

CARRIER, PERSONNEL, FULL TRACKED, ARMORED, M113A3:
2350-01-219-7577
CARRIER, COMMAND POST, LIGHT, TRACKED, M577A3:
2350-01-369-6085
CARRIER, ANTI-TANK (TOW), FULL TRACKED ARMORED, M901A3
2350-01-369-7253
CARRIER, PERSONNEL, FULL TRACKED ARMORED FIRE
SUPPORT, M981A3:
2350-01-369-6079
CARRIER, SMOKE GENERATOR, FULL TRACKED, M1059A3:
2350-01-369-6083
CARRIER, MORTAR, 120-MM, SELF-PROPELLED, M1064A3:
2350-01-369-6082
CARRIER, STANDARDIZED INTEGRATED COMMAND POST
SYSTEM, M1068A3:
2350-01-369-6086
CHASSIS, MECHANIZED SMOKE OBSCURANT, M58:
2350-01-418-6654

Reference: TM 9-2350-277-10, TM 9-2350-277-20, TM 9-2300-422-23&P, IL 9100SL, TB 43-0210, TB 43-0211, FOR ARCTIC OPERATIONS, FM 9-207, FOR DESERT OPERATIONS, FM 90-3, FOR MOUNTAIN OPERATIONS, FM 90-6

REPORTING OF ERRORS

You can improve this publication by calling attention to errors, recommending improvements and by stating your reasons for the recommendations. Your letter or DA Form 2028, Recommended Changes to Publications and Blank Forms, should be mailed directly to Commander, U.S. Army Tank-Automotive Command, ATTN: AMSTAIM-AC, Warren, MI 48397-5000. A reply will be furnished directly to you.

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Service intervals (on-condition or hard time) and the related man-hour times are based on normal operation. The man-hour time specified is the time you need to do all the services prescribed for a particular interval. Hard time intervals will be indicated by one of the following symbols as appropriate: Daily (D), Weekly O(N), Monthly (M), Semiannually (S), and Annually (A). On-condition (OC) oil sample intervals shall be applied unless changed by the Army Oil Analysis Program (AOAP) Laboratory. Change the hard time interval if lubricants are contaminated or if you are operating equipment under adverse operating conditions, including longer-than-usual operating hours. The hard time intervals may be extended during periods of low activity if adequate preservation precautions are taken. Hard time intervals will be applied to oil changes in the event AOAP Laboratory support is not available.

On-condition (OC) AOAP Laboratory determined oil change intervals shall be applied instead of hard time intervals such as hourly, calendar, or mileage, unless otherwise notified. The services will be required when directed by an Army Oil Analysis Program (AOAP) Laboratory which has analyzed the oil for serviceability.

WARNING

Dry cleaning solvent PD-680 is toxic and flammable. Wear protective goggles and gloves; use only in well ventilated area; avoid contact with skin, eyes and clothes, and do not breathe vapors. Keep away from heat and flame. Never smoke when using solvent; the flash point for Type I dry cleaning solvent is 100°F (38°C) and for Type II is 138°F (50°C). Failure to do so may result in injury or death.

If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

Clean fittings before lubricating. Clean parts with dry cleaning solvent, PD-680 (SD), Type II. Dry before lubricating. Dotted arrow points indicate lubrication on both sides of equipment.

Level of maintenance. The lowest level of maintenance authorized to lubricate a point is indicated by one of the following symbols as appropriate: Operator/Crew (C); and Unit Maintenance (O). Unless specifically identified, all procedures apply to M1 13A3, M577A3, M901A3, M981A3, M1059A3, M1064A3, M1068A3, and M58 carriers.

NOTE

Park carrier on level ground to check oil levels. Check/lubricate all oil and grease fitting points after washing or fording.

ARMY OIL ANALYSIS PROGRAM (AOAP)

AOAP is an effective maintenance diagnostic tool and not a maintenance substitute. TB 43-0210 or TM 9-2300-422-23&P must not be interpreted to mean AOAP minimizes, in any way, the need to employ good maintenance practices and strong maintenance disciplines.

SAMPLING REQUIREMENTS

Samples may be taken without WARMING a component to operating temperature if the equipment has been operated within the last 30 days. If the equipment has not been operated within the last 30 days, the components must be brought to operating temperature. These requisites apply to both routine and special sampling. Oil samples must not be taken immediately after oil is added. When oil sampling valve is not available to take oil sample, use a vampire pump.

LUBRICATION ORDER

25 July 1994

LO 9-2350-277-12

(Supersedes LO 9-2350-277-12, May 1987)

SAMPLING PROCEDURES

1. Perform DAILY operation checks and services.

NOTE

DO NOT ADD OIL immediately prior to taking oil samples. When operation checks and services indicate the need to replenish oil levels WAIT until after taking samples. New oil added immediately prior to taking samples or before prolonged operation of components will adversely effect oil analysis results.

2. Obtain two sample bottles (NSN 8125-01-082-9697) and two DA Form 2026s from the unit AOAP monitor.
3. Start engine (TM 9-2350-277-10). If required (refer to Sampling Requirements), operate carrier to bring engine and transmission up to normal operating temperatures.
4. Stop carrier and set the brakes. (TM 9-2350-277-10).
5. Place range selector in SL position (steering lock) and keep engine running.
6. Remove driver's power plant access panel (TM 9-2350-277-10).

7. With engine running remove dust caps from engine and transmission oil sampling valves.
8. Open sample valve on engine oil filter and drain a small amount of oil into a container to clear valve of grit and contamination. (Properly dispose of container and oil upon completion of sample taking.) Fill sampling bottle to the neck shoulder and seal it. Attach DA Form 2026 to sample bottle.
9. Close oil sample valve and install dust cap.
10. Take oil sample from transmission in the same manner (steps 7 thru 9).
11. Stop engine (TM 9-2350-277-10).
12. Install driver's compartment power plant access panel and secure carrier.
13. Deliver sample bottles to the unit AOAP monitor.

NOTE

For location of nearest AOAP Laboratory and complete information about AOAP, refer to TB 43-0210.



LUBRICANT • INTERVAL

ENGINE OIL FILL
(See NOTES 1&2)
(C)

OE/HDO

D

ENGINE OIL LEVEL
(Check Level)
(See NOTE 3) (C)

OE/HDO

D

ENGINE OIL SAMPLE VALVE
(See NOTES 4&5)
(C)

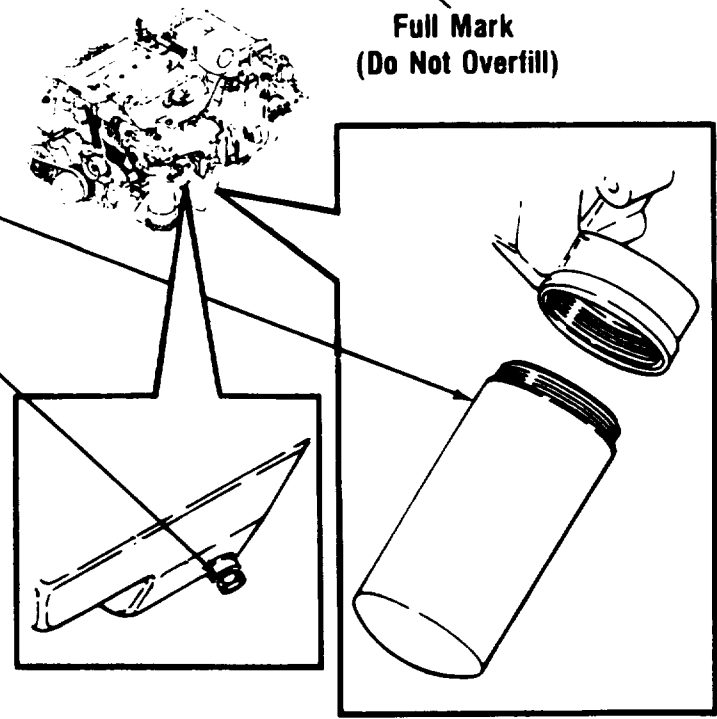
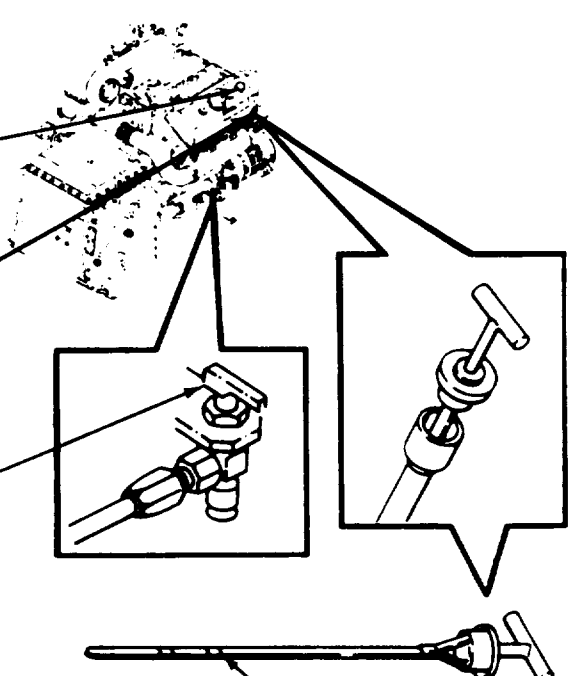
OC

ENGINE OIL FILTER
(See NOTE 6) (O)

OC

ENGINE OIL DRAIN
(See NOTES 7,8&9) (O)

OC



TOTAL MAN-HR	
INTERVAL	MAN-HR
D	0.3
OC	0.5

LUBRICATION ORDER

25 July 1994

LO 9-2350-277-12

(Supersedes LO 9-2350-277-12, May 1987)

LUBRICANTS/COMPONENTS		CAPACITIES (APPROX)	EXPECTED TEMPERATURES*			INTERVALS
			Above +32°F (Above 0°C)	+40°F to -10°F (+5°C to -23°C)	0°F to -65°F (-18°C to -54°C)	
OE/HDO (MIL-L-2104D) OR OEA (MIL-L-46167)	LUBRICATING OIL, INTERNAL COMBUSTION ENGINE	18 qts	OE/HDO- 15/40	OE/HDO- 15/40	OEA	D — Daily OC — On Condition
(MIL-L-21260)	PRESERVATION OIL		PE 30-1	PE 30-1		

*FOR ARCTIC OPERATION REFER TO FM 9-207

NOTES

1. Do NOT mix OE/HDO-15W40 with single grade lubricants.

NOTE

Visual inspection of engine oil should not be justification to replace oil. Diesel engine oil may appear black due to additives.

2. Change oil and oil filters when converting from OE/HDO to OEA, PE-30-1 to OE/HDO, etc.

CAUTION

Engine can be damaged if filled above F (full) mark.

3. ENGINE OIL LEVEL. Before starting engine, check for oil level between F and L marks on gage rod. Do NOT add oil above F (full) mark.

4. FREQUENCY OF AOAP SAMPLE. Every 60 days obtain a sample of engine oil and send to the nearest AOAP Laboratory (TB 43-0210 and TM 9-2300-422-23&P). Take samples as near the prescribed interval as possible. If sampling at the prescribed interval is not possible, a 10 percent variance before or after the scheduled interval date or miles is permissible. The need for on-condition oil changes will be determined by the AOAP Laboratory.

5. HARD TIME INTERVAL. If AOAP laboratory support is not available, drain oil and change filter element/gasket every 1,500 miles or semi-annually. The hard time interval may be shortened if equipment is operated under adverse conditions.

6. ENGINE OIL FILTER. Filter element will be replaced each time an engine oil change is required (TM 9-2350-277-20).

NOTES (cont)

7 ENGINE OIL DRAIN AND FILTER ELEMENT REPLACEMENT.

WARNING

Hot parts can burn you. Use care when you work near hot power unit.

NOTE

Drain oil only when hot after engine operation. Allow oil to drain thoroughly.

- a. Remove access cover from bottom of hull (TM 9-2350-277-20).
- b. Place a suitable container under engine oil pan.
- c. Remove plug from engine oil pan and drain oil into container.
- d. Inspect plug and oil for metallic particles. If metal chips are found, notify direct support maintenance.
- e. Clean and install drain plug in engine oil pan.

f. Install new oil filter element (TM 9-2350-277-20).

g. Fill engine with approximately 22 quarts of OE/HDO or OEA (see card 4) to bring level between F and L marks on gage rod.

8. OPERATIONAL CHECK

a. Start engine (TM 9-2350-277-10) and check for oil leaks at filter and drain plug. Stop engine.

b. Inspect access cover on hull bottom and replace if damaged.

c. Install access cover on hull bottom (TM 9-2350-277-20).

9. PRESERVATION OIL. If engine has been filled with preservation oil (MIL-L-21260, Grade PE 30-1), leave this oil in engine until first scheduled oil change. Maintain operating oil level by adding applicable grade oil (OE/HDO or OEA). When first scheduled oil change is made, refill engine with applicable grade of oil (see NOTE 6 and Temperature Key Chart).

LUBRICATION ORDER

25 July 1994

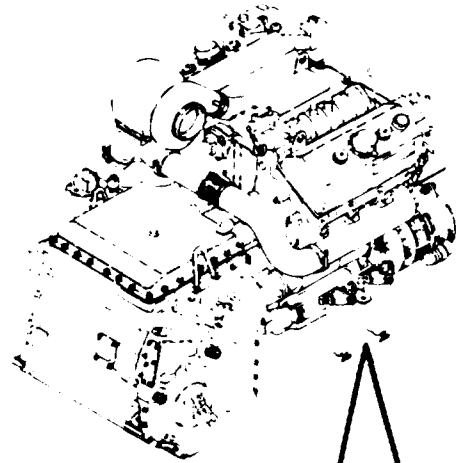
LO 9-2350-277-12

(Supersedes LO 9-2350-277-12, May 1987)

LUBRICANT • INTERVAL

WARNING

Fuel is flammable. Always use in area with good air flow, away from heat or flames. Do not breathe fumes. If fuel gets on hands, wash them. If fuel gets in eyes, flush with water and get medical help. Keep fire extinguisher nearby.

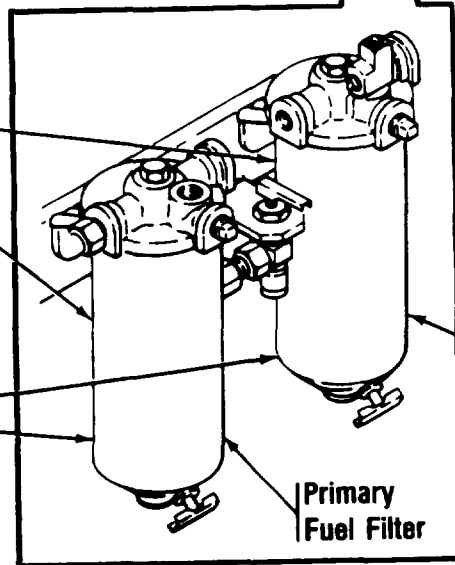


FUEL FILTER
CHANGE
(2 places)
(See NOTE 2) (0)

FUEL FILTER
DRAIN
(2 places)
(See NOTE 1) (C)

S

D



Secondary
Fuel Filter

Primary
Fuel Filter

TOTAL MAN-HR	
INTERVAL	MAN-HR
S	0.3
D	0.3