

1 December 1983 (Supersedes M60A1 Portions of LO 9-2350-215-12, 22 August 1977)

**TANK, COMBAT, FULL TRACKED, 105-MM, M60A1
(2350-00-756-8497 AND 2350-01-058-9487 AOS)**

Reference: TM 9-2350-215-10 Series, TM 92350-215-20-1 Series, and TM 9-2350-215-20-2 Series

FOR ALL LUBRICATION INTERVALS:

Hard (fixed) time intervals and the related man hour times are based on normal operation. The man-hour times specified is the time you need to do all the services prescribed for a particular interval. Change the interval. If your lubricants are contaminated or if you are operating the equipment under adverse conditions, including longer-than-usual operating hours. The interval may be extended during periods of low activity. If extended adequate preservation precautions must be taken.

On-condition (OC) intervals for oil changes shall be determined by the Army 001 Analysis Program (AOAP) laboratory and shall be applied unless otherwise notified.

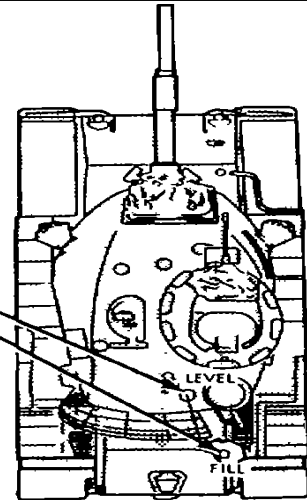
Hard (fixed) time oil change intervals will be applied in the event AOAP laboratory support is not available

Park vehicle on level ground to check oil levels. Clean fittings before and after lubricating with a dry lint-free cloth. Lubricate all items found contaminated after fording or washing. Broken arrow shafts (-->) indicate lubrication points on both sides of the vehicle. Level of maintenance for lubrication requirements is indicated in edge column by (C) for Crew/Operator and (O) for Organizational.

Reporting errors and recommending improvement.
You can help improve this lubrication order if you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter on DA Form 202B (Recommended Changes to Publications and Blank Forms) direct to Commander, U S Army Tank-Automotive Command ATTN DRSTA-MB, Warren, Mi. 48090 A reply will be furnished to you.

MAINTENANCE LEVEL

C ENGINE OIL LEVEL AND FILL
(See note 1 for ADVS-1790-2D ENGINES)
(See note 2 for ADVS-1790-2A ENGINES)



LUBRICANTS USED TO PERFORM OPERATIONS ON THIS PAGE:

OE/HDO, and OEA (SEE KEY)

TOTAL MAN-HRS for 1 lube point

0.2

DAILY LUBRICATION

TA254545

KEY

LUBRICANT/COMPONENTS	Refill Capacity	EXPECTED TEMPERATURES*		
		Above +32°F (Above 0°C)	+40°F to -10°F (+4°C to -23°C)	0°F to -65°F (-17°C to -53°C)
OE/HDO: Oil, ICE, Tactical MIL-L-2104	As Required As Required	NOTE When air temperature is consistently above +60°F (+15°C), use OE/HDO-50 in engine		
OEA Oil, Engine, Arctic MIL-L-46167 Engine - 2D Engine - 2A		OE/HDO-30	OE/HDO-10	OEA

NOTES:

*For Arctic Operation refer to FM 9-207

1 ENGINE OIL CHECKING PROCEDURES FOR VEHICLES EQUIPPED WITH AVDS-1790-2D ENGINES.

Check engine oil levels daily after operating the engine. The vehicle must be parked on level ground to obtain an accurate oil level reading

Checking procedure for

Engine Running, Cold Oil. When the oil level is checked after the engine has been started, but operated at 700 to 1200 rpm for only 5 to 10 minutes, the oil temperature will be below normal operating temperature

1. Check the oil level (with engine idling at 700 to 750 rpm). If the level is in the "IDLING RANGE" (between the "ADD" and "HOT FULL" marks), the engine is safe to operate.



2. If the oil level is below the "ADD" mark, add oil as necessary to bring the level to the "COLD FULL" mark.

NOTE: On the backside of dipstick are four hashmarks, the distance between each mark is 2 gallons. When oil level shows low on dipstick, turn to these marks to determine the correct amount of oil to add.



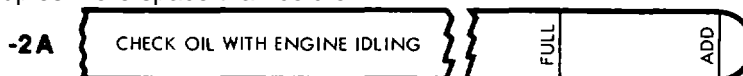
Engine Running Hot Oil.

1. Check oil level with engine idling at 700 to 750 rpm. After a hot run, the oil level will be 2 to 3 inches above the "HOT FULL" mark. This would be normal under these conditions due to oil expansion and aeration
2. If the tactical situation permits, allow the engine to idle at 700 to 750 rpm for 5 to 10 minutes and check the level again.
 - a. If the oil level is above the "ADD" mark, the engine is safe to operate. However, oil may be added pending expected mission duration.
 - b. If the oil level is below the "ADD" mark, add oil as necessary to bring the level to the "HOT FULL" mark.

NOTE Any added oil will not show on the dipstick until after the engine has been running several minutes.

2 ENGINE OIL CHECKING PROCEDURE FOR VEHICLES EQUIPPED WITH AVDS-1790-2A ENGINES.

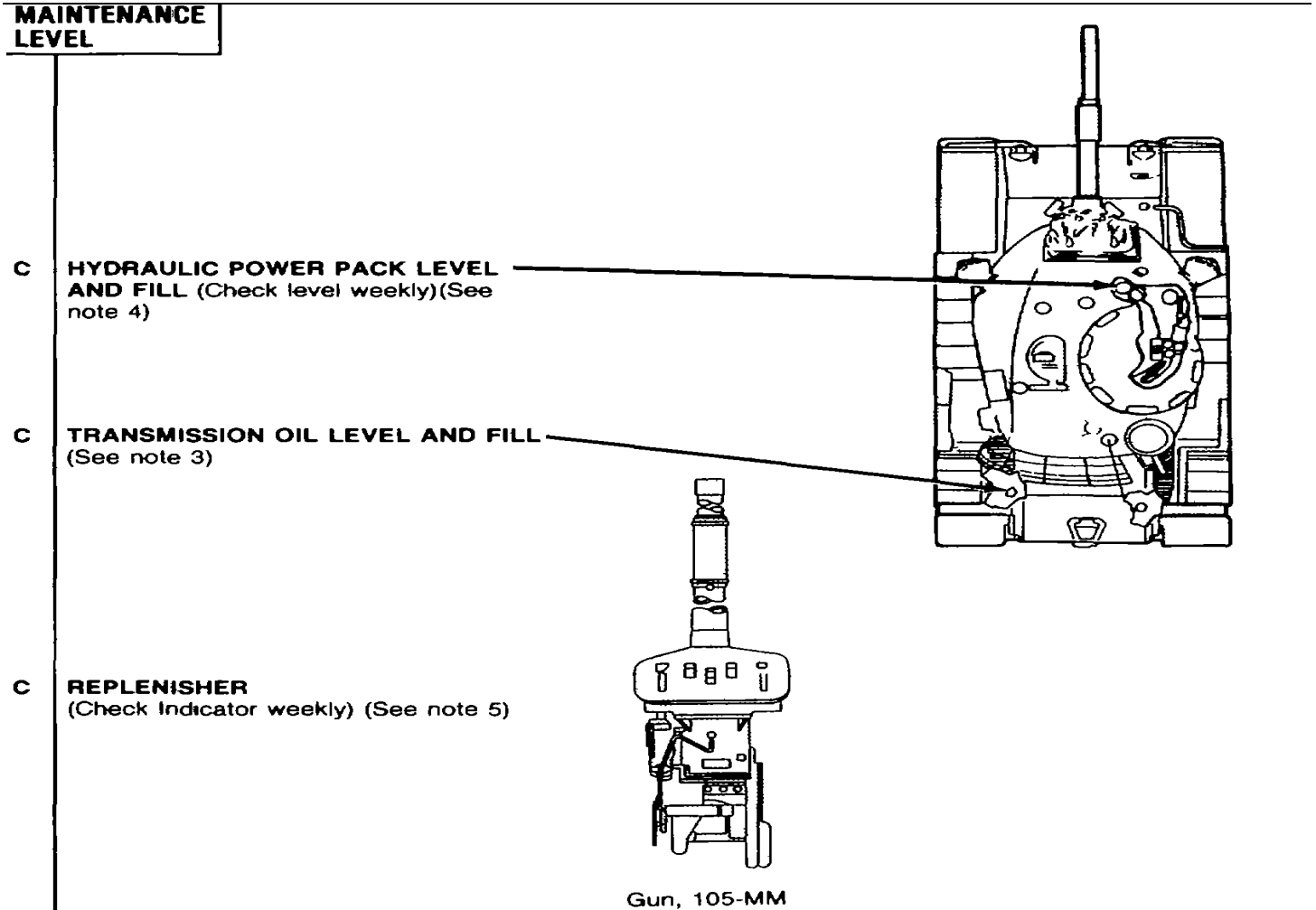
Check engine oil levels daily after operating the engine. Run engine at 1000 to 1200 rpm until the engine oil temperature gage reads in the green band, or a maximum of ten minutes. With the engine idling at 700 to 750 rpm, check oil level. Oil level should be between ADD and FULL marks, if low, add oil as required to engine to bring level to FULL mark on the dipstick Long sustained full load engine operation may result in engine oil levels slightly above the FULL mark. This is acceptable since hot oil occupies more space than cold oil.



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Reference: TM 9-2350-215-10 Series, TM 9-2350-215-20-1 Series, and TM 9-2350-215-20-2 Series



LUBRICANTS USED TO PERFORM OPERATIONS ON THIS PAGE:

OE/HDO, OEA, and FRH (SEE KEY)

TOTAL MAN-HRS for 3 lube points

0.6

DAILY AND WEEKLY LUBRICATION

TA254547

KEY

LUBRICANT/COMPONENTS	Refill Capacity	EXPECTED TEMPERATURES*		
		Above +32°F (Above 0°C)	+40°F to --10°F (+4°C to --23°C)	0°F to --65°F (--17°C to --53°C)
OE/HDO: Oil, ICE, Tactical MIL-L-2104 OEA: Oil Engine, Arctic MIL-L-46167 Transmission	As Required	OE/HDO		OEA
FRH: Hydraulic Fluid, Rust Inhibited, Fire Resistant, Synthetic Hydrocarbon Base MIL-H-46170 Type I Replenisher	As Required	ALL TEMPERATURES		
Hydraulic Power Pack	As Required			

*For Arctic Operation refer to FM 9-207

NOTES:

3. TRANSMISSION OIL LEVEL CHECKING PROCEDURE Set parking brakes with shift lever in PARK. Start engine and run at 1000 to 1200 rpm until transmission oil temperature gage reads in green band. With engine idling at 700 to 750 rpm, check oil level. Oil level should be between ADD and FULL marks. If low add oil as required to transmission to bring level to FULL mark on transmission dipstick.

NOTE

Oil level on the transmission dipstick must be at or above the ADD mark. Approximately three gallons of oil will raise the transmission oil level from ADD to FULL.

4. HYDRAULIC POWER PACK. Check fluid level weekly and before operation. With accumulator pressure gage indicating zero pressure, check liquid level at reservoir. Fluid level should be between ADD and FULL. Add or drain fluid as required If fluid is added, add to FULL mark.

5. REPLENISHER. Check replenisher indicator tape weekly and before firing, as indicated in TM 9-2350-215-10.

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Reference: TM 9-2350-215-10 Series, TM 92350-215-20-1 Series, and TM 9-2350-215-20-2 Series

MAINTENANCE LEVEL

C MAIN GUN BORE
 (See note 6)

C BORE EVACUATOR
 (See note 7)

C LOADER'S SAFETY SWITCH
 (Lubricate moving parts at point of contact)

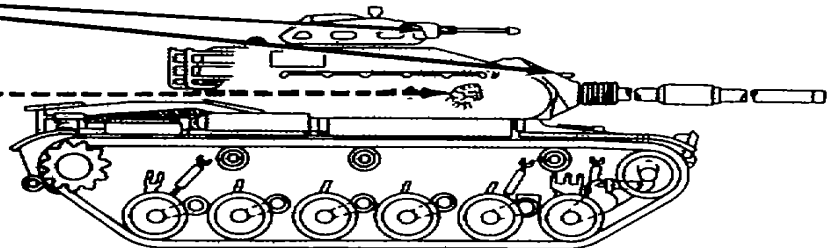
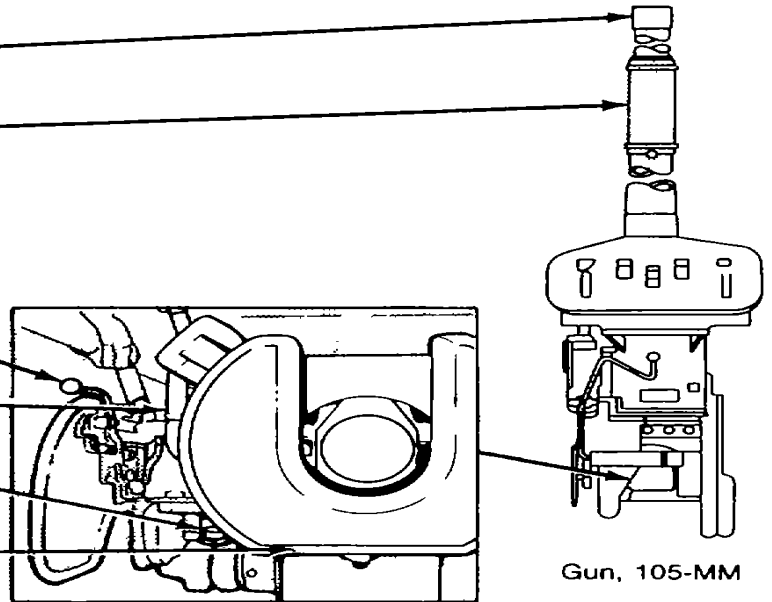
C BREECH OPERATING HANDLE
 (Lubricate as required)

C BREECH OPERATING MECHANISM
 (See note 6)

C BREECHBLOCK
CAUTION: Do not lubricate electrical firing contacts, insulators or firing pin (See note 6)

C MACHINE GUNS
 (See note 8)

C SMOKE GRENADE LAUNCHER
 Clean and Service the same as main gun bore (See note 6)
 Do not lube contacts at bottom of tubes



LUBRICANTS USED TO PERFORM OPERATIONS ON THIS PAGE
 CLP (SEE KEY)

TOTAL MAN-HRS for 7 lube points
 2.2

NON SCHEDULED LUBRICATION

TA254549

KEY

LUBRICANT/COMPONENTS	Refill Capacity	EXPECTED TEMPERATURES*		
		Above +32°F (Above 0°C)	+40°F to --10°F (+4°C to --23°C)	0°F to --65°F (--17°C to --53°C)
CLP: Cleaner, Lubricant, Preservative MIL-L-63460	As	ALL TEMPERATURES		
Bore Evacuator	Required			
Breech Operating Handle	As			
Main Gun Bore, 105mm	Required			
Loader's Safety Launcher	As			
Smoke Grenade Launcher	Required			
Machine Guns	As			
	Required			

NOTES:

*For Arctic Operations refer to FM 9-207

- 6. MAIN GUN BREECH, OPERATING MECHANISM, AND SMOKE GRENADE LAUNCHER.
 - a. Before Firing: Wipe all surfaces dry.
 - b. After Firing: Immediately clean with CLP and wipe dry. Re-apply a light coat of CLP to all surfaces. Make sure all surfaces (including rifling) are coated. Do not wipe dry. Repeat process on next two days after firing.
 - c. Inactivity. If not to be fired for an extended period, quarterly clean with CLP. Wipe dry and re-apply CLP to all surfaces.
- 7. BORE EVACUATOR
 - a. After Firing Clean with CLP. Clean tube orifices with a soft wire. Wipe dry and reapply a light coat of CLP to all surfaces. Do not wipe dry Repeat process on next two days after firing.
 - b. Inactivity - If not to be fired for an extended period, quarterly clean with CLP, wipe dry and re-apply CLP to all surfaces.
- 8. MACHINE GUNS LUBRICATION.
 - a. Before Firing: Remove oil from barrel.
 - b. After Firing: Clean all powder-fouled surfaces with CLP. Disassemble into major components, clean with dry cleaning solvent, P-D-680, Type II, wipe dry, and apply a light coat of CLP. Apply lubricants sparingly in grooves, camways, rails, rollers, covers and receiver assemblies. Cycle function components by hand to spread the oil DO NOT oil solenoids and DO NOT dip backplates with solenoids into any solution, DO clean with a swab or clean dry cloth.
 - c. Inactivity: Clean and oil every 90 days unless inspection reveals shorter intervals are required.

NOTE

For more detailed lubrication instructions see TM 9-1005-231-10 for M85 (caliber .50 machine gun) and TM 9-1005-313-10 for M240 (7.62 mm machine gun).

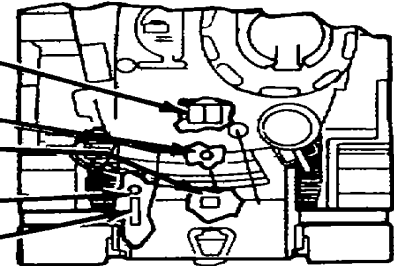
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**MAINTENANCE
LEVEL**

- ENGINE OIL FILTERS**
(See note 10a for -2D Engine)
(See note 10b for -2A Engine)
- ENGINE CRANKCASE DRAIN**
(See note 10a for -2D Engine)
(See note 10b for -2A Engine)
- TRANSMISSION OIL FILTER**
(Remove element, clean, dry, inspect
and install)
- TRANSMISSION DRAIN**
(See note 11)
- TRANSMISSION SIDE OIL SCREEN**
(See note 12)



KEY

LUBRICANT/COMPONENTS	Refill Capacity	EXPECTED TEMPERATURES*			
		Above +60°F (Above +15°C)	Above +32°F (Above 0°C)	+ 40°F to -- 10°F (+4°C to --23°C)	0°F to -65°F (--17°C to -53°C)
OE/HDO: Oil, ICE, Tactical MIL-L-2104 OEA: Oil, Engine Arctic MIL-L-46167		When temperature is consistently above +60°F (+15°C) use OE/HDO-50 in Engine.			
Engine	-2D 17 gal.	OE/HDO-	OE/HDO-	OE/HDO-	OEA
	-2A 13 gal.	50	30		
Transmission	17 gal.		OE/HDO 10	-10	

*For Arctic Operation refer to FM 9-207

LUBRICANTS USED TO PERFORM OPERATIONS ON THIS PAGE.

TOTAL MAN-HRS for 5 lube points

OE/HDO, and OEA (SEE KEY)

1.9

ON CONDITION LUBRICATION

(See note 9)
TA254551

NOTES:

9. Oil samples from both engine and transmission must be submitted to an assigned Army Oil. Analysis Program (AOAP) laboratory every 25 hours of operation or 30 days, whichever occurs first, in accordance with TB43-0210. Oil will be analyzed for condition and will be changed only when directed by the AOAP laboratory. In the event AOAP laboratory support is not available, drain oil every 1500 miles or semiannually, whichever ever occurs first. Semiannual oil changes are to be coordinated with seasonal changes. When using OEA oil, drain every 750 miles or quarterly, whichever occurs first.

10a -2D Engine: Drain oil only after operation while oil is warm. To drain engine, remove engine drain plug access cover from bottom of hull and remove drain plug and gasket. Remove vent bolt and sealing washer (on oil filter cover) and loosen filter housing drain valve 3/4-inch hex nut (below filter cover), six turns. After draining, clean and install drain plug, new gasket and access cover. Remove cover and filter elements from filter housing. Clean housing, install new filter elements and reinstall housing cover with new gasket. Tighten 3/4-inch hex nut to 150 lb-in (do not over tighten). Install vent bolt and new sealing washer. Refill crankcase with 17 gallons of seasonal grade oil, start engine and follow checking procedures in note 1 on card 2.

10b. 2A Engine: To drain engine, park vehicle on level ground. Remove engine drain plug access cover from bottom of hull and remove both oil pan drain plugs. Loosen the stop screws on the main and auxiliary oil filters. Remove nuts and washers from oil filter covers. Pull filters out against stop screws and allow filters to drain through oil pan. After draining, clean and install oil pan drain plugs with new gasket and hull access cover. Service main and auxiliary oil filters. Refill engine crankcase with 13 gallons of seasonal grade oil, start engine and follow checking procedures in note 2 on card 2.

11. To drain transmission, remove two drain plug access covers from bottom of hull and remove drain plugs. After draining, clean and install drain plugs and access covers. Refill transmission to ADD mark on dipstick and follow transmission oil check procedure in note 3 on card 4.

12. TRANSMISSION SIDE OIL SCREEN Whenever powerplant is removed and transmission is drained, remove, clean, and inspect the side oil screen.

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MAINTENANCE LEVEL	MAINTENANCE LEVEL
<p>O TRACK SUPPORT ROLLER-BEARINGS (3 fittings) (Lubricate until lubricant can be felt at seal behind rollers. Wipe off all excess lubricant from behind roller, seal, and along roller inner rim.)</p>	<p>COMPENSATING IDLER ARM HOUSING (Lubricate until clean lubricant appears at relief vent. Wipe off excess lubricant)</p>
<p>C TOW CABLES (See note 14)</p>	<p>COMPENSATING IDLER WHEEL BEARINGS (See note 13)</p>
<p>O ROADWHEEL ARM BEARINGS (6 fittings) (Lubricate until clean lubricant appears between arm retainer and arm, wipe off excess lubricant)</p>	<p>COMPENSATING IDLER ARM LINK (Lubricate until clean lubricant appears between barrel and shaft)</p>
<p>C TOWING PINTLE (3 fittings)</p>	<p>ROADWHEEL BEARINGS (6 fittings) (See note 13)</p>

LUBRICANTS USED TO PERFORM OPERATIONS ON THIS PAGE (EXCEPT TOW CABLES)

GAA (SEE KEY)

TOTAL MAN-HRS for 42 lube points

0.8

QUARTERLY LUBRICATION/750 MILES

TA254553

KEY

LUBRICANT/COMPONENTS	Refill Capacity	EXPECTED TEMPERATURES*		
		Above +32°F (Above 0°C)	+40°F to --10°F (+4°C to --23°C)	0°F to --65°F (--17°C to --53°C)
GAA: Grease, Automotive and Artillery MIL-G-10924 Track Support Roller Bearing	As Required	ALL TEMPERATURES		
Compensating Idler Arm Housing	As Required			
Compensating Idler Wheel Bearings	As Required			
Compensating Idler Arm Link	As Required			
Roadwheel Bearings	As Required			
Roadwheel Arm Bearings	As Required			
Towing Pintle	As Required			

*For Arctic Operation refer to FM 9-207

NOTES

13. COMPENSATING IDLER WHEEL BEARINGS AND ROADWHEEL BEARINGS. Clean grease from seal assembly. Clean lubricant pressure relief fitting using a clean, lint-free, dry cloth. Check lubricating pressure relief fittings for proper operation. The plunger type fittings are checked by pulling up on the plunger. The plunger should move freely. The ball-type fittings should be checked to insure that the two relief ports are open. If plunger does not move freely, or relief ports are not open (ball type), remove and thoroughly clean in PD-680 Type II, dry cleaning solvent. Dry with compressed air or lint-free cloth. Verify that plunger or ball moves freely before installing fitting. Apply lubricant until it appears at lubricant pressure relief fitting. No lubricant should appear at seal assembly. Wipe excess lubricant from relief fitting.

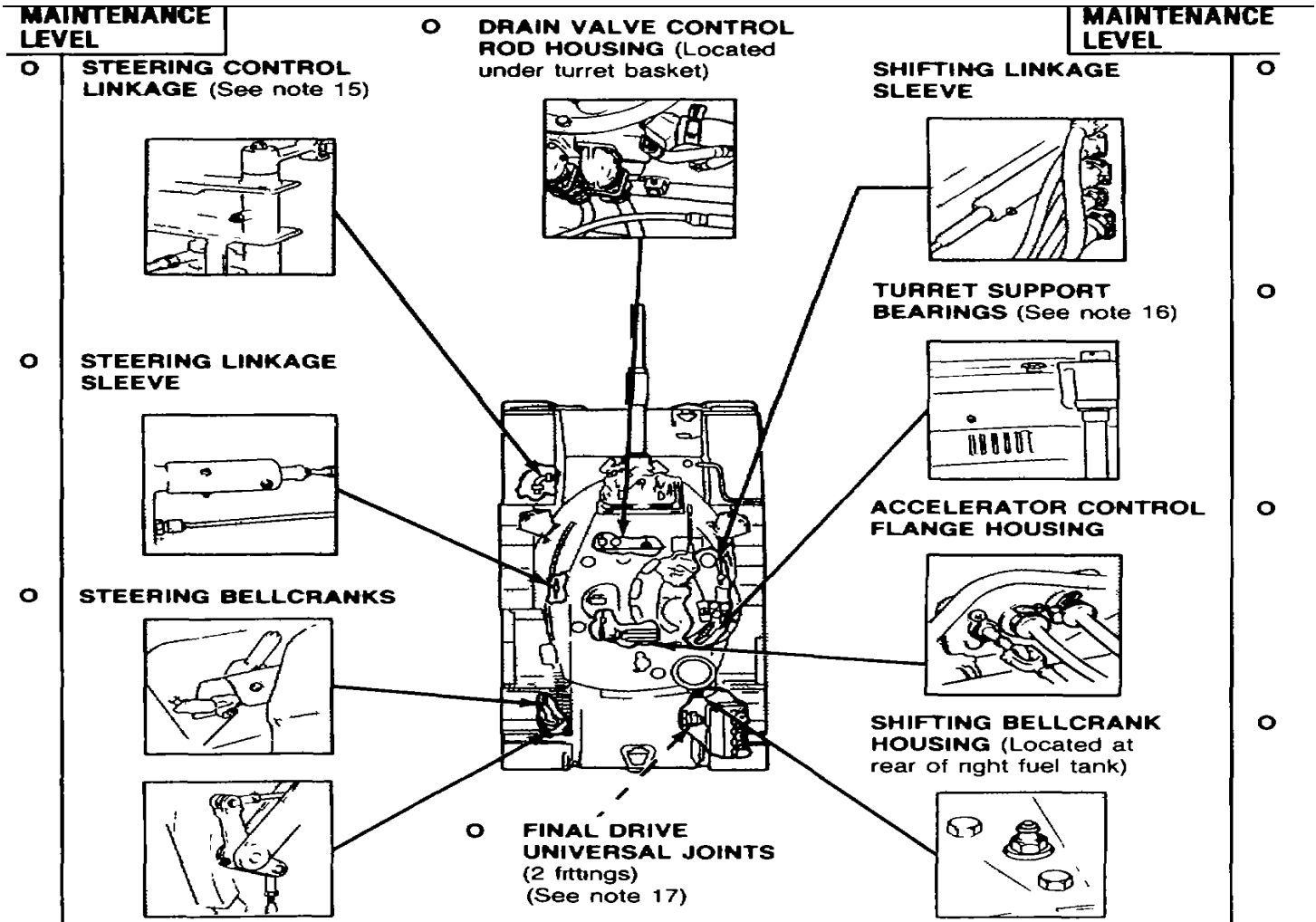
14. TOW CABLES. Clean cables with dry cleaning solvent PD-680, Type II, and coat with corrosion preventive compound MIL-C-16173 (Grade 1).

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LUBRICANTS USED TO PERFORM OPERATIONS ON THIS PAGE

TOTAL MAN-HRS for 13 lube points

GAA (SEE KEY)

1.8

QUARTERLY LUBRICATION/750 MILES - Continued

TA254555

KEY

LUBRICANT/COMPONENTS	Refill Capacity	EXPECTED TEMPERATURES*		
		Above +32°F (Above 0°C)	+40°F to --10°F (+4°C to --23°C)	0°F to --65°F (--17°C to --53°C)
GAA: Grease, Automotive and Artillery MIL-G-10924		ALL TEMPERATURES		
Steering Control Linkage	As Required			
Steering Linkage Sleeve	As Required			
Steering Bellcranks	As Required			
Drain Valve Control Rod Housing	As Required			
Shifting Linkage Sleeve	As Required			
Turret Support Bearings	As Required			
Accelerator Control Flange Housing	As Required			
Shifting Bellcrank Housing	As Required			
Final Drive Universal Joints	As Required			

*For Arctic Operation refer to FM 9-207

NOTES:

- 15. STEERING CONTROL LINKAGE. Lubricate when fire extinguisher bottles are removed for quarterly preventive maintenance checks and services.
- 16. TURRET SUPPORT BEARINGS. Remove plug and insert lubrication fitting. Lubricate with grease. Manually rotate turret a minimum of one revolution while lubricating to insure even lubrication of all support bearings. Remove lubrication fitting and install plug.
- 17 FINAL DRIVE UNIVERSAL JOINTS. If lubrication fitting holes are plugged with protective plugs, remove and discard plugs. Install lubrication fittings but do not remove fittings after lubricating.

TA254556

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**MAINTENANCE
LEVEL**

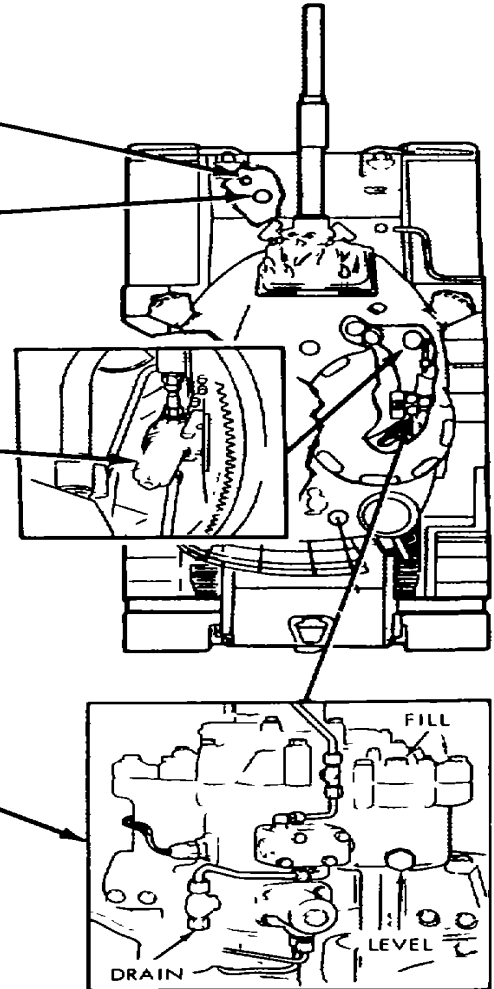
- O HYDRAULIC BRAKE MASTER CYLINDER**
(Check level) (Fluid should be 1/4 inch from top of opening)

- O TURRET SEAL PUMP**
(Use Silicone compound MIL-S-8660 to lube)
(See note 18)

- C STABILIZATION SYSTEM FILTER**
(See note 20)

- O TRAVERSING GEAR BOX LEVEL**
(Check level) (See note 19)

- C OIL CAN POINTS (17 lube points)**
(See notes 21 and 22)



LUBRICANTS USED TO PERFORM OPERATIONS
ON THIS PAGE:

BFS, OE/HDO, and OEA (SEE KEY)

TOTAL MAN-HRS
for 21 lube points

1.3

QUARTERLY LUBRICATION/750 MILES - Continued

TA254557

KEY

LUBRICANT/COMPONENTS	Refill Capacity	EXPECTED TEMPERATURES*		
		Above +32°F (Above 0°C)	+40°F to --10°F (+4°C to --23°C)	0°F to --65°F (--17°C to --53°C)
BFS: Brake Fluid, Silicone Automotive, All Weather Operational and Preservative MIL-B-46176 Hydraulic Brake Master Cylinder	As Required	ALL TEMPERATURES		
OE/HDO: Oil, ICE, Tactical MIL-L-2104 OEA: Oil, Engine Arctic, MIL-L-46167 Oil Can Points Traversing Gear Box	As Required As Required	OE/HDO-30 OE/HDO-10	OE/HDO-10 OE-HDO-10	OEA OEA
Silicone Compound MIL-S-8660 Turret Seal Pump	As Required	ALL TEMPERATURES		

*For Arctic Operation refer to FM 9-207

NOTES

18. TURRET SEAL PUMP. Remove pump plunger If necessary, clean by rubbing lightly with fine emery cloth and wipe with dry cleaning solvent, PD-680, Type II Lubricate cylinder, plunger, and rod lightly with silicone compound Assemble pump.

19. TRAVERSING GEARBOX to check level, remove level plug. Oil level should be at bottom of plug hole. To fill or add oil, remove fill plug Clean breather on fill plug.

20. STABILIZATION SYSTEM FILTER Quarterly and at times of removal and replacement of any hydraulic system line or component, remove and replace filter.

CAUTION

Use care when lubricating periscope and night viewer covers to prevent oil from being applied to optical surfaces.

NOTE

Lubricate oil can points that become accessible while performing other lubrication tasks.

21. OIL CAN POINTS Quarterly lubricate the following items

- | | |
|---|---|
| Headlight removal nut | Grille door hinge |
| Fender stowage box hatches and hinge | Control rod devise |
| Interphone box hing | Ammunition rack retain rs |
| Gun travel lock hinges and bol | Ammunition box latche |
| Towing hooks (hinge pin | Cupola machinegun access door lock |
| Brake linkag | Driver's gunner's and commander' |
| Transmission support guide rail and rollers | seat moving parts |
| Penscope cover hinges an penscope hatch mounts | Hatch locks and hinge |
| Driver's escape hatch (clean an coat pins, plungers and all unpainted surfaces) | Manual elevating and traversin handles and universal joints |

22. Do not lubricate the following Items

- | | |
|------------------------------------|---|
| Machinegun solenoi | Gas particulate fan moto |
| Starter solenoi | Track |
| Air cleaner blower moto | Tachometer drive adapte |
| Hydraulic power pack electri motor | Electronic firing circuit contact |
| Heater moto | Breech block firing pi |
| Ventilator blower moto | Any item NOT pointed out In thi lubrication order |

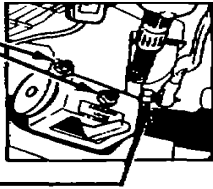
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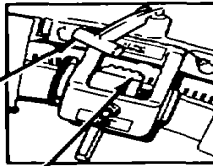
Reference. TM 9-2350-215-10 Series, TM 9-2350-215-20-1 Series, and TM 9-2350-215-20-2 Series

MAINTENANCE LEVEL

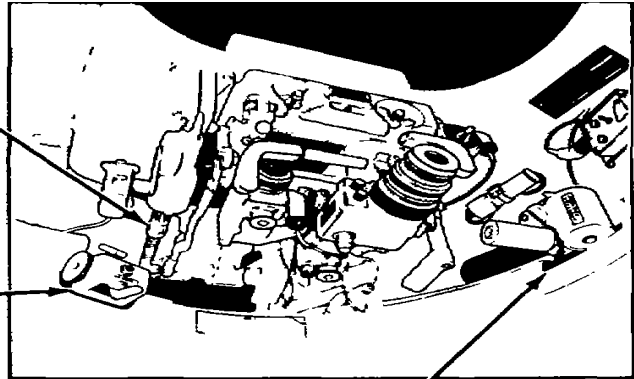
○ **CRADLE TRUNNION BEARINGS** (Lubricate until grease appears, 2 points)



○ **ELEVATING SCREW JACK** (Clean and coat)



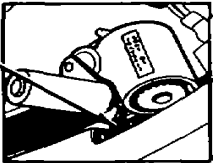
○ **AZIMUTH INTERLOCK** (Lubricate cam, rollers, spring and pin, lightly)



CUPOLA

○ **AZIMUTH LOCK** (Clean lock and coat lightly)

○ **CUPOLA RING GEAR** (Coat gear teeth lightly 360 degrees)
CAUTION: Do not lubricate plastic ball bearings



LUBRICANT USED TO PERFORM OPERATIONS ON THIS PAGE

TOTAL MAN-HRS for 6 lube points

GAA, and CLP (SEE KEY)

1.2

QUARTERLY LUBRICATION/750 MILES

TA254559

KEY

LUBRICANT/COMPONENTS	Refill Capacity	EXPECTED TEMPERATURES*		
		Above +32°F (Above 0°C)	+40°F to --10°F (+4°C to --23°C)	0°F to --65°F (--17°C to --53°C)
GAA: Grease, Automotive and Artillery MIL-G-10924	As Required	ALL TEMPERATURES		
Cupola Azimuth Lock	As Required			
Cupola Ring Gear	As Required			
Cradle Trunnion Bearings	As Required			
Elevating Screw Jack	As Required			
CLP: Cleaner, Lubricant Preservative, MIL-L-63460	As Required			
Cupola Azimuth Interlock	As Required			

*For Arctic Operation refer to FM 9-207

NOTE

Quarterly lubrication of main gun bore, bore evacuator, and machine guns may be required. (See notes 6, 7, and 8, card 6)

NOTE

If operating in 0°F (-17°C) to -65°F (-53°C) temperatures without Army Oil Analysis, quarterly/750 mile transmission and oil changes are required (See note 9, card 8).

NOTE

Whenever powerplant is removed, remove, clean and inspect transmission side oil screen. (See note 12, card 8.)

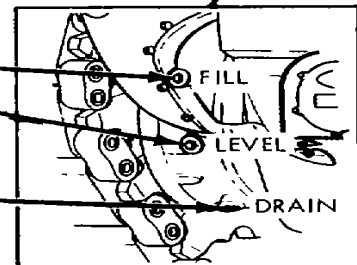
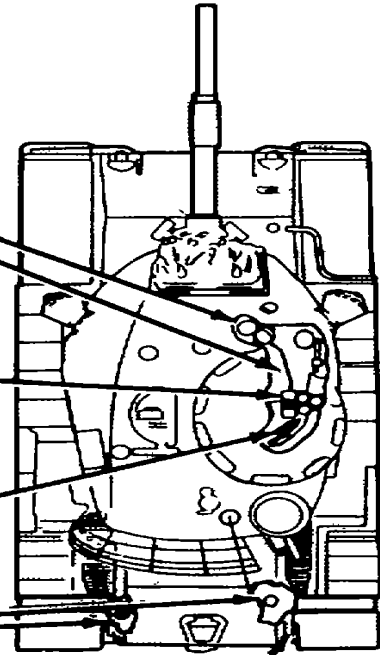
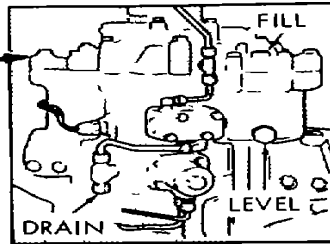
1 December 1983 (Supersedes M60A1 Portions of LO 9-2350-215-12, 22 August 1977)

TANK, COMBAT, FULL TRACKED, 105-MM, M60A1
 (2350-00-756-8497 AND 2350-01-058-9487 AOS)

Reference TM 9-2350-215-10 Series, TM 9-2350-215-20-1 Series, and TM 9-2350-215-20-2 Series

MAINTENANCE LEVEL

- **1 YEAR LUBRICATION**
HYDRAULIC POWER PACK DRAIN
 (See note 24)
- **1 YEAR LUBRICATION**
BACKLASH ASSEMBLY
 (Pack Bearing with GIA)
- **EVERY 6 MONTHS**
TRAVERSING GEARBOX DRAIN (Drain and refill)
 (See note 23)
- **EVERY 6 MONTHS**
TURRET TRAVERSING RING AND PINION GEAR (Clean and coat lightly when lubricant becomes contaminated with GAA)
- **EVERY 6 MONTHS**
BRAKE APPLY LEVERS
 (See note 25)
- **EVERY 6 MONTHS**
FINAL DRIVE FILL, LEVEL (Check level) **AND BREATHER REPLACEMENT**
 (See note 26)
- **2 YEAR LUBRICATION**
FINAL DRIVE DRAIN
 (Drain and refill-capacity 8 qt)
 (See note 26)



LUBRICANTS USED TO PERFORM OPERATIONS ON THIS PAGE:

For 6 month checks use OE/HDO, OEA, GAA, and CLP
 For 1 year use FRH, and GIA
 For 2 year check use OE/HDO, and OEA

TOTAL MAN-HRS for 8 lube points

6 MONTH - 1.8
 1 YEAR - 0.5
 2 YEAR - 0.4

6 MONTH, 1 YEAR AND 2 YEAR LUBRICATION

TA254561

KEY

LUBRICANT/COMPONENTS	Refill Capacity	EXPECTED TEMPERATURES*		
		Above +32°F (Above 0°C)	+40°F to -10°F (+4°C to -23°C)	0°F to -65°F (-17°C to -53°C)
OE/HDO: Oil, ICE, Tactical MIL-L-2104 OEA: Oil, Engine Arctic MIL-L-461070 Final Drive Traversing Gear Box	8 qts. 2 qts.	OE/HDO-50		OEA See Note 26b
CLP: Cleaner, Lubricant, Preservative MIL-L-63460 Brake Apply Levers	As Required	OE/HDO-10	OE/HDO-10	OEA
GAA: Grease, Automotive and Artillery, MIL-G-10924 Turret Traversing Ring and Pinion	As Required	ALL TEMPERATURES		
FRH: Hydraulic Fluid, Rust Inhibited, Fire Resistant. Synthetic Hydrocarbon Base, MIL-H-46170, Type I Hydraulic Power Pack	As Required			
GIA: Grease, Aircraft, and Instrument, MIL-G-23827 Backlash Assembly	As Required			

*For Arctic Operation refer to FM 9-207

NOTES:

23. TRAVERSING GEARBOX . To drain, remove cap from tee. Disconnect line and remove tee. Clean screen (part of tee). To check level, remove level plug. Oil level should be at bottom of plug hole. To fill or add oil, remove fill plug. Clean breather on fill plug.

24. HYDRAULIC POWER PACK. Drain annually. To drain, reduce hydraulic system pressure to zero and open petcock on reservoir. Replace stabilization system filter when draining annually. Fill with FRH only. (See note 4. card 4.)

25. BRAKE APPLY LEVERS. Semiannually when powerplant is removed for scheduled maintenance, remove brake apply lever covers, clean and coat all moving parts with CLP. Install cover and gasket.

26. FINAL DRIVES

a. Check oil level semiannually. Check more frequently if there is evidence of leakage. Check before operating vehicle when oil is cold. To check oil level, remove oil level plug. If final drive has been overfilled, allow excess oil to drain into a suitable container. It is normal for a small quantity of oil (approximately two or three tablespoons) trapped behind plug to run out as the plug is removed. Make sure oil level is up to lower edge of plug hole. Carefully insert finger into level plug hole and feel for oil. Check oil for metal content. If oil level is low, install level plug, remove fill plug, add oil. Allow oil to settle. Recheck oil level. Repeat procedure, as necessary, until proper level is reached. DO NOT OVERFILL. Clean and install fill and level plugs. Drain every two years, biennial. To drain, remove drain plug from bottom of housing. Drain only after operation while oil is warm. After draining, clean and install drain plug. Refill to proper level as outlined above. Whenever oil is checked or changed, check magnetic plug for metal shavings.

b. When temperatures are constantly below + 10°F (- 12°F) for 7 or more days, change oil to OEA, MIL-L-46167.

c. Remove and Install Breather (if equipped) at time of semiannual powerplant removal.

NOTE

If Army Oil Analysis is not available, engine and transmission oil changes are required (See note 9, card 8.)

TA254562

1 December 1983 (Supersedes M60A1 Portions of LO 9-2350-215-12, 22 August 1977)

**TANK, COMBAT, FULL TRACKED, 105-MM, M60A1
(2350-00-756-8497 AND 2350-01-058-9487 AOS)**

Reference TM 9-2350-215-10 Series, TM 9-2350-215-20-1 Series, and TM 9-2350-215-20-2 Series

Copy of this Lubrication Order will remain with the vehicle at all times Instructions contained herein are mandatory

By Order of the Secretary of the Army
Official Robert M. Joyce
*Major General, United States Army
The Adjutant General*

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

LO 9-2350-215-12 DISTRIBUTION To be distributed In accordance with DA form 12-37, Operator Maintenance requirements for 105mm M60A1 Tank

TA301018

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