

LUBRICATION ORDER

LO 5-2350-262-12

8 November 1993

SUPERSEDES L05-2350-262-12, 26 JUNE 1992

ARMORED COMBAT EARTHMOVER (ACE), M9 (2350-00-808-7100)

Reference: TM 5-2350-262-10, TM 5-2350-262-20-1, -2, TB 43-0210, and Supply Catalog C9100-IL

REPORTING 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 or DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to: Commander, U.S. Army Tank-Automotive Command, ATTN: AMSTA-MB, Warren, MI 48397-5000. A reply will be furnished to you.

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

This lubrication order is divided into six sections, based on lubrication intervals (daily, monthly, quarterly, semiannually, annually, and on-condition).

An overall view showing lubrication points precedes each set of detailed notes.

A dotted leader line (- - -) means there are lubrication points on both sides of the vehicle.

Intervals are based on normal operation.

- Lubricate more often during constant operation.
- Relubricate all items found contaminated after fording, swimming, or high-pressure washing.
- On-condition intervals for oil changes shall be determined by the Army Oil Analysis Program (AOAP) laboratory and shall be applied unless otherwise notified. See card 3 for oil sampling procedures.
- Oil filters shall be changed at prescribed hardtime intervals or sooner when:
 - a. They are known to be contaminated, or clogged;
 - b. Service is recommended by AOAP laboratory analysis.
- For equipment under manufacturer's warranty, hardtime oil service intervals shall be followed. Intervals shall be shortened if lubricants are known to be contaminated or if operation is under adverse conditions (such as longer-than-usual operating hours, extended idling periods, extreme dust).

WARNING: Drycleaning solvent (SD-2) is toxic and flammable. Wear protective goggles and gloves, and use only in well-ventilated area. Avoid contact with skin, eyes, and clothes, and do not breathe vapors. Do not use near open flame or excessive heat. If you become dizzy while using drycleaning solvent, get fresh air immediately, and get medical aid. If contact with skin or clothing is made, flush with water. If contact with eyes is made, wash your eyes with water, and get medical aid immediately.

- For operation of vehicle in prolonged cold temperatures below -10°F (-23°C): remove lubricants prescribed in the key for temperatures above -10°F (-23°C), clean parts with drycleaning solvent (SD-2), and relubricate with lubricants specified in the key for temperatures 0°F to -65°F (-18°C to -54°C).

· Operation in dusty or sandy areas requires more frequent cleaning and servicing of filters to prevent dust from entering engine, transmission, steer unit, and hydraulic system.

MAN-HOUR TIMES

The man-hour time specified is the time you need to do all the services prescribed for a particular interval. These times are based on normal vehicle operation.

LEVEL OF MAINTENANCE: C - - Operator
O - - Unit Maintenance

LUBRICATION POINTS

Type of lubricants used at each point are identified by arrows:



PL



GAA

- OBSERVE THE FOLLOWING:**
- NEVER use the wrong type grease.
 - NEVER use too much lubrication.
 - ALWAYS clean grease fittings with drycleaning solvent (SD), type II or equivalent, and dry before lubricating.
 - ALWAYS use the lubrication order.

—KEY—

LUBRICANTS	CAPACITIES	EXPECTED TEMPERATURES			INTERVALS
		Above +15°F (Above -9°C)	+40° to -15°F (44° to -26°C)	+40° to -65°F (+4° to -54°C)	
OE/HDO (MIL-L-2104)	LUBRICATING OIL, Internal Combustion Engine Tactical Service	OE/HDO-30	OE/HDO-10	OEA	D-Daily M-Monthly or 33 hours of oper- ation, whichever occurs first. Q-Quarterly (3 months) or 100 hours of oper- ation, whichever occurs first. S-Semiannually (6 months) or 200 hours of oper- ation, whichever occurs first. A-Annually (12 months) or 400 hours of oper- ation, whichever occurs first. OC-On-condition.
OEA (MIL-L-46167)	LUBRICATING OIL, Internal Combustion Engine Artic				
	Engine Crankcase, add 4 additional quarts (3.785 L) for filters	Refill 22 qts (20.812 L) Dry 30 qts (28.380 L)			
	Winch	3.5 qts (3.312 L)			
	Transmission, Steer Unit, Transfer Case, Oil Cooler and Lines	Refill 50 qts (47.300 L) Dry 78 qts (73.815 L)			
	Hydraulic Tank	Refill 108 qts (102.206 L) Dry 128 qts (121.133 L)			
	Hydraulic Tank Return Line Filter	4 qts (3.785 L)			
GO (MIL-L-2105)	LUBRICATING OIL, Gear, Multi-purpose	GO-85/140	GO-80/90	GO-75	
	Final Drives (2)	8 qts each (7.571 L) GO-80/90			
GAA (MIL-G-10924)	GREASE, Automotive and Artillery	ALL TEMPERATURES			
	Roadwheel Hub Bearing	GAA	GAA	GAA	
CMD (MIL-G-21164)	Molybdenum Disulfide	ALL TEMPERATURES			
	Hatch Hinge Assembly	GMD	GMD	GMD	
PL (Medium (MIL-L-3150) (Special VV-L-800)	LUBRICATING OIL, General Purpose Oil Can Points	PL-M Medium	PL-S Special	PL-S Special	
SD-2 (P-D-680)	SOLVENT, Drycleaning	ALL TEMPERATURES			
		EXPECTED TEMPERATURES			
(MIL-G-18458)	GREASE, Wire Rope and Exposed Gear	ALL TEMPERATURES			
	WINCH CABLE and Drum	Grease, Wire Rope and Exposed Gear	Grease, Wire Rope and Exposed Gear	Grease, Wire Rope and Exposed Gear	

FUEL REQUIREMENT'S - TEMPERATURE LIMITS (VV-F-800)	
Grade DF-2 Fuel	For use above +10°F (-12°C)*
Grade DF-1**	For use below +10°F (-12°C) to above -20°F (-29°C)
Grade DF-A	For use below -20°F (-29°C)
Grade JP8	For use above -60°F (-51°C)
* Usage temperature may vary dependent on the cloud point of the actual DF-2 fuel being supplied in the geographical area	
** DF-1 is not normally procured in CONUS or OCONUS Refineries will blend DF-2 with kerosene to meet temperature requirements of DF-1.	

TOTAL MAN-HOURS		TOTAL MAN-HOURS	
INTERVAL	MAN-HOURS	INTERVAL	MAN-HOURS
D	0.3	S	2.8
M	1.0	A	4.6
Q	3.7	OC	1.0

- GENERAL NOTE 1** If OEA lubricant is required to meet the temperature ranges specified in key, OEA is to be used in all places where OE/HDO-10 is specified.
- GENERAL NOTE 2** The use of OE/HDO 15W-40 in lieu of OE/HDO-30 is authorized. The OE/HDO 15W-40 can be used at all temperatures above 5°F (-15°C) for all components except the transmission, transfer case, steer unit and final drives.

OIL ANALYSIS PROGRAM SAMPLING PROCEDURES

Note

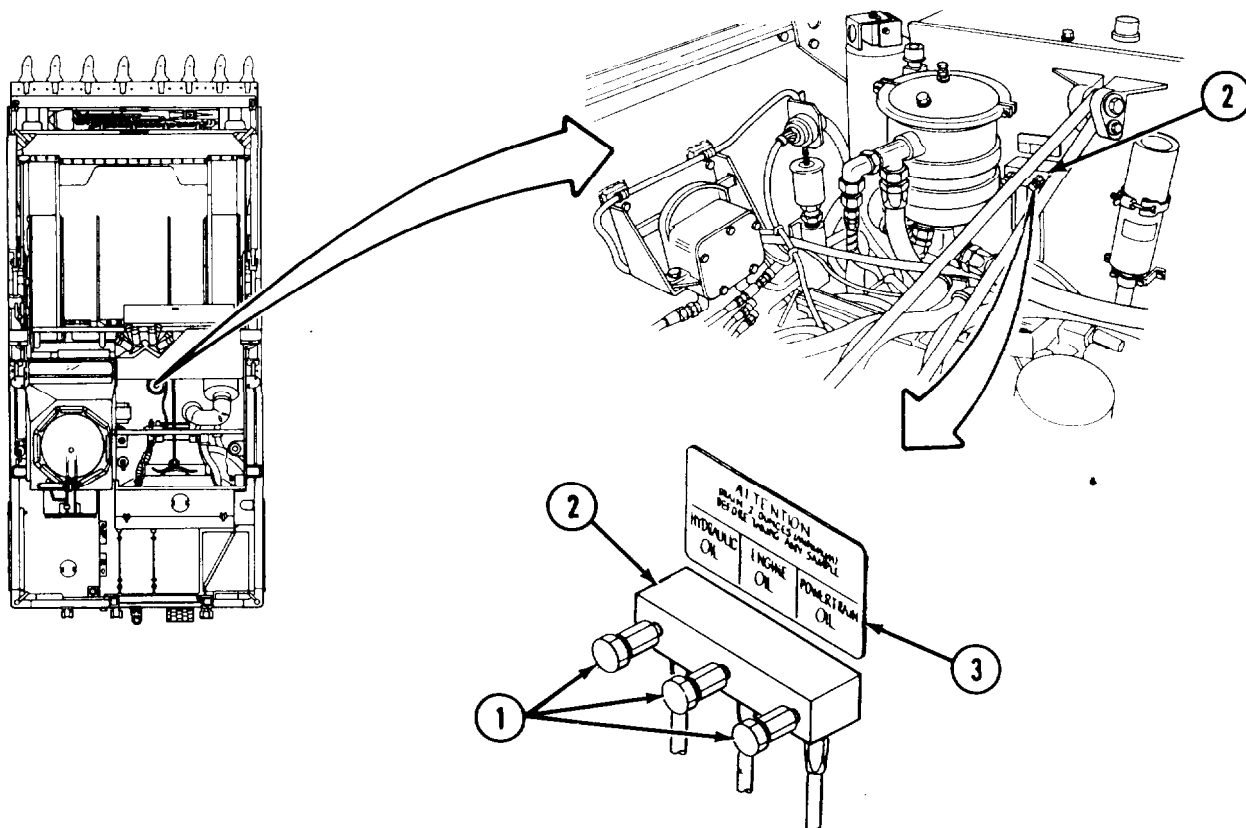
Oil samples must be submitted to an assigned Army Oil Analysis Program (AOAP) laboratory every 25 engine hours or 30 days, whichever comes first, in accordance with TB 43-0210.

Three oil sampling valves (1) are located on the oil sampling manifold (2). The valves are identified by the plate (3) above the valves (1), and are used to sample oil from the following:

- HYDRAULIC OIL SAMPLE — — Samples oil from the entire vehicle hydraulic system.
- ENGINE OIL SAMPLE — — Samples vehicle engine oil.
- POWERTRAIN OIL SAMPLE — — Samples lubricating oil from the transmission and steer unit.

When a lubrication note specifies that an oil sample must be taken, use the following procedures:

- A Open engine intake grilles (TM 5-2350-262-10).
- B Ensure that oil to be sampled is at its normal operating temperature (TM 5-2350-262-10).
- C Open valve (1) of system or component to be sampled, and drain at least 2 oz (59 ml) of oil into a container. Close valve (1), and discard this oil.
- D Place sample bottle (TB 43-0210) under valve of system or component to be sampled, open valve (1), and fill sample bottle to approximately 1/2 in. (1.3 cm) below neck of bottle. Close valve (1).
- E Send oil sample to AOAP laboratory.
- F If no other tasks will be performed in the engine compartment, close engine intake grilles (TM 5-2350-262-10).



DAILY NOTES

This page shows what to check or lubricate each day the vehicle is operated or driven.

LUBRICANT • INTERVAL

Engine
Crankcase
Level Check
(See Note 1) (C)

Engine
Crankcase
Fill
(See Note 1) (C)

**OE/HDO
or
OEA**

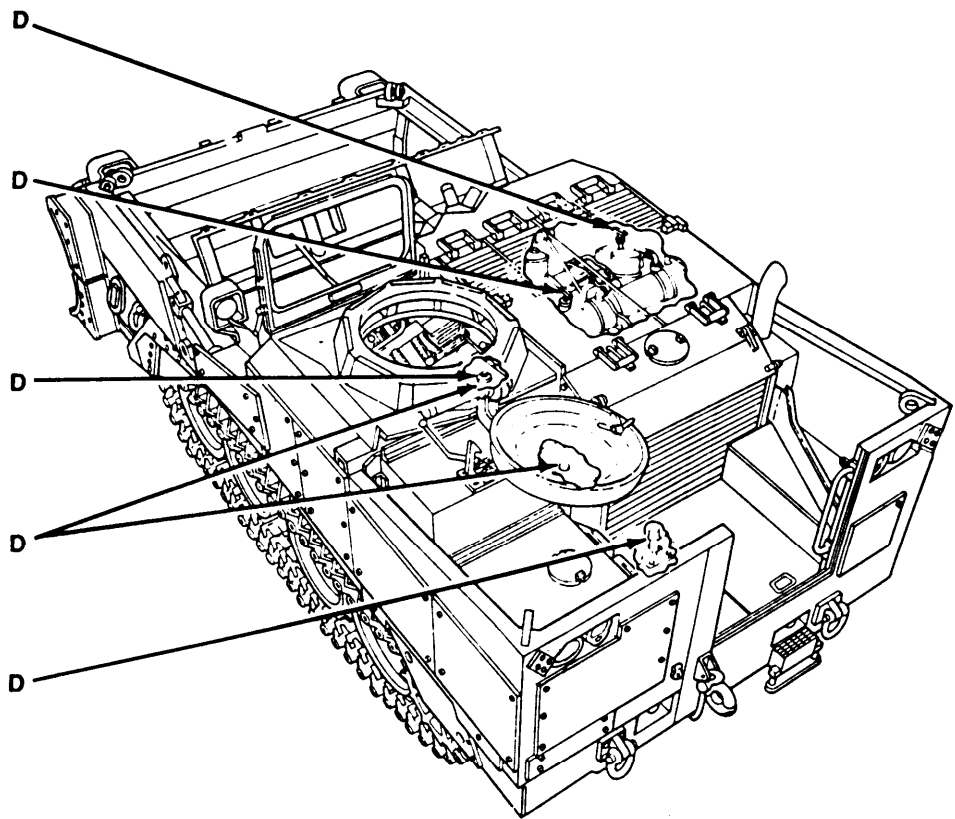
Hydraulic
Tank
Level Check
(See Note 2) (C)

Hydraulic
Tank Fill
(See Note 2) (C)

**OE/HDO
or
OEA**

Transmission,
Steer Unit,
and Transfer
Case Fill
(See Note 3) (C)

**OE/HDO
or
OEA**



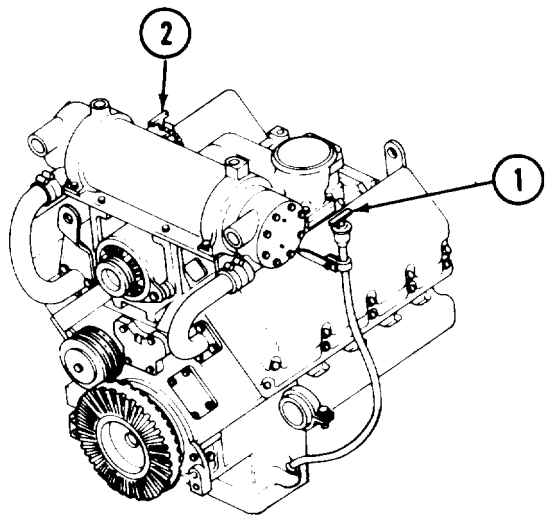
DAILY NOTES (CONTINUED)

Note 1

ENGINE CRANKCASE

Access through intake grilles (TM 5-2350-262-10).

- A Check oil level before starting engine
- B Level should be between low (L) and high (H) marks on gage (1).
- C Add or drain OE/HDO or OEA as required. To add oil, remove filler cap (2) from rocker cover. Install cap (2) when done filling oil.
- D Take oil samples every 30 days. Refer to TB 43-0210 for sampling requirements and card 3 for oil sampling procedures.



Note 2

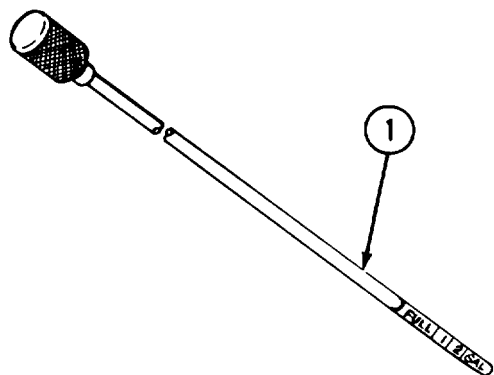
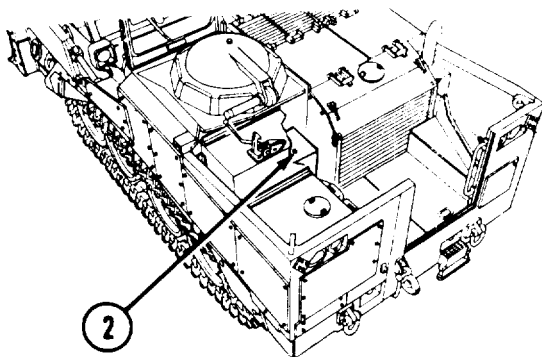
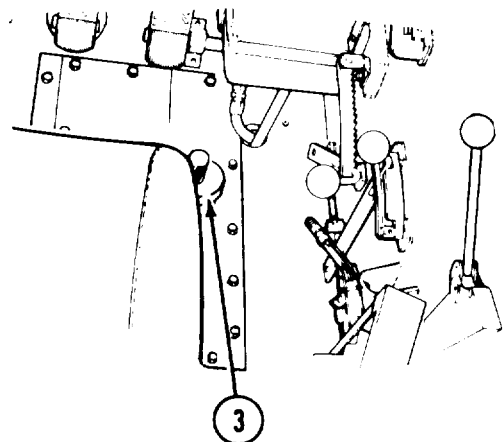
HYDRAULIC TANK

Note

- Take oil sample (card 3) five days prior to annual lubrication. Submit oil sample to AOAP laboratory. Change oil only as directed by AOAP laboratory.
- Check hydraulic oil level with ejector retracted (back), apron down, and hydraulic pressure relieved.

Access through operator's hatch (TM 5-2350-262-10).

- A Check oil level on gage (1).
- B Oil level should be within the FULL marks.
- C Add or drain OE/HDO-10 or OEA, as required. Add oil through either the primary fill point (2) or optional fill point (3).



DAILY NOTES (CONTINUED)

Note 3

TRANSMISSION, STEER UNIT, AND TRANSFER CASE

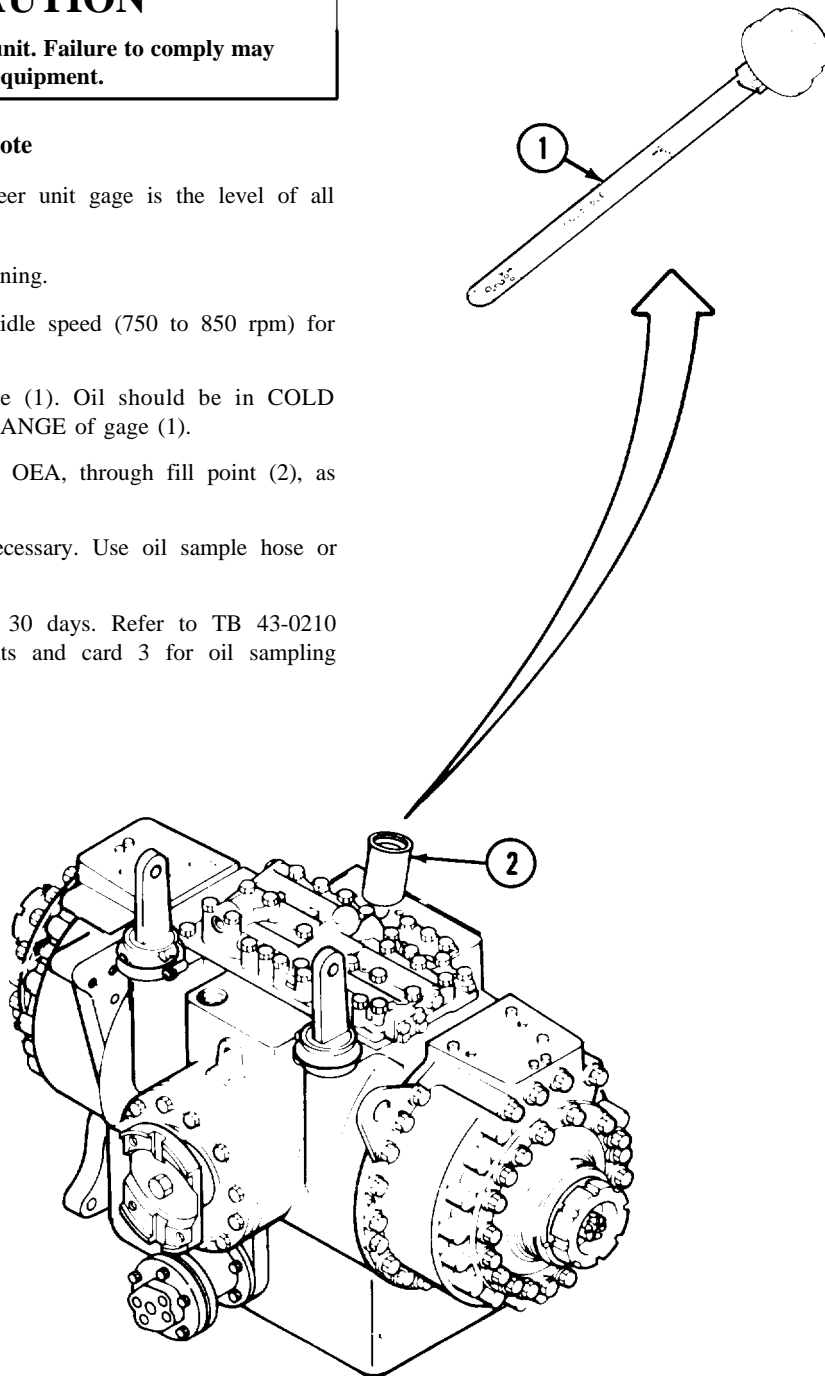
Access through rear floor plates (TM 5-2350-262-10).

CAUTION

Do not overfill steer unit. Failure to comply may result in damage to equipment.

Note

- The level on the steer unit gage is the level of all three units.
 - Engine must be running.
- A Start engine and run at idle speed (750 to 850 rpm) for 3 to 5 minutes.
- B Check oil level on gage (1). Oil should be in COLD IDLE or OPERATING RANGE of gage (1).
- C Add oil, OE/HDO-10 or OEA, through fill point (2), as necessary.
- D Remove excess oil if necessary. Use oil sample hose or syringe, if available.
- E Take oil samples every 30 days. Refer to TB 43-0210 for sampling requirements and card 3 for oil sampling procedures.



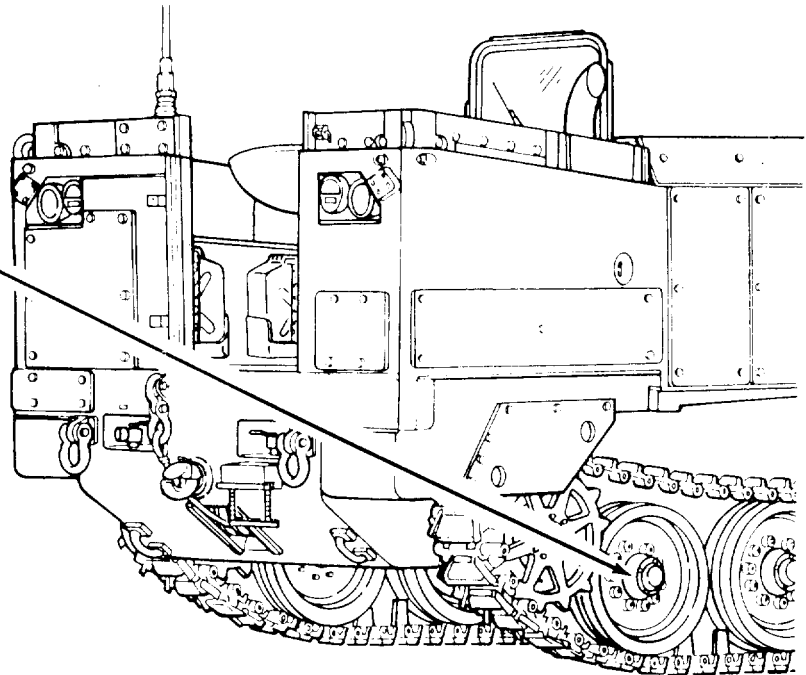
MONTHLY NOTES

LUBRICANT - INTERVAL

Roadwheel
Hubs
(See Note 4) (C)

GAA

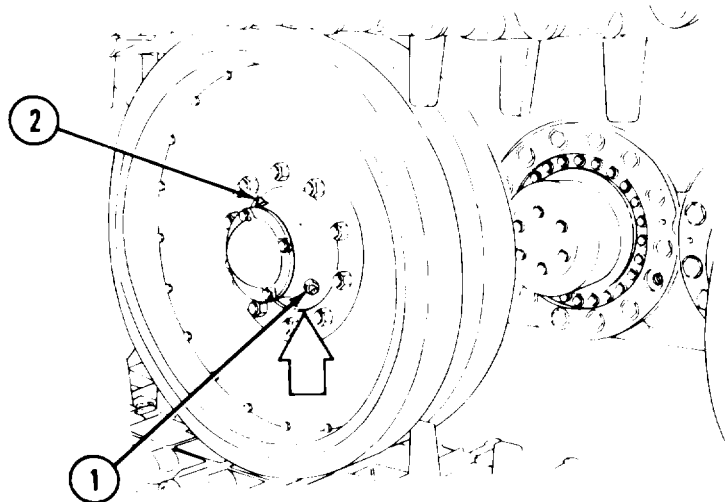
M



Note 4

ROADWHEEL HUBS

Lubricate fitting (1) with GAA until grease comes out of safety relief valve (2).



QUARTERLY NOTES

LUBRICANT • INTERVAL

INTERVAL • LUBRICANT

Ejector
Cylinder
Rod End
(See Note 5) (C)

GAA

Q

Ejector
Guide
Rollers
(See Note 6) (C)

GAA

Q

Apron Hinge
Pins
(See Note 7) (C)

GAA

Q

Apron Cylinder
Rods
(See Note 7) (C)

GAA

Q

Speedometer
Adapter
(See Note 8) (O)

GAA

Q

Q GAA

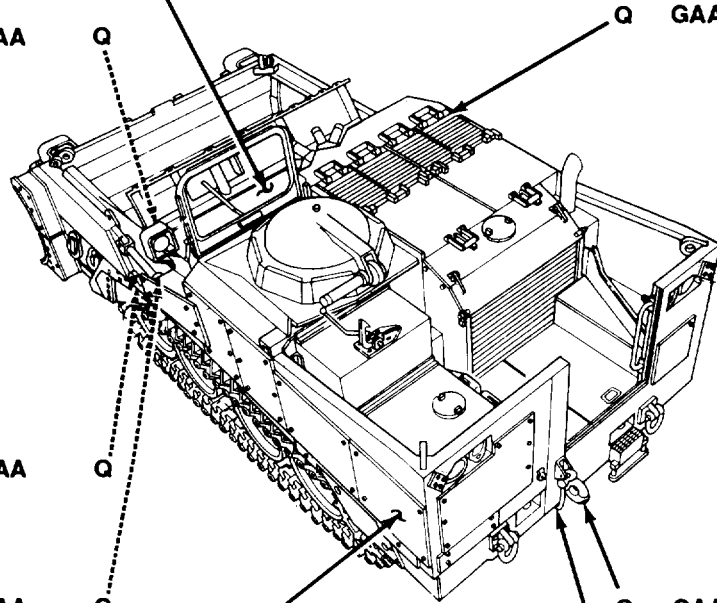
Tachometer
Adapter
(See Note 9) (O)

Q GAA

Towing Pintle
(See Note 10) (C)

Q OE/HDO
or
OEA

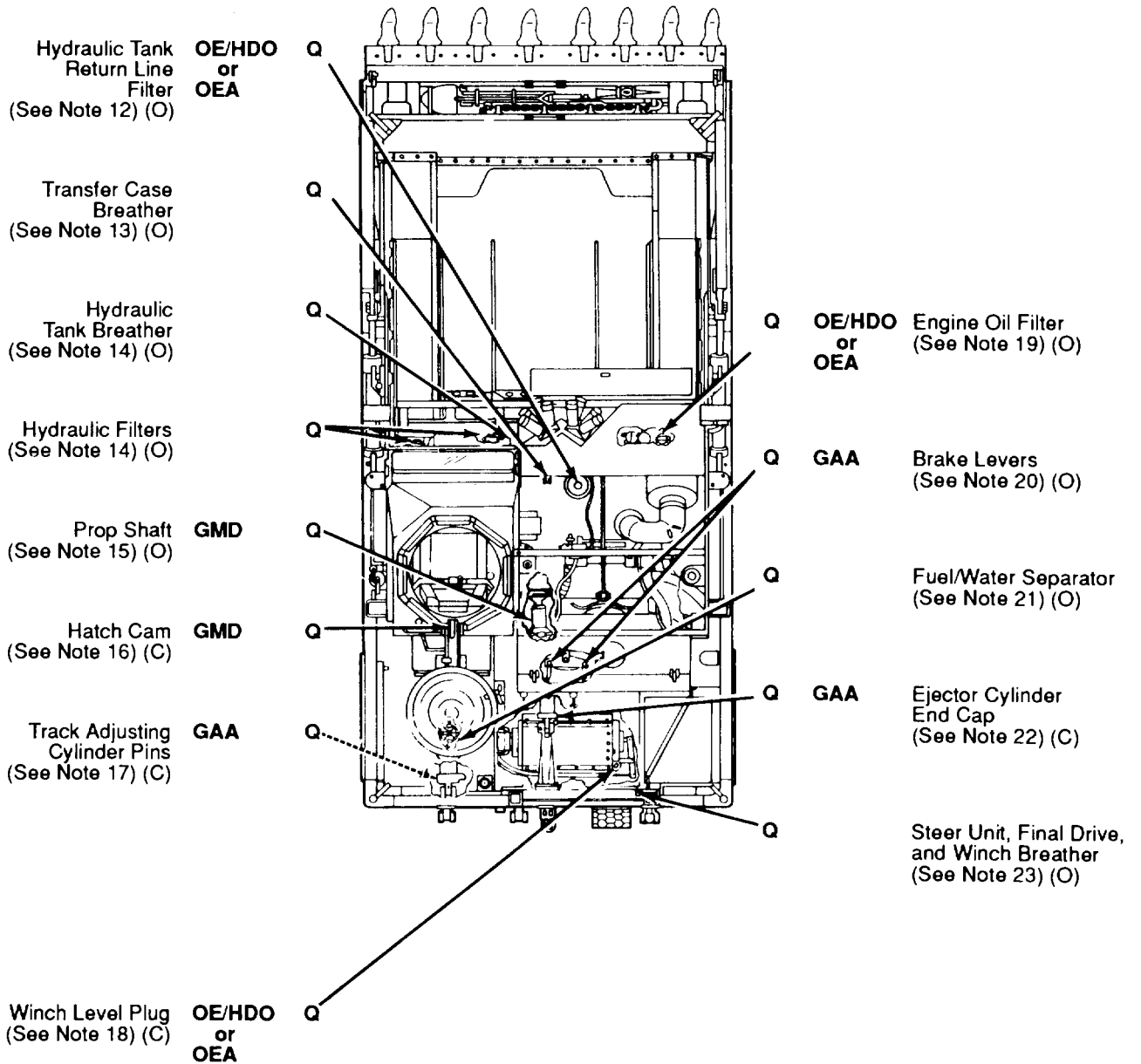
Winch Cable and
Winch Drum
(See Note 11) (O)



QUARTERLY NOTES (CONTINUED)

LUBRICANT • INTERVAL

INTERVAL • LUBRICANT



QUARTERLY NOTES (CONTINUED)

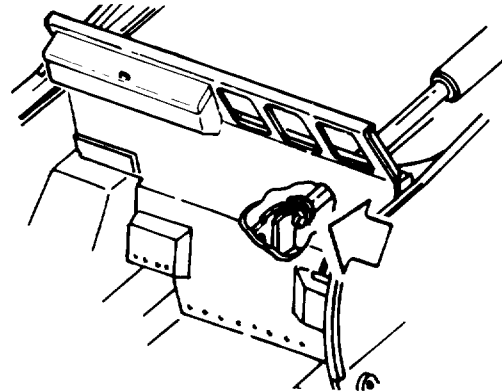
Note 5

EJECTOR CYLINDER ROD END

WARNING

Do not operate ejector when personnel are in bowl. Do not work in bowl unless ejector lock is engaged. Failure to comply may result in severe injury to personnel.

- A Move ejector forward.
- B Lubricate fitting with GAA.



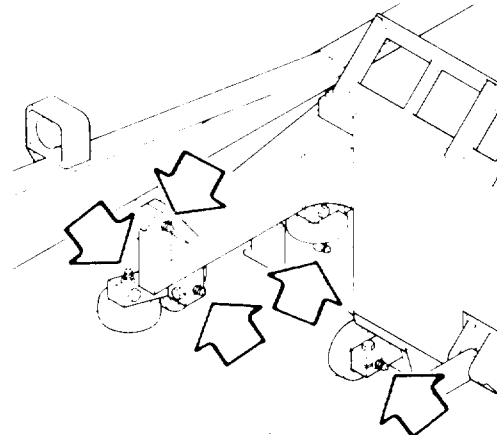
Note 6

EJECTOR GUIDE ROLLERS

WARNING

Do not operate ejector when personnel are in bowl. Do not work in bowl unless ejector lock is engaged. Failure to comply may result in severe injury to personnel.

- A Move ejector forward.
- B Lubricate 10 fittings (one on each roller shaft) with GAA.

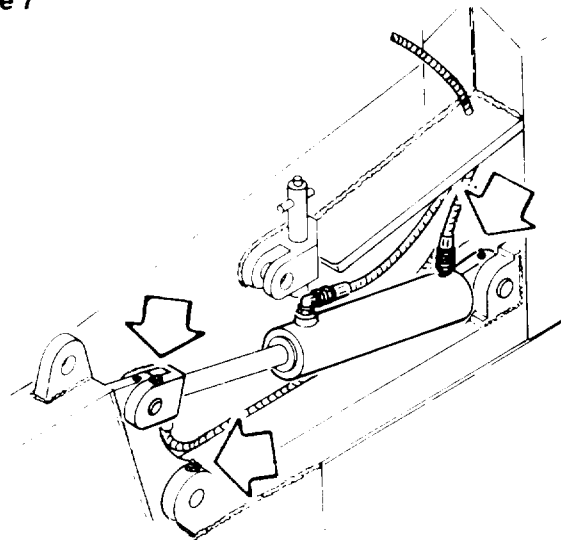


Note 7

APRON HINGE PINS AND CYLINDER RODS

Access through armor plate (TM 5-2350-262-10).

Lubricate three fittings with GAA.



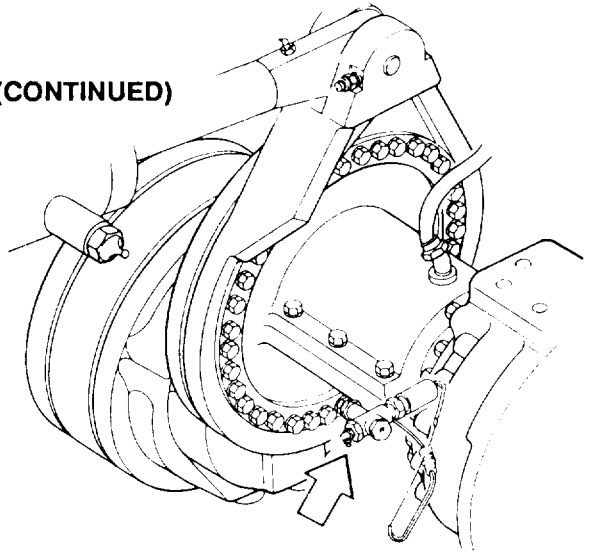
QUARTERLY NOTES (CONTINUED)

Note 8

SPEEDOMETER ADAPTER

Access through rear floor plates (TM 5-2350-262-10).

Lubricate fitting with GAA.

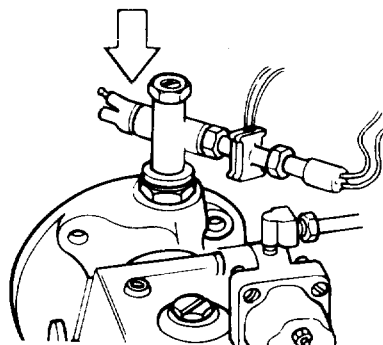
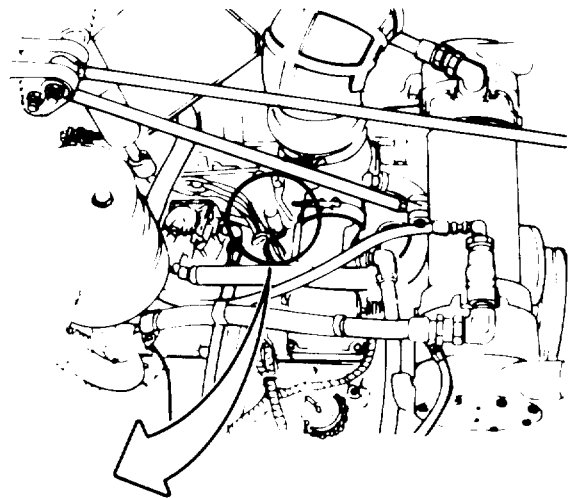


Note 9

TACHOMETER ADAPTER

Access through engine intake grilles (TM 5-2350-262-10).

Lubricate with GAA.

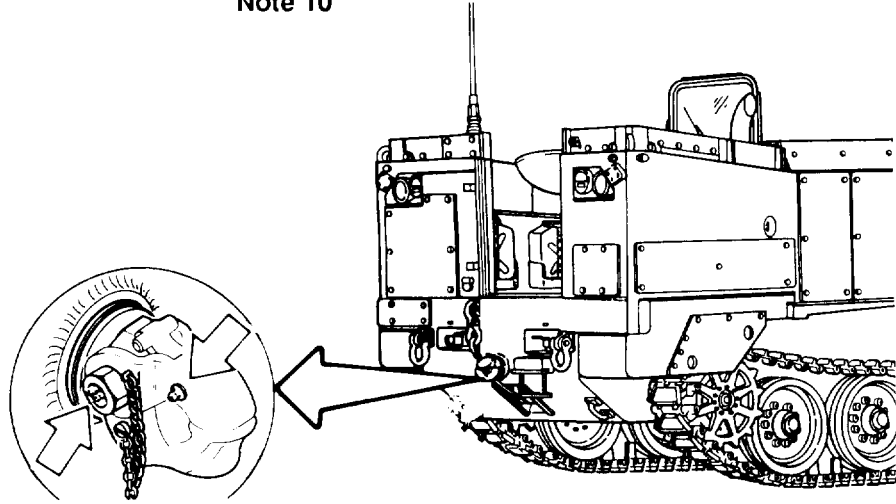


QUARTERLY NOTES (CONTINUED)

Note 10

TOWING PINTLE

Lubricate two fittings with GAA.



Note 11

WINCH CABLE AND DRUM

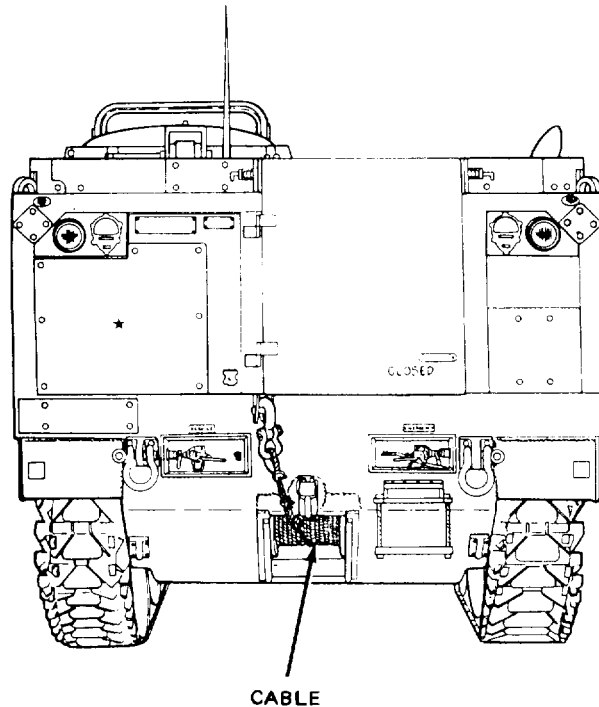
WARNING

Always wear leather gloves when handling wire rope. Never allow wire rope to run through hands. Broken or frayed wires may cause severe injury to personnel.

After use, clean cable and oil with OE/HDO or OEA.

Quarterly

- A Unwind and clean entire cable.
- B Brush-soak cable with oil (OE/HDO-30 or OEA).
- C Wipe off excess oil. Coat cable and drum with wire rope grease.
- D Rewind cable.



QUARTERLY NOTES (CONTINUED)

Note 12

HYDRAULIC TANK RETURN LINE FILTER

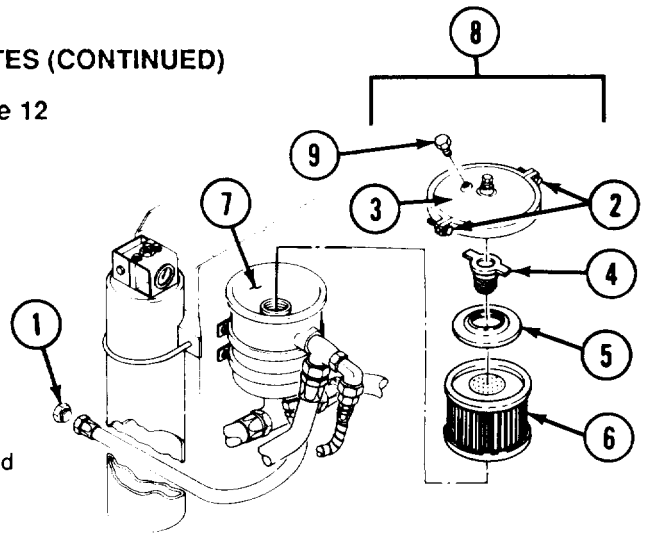
Access through intake grilles (TM 5-2350-262-10). Change filter quarterly or as a result of oil analysis.

- A Remove plug (1) and drain oil into suitable container.
- B Loosen two screws (2) and remove cover (3).

Note

Inspect gaskets for damage. Replace if necessary.

- C Unscrew valve (4) and remove retainer (5) and element (6).
- D Clean retainer (5) and inside of housing (7).
- E Install retainer (5) and new element (6) and reassemble filter assembly (8).
- F Remove plug (9) and fill filter with 4 qt (3.758 L) of OE/HDO-10 or OEA.



Note 13

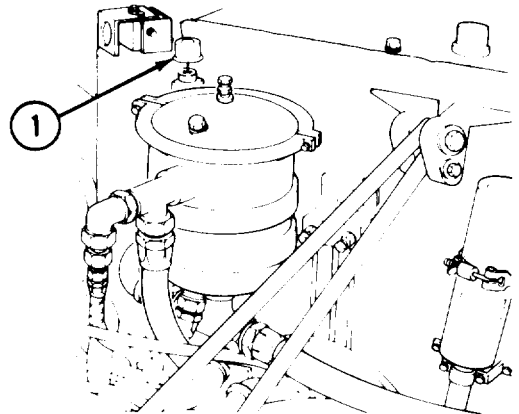
TRANSFER CASE BREATHER

Access through intake grilles (TM 5-2350-262-10).

WARNING

Refer to card 1.

- A Remove breather (1) and clean with drycleaning solvent (SD-2).
- B Dry, inspect, and install breather (1).



Note 14

HYDRAULIC FILTERS AND HYDRAULIC TANK BREATHER

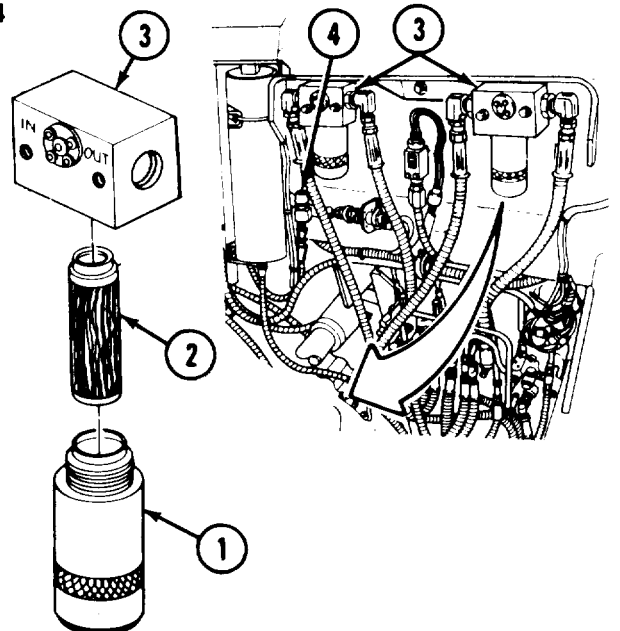
Change filters quarterly or as a result of oil analysis.

- A Move ejector forward (TM 5-2350-262-10).
- B Remove two filter bowls (1) and filter elements (2) from filter heads (3).
- C Clean two filter bowls (1) and replace filter elements (2).

WARNING

Refer to card 1.

- D Install two filter bowls (1) and elements (2) in filter heads (3).
- E Remove breather (4) and clean with drycleaning solvent (SD-2).
- F Dry, inspect, and install breather (4).



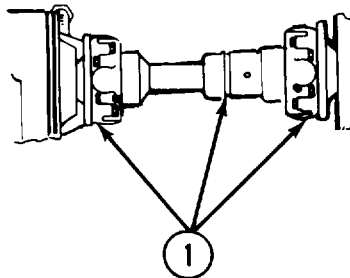
QUARTERLY NOTES (CONTINUED)

Note 15

PROP SHAFT

Access through left rear hull access cover (TM 5-2350-262-20-1).

Lubricate three fittings (1) with GMD.

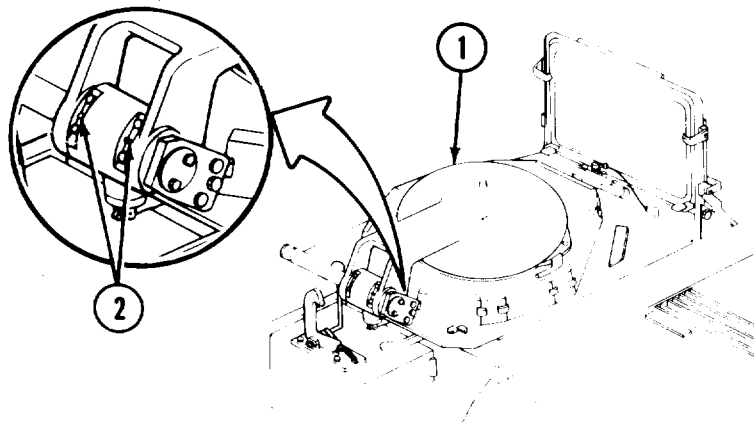


Note 16

HATCH CAM

A Close hatch cover (1).

B Lubricate two fittings (2) with GMD.

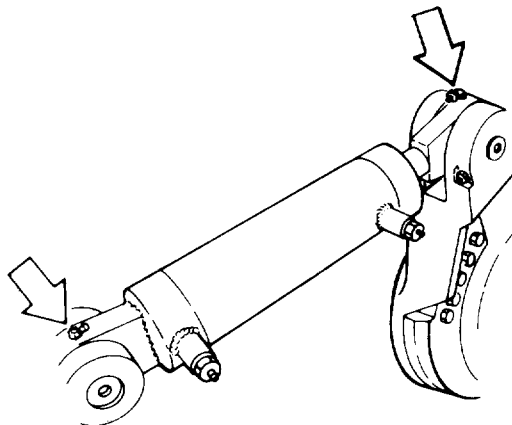


Note 17

TRACK ADJUSTING CYLINDER PINS

Access through rear floor plates (TM 5-2350-262-10).

Lubricate two fittings with GAA on left and right track adjusting cylinders.



QUARTERLY NOTES (CONTINUED)

Note 18

WINCH LEVEL PLUG

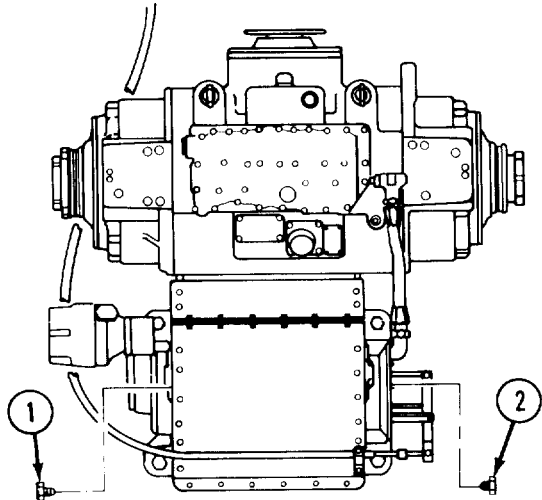
Access through rear floor plates (TM 5-2350-262-10).

- A Remove level plug (1).
- B Remove fill plug (2).
- C Fill winch slowly with OE/HDO or OEA until oil appears at level plug hole.

WARNING

Refer to card 1.

- D Clean plugs (1) and (2) with drycleaning solvent (SD-2) and install.



Note 19

ENGINE OIL FILTER

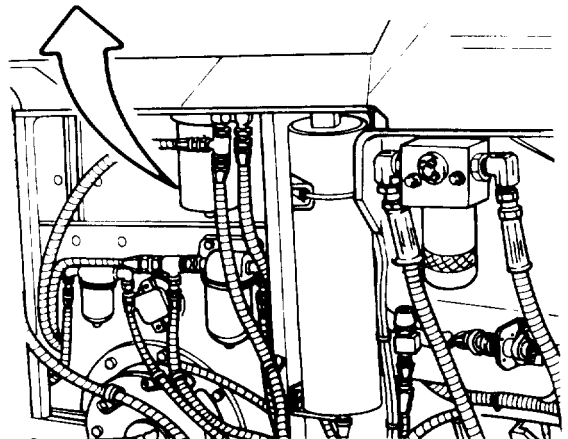
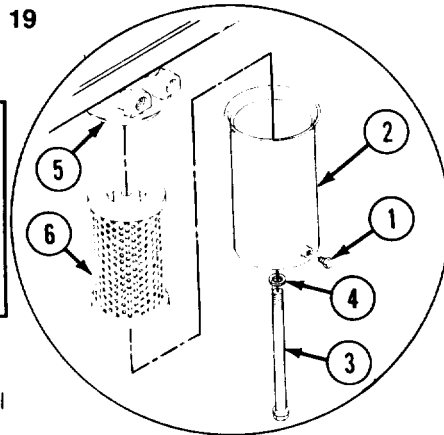
WARNING

Do not operate ejector when personnel are in bowl. Do not work in bowl unless ejector lock is engaged. Failure to comply may result in severe injury to personnel.

Move ejector forward.

Change element quarterly, at oil change, or as a result of oil analysis.

- A Remove drainplug (1) and drain oil from shell (2) into suitable container. Replace drainplug (1).
- B Remove screw (3), washer (4), shell (2), and element (6) from filter head (5). Discard element (6).
- C Clean shell (2), and install new element (6) in shell (2).
- D Start and operate engine for 5 minutes at 1,000 rpm to circulate oil.
- E Stop engine and check oil level. Check for leaks.
- F Add OE/HDO or OEA as required.



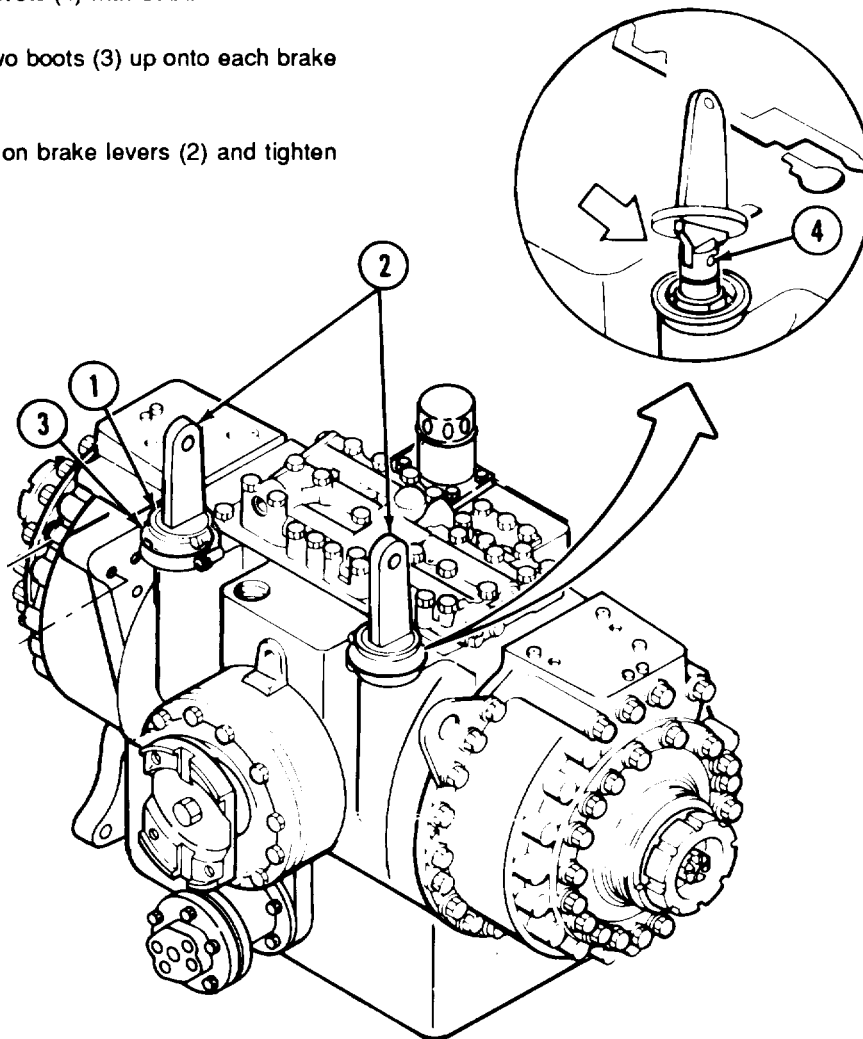
QUARTERLY NOTES (CONTINUED)

Note 20

BRAKE LEVERS

Access through rear floor plates (TM 5-2350-262-10).

- A Loosen two clamps (1) and slide clamps (1) up on brake levers (2).
- B Slide boots (3) down from each brake lever (2).
- C Lubricate brake lever pivots (4) with GAA.
- D For installation, slide two boots (3) up onto each brake lever (2).
- E Slide clamps (1) down on brake levers (2) and tighten two clamps (1).



QUARTERLY NOTES (CONTINUED)

Note 21

FUEL/WATER SEPARATOR

Access through rear floor plates (TM 5-2350-262-10).

WARNING

- Fuel is a combustible material. Do not smoke or allow sparks or open flames into areas where fuel is present. Failure to comply may result in severe injury to personnel or death. If injured, seek medical attention immediately.
- Components in bowl of fuel/water separator are under spring pressure and can fly out and injure personnel when retaining ring is removed.

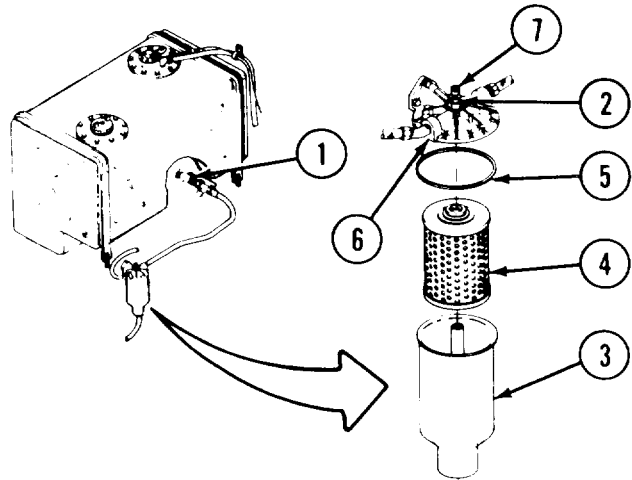
- A** Close fuel shutoff valve (1).
- B** Loosen screw (2) and remove bowl (3). Pour fuel from bowl (3) into a 1 gal. (3.785 L) container.
- C** Remove element (4) and gasket (5). Discard element (4) and gasket (5).

WARNING

Refer to card 1.

- D** Clean bowl (3) and cover (6) with drycleaning solvent (SD-2) and wipe dry with clean, lint-free cloth.

- E** Install new gasket (5) and new element (4) in bowl (3).
- F** Install bowl (3) on cover (6), and secure by tightening screw (2).
- G** Loosen screw (7) and fuel shutoff valve (1).
- H** When bowl (3) is filled with fuel, tighten screw (7).

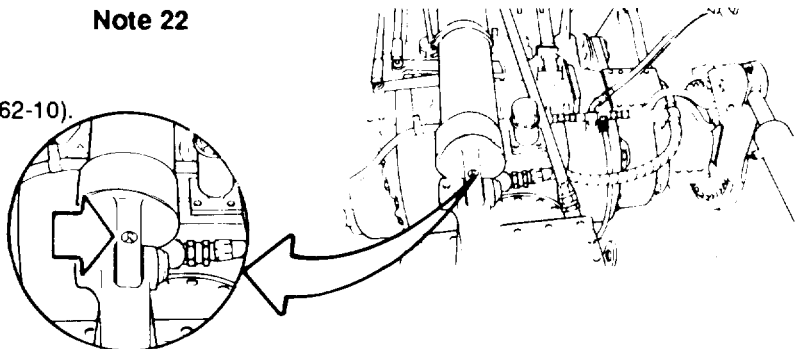


Note 22

EJECTOR CYLINDER END CAP

Access through rear floor plates (TM 5-2350-262-10).

Lubricate fitting with GAA.



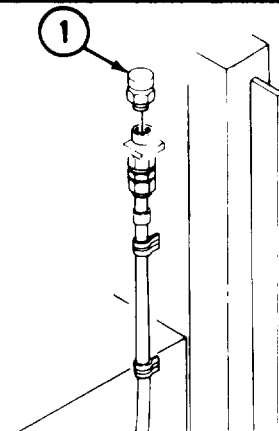
Note 23

STEER UNIT, FINAL DRIVE, AND WINCH BREATHER

WARNING

Refer to card 1.

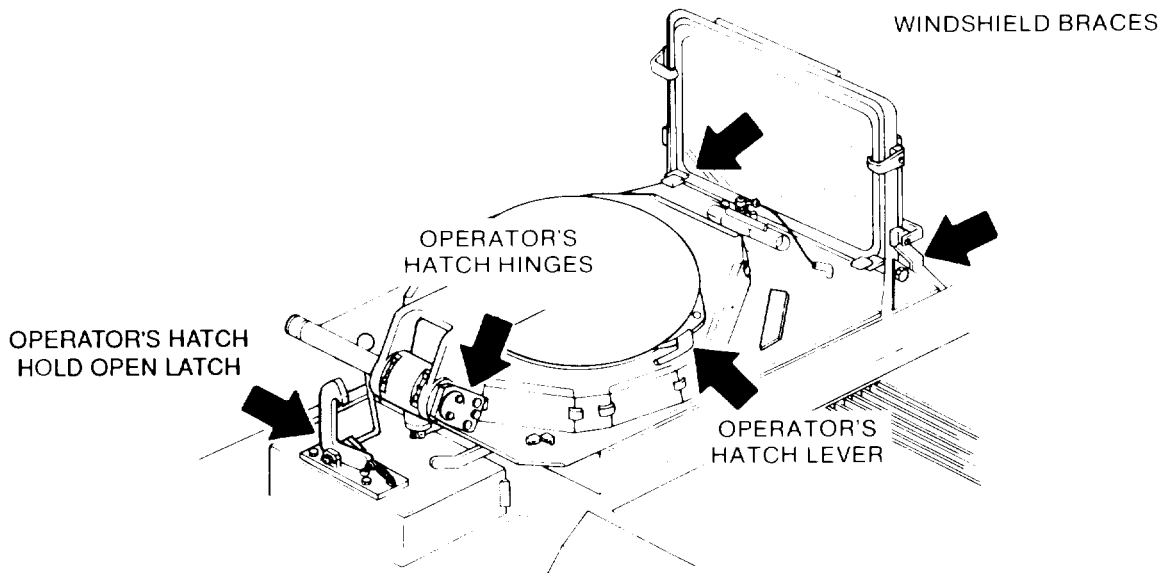
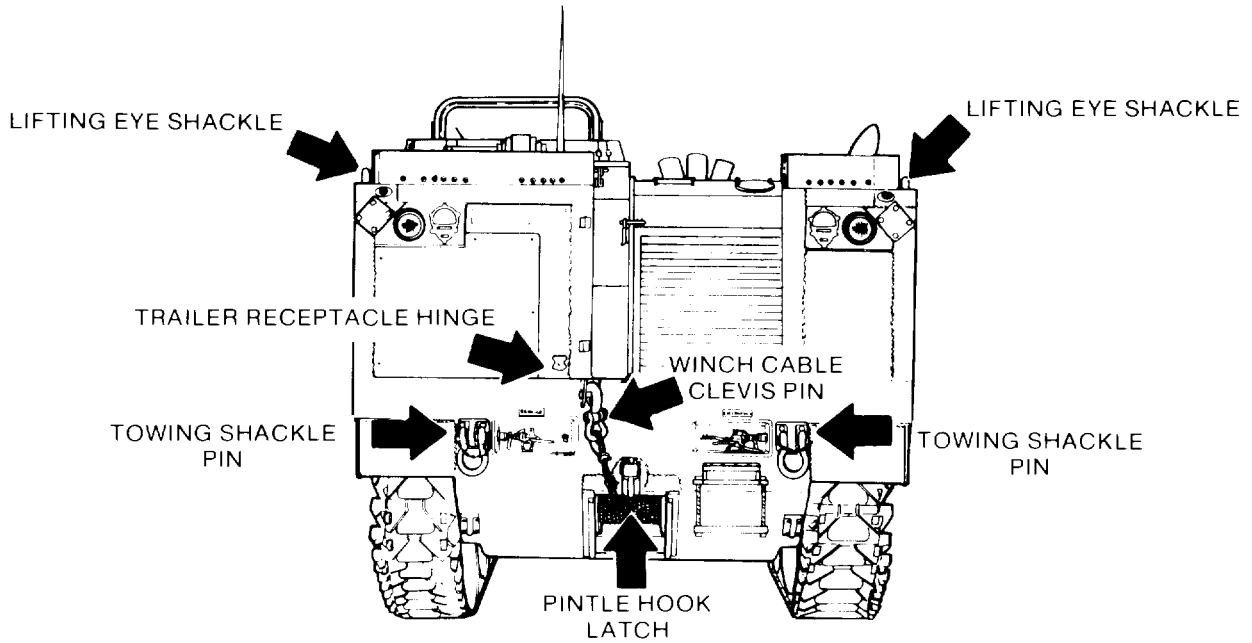
- A** Remove breather (1) and clean with drycleaning solvent (SD-2).
- B** Dry, inspect, and install breather (1).



QUARTERLY NOTES (CONTINUED)

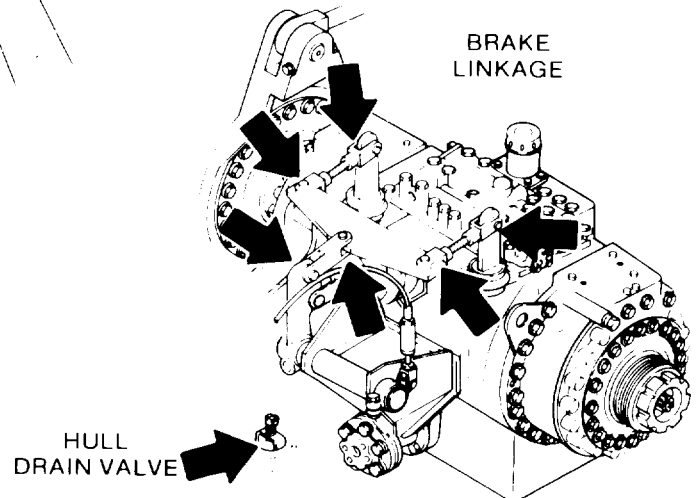
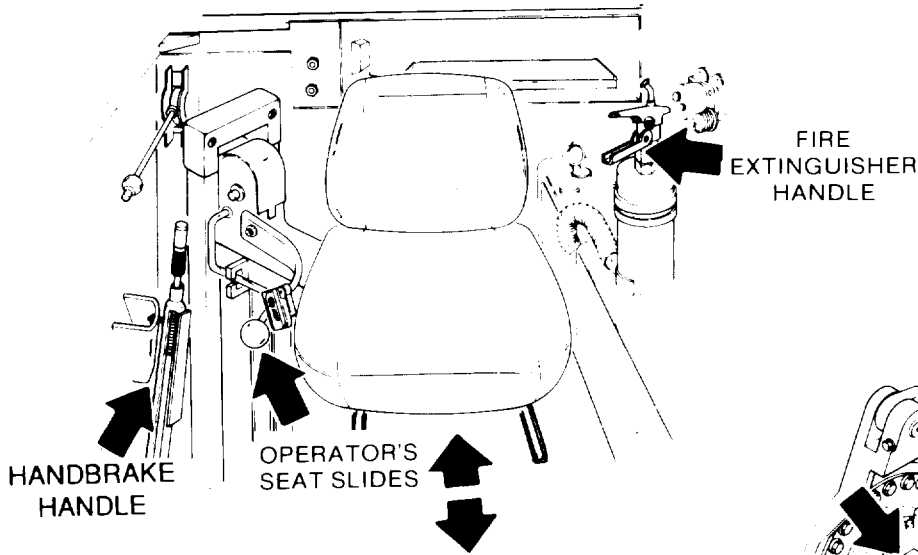
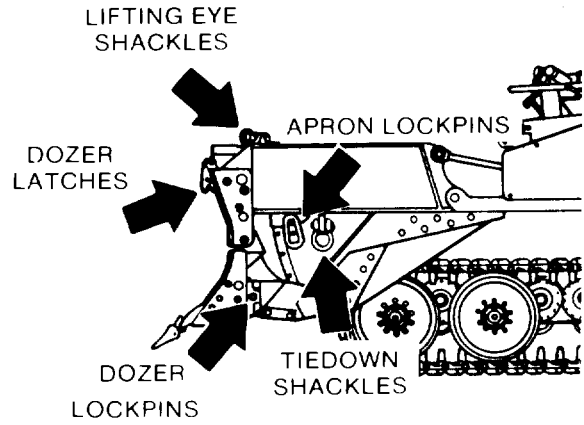
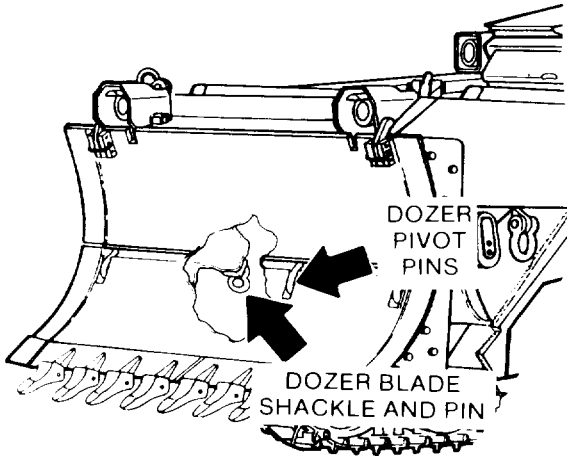
OIL CAN POINTS

Lubricate quarterly with PL-M or PL-S



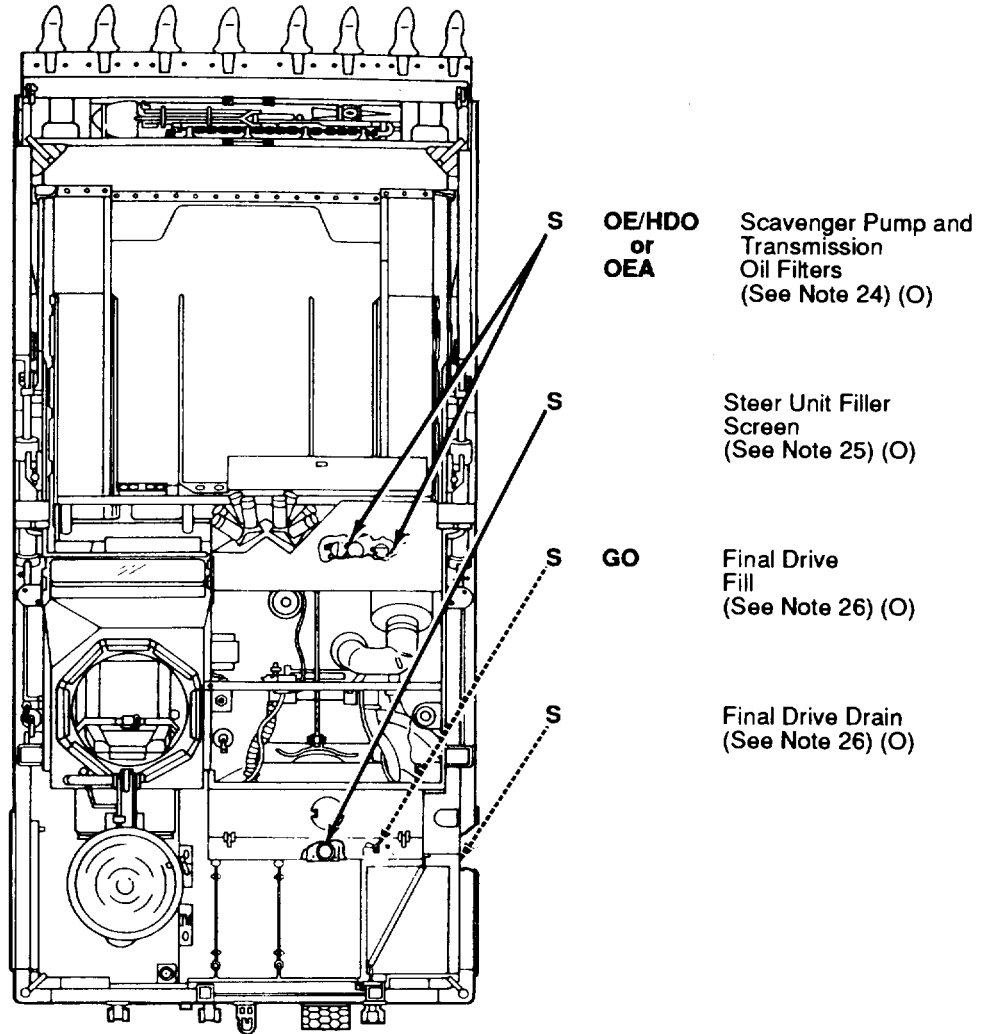
QUARTERLY NOTES (CONTINUED)

Lubricate quarterly with PL-M or PL-S



SEMIANNUAL NOTES

INTERVAL • LUBRICANT



SEMIANNUAL NOTES (CONTINUED)

Note 24

SCAVENGER PUMP AND TRANSMISSION OIL FILTERS

WARNING

Do not operate ejector when personnel are in bowl. Do not work in bowl unless ejector lock is engaged. Failure to comply may result in severe injury to personnel.

Change semiannually or as a result of an oil analysis.

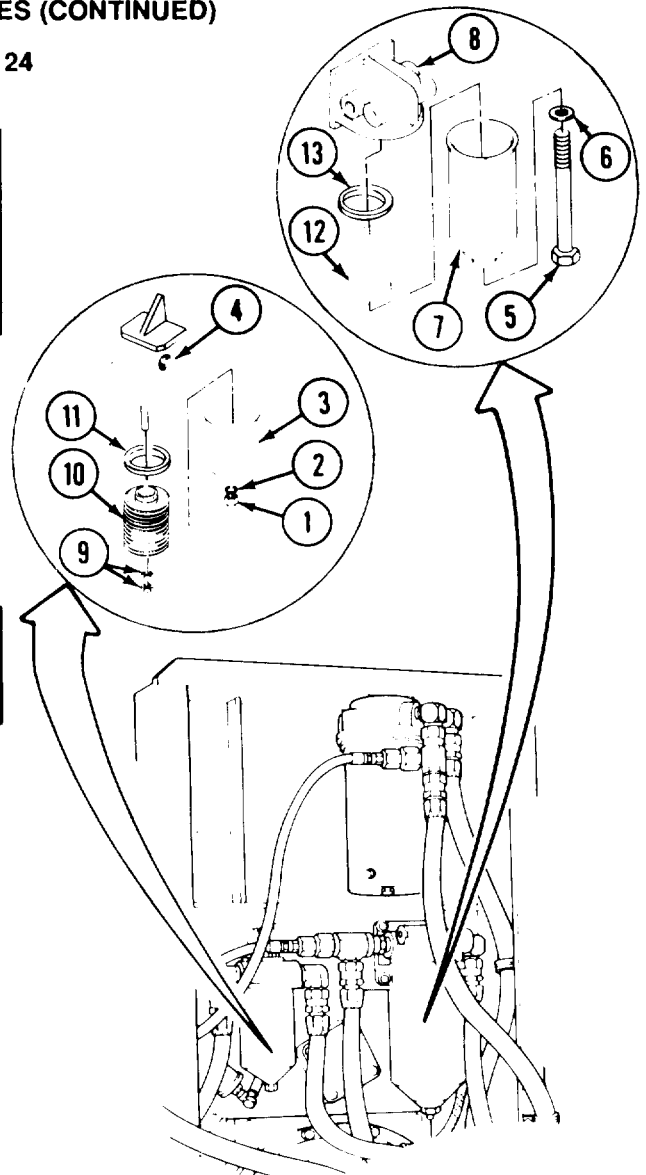
Move ejector forward (TM 5-2350-262-10).

- A** Remove nut (1), packing (2), and bowl (3) from scavenger pump filter head (4). Discard packing (2).
- B** Remove screw (5), washer (6), and shell (7) from transmission oil filter head (8).

WARNING

Refer to card 1.

- C** Remove two nuts (9), scavenger pump filter element (10), and packing (11). Discard packing (11). Clean scavenger pump filter element (10) and bowl (3) with drycleaning solvent (SD-2) and install, using new packing (11).
- D** Clean shell (7) with drycleaning solvent (SD-2). Replace transmission oil filter element (12) and gasket (13) and install.
- E** Start and operate engine for 3 to 5 minutes at idle with the transmission in **N** (neutral) to circulate oil.
- F** Check oil level at steer unit. Check for leaks.
- G** Add OE/HDO or OEA, as required.



Note 25

STEER UNIT FILLER SCREEN

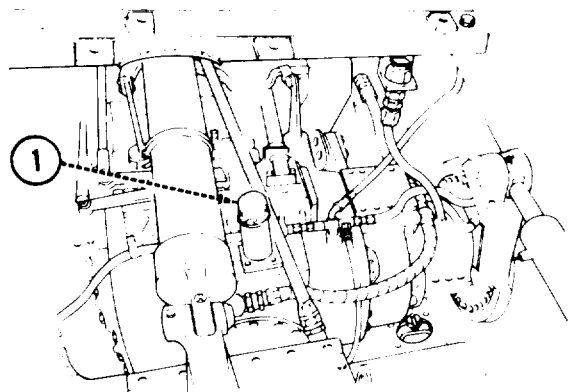
Access through rear floor plates (TM 5-2350-262-10).

WARNING

Refer to card 1.

Remove steer unit filler neck (TM 5-2350-262-20-2).

- A** Remove screen (1) and clean with drycleaning solvent (SD-2).
- B** Dry, inspect screen (1), and install.



SEMIANNUAL NOTES (CONTINUED)

Note 26

FINAL DRIVE DRAIN AND FILL

WARNING

Hot oil can cause severe injuries. Avoid splashing or spilling hot oil during draining. Failure to comply may result in injury to personnel.

Access through rear floor plates (TM 5-2350-262-10).

Note

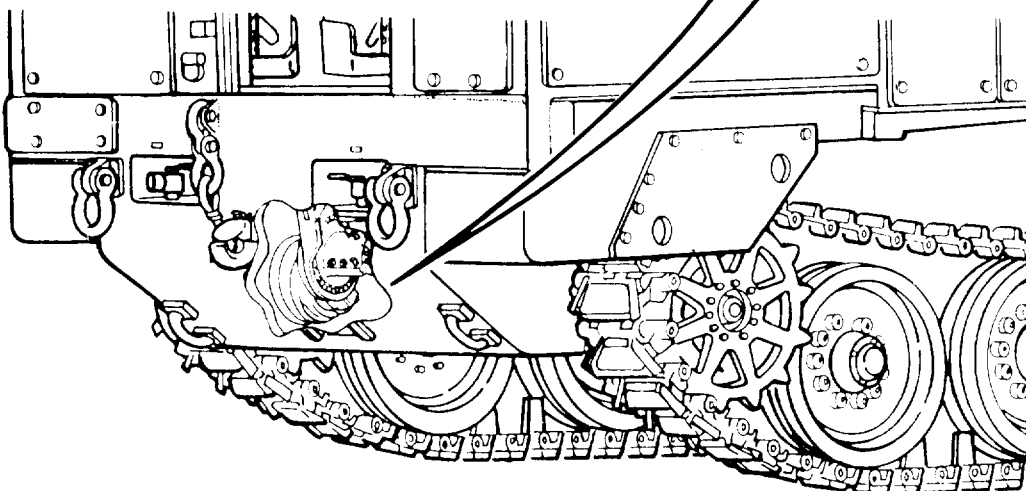
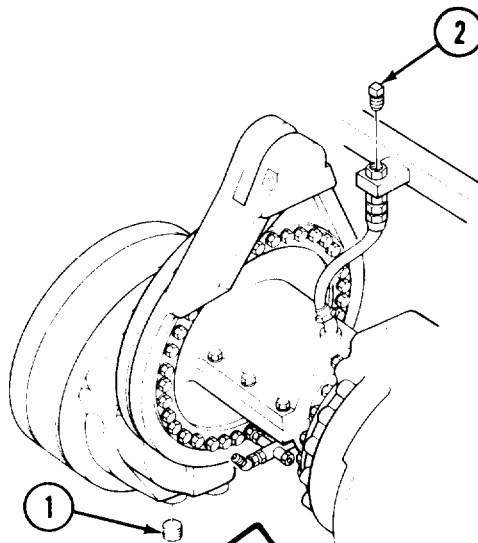
Drain oil only when hot.

- A** Remove drainplug (1) and drain final drive oil into suitable container.

WARNING

Refer to card 1.

- B** After draining, clean drainplug (1) in drycleaning solvent (SD-2) and install.
- C** Tighten drainplug (1) to 75 to 83 lb-ft (102 to 112 N·m).
- D** Remove oil fill plug (2) and fill with 2 gal. (7.6 L) of GO-80/90.
- E** Clean fill plug (2) in drycleaning solvent (SD-2), wipe dry, and install.



ANNUAL NOTES

LUBRICANT · INTERVAL

INTERVAL · LUBRICANT

Hydraulic Tank Drain
(See Note 27) (O)

Hydraulic Tank Fill
(See Note 27) (O)

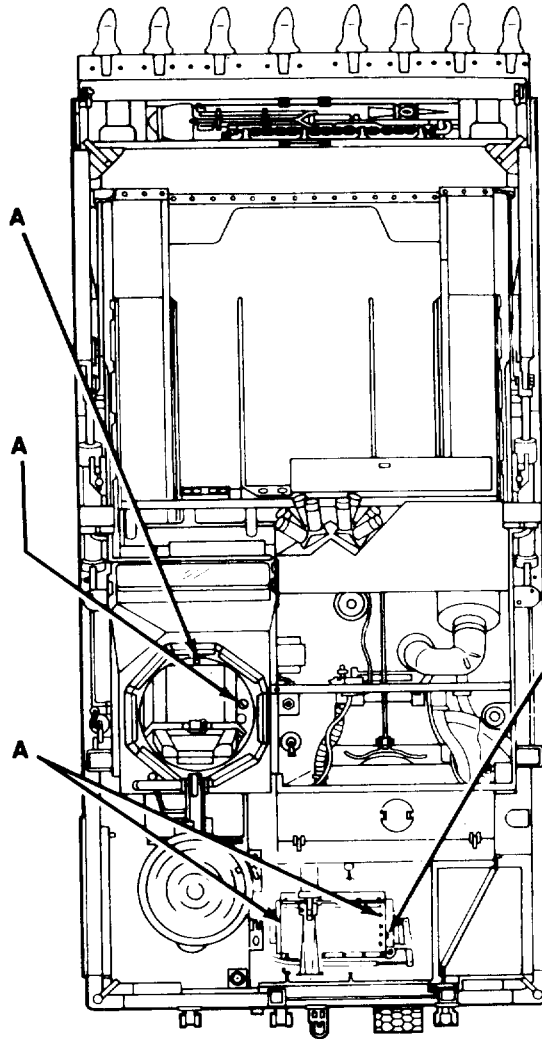
Winch Drain
(See Note 28) (O)

OE/HDO
or
OEA

OE/HDO
or
OEA

OE/HDO
or
OEA

Winch Fill
(See Note 28) (O)



ANNUAL NOTES (CONTINUED)

Note 27

HYDRAULIC TANK DRAIN AND FILL

Note

- Take oil sample (card 3) five days prior to annual lubrication. Submit oil sample to AOAP laboratory. Change oil only if directed by AOAP laboratory.
- Hydraulic tank capacity is 108 qt (102 L).

Access through plate on bottom of hull, under operator's compartment (TM 5-2350-262-20-1).

WARNING

- Do not work under vehicle unless hull is blocked. Failure to comply may result in severe injury or death to personnel.
- Do not operate ejector when personnel are in bowl. Failure to comply may result in severe injury to personnel.

A Retract ejector (TM 5-2350-262-10).

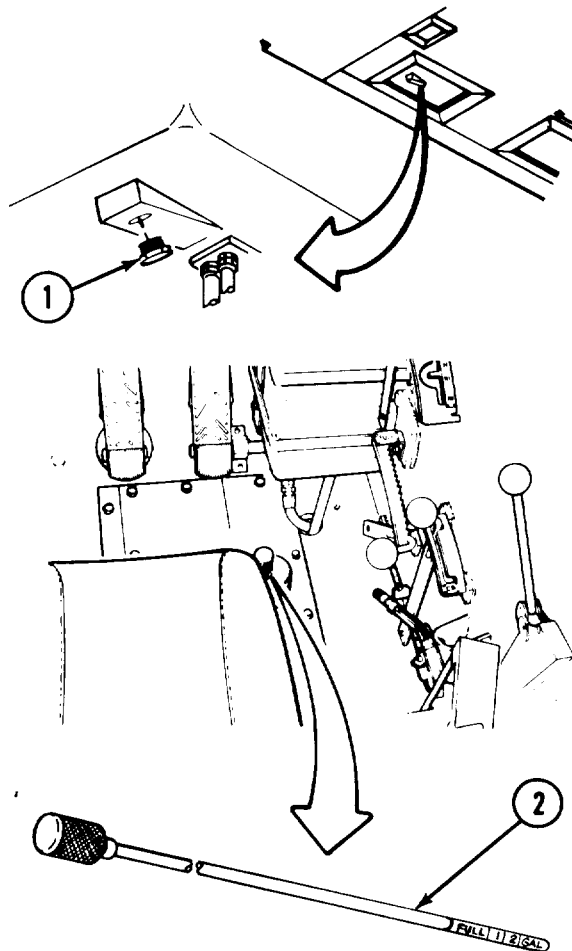
B Remove plug (1) and drain oil into suitable container. Remove dipstick (2) to speed oil flow.

WARNING

Refer to card 1.

C After draining, clean plug (1) in drycleaning solvent (SD-2) and install.

D Fill hydraulic tank with OE/HDO or OEA, until dipstick (2) indicates FULL.



Note 28

WINCH DRAIN AND FILL

Access through rear floor plates (TM 5-2350-262-10).

A Remove two drainplugs (1) and drain oil into suitable container.

WARNING

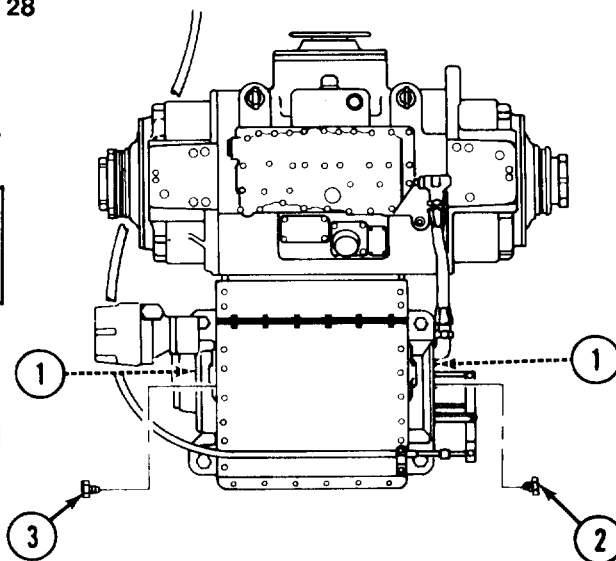
Refer to card 1.

B After draining, clean drainplugs (1) in drycleaning solvent (SD-2) and install.

C Remove fill plug (2) and level plug (3).

D Fill winch slowly with OE/HDO or OEA, until oil appears at level plug hole.

E Clean plugs (2) and (3) with drycleaning solvent (SD-2) and install.



ON-CONDITION NOTES

LUBRICANT • INTERVAL

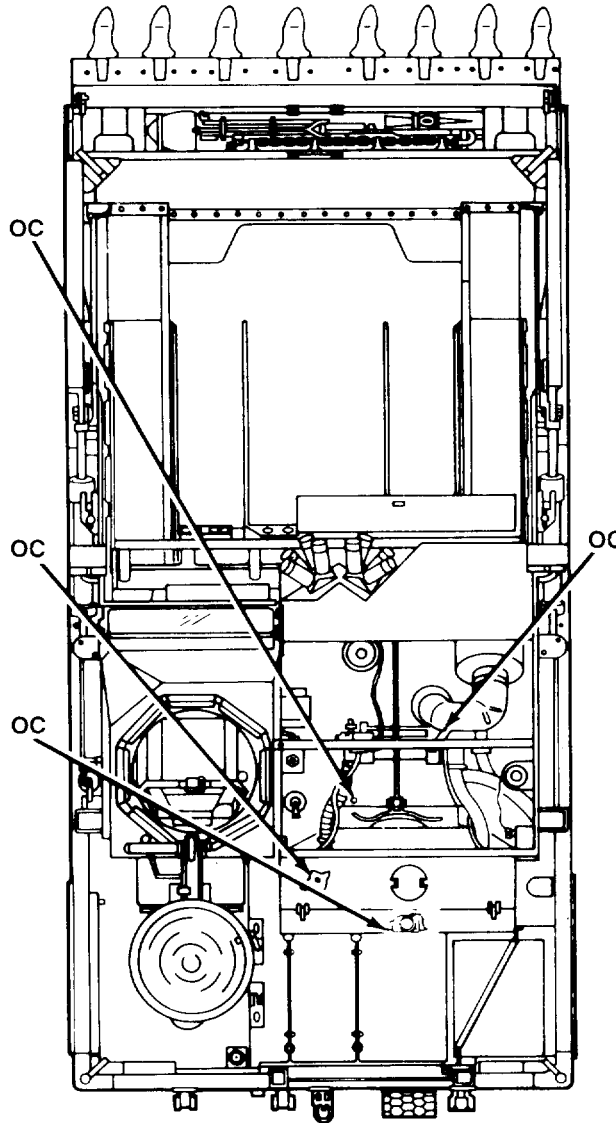
INTERVAL • LUBRICANT

Transmission
Drain
(See Note 29) (O)

Steer Unit
Drain
(See Note 29) (O)

Transmission and Steer
Unit Fill
(See Note 29) (O)

OE/HDO
or
OEA



Engine Crankcase
Drain
(See Note 30) (O)

ON-CONDITION NOTES (CONTINUED)

Note 29

STEER UNIT AND TRANSMISSION DRAIN AND FILL

Note

- Steer unit and transmission refill capacity is 50 qt (47 L).
- Drain oil only when hot.
- Drain when notified by the Army Oil Analysis Program (AOAP) laboratory.

Access through hull plug and plate under steer unit and transmission (TM 5-2350-262-20-1).

WARNING

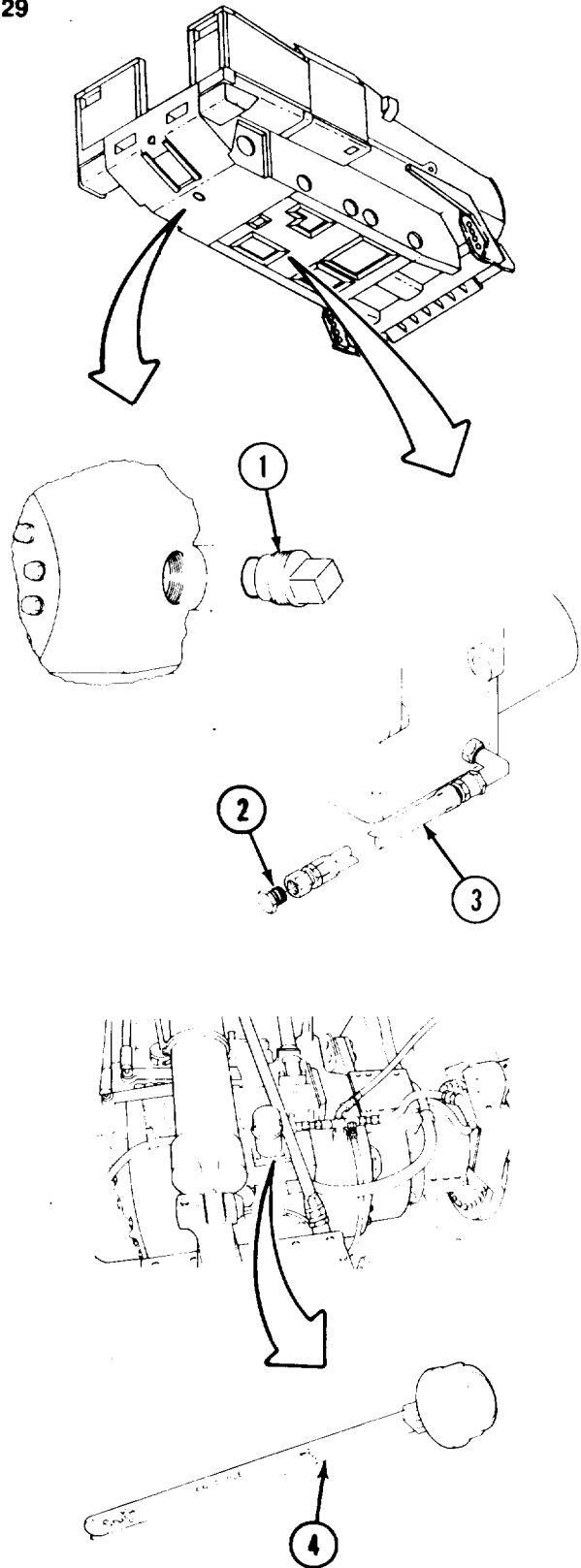
- Do not work under vehicle unless hull is blocked. Failure to comply may result in severe injury to personnel or death.
- Hot oil can cause serious injuries. Avoid splashing or spilling hot oil during draining. Failure to comply may result in injury to personnel.

- A** Remove plug (1) from steer unit and drain oil into suitable container.
- B** Remove plug (2) from hose (3) and drain residual oil from transmission and transfer case into suitable container.

WARNING

Refer to card 1.

- C** After draining, clean plugs (1) and (2) in drycleaning solvent (SD-2) and install.
- D** Remove gage (4) from steer unit and fill with OE/HDO or OEA.
- E** Start engine and run at idle speed (750 to 850 rpm) for 3 to 5 minutes.
- F** Check for leaks, and add oil to COLD IDLE or OPERATING RANGE indication on gage (4). Add oil if necessary, but do not overfill.
- G** Stop engine.



ON-CONDITION NOTES (CONTINUED)

Note 30

ENGINE CRANKCASE DRAIN

Note

- Engine crankcase refill capacity is 22 qt (20.8 L).
- Drain oil only when hot.
- Drain when notified by the Army Oil Analysis Program (AOAP) laboratory.

Access through plate under engine (TM 5-2350-262-20-1).

WARNING

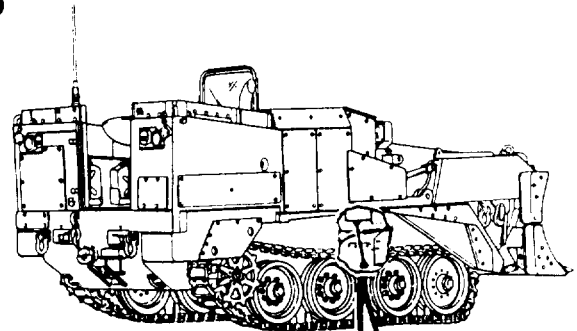
- Do not work under vehicle unless hull is blocked. Failure to comply may result in severe injury to personnel.
- Hot oil can cause serious injuries. Avoid splashing or spilling hot oil during draining. Failure to comply may result in injury to personnel.

- A** Remove hull plate (1). Remove drainplug (2) from crankcase drain hose (3) and drain oil into suitable container.

WARNING

Refer to card 1.

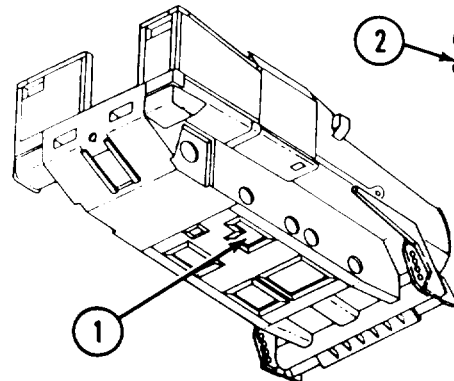
- B** Clean drainplug (2) in drycleaning solvent (SD-2) and install.
- C** Replace oil filter element (See Note 19, Steps A, B, and C only).
- D** Refill crankcase (See Note 1)



ENGINE OIL PAN

3

2



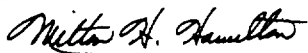
1

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:

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

Official:


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

05554

Distribution:

To be distributed in accordance with DA Form 12-37, Operator and Organizational level maintenance requirements for the ACE, M9.

This fine document...

Was brought to you by me:



[Liberated Manuals -- free army and government manuals](#)

Why do I do it? I am tired of sleazy CD-ROM sellers, who take publicly available information, slap “watermarks” and other junk on it, and sell it. Those masters of search engine manipulation make sure that their sites that sell free information, come up first in search engines. They did not create it... They did not even scan it... Why should they get your money? Why are not letting you give those free manuals to your friends?

I am setting this document FREE. This document was made by the US Government and is NOT protected by Copyright. Feel free to share, republish, sell and so on.

I am not asking you for donations, fees or handouts. If you can, please provide a link to liberatedmanuals.com, so that free manuals come up first in search engines:

<A HREF=<http://www.liberatedmanuals.com/>>Free Military and Government Manuals

– Sincerely
Igor Chudov
<http://igor.chudov.com/>