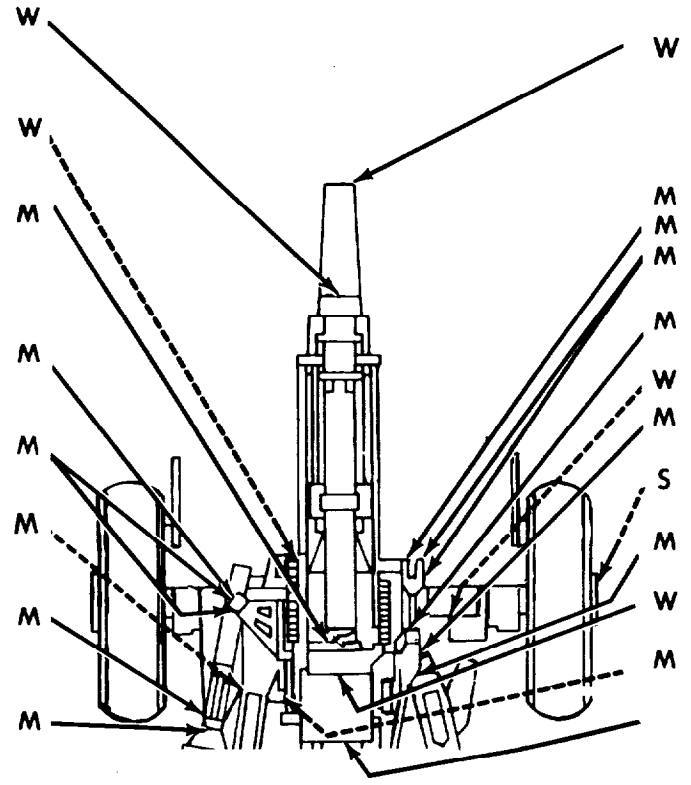
HOWITZER, LIGHT, TOWED: 105MM, M101 AND M101A1

Reference: TM 9-1015-203-12

Intervals are based on normal operations. Reduce to compensate for abnormal operation and severe conditions, or contaminated lubricants. During inactive periods, intervals may be extended commensurate with adequate preservation. Relubricate after washing or fording. Clean fittings before lubricating. Clean parts with MINERAL SPIRITS PAINT THINNER (TPM) or DRY CLEANING SOLVENT (SD). Dry before lubricating (for exception see note 1). Lubricate dotted-arrow points on both sides of equipment.

LUBRICANT-INTERVAL

Recoil Mechanism Reserve Oil Fill Setscrew (See note 2)	OHT	W
Elevating Arc and Pinion (Clean and oil)	PL	W
Pintle Pin Lower Sleeve Bushing (To reach fitting bring howitzer tube to 0 elevation)	GAA	M
Handwheel Traversing Rod (See note 3)	GAA	M
Travel-sing Swivel Nut Bracket Sleeve Bearings	GAA	M
Trail Hinge Pin (Some models, 1 fitting)	GAA	M
Traversing Screw Pivot Ball Bearing	GAA	M
Traversing Screw Pivot Bracket Sleeve Bearing	GAA	M



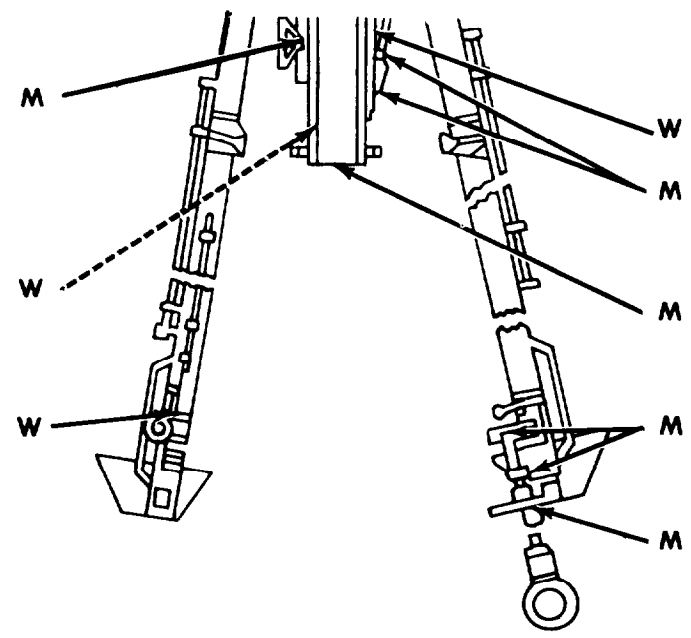
INTERVAL-LUBRICANT

W	PL	Cannon Bore and Locking Ring (Wipe clean before firing) (See note 1)
M	GAA	Recoil Slide (See note 1 and 2)
M	GAA	Elevating Worm Gear
M	GAA	Elevating Worm Shaft Sleeve Bushings
M	GAA	Elevating Bevel Pinion Shaft Sleeve Bushing
W	PL	Axle Support Gib Bearing
M	GAA	Elevating Handwheel Shaft Bushing
S	GAA	Wheel Bearings (Remove, clean, and repack)
M	GAA	Elevating Bevel Pinion Shaft Sleeve Bushing
W	PL	Breech and Firing Mechanism (Also after firing, clean and oil)
M	GAA	Cradle Trunnion Sleeve Bushings
	PL	Respirator (See note 2)

FOLD

FOLD

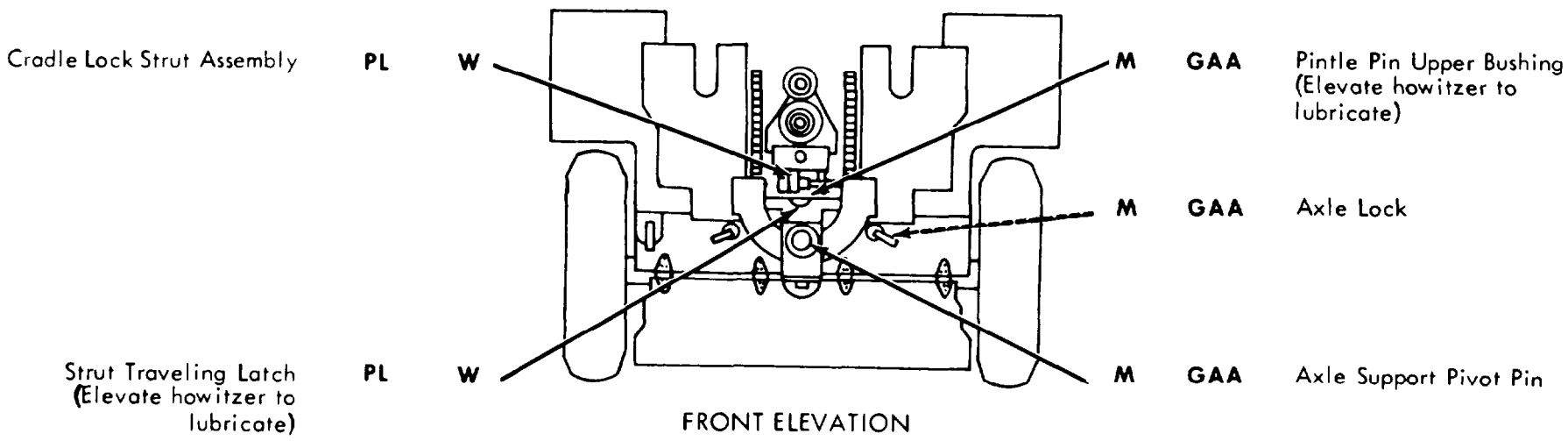
Elevating Cross Shaft Sleeve Bushing	GAA	M
Exposed Recoil Slide (Also **before firing)**	PL	W
Trail Locking Latch	PL	W



W	PL	Firing Mechanism Shaft
M	GAA	Elevating Handwheel Cross Shaft Sleeve Bushings
M	GAA	Equilibrator Spring Rod Bearing
M	GAA	Trail Drawbar Sleeve Bearings
M	GAA	Trail Drawbar Lock

- KEY -

LUBRICANTS		EXPECTED TEMPERATURES			INTERVALS
		Above +32° F	+40° F to -20° F	-20° F to -65° F	
PL	LUBRICATING OIL, general purpose	PL (Medium)	PL (Special)	PL (Special)	W - Weekly
RS	OIL, recoil special	(See note 2).	(See note 2)		
GAA	GREASE, automotive and artillery	ALL TEMPERATURES			M - Monthly
OHT	HYDRAULIC FLUID, petroleum base, preservative	ALL TEMPERATURES			A - Annually
CR	CLEANING COMPOUND, solvent	ALL TEMPERATURES			S - Semi-Annually
GMD	GREASE, Molybdenum, Dissulfide				



FRONT ELEVATION

- NOTES -

1. CANNON BORE AND LOCKING PIN - Immediately after firing and on 2 consecutive days thereafter, thoroughly clean with CR, making sure that all surfaces, including the rifling, are well coated. Do not wipe dry. On the third day afterfiring, clean with CR, wipe dry and lightly coat with PL. Weekly thereafter, clean with CR, wipe dry and reoil with PL. Every 90 days remove cannon and locking ring, clean and service bearing surfaces, lightly coat with GAA. Coat locking ring with GMD.

2. RECOIL MECHANISM - For M2A1, M2A2, and M2A3 RS may be us e d in lieu of OHC for temperatures above -20F. Every 90 days remove recoil mechanism. Clean and service bearing surfaces, lightly coat with GAA. Clean and service respirator. When recoil mechanism is removed, wash with SD, coat with PL.

3. TRAVERSING SWIVEL NUT SCREW - Remove plug, if present, and insert fitting. Traverse extreme right and lubricate sparingly, the n extreme left and lubricate sparingly. Traverse extreme right, clean and apply film of PL to exposed traversing handwheel shaft. Do not remove fitting, once installed.

4. OIL CAN POINTS - Weekly lubricate elevating mechanism, universal joints, recoil indicator, trail lock mechanism, traveling lock shaft sockets, traversing and elevating handwheel handles, equilibratorguide rods, hand brake lever assembly, axle lock knob assembly, shield hinges and locking pins, cradle lock strut hinge pin and strut support latch, shield hinges and latches, strut latch pins with PL.

5. LUBRICATED AT TIME OF DISASSEMBLY By ORDNANCE PERSONNEL - Equilibrator fulcrum journal roller bearing and elevating worm wheel shaft bearing.

FOLD FOLD

Cop of this Lubrication Order will remain with the equipment at all times; instructions contained herein are mandatory and supersede all conflicting lubrication instructions dated prior to the date of the Lubrication Order.

BY ORDER OF THE SECRETARY OF THE ARMY:

OFFICIAL:

VERNE L. BOWERS,
Major General, United States Army,
The Adjutant General

W. C. WESTMORELAND,
General, United States Army,
Chief of Staff

DISTRIRUTION:
To be distributed in accordance with DA Form 1240, 1 qty rqr block no. 13) Operator and Crew maintenance requirements for Howitzer, 105-MM, Tower, M101A1.

U.S. GOVERNMENT PRINTING MICE: 1972 0-455-792

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.

PRINTED NAME, GRADE OR TITLE AND TELEPHONE NUMBER	SIGN HERE

TEAR ALONG PERFORATED 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.

THE METRIC SYSTEM AND EQUIVALENTS

'NEAR MEASURE

. 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

'VEIGHTS

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

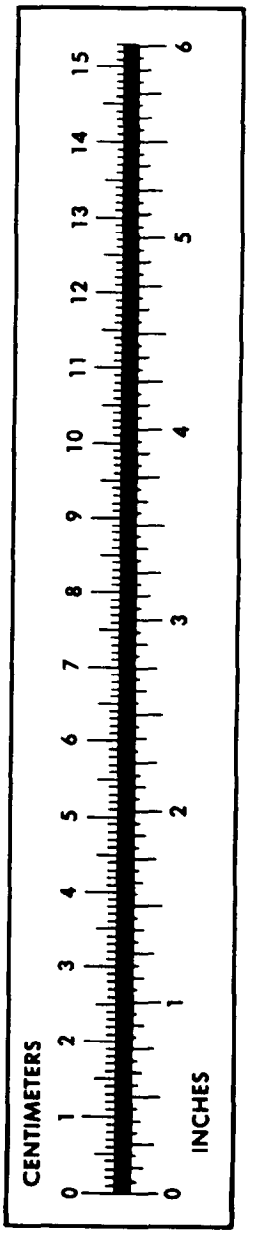
TEMPERATURE

5/9(°F - 32) = °C
212° Fahrenheit is evuivalent to 100° Celsius
90° Fahrenheit is equivalent to 32.2° Celsius
32° Fahrenheit is equivalent to 0° Celsius
9/5C° + 32 =°F

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
ıts	Liters	0.473
arts	Liters	0.946
allons	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
ers	Gallons	0.264
ms	Ounces	0.035
ograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pounds-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
lometers per Liter	Miles per Gallon	2.354
meters per Hour	Miles per Hour	0.621



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