The Centurion became Britain’s main battle tank from the introduction in 1945 until replaced by the Chieftain in the 1960s. It carried a crew of 4 - the driver was accommodated in the hull with the commander, gunner and loader in the turret. It was armed with a 20 pounder or a 105mm gun, a .30in Browning coaxial machine gun and a separate, dismountable, .30in Browning machine gun. It was powered by a Rolls-Royce Meteor V-12 27 litre petrol engine coupled to a 5 speed gearbox.

The Centurion was used by most Commonwealth, and many other, countries including Australia, Denmark, India, Israel, Jordan, Kuwait, Lebanon, Netherlands, New Zealand, Somalia, South Africa, Sweden, Switzerland and UK. It also saw battle action in the Korean, Six Day, Vietnam and Gulf wars.

The User Handbook is in English and comprises 257 pages covering vehicle operation, maintenance and fault diagnosis. There are 88 colour and monochrome illustrations and, additionally, stowage diagrams.

Contents
1. General description, lay-out and data
2. Hull and turret details
3. Fire fighting equipment
4. Engine
5. Engine lubrication and cooling systems
6. Fuel system and carburetters
7. Ignition system
8. Lighting, starting and electrical accessories
9. Generating and ventilation system
10. Clutch, gearbox and steering
11. Main brakes
12. Final drives, sprockets and track adjusting wheels
13. Tracks and guide rollers
14. Suspension and shock absorbers
15. Driving tips, towing and fording instructions
16. Diagnosis of faults
17. Gearbox supplement
Engine oil change

To change the oil (the first 250 and every 1,000 miles or yearly task)

155. When changing the oil, it is also necessary to renew the element in the pressure filter and clean the scavenge filters (para 153 and 154).

Although the lubrication system has a capacity of 14 gallons, only up to 10 gallons will drain, the remaining 4 gallons being held in the oilways, etc. in the engine.

(a) Equipment required:-

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank cleaning brush</td>
<td></td>
</tr>
<tr>
<td>10 gallon oil CMD-110</td>
<td></td>
</tr>
<tr>
<td>Containers for old oil</td>
<td></td>
</tr>
<tr>
<td>Non-fluffy cloth</td>
<td></td>
</tr>
<tr>
<td>9/16 in AP spanner</td>
<td></td>
</tr>
<tr>
<td>Fliers</td>
<td></td>
</tr>
<tr>
<td>Locking wire</td>
<td></td>
</tr>
<tr>
<td>Drain valve T spanner</td>
<td></td>
</tr>
<tr>
<td>A84413</td>
<td></td>
</tr>
</tbody>
</table>

(b) Method:-

(i) With the engine warm and the vehicle on level ground, clean the access plate (Fig 18(5)) (tank cleaning brush) remove the locking wire (pliers) and oil tank drain access plate (9/16 in AP spanner).

(ii) Using the T spanner, remove first the regulating plug, (Fig 36(1)), then the drain plug (2). Enter the regulating plug into the drain plug aperture (A) and place the container in position. Screw up the regulating plug until the oil flows. Screwing up the regulating plug increases the flow and unscrewing the plug decreases and stops the flow.

Warning: 1. There are no oil drain plug fitted to the engine sump. The large circular plug fitted to the sloping face of the sump at the fan drive end, is a timing mark inspection plug of fragile construction and must not under any circumstances be disturbed by the crew.

2. The engine must never be run during an oil change for the purpose of scavenging oil which may remain in the sump or timing case. This is extremely dangerous and will seriously damage the engine.
1. Radiators
2. Coolant filler cap
3. Thermostat housing
4. Generating unit thermostat
5. Balance pipes
6. Coolant pump
7. Engine mounting rails
8. Cylinder jacket inlet pipes
9. Cylinder jacket drain pipes
10. Drain tap
11. Balance pipe
12. Thermostat by-pass pipe
13. Inlet pipe from header tank to system
14. Header tank
15. Radiator gland nuts
16. Pressure relief valve

Fig 37 Engine cooling system
Fig 38 Layout of fuel system

1. Inlet from Mono-trailer
2. Rear fuel tank filler
3. Left self sealing coupling
4. Rear fuel tank
5. Fuel inlet pipe from rear to left fuel tank
6. Left fuel tank breather pipe
7. Left fuel tank
8. Generating unit fuel feed pipe
9. Fuel pumps
10. Right fuel tank
11. Kigass pump
12. Fuel tap handwheel
13. Fuel filter
14. Rear fuel tank breather pipe
15. Right fuel tank filler
16. One way valve
17. Generating unit fuel pump
18. Right fuel tank breather pipe
19. Carburettor feed pipe

A Main supply
B Supply from Mono-trailer
C Kigass
D Breather