6 - ENGINE LUBRICATION SYSTEM

DESCRIPTION

47. Fig. 10 shows the layout of the system and will familiarize the crew with the position and function of all external pipes and unions and assist them in tracing leaks and in the diagnosis of faults. The following brief description of the path of the lubricant will act as a background to the practical instruction which follows.

48. The system is of the dry sump type with a capacity of 3 gallons. There are two circuits: pressure and scavenge.

49. The gear type pressure pump draws oil from the engine oil tank below the radiator and delivers it direct to the full flow oil filter (Fig. 7) on the right-hand side of the engine compartment. The filtered oil then passes to the relief valves from whence the main oil supply is delivered to the crankshaft, camshaft, big-end and gudgeon pin bearings. The low-pressure supply from the relief valves is conveyed by a pipe and drilling to the inlet valve rocker shaft, rockers and exhaust valve tappets. A branch pipe from the low-pressure system conveys oil to a jet to lubricate the timing gears.

50. The gear type scavenge pump, draws oil from the engine sump and forces it through the oil cooler (Fig. 7), mounted above the engine, from whence it is returned to the engine oil tank.

51. The oil tank is provided with a push-in dipstick (Fig. 7), a filler pipe with captive clip-on cap, a breather pipe, and a drain plug accessible after removing an access plate in the centre rear of the bottom plate of the hull (Fig. 5).

OPERATION OF CONTROLS

Low-pressure warning light

52. An amber light, top left of the driver's switchboard (Fig. 6), gives warning of any dangerous drop in oil pressure. The light is operated by a switch incorporated in the main oil supply circuit and arranged to switch off the light when the pressure in the circuit exceeds approximately 7 lb. per sq. in. The light will come on when the ignition is switched on and should go out as soon as the engine starts. Should it come on while the engine is running at normal speed, the engine must be stopped and the cause investigated.

MAINTENANCE

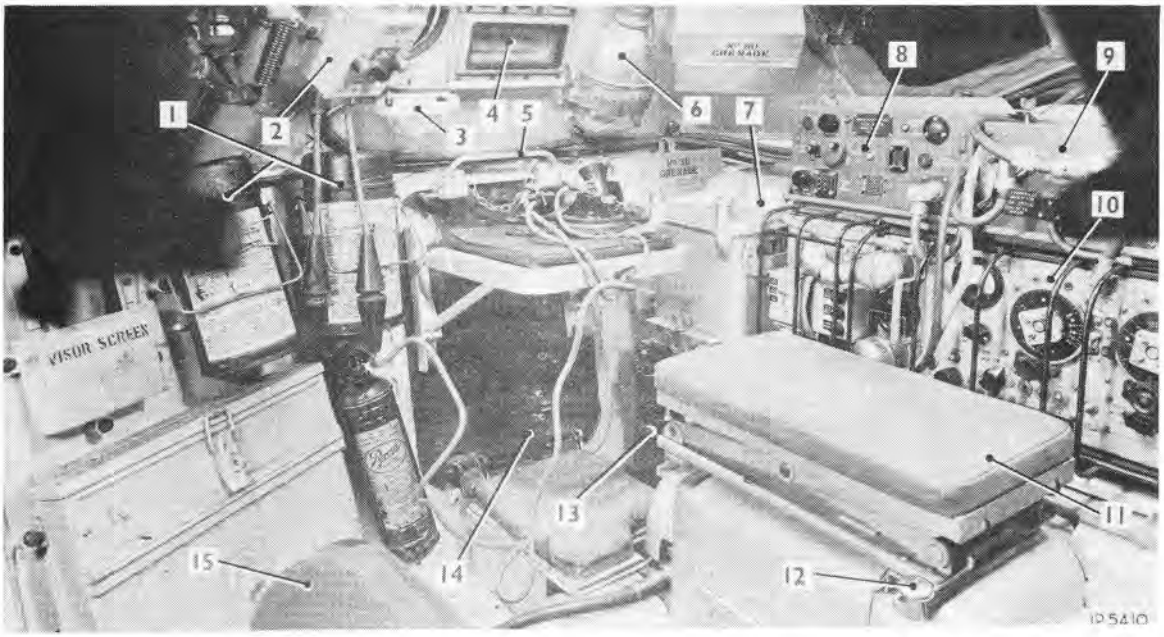
53. To check engine oil level and top up (Daily task):-

(a) Equipment required:-

Engine cover key — Supply of OMD-110

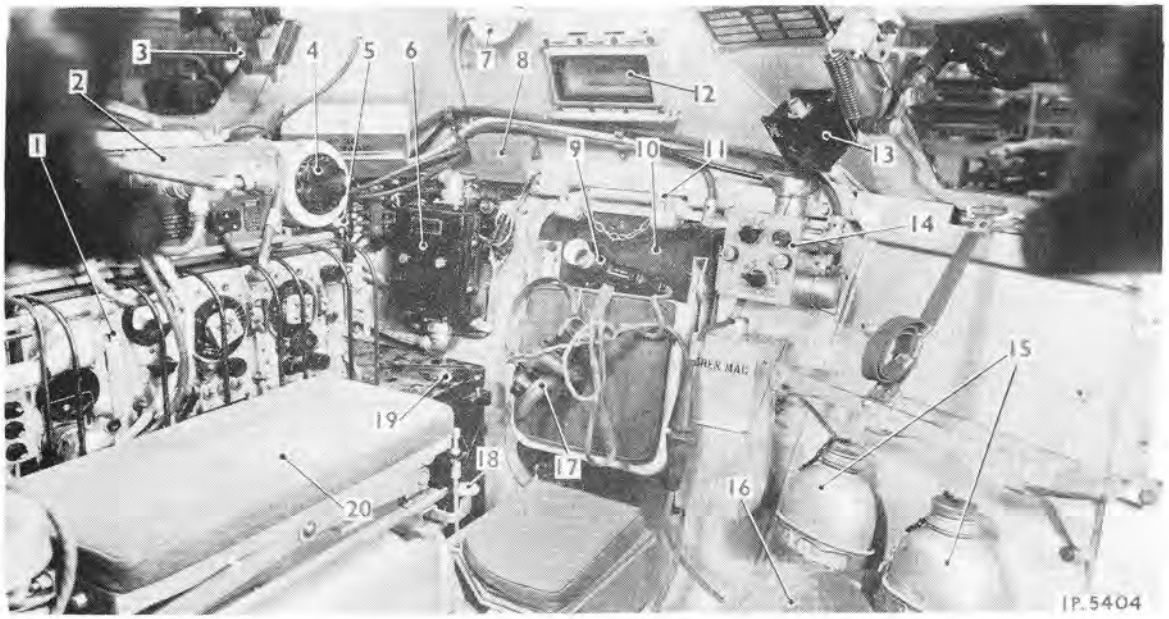
(b) Method:-

(i) Open the engine right-hand side cover.



1 Vacuum jars
2 Control unit
3 Roof lamp
4 Side observation visor
5 Escape hatch operating handle
6 Water bottle
7 Air cleaner
8 Wireless set - No.31 A.F.V.
9 Power supply unit
10 Wireless set - No.19
11 Gunner's seat
12 Gunner's seat catch
13 Battery box
14 Escape hatch
15 Driver's seat

Fig.34 Interior of vehicle - rear right side



1 Wireless set - No.19
2 Power supply unit
3 Rear observation flap locking device
4 W/T variometer
5 Distribution box
6 Generator panel
7 Roof lamp
8 W/T junction box
9 Microphone
10 Escape hatch
11 Escape hatch operating handle
12 Side observation visor
13 Smoke discharger button box
14 Control unit
15 Water bottles
16 Driver's seat
17 Headset
18 Gunner's seat catch
19 Battery box
20 Gunner's seat

Fig.35 Interior of vehicle - rear left side

Item	*Drawing or Part No.*	*Source of Supply*			*Stowage position and Remarks*
		Fitted during Manufacture		*W.D. after Comptn. of Veh.*	
		Free Issue	*Contr. Supply*		
Mirror, driving	Sect.LV6/MT3 Pt.No. 44106	-	2	-	1 - Wheelguard, front R.H. 1 - Wheelguard, front L.H.
Holder, vehicle literature 10½ in. x 14½ in. x 1½ in. Mk.2	Sect.LV6/MT1 Pt.No. 9893	1	-	-	Underneath R.H. hatch
Instruction book	Sect. Pt.No.	-	1	-	In holder
Army book 413	Sect. Pt.No.	-	-	1	In holder
Crew Maintenance book	Sect. Pt.No.	-	-	1	In holder
Stowage diagrams		-	-	1 set	In holder
Table of tools and equipment No.		-	-	1	In holder
Bag, tool, empty, No.1	Sect.F1 Pt.No. FA.20000	-	-	1	External, L.H. rear locker
Plug, sparking (spare) 14 mm.	Sect.LV6/MT4 Pt.No. SRL.14P	-	-	2	Engine compartment
Vessel boiling electric 3 pt. 750 watt. or Vessel boiling No.2 Mk.1	Sect.LV6/MT3 Pt.No. 28260 or Sect.LV6/MT3 Pt.No. FV159910	-	-	1	External locker, rear L.H.

(b) Method:-

Remove the filler plug and check that the extinguisher is filled to the filler hole with carbon tetra-chloride. The total capacity is 2 pints.

277. To check methyl bromide extinguishers (Daily task):-

Remove each extinguisher and shake it to ensure that it is full. Check the operation of the quick release strap.

278. To check methyl bromide extinguishers (Weekly task):-

(a) Equipment required:-

13/16 in. spanner

(b) Method:-

Unscrew the piercing head (13/16 in. spanner) and examine the sealing disc. If the disc is intact, check that the nozzle is clear and replace the head.

21 - HINTS AND TIPS ON DRIVING (Including starting up sequence)

279. The following information has already been covered in previous sections of Chapter 1. This section is included to consolidate, in covenient form, all the important points concerning the use of the driving controls and to bring out any peculiarities of the vehicle under operating conditions. It should thus prove of value to the student already acquainted with Chapter 1 and, in addition, can be used as a guide by the trained "A" and "B" driver who finds it necessary to drive the vehicle before receiving detailed instructions.

STARTING UP SEQUENCE

Engine cold

280. (i) Check that the fuel, oil and coolant levels are correct.

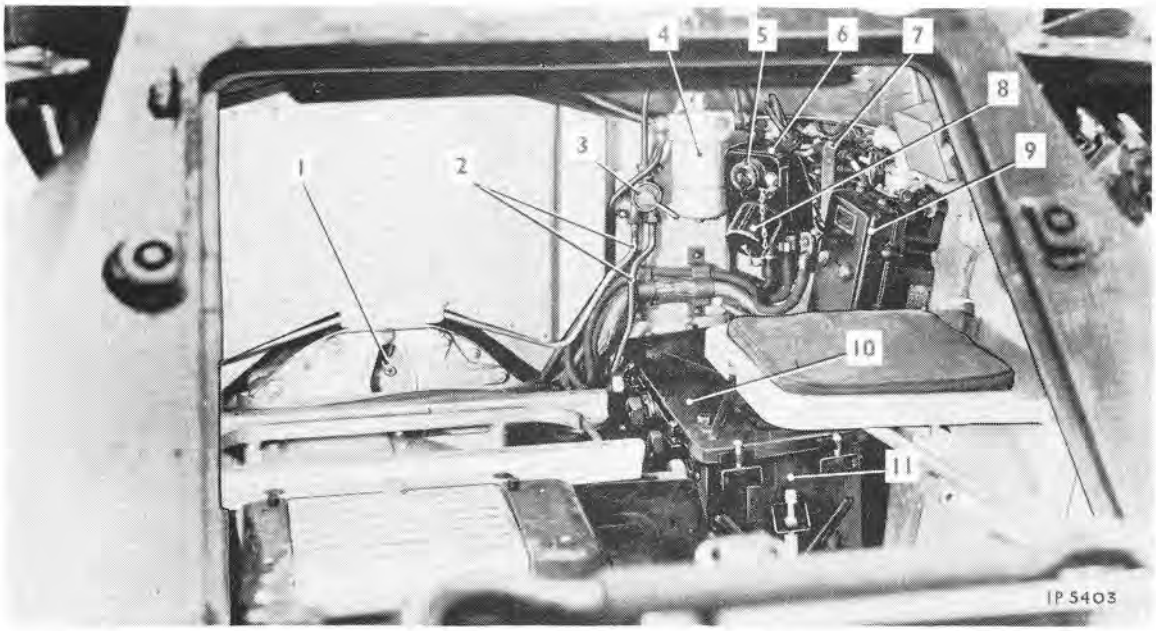
(ii) Check fire extinguishers.

(iii) During cold weather, turn the engine over a few turns by hand.

(iv) Turn the fuel tap to main supply.

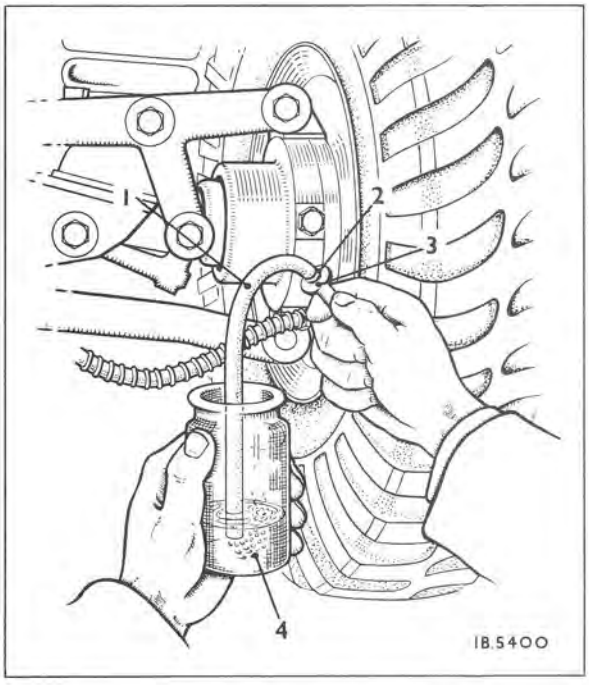
(v) Check that the handbrake is fully on. (In cold weather it is possible for the vehicle to move, if the handbrake is not applied, owing to the thickness of the oil in the gearbox and fluid coupling when cold.).

(vi) Check that the forward and reverse lever is in the appropriate position for moving off. (Pushed forward for forward gear and pulled back for reverse gear).



1 Fluid coupling filler plug
2 Fuel pipes
3 Fuel tap
4 Fuel filter
5 Inspection lamp socket cap
6 Distribution box
7 Cable terminal block
8 Inter-vehicle starting socket cap
9 Generator panel
10 Battery box lid
11 Battery box

Fig.36 Internal view of vehicle - rear left side with equipment removed



1 Rubber tube
2 Bleeder screw
3 Spanner
4 Brake fluid

Fig.37 Bleeding the brakes