

APPENDIX V.

INSTRUCTIONS FOR STARTING, STOPPING, ETC.

FILLING WITH WATER.

The radiator should not be filled higher than two inches above the tops of the tubes, and the level should not be allowed to get much below this. The white line in Fig. 37 shows the correct level.

Level.

Use only soft water (preferably rain water).
A teaspoon of "Incrusto" per gallon of water may be added to prevent scale and rust.

Incrustation. This preparation is obtainable from the Anglo-Bosphorus Oil Co. Ltd., Bristol (mention for ROLLS-ROYCE car).

FILLING WITH PETROL.

Petrol should only be poured into the petrol tank through a very fine wire gauze strainer - fine enough to stop water. Funnels wet with water must not be used for replenishing petrol tanks. For filling, it is only necessary to unscrew cap A (Fig. 57).



Fig. 57

THE CORRECT WAY TO HOLD A "SHELL" PETROL-CAN SO AS TO ALLOW A FREE INTAKE OF AIR AND A CLEAN FLOW OF PETROL.

The R-R carburettors are regulated for "Shell" spirit having an average specific gravity of .710; when the car is taken abroad a slight alteration to the jets may be necessary to suit the foreign petrol, but this should be obtainable with the small lever on dashboard (in later types this lever is on the Steering Column).

Density.

FILLING WITH OIL.

See that the oil in the engine body is at the right level (page 15).

We recommend Price's Motorine B for summer, and Price's Motorine C for winter use.

STARTING THE ENGINE.

See that the gear lever is in neutral position, hand brake lever "on", and petrol tap on. Give the hand pump a few strokes until, the petrol pressure gauge registers about 1/2 pound. Flood the carburettor by gently pressing down the spring plunger in float chamber cover (do not damage the float by "joggling" violently). Retard the ignition, fully, by setting the control lever right back to "late", and advance the governor lever 1/3 up the quadrant. Switch both ignitions on and set the jet adjustment lever two notches "strong". The engine should start with a few *upward* pulls on the starting handle. Do not push the starting handle down, but lift it with the four fingers of the right hand without actually gripping it (see Fig. 51); this will prevent personal injury in the event of a back-fire. Take great care that the ignition lever is set *right back* to late before attempting to start the engine. If trouble is experienced in starting the engine, inject 1/2 teaspoonful of petrol into the induction pipe at the small cock provided, taking care to shut the cock afterwards; in very cold weather, cotton waste moistened with *hot* water packed round the carburettor will assist the starting of the engine (great care must be taken that no water is drawn into the carburettor).

STARTING THE CAR.

We recommend starting the car on the first, or lowest gear. Having pushed the clutch right out, and gently moved the gear lever into the first speed position, the governor control handle should be advanced about

quarter-way up, so that the engine is accelerated to about 300 or 400 revolutions per minute. Then, with the ignition control lever advanced to about a quarter of its range only, the clutch should be gently let in.

In starting the car do not run the engine too fast, remembering that the slower the engine speed the more quietly will the car get away, and the less strain will there be on the transmission.

Care must be taken not to “grind” the gears; if the gears will not engage through the teeth being opposite to one another, the clutch pedal should be slightly lifted, and after pressing well down again, another attempt should be gently made. Do not jam the gears in. If a grinding noise is heard when bringing into gear (which is due to the wheels revolving), press the clutch pedal *well* down, which should stop them. If they still continue to revolve, there may be an excess of oil on the clutch (see Appendix VII., on “Care of Clutch,” page 70) or possibly the small clutch pad requires attention (see “Clutch Pad,” page 74).

The clutch must always be let in gently, otherwise the engine may be stopped by the effort to suddenly move the load, and the mechanism and tyres may be strained and damaged.

If the clutch should slip, i.e., fail to drive the car properly when “engaged,” see Appendix VII., on “Care of Clutch.”

To change from first speed to second leave the control lever in its position of quarter-way up quadrant, and as soon as the car is moving steadily, push out the clutch and move the gear lever quietly into second gear position (this can be done quite slowly), then let in the clutch gently. The gears will engage without noise if the time between disengaging from 1st and engaging with second is judged nicely; this should be such as will allow the primary shaft to drop in speed sufficiently to pick up the higher gear without grating the teeth. The governor will open the throttle automatically the requisite amount if the clutch is let in *gently*, so do not touch the accelerator pedal during these operations.

The change from 2nd to 3rd speed is effected in a similar manner.

Having got the car running on the third gear (which being the direct drive, should be used as soon as possible), the speed can be adjusted to suit the wish of the driver by using the foot accelerator pedal, the governor being set by placing the governor lever near its lowest position. Never depress the accelerator pedal with the clutch out or the gear lever in “neutral.” The accelerator pedal should be released when turning a corner.

TIMING THE IGNITION.

The timing of both ignitions is controlled from the steering column by the same lever (marked “Ignition”). When using the battery ignition it is important that the “timing” be varied with the varying speed of the engine, because, owing to the fact that the Rolls-Royce engine is unusually flexible (capable of running at greatly varying speeds), the benefit derived from doing so is more than usually noticeable.

The same applies to the magneto ignition, though not with the same degree of importance.

TO DESCEND A HILL.

The throttle may be closed by moving the governor lever right back (if the governor is already set for slow running, the throttle will close automatically when the speed of the car is much increased), so that the clutch being left “in,” the engine may serve as a brake. The foot and hand brakes should then be applied gently and gradually, so that the speed is always kept well within control. Always put the brakes on at the top of the hill. Do not wait until the car is running fast downhill. It is advisable to use the hand brake rather than the foot brake, the latter being applied as well if required, or in case of emergency.

When descending long hills use both the foot and hand brakes. Avoid jamming the brakes on suddenly. Changing to a lower gear should never be attempted while descending a hill unless the car has been nearly stopped.

If the car is on a decline (forwards) and the engine has stopped, it may be started by allowing the car to run slowly down-hill (on “direct drive”) and then gently letting the clutch in.

TO ASCEND A HILL AND CHANGE TO A LOWER GEAR.

If a hill is too steep to be negotiated on the “direct drive” (third gear) and necessitates changing gear, the driver should proceed as follows:—Advance the governor lever fairly well forwards towards the “fast” position, withdraw the clutch slightly, and move the change gear lever into the neutral notch. Then let the engine clutch right “in” (so as to spin the gears). As soon as the speed of the car has fallen to below that of the suitable gear for the hill, the clutch should be withdrawn again, and the change gear lever at the same time moved over to the lower gear notch. The clutch should then be let in gently. All changing of gears should be done without noise or shock,

otherwise the handling is wrong, and these notes should be studied as shocks in changing gear not only damage the gear whels, but strain and tend to loosen the whole transmission mechanism. Practice on a level road is advisable, so that plenty of time can be taken to change. Should there be any doubts about ascending a steep hill, the car should be dropped on to the lowest gear at the *bottom of the hill* rather than the gear changed hurriedly on the hill.

Caution. Take care never to try to change gear or allow the gears to get “ out of mesh “ when the engine has stopped and the car is in motion ; should this occur, wait till the car is almost at rest before touching the gear lever.

TO STOP THE CAR. - BRAKES.

In stopping the car (except in case of emergency), the throttle should be closed (by releasing accelerator pedal) well before arrival at destination, and the car allowed to slow down, so that little or no brake will be required. In fact the brakes should be used as little as possible, and retained for emergencies. Similarly the clutch should be withdrawn or the throttle closed in plenty of time before coming to a corner or traffic obstruction, so that a gentle application of the brake will stop the car completely if necessary.

The foot brake of the ROOLS-ROYCE cars is extremely powerful - it requires but a slight pressure of the foot -

Abuse of Foot Brake. and in the case of an emergency must not be used with such violence as a less efficient brake, such as many drivers are accustomed to. The back wheels can be easily locked thereby, and if the wheels grip the road surface well (as is specially likely with metal-studded tyres), it is probable that some part of the transmission will be badly strained.

For this reason we suggest that owners should see that their drivers follow this instruction strictly and use their side brakes for ordinary work, the foot brake being applied, with reasonable pressure, only when it is required to supplement the side brakes, or to cool the latter on long grades.

The proper course, on desiring to slow down, is to do so by allowing the throttle to close, the engine will then retard the car without taking out the clutch (*i.e.*, use the engine as the first brake). then have recourse to the side brakes, and lastly, fall back on the foot brake for the most prompt and most quickly available emergency brake.

All brakes should be eased off as the car comes to rest (the side brake put on again after the car is stationary) ; this will prevent any unpleasant jerk to the passengers and mechanism.

For long down grades, the engine must be left in gear (on third speed) and the throttle closed ; if additional braking is required, use both the foot brake and side brakes to prevent either of them overheating.

If, in an emergency, the car has been pulled up very suddenly by the foot brake, the car should afterwards be carefully examined, to see if any part, such as the propeller shaft or torque rod, has been damaged ; this inspection may save an accident due to the failure of a part which has been badly strained by the improper use of the brakes.

See noted elsewhere on lubrication and care of the brakes.

STEERING.

A firm grip of the steering wheel should be kept when going over rough surface to prevent the front wheels from oscillating too far.

The steering of these cars is designed to have what is termed a “big lock,” *i.e.*, the front wheels can be turned round to a considerable angle, which is extremely useful for turning round in narrow roads and confined spaces, but care must be taken never to use the “ full lock,” - or anywhere near it - when the car is travelling at any speed, but only when manoeuvring in or out of a difficult place.

See noted elsewhere on lubrication and care of the steering gear.

SIDE-SLIP

On greasy surfaces the speed must at once be reduced to “ very slow,” for the brakes may be valueless to stop the car in case of an obstruction.

The safest rule on greasy surfaces is to drive as though you had no brakes *i.e.*, in such a manner that if an obstruction presents itself the car will pull up of its own accord by merely withdrawing the clutch.

When you feel a tendency of the car to slip, immediately take the clutch out ; do not apply the brake, which would probably cause the worst skid, but “ correct ” the side-slip by turning the front wheels in the direction towards which the *back* of the car is tending to skid ; be careful to turn them straight again just as soon as the car straightens itself, or you may have a worse skid in the opposite direction. It is often the *second* skid that causes an accident, owing to the driver having

“corrected” the first without being prepared for a counterswing in the other direction worse than the first.

If forced to apply a brake on a greasy surface, a light pressure on the foot brake will be less liable to aggravate a skid than using the side brakes.

NOTES TO DRIVERS.

An owner may find it well to instruct his driver as follows :-

Collisions. Drivers are warned to inspect carefully the front dumb irons for damage, after even slight collisions. Damage to these parts may result in a serious accident when the car is again on the road.

Corners. Avoid taking bends or corners fast as this puts a serious strain on the wheels, body etc., and causes *great wear and tear* on the tyres.

Avoid unnecessary risks, such as passing between other vehicles when there is only just room, as this often results in a sudden violent application of the brake being necessary, which causes great strain on the mechanism, wear and tear on tyres, and unnecessary discomfort to the occupants.

Risks. When passing through towns and villages the throttle should be nearly closed, i.e., the governor lever placed near the “slow,” position, so that (the accelerator pedal being “up”) the engine will only just keep the car going at a slow speed.

Towns. Remember that owing to the silence of the car one is often driving at a much higher speed than one thinks.

Speed. Drive with the greatest consideration and courtesy for other users of the road, so that you may not earn a bad reputation.

Courtesy. Especially avoid fastdriving fast. In dusty weather where there are many pedestrians on the road, an occasional glance backwards will reveal the immense amount of annoyance and discomfort to others which such a practice causes.

Dust. In wet weather, when the road surface is uneven, the speed should be greatly reduced in populated parts, to avoid splashing people on the footpath.

Mud.

Do not let the tyres get flabby, but pump them up occasionally. It is ruinous to the tyres to run on them if they are not well pumped up ; too much pressure, however, may cause a burst, as well as discomfort to the occupants ;

Tyres. the correct pressures according to weight carried can be obtained by reference to the tyre makers’ lists. Examine the surfaces of the tyres at stopping places, and pull out any nails, flints, etc.; many punctures are thereby saved.

It is recommended that both ignitions be used except for very slow running.

Ignition. It is important to remember that, when the accelerator is depressed beyond a certain point, the extra oiling device is brought into action ; this fact would be utilized by a thoughtful driver, by depressing the pedal occasionally to its full extent after driving for some time on, say, 1/4 throttle (*i.e.*, without extra oil).

Extra Oil. Strengthen the mixture 2 or 3 notches, switch on battery only and retard. A strong mixture burns slowly, and if ignited late will give the minimum power, because the exhaust valve opens and releases the pressure while the gases are still burning.

Slow running. Extremely slow running may be obtained by increasing the spark gaps to .035 in. or .04 in., but this necessitates the plug points being kept particularly clean ; if the engine is then found to miss-fire when the throttle is opened after running slowly, the gaps are too long, and should be shortened.

AFTER THE CAR HAS STOPPED.

The side brake should be put firmly on, and the change gear lever brought to the neutral position before the driver leaves his seat. If the car will soon be required again, the engine should be stopped with the governor lever halfway up the quadrant (not more), by means of the switch, after which the ignition should be put to the fully retarded position ready for the new start. The engine should not be “raced “ and then switched off, as this will cause violent explosions in the silencer. If the car will not be used again immediately, turn off the main petrol supply tap. Extinguish all lamps if alight.

CLEANING.

It is necessary to keep every part of the mechanism clean, not merely the parts which are easily accessible.