

## SECTION P

### LUBRICATION

Section No. P.1	Daily service. <i>Engine.</i>
Section No. P.2	1,000 miles service. <i>Steering gear.</i> <i>Propeller shaft.</i> <i>Gearbox.</i> <i>Rear axle.</i> <i>Carburetter dampers.</i> <i>Hand brake cable.</i>
Section No. P.3	3,000 miles service. <i>Engine oil change.</i> <i>Air cleaners.</i>
Section No. P.4	6,000 miles service. <i>Distributor.</i> <i>Gearbox oil change.</i> <i>Rear axle oil change.</i> <i>Front wheel hubs.</i> <i>Engine oil filter.</i> <i>Water pump.</i>
Section No. P.5	12,000 miles service. <i>Dynamo.</i> <i>Engine-flushing.</i> <i>Steering gearbox.</i> <i>Speedometer and tachometer cables.</i>

Correct lubrication of any piece of mechanism is of paramount importance, and in no instance is it of greater importance than in the correct choice of lubricant for a motor-car engine. Automobile engines have different characteristics, such as operating temperatures, oiling systems, size of oilways, clearances, and similar technicalities, and the use of the correct oil is therefore essential.

**NOTE.**—The letters given in brackets throughout the Manual refer to the appropriate section of the recommended lubricants table given on page P.7.

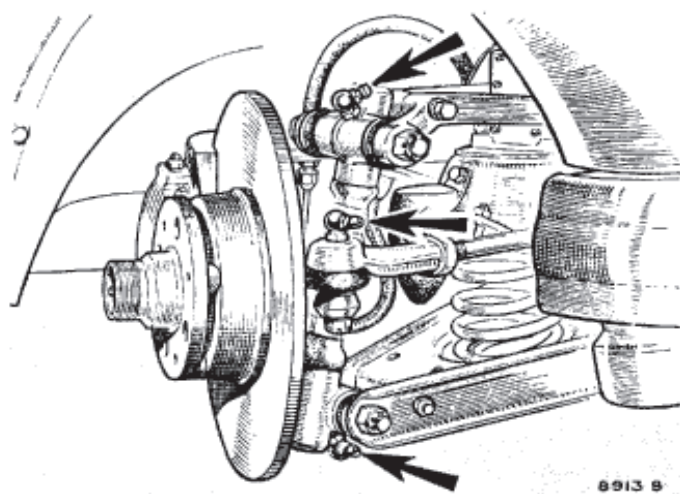


Fig. P.1

*The steering gear lubrication nipples on the right-hand side*

## Section P.1

### DAILY SERVICE

#### ENGINE (A)

Inspect the oil level in the engine, and refill if necessary to the 'MAX' mark on the dipstick. The oil filler cap is on top of the exhaust camshaft cover and is released by turning it anti-clockwise.

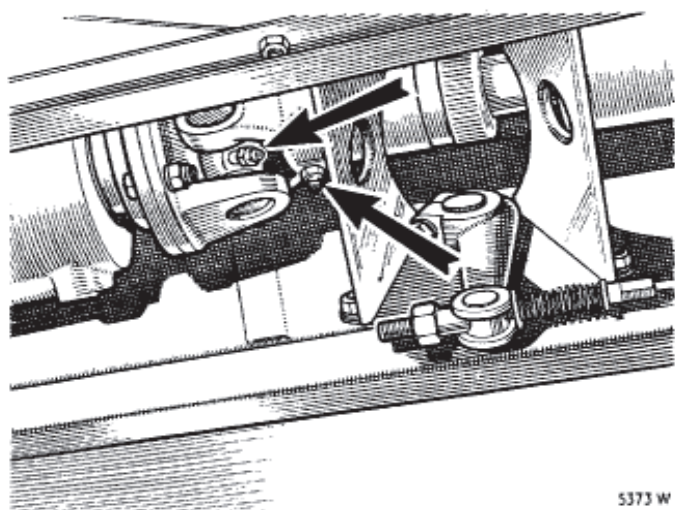


Fig. P.2

*The universal joint and sliding yoke lubrication nipples at the front end of the propeller shaft*

## Section P.2

### 1,000 MILES (1600 Km.) SERVICE

Carry out the instructions detailed in Section P.1 and then continue with the following.

#### STEERING GEAR (C)

Lubrication nipples are provided at the top and bottom of each swivel pin and on the steering tie-roads. The gun filled to Ref. C (page P.7) should be applied to the nipples and three or four strokes given.

#### PROPELLER SHAFT (C)

The two needle-type universal joints and the front end sliding yoke should receive lubrication to Ref. C (page P.7). The front end of the propeller shaft is provided with two lubrication nipples and there is also one at the rear.

#### GEARBOX (A)

Top up the oil level and ensure that the gearbox is not filled above the 'HIGH' mark on the dipstick. If the level is too high oil may get into the clutch case and cause clutch slip. The combined filler plug and dipstick are located beneath the rubber plug in the gearbox cover.

#### REAR AXLE (B)

The combined filler and level plug is reached from below the rear of the car. The oil should be replenished if necessary to the level of the filler plug hole. (See Fig. P.10).

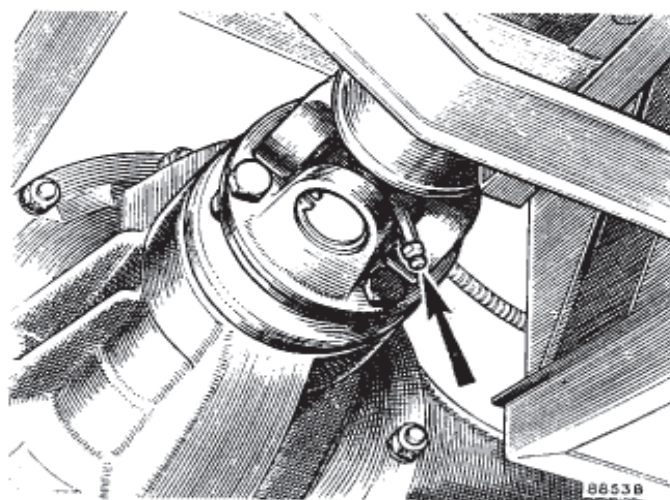


Fig. P.3

*The rear universal joint lubrication nipple*



**NOTE.**—It is essential that only Hypoid oil be used in the rear axle. (See page P.7.)

### CARBURETTER DAMPERS (D)

Unscrew the oil cap at the top of each suction chamber, pour in a small quantity of thin engine oil, and replace the caps. Under no circumstances should a heavy-bodied lubricant be used. Failure to lubricate the piston dampers will cause the pistons to flutter and reduce acceleration.

An oil indicated under Ref. D (page P.7) should be used.

### HAND BRAKE CABLE (C)

The grease nipple on the hand brake cable should be given three or four strokes with a grease gun filled with grease to Ref. C (page P.7).

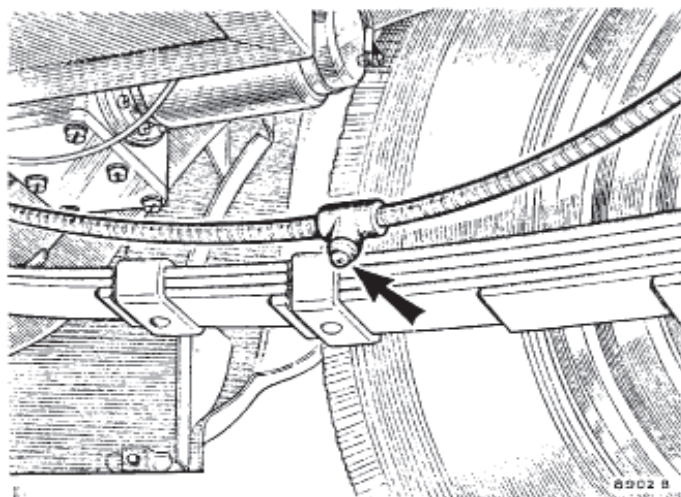


Fig. P.5

*The hand brake cable grease nipple*

## Section P.3

### 3,000 MILES (4800 Km.) SERVICE

Carry out the instructions detailed in Section P.2, except those under 'ENGINE' (Section P.1), and continue with the following.

### ENGINE OIL CHANGE (A)

Drain the oil from the engine sump after 3,000 miles (4800 km.). The drain plug is on the right-hand side of

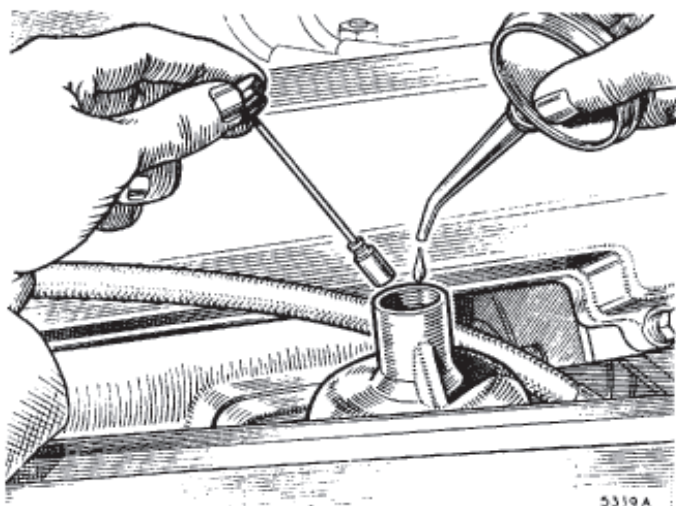


Fig. P.4

*Add a small quantity of thin engine oil to the carburetter dampers*

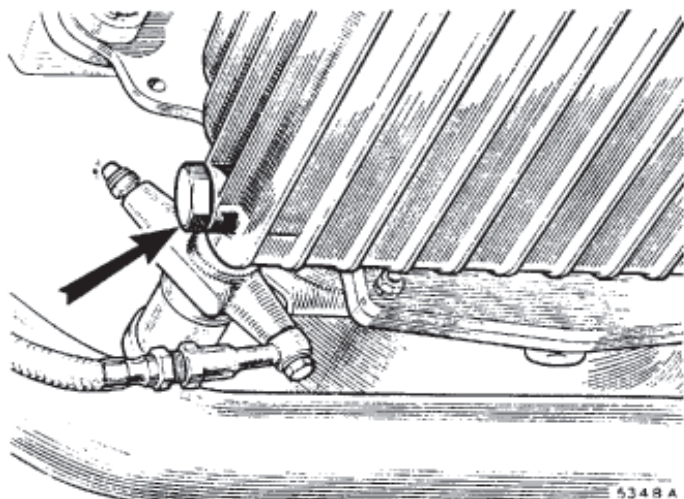


Fig. P.6

*The engine sump drain plug is on the right-hand side*

the sump and should be removed after a journey while the oil is still warm and will drain easily.

### AIR CLEANERS (A)

Wash the filter elements in petrol and allow to dry. Re-oil the elements with S.A.E. 20 engine oil and allow to drain before reassembling.

It is only necessary to withdraw the two hexagon-headed screws and lift off the outer cover to release each corrugated element.

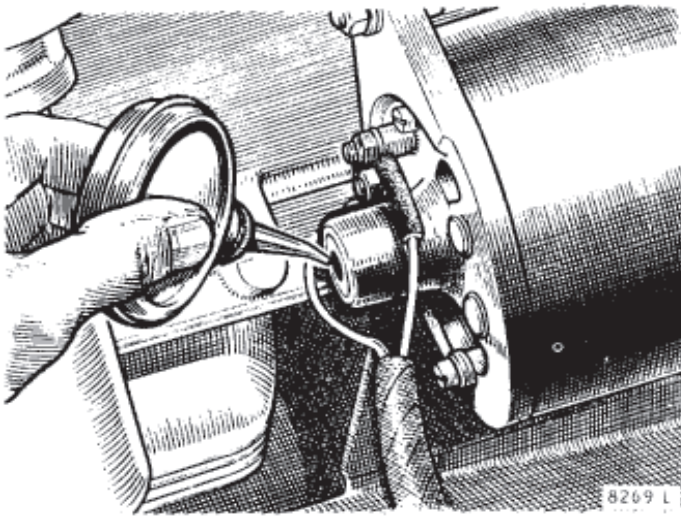


Fig. P.7

Lubricate the dynamo with a few drops of thin engine oil in the hole in the centre of the rear end bearing

## Section P.4

### 6,000 MILES (9600 Km.) SERVICE

Carry out the instructions detailed in Sections P.2 and P.3 except those under 'GEARBOX' and 'REAR AXLE' (Section P.2), and continue with the following.

#### DISTRIBUTOR

##### Cam bearing (D)

Lift the rotor off the top of the spindle by pulling it squarely and add a few drops of thin engine oil (Ref. D, page P.7) to the cam bearing. Do not remove the screw which is exposed.

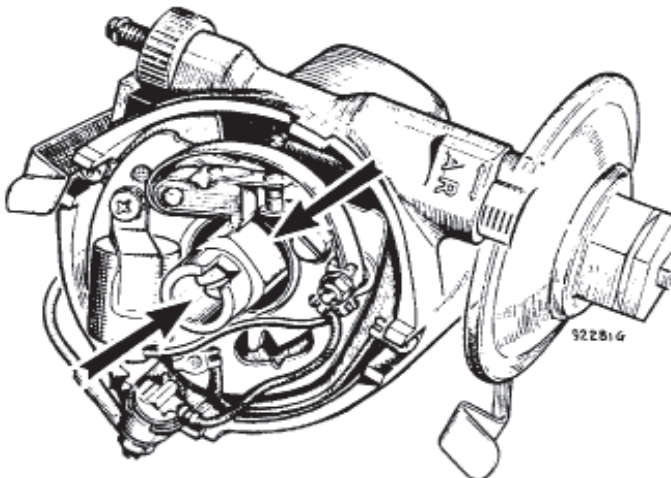


Fig. P.8

Add a few drops of thin engine oil to the cam bearing (lower arrow) and lightly smear the cam (upper arrow) with a small amount of grease

There is a clearance between the screw and the inner face of the spindle for the oil to pass.

Replace the rotor with its drive lug correctly engaging the spindle slot and push it onto the shaft as far as it will go.

##### Cam (C)

Lightly smear the cam with a very small amount of grease (Ref. C, page P.7), or if this is not available clean engine oil can be used.

##### Automatic timing control (D)

Carefully add a few drops of thin engine oil (Ref. D, page P.7) through the hole in the contact breaker base through which the cam passes. Do not allow the oil to get on or near the contacts. Do not over-oil.

##### Contact breaker pivot (D)

Add a spot of engine oil (Ref. D, page P.7) to the moving contact pivot pin.

#### GEARBOX OIL CHANGE (A)

Drain the gearbox oil.

When the gearbox has been drained completely replace the drain plug and refill with oil to Ref. A (page P.7) through the filler hole.

#### REAR AXLE OIL CHANGE (B)

Remove the drain plug and drain out the oil. Refill with Hypoid oil (Ref. B, page P.7) to the level of the filler plug hole.

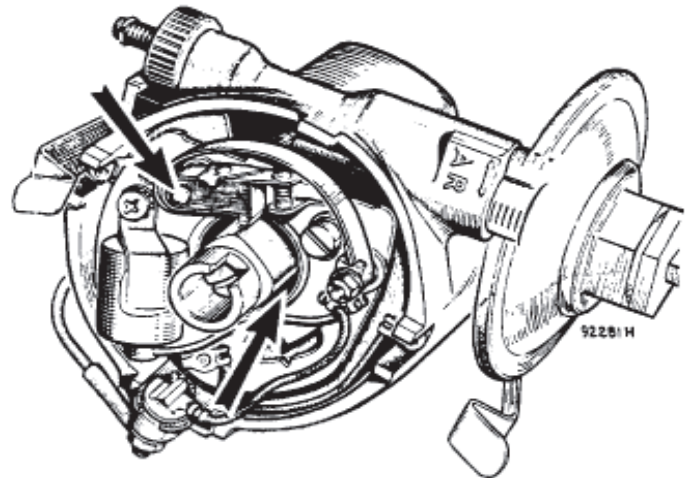


Fig. P.9

The contact breaker pivot is indicated by the upper arrow. The lower arrow indicates the aperture through which the automatic timing control is lubricated



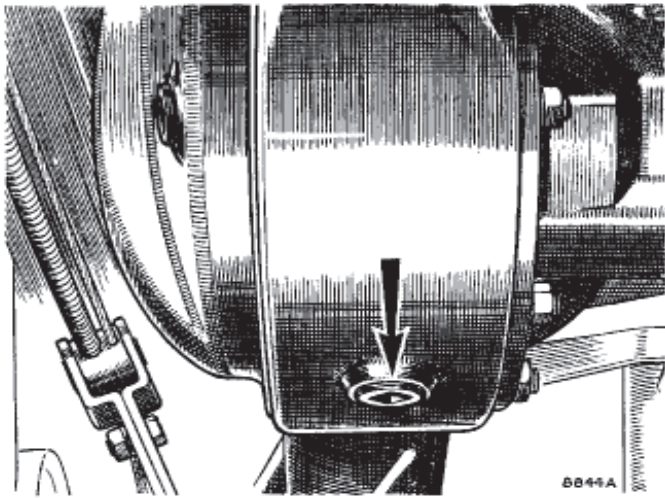


Fig. P.10

The rear axle drain plug is indicated by the arrow. The combined filler and level plug may be seen at the rear of the axle casing

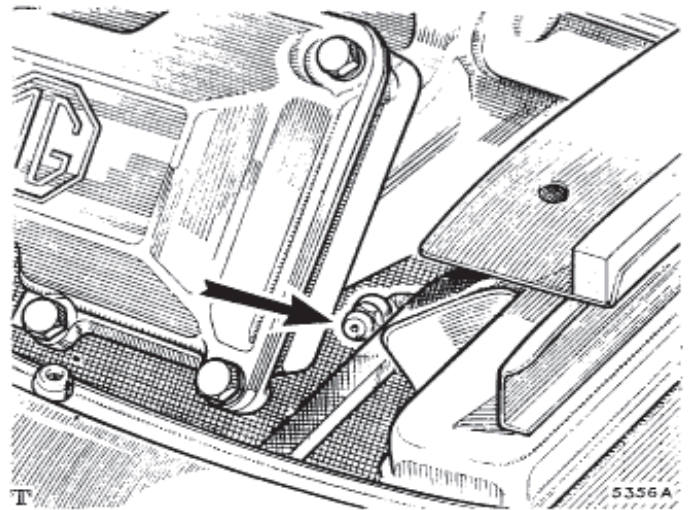


Fig. P.12

The arrow indicates the water pump oil nipple, which must receive one stroke only from the oil gun

FRONT WHEEL HUBS (C)

Remove the front wheel hub nuts and pull out the grease-retaining cap from the end of each hub, using a suitable extractor.

Pack with grease (Ref. C, page P.7) and replace.

ENGINE OIL FILTER

Fit a new engine oil filter element. The filter is released by unscrewing the central bolt securing the filter body to

the filter head. When fitting the new element make sure that the seating washer for the filter body is in good condition and that the body is fitted securely to prevent oil leaks. Care must also be taken to ensure that the washers below the element inside the bowl are fitted correctly. The small felt washer must be positioned between the element pressure plate and the metal washer above the pressure spring. It is essential for correct oil filtration that the felt washer should be in good condition and be a snug fit on the centre-securing bolt.

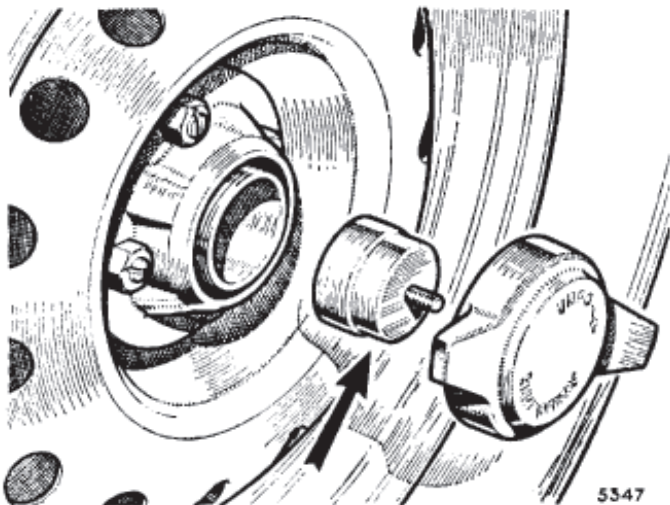


Fig. P.11

Unscrew the hub nut and withdraw the grease-retaining cap to repack the hub with grease

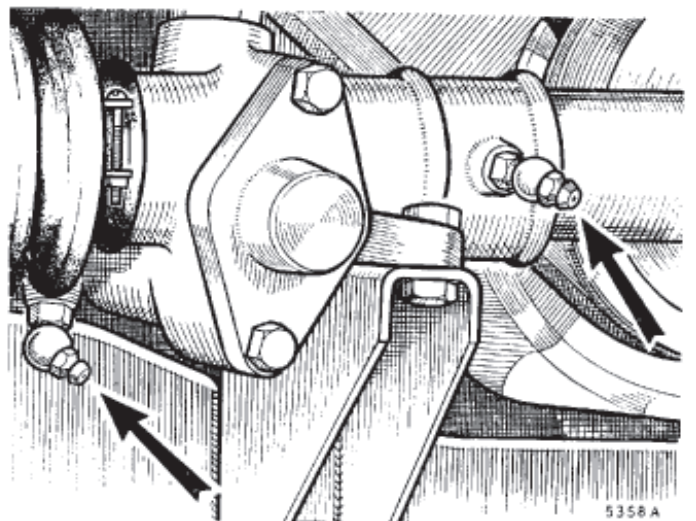


Fig. P.13

The steering-rack oil nipples which must receive attention

### WATER PUMP

Give the nipple on the water pump body **one stroke only** with the gun filled with S.A.E. 140 oil. The oiling of the pump must be done very sparingly, otherwise oil will flow past the bearings onto the face of the carbon sealing ring and impair its efficiency.

## Section P.5

### 12,000 MILES (19200 Km.) SERVICE

Carry out the instructions detailed in Sections P.2, P.3, and P.4 in addition to the following.

#### ENGINE-FLUSHING (A)

Remove the engine sump drain plug and allow the old oil to drain completely.

Replace the drain plug and refill the engine with approximately 6 pints (7.2 U.S. pints, 3.41 litres) of flushing oil manufactured by one of the approved oil companies listed on page P.7.

Run the engine at a fast idling speed for 2½ to 3 minutes.

After stopping the engine special care must be taken to ensure complete drainage of the flushing oil.

Replace the sump drain plug and fill the engine with oil to Ref. A (page P.7).

#### STEERING GEARBOX (B)

The two nipples for the steering gearbox and pinion are reached from beneath the front of the car.

Give the gearbox nipple 10 strokes **only** and the pinion nipple two strokes **only** at the same time with a gun filled with oil to Ref. B (page P.7).

#### SPEEDOMETER AND TACHOMETER CABLES (C)

Unscrew the speedometer and tachometer drive cable outer casings from the instrument heads. Extract their inner cables and lubricate sparingly with grease to Ref. C. Oil must not be used. After replacing each cable in its outer casing withdraw the upper end approximately 8 in. (20 cm.) and wipe off the surface grease before re-connecting it to the instrument head.

#### DYNAMO (D)

Add two drops of engine oil to Ref. D (page P.7) in the lubrication hole in the centre of the rear end bearing plate.

Do not over-oil.

# LUBRICATION

# P

The following is a list of lubricants recommended:

<b>A ENGINE AND AIR CLEANER</b>								
<i>Climatic conditions</i>	Esso	Mobil	Shell	BP	Filtrate	Sternol	Duckham's	Castrol
Tropical and temperate down to 32° F. (0° C.)	Esso Extra Motor Oil 20W/30	Mobiloil A	Shell X-100 30	Energol S.A.E. 30	Medium Filtrate 30	Sternol W.W. 30	Duckham's NOL Thirty	Castrol X.L.
Extreme cold down to 10° F. (-12° C.)	Esso Extra Motor Oil 20W/30	Mobiloil Arctic	Shell X-100 20/20W	Energol S.A.E. 20W	Zero Filtrate 20	Sternol W.W. 20	Duckham's NOL Twenty	Castrolite
Arctic consistently below 10° F. (-12° C.)	Esso Motor Oil 10	Mobiloil 10W	Shell X-100 10W	Energol S.A.E. 10W	Sub-Zero Filtrate 10W	Sternol W.W. 10	Duckham's NOL Ten	Castrol Z
<b>GEARBOX</b>								
All conditions	Esso Extra Motor Oil 20W/30	Mobiloil A	Shell X-100 30	Energol S.A.E. 30	Medium Filtrate 30	Sternol W.W. 30	Duckham's NOL Thirty	Castrol X.L.
<b>B REAR AXLE (HYPOID) AND STEERING GEAR</b>								
All conditions down to 10° F. (-12° C.)	Esso Gear Oil G.P. 90/140	Mobilube G.X. 90	Shell Spirax 90 E.P.	Gear Oil S.A.E. 90 E.P.	Filtrate Hypoid Gear 90	Ambroleum E.P. 90	Duckham's Hypoid 90	Castrol Hypoy
Arctic consistently below 10° F. (-12° C.)	Esso Gear Oil 80	Mobilube G.X. 80	Shell Spirax 80 E.P.	Gear Oil S.A.E. 80 E.P.	Filtrate Hypoid Gear 80	Ambroleum E.P. 80	Duckham's Hypoid 80	Castrol Hypoy Light
<b>C LUBRICATION NIPPLES AND WHEEL HUBS</b>								
Wheel hubs, hand brake cable, and all lubrication nipples except water pump and steering rack and pinion	Esso Multi-purpose Grease H	Mobilgrease M.P.	Shell Retinax A	Energrease L. 2	Filtrate Super Lithium Grease	Ambroline L.H.T.	Duckham's L.B. 10 Grease	Castrolase L.M.
Alternative for all lubrication nipples except hand brake cable and steering rack and pinion	Esso Gear Oil G.P. 90/140	Mobilube G.X. 140	Shell Spirax 140 E.P.	Gear Oil S.A.E. 140 E.P.	Filtrate Gear 140 E.P.	Ambroleum E.P. 140	Duckham's NOL E.P. 140	Castrol Hi-Press
<b>D UTILITY LUBRICANT, S.U. CARBURETTER DASHPOT, OILCAN POINTS, ETC.</b>								
All conditions	Esso Extra Motor Oil 20W/30	Mobiloil Arctic	Shell X-100 20/20W	Energol S.A.E. 20W	Zero Filtrate 20	Sternol W.W. 20	Duckham's NOL Twenty	Castrolite
<b>E UPPER CYLINDER LUBRICANT</b>								
All conditions	Esso Upper Cylinder Lubricant	Mobil Upperlube	Shell Upper Cylinder Lubricant	Upper Cylinder Lubricant	Filtrate Petroyle	Sternol Magikoyl	Duckham's Adcoild Liquid	Castrollo