

*(To be inserted in Bentley Handbook No. XV, to face page 22.)*

### **COASTING.**

Owners are advised that coasting or "freewheeling" down hills *with the engine switched off* must definitely be avoided, as this is likely to cause severe damage to the Automatic Gearbox mechanism.

This damage can occur with the manual control lever in any of the five positions, including position "N".

Similarly, if, in the unfortunate event of an accident, it should be necessary to give instructions for the car to be towed, owners are requested to instruct that the following procedure should be carried out before the car is moved, to safeguard the gearbox from further damage.

- (i) The car should not be towed if there is any sign of mechanical failure or breakage in the gearbox. In this case the car must be transported.
- (ii) When satisfied that the gearbox is undamaged, remove the front interior carpet to obtain access to the inspection cover in the floor (see 3, Fig. 21), page 67. Remove the six screws and the cover.
- (iii) Release the locknut and slacken off the rear band adjusting screw (5, Fig. 21)  $4\frac{1}{2}$  complete turns. Re-tighten the locknut and replace the inspection cover, screws, and front carpet.
- (iv) Keep the control lever at "N" throughout, and maintain when possible a towing speed between 15 and 25 miles per hour. Distances must at all times be kept to a minimum.

### **IMPORTANT.**

At no time must a speed of 25 miles per hour be exceeded whilst towing.

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### Use of Starting Handle.

*It is imperative when starting the engine with the starting handle, that the gear lever must be at Neutral.*

### Automatic Gear Changing.

The gearbox is fully automatic in operation throughout the range of the gear ratios, however, a manual control lever is mounted on the steering column, by means of which a selection may be made of the desired range best suited to the operating conditions, thus giving the driver greater flexibility of the control and enabling him to use his judgment and skill.

Three forward speed ranges are provided, also neutral and reverse. The quadrant is marked as follows:—

N.    4.    3.    2.    R.

The gear ratios available in each of the positions are as under:—

“4”—Top, 3rd, 2nd and 1st.

“3”—3rd, 2nd and 1st.

“2”—2nd and 1st.

For all normal driving conditions the lever is placed in the position marked “4”, when all four speeds are available under the control of the automatic “control unit”, which will select the suitable gear ratio according to the degree of throttle opening and the speed of the car.

The gear lever quadrant is provided with a gate between positions “2” and “3” and a button on the lever has to be depressed to move in or out of neutral or into reverse, thus preventing inadvertent engagement with an unwanted gear.

For greater control of the car when touring in hilly or difficult country, the gear lever should be placed in the position marked “3”. The change either up or down, between 4th and 3rd speed, can be made at any moment by the simple movement of the lever. Easing the pressure on the accelerator pedal facilitates the change, but this is not essential.

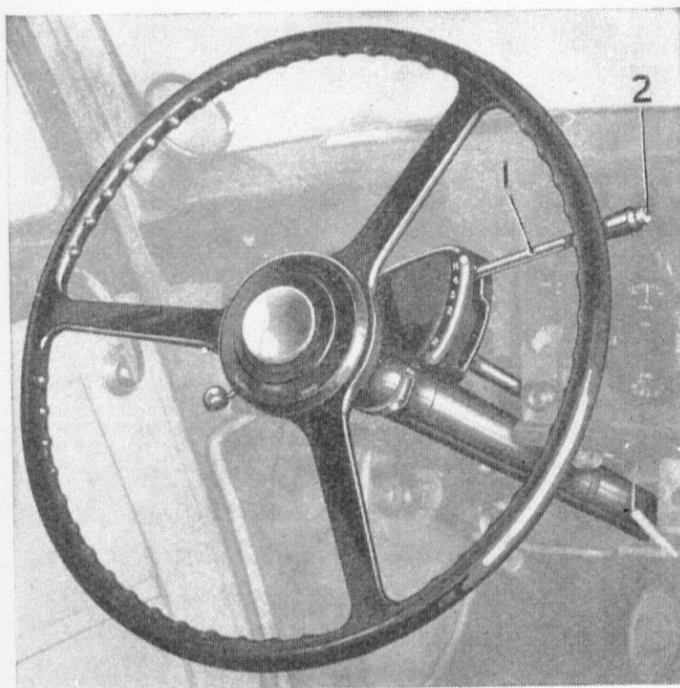


Fig. 2.—GEAR RANGE SELECTOR LEVER.

1. Lever.
2. Neutral and Reverse Lock Button.

Should the driver desire maximum acceleration, he may obtain a lower gear at full throttle by depressing the accelerator pedal beyond the normal limit of its travel, so actuating the kick-down switch.

It should be noted that although the hand control lever may be set in position "3", this gear ratio will not be held if the engine revolutions are excessive. The automatic control unit will over-ride this setting and the gearbox will automatically change up to 4th gear.

When descending very steep gradients, the gear lever should be placed in the 2nd position.

Only at prolonged halts, due to traffic jams, etc., is it necessary to engage neutral; at all ordinary traffic controls, the gearbox may be left in the gear range then in use.

Reverse can be engaged while the car is travelling forward at any speed below 10 miles an hour. This feature can be used to advantage should the car become embedded in deep snow, when by suitable timing of the engagement of reverse and second, the car can be rocked out of the rut.

When the engine is stationary, a parking lock is provided by placing the hand control lever in "R".

The illustration of the steering column control lever shows that a "gate" is provided between positions "3" and "2"; this design of quadrant allows changes between 4th and 3rd speed ranges to be made without risk of entering the 2nd speed range. Likewise, changes between 2nd speed range and reverse when "shunting" are facilitated.

It should be noted that when starting the car from cold the engine will run at a "fast idle", with the consequent build-up of an operating oil pressure in the gearbox. If when parked in a confined space it is necessary to engage reverse gear from neutral, thereby temporarily engaging the forward speed ranges, care must be taken not to release the brakes until the gear lever is in position "R".

### **Tow Starting.**

If it should be necessary to start the car by towing, the gear lever should be placed at position "2". When the car speed reaches about 20 miles per hour, the engine will start to turn over and fire. The lever should then be placed in the neutral position, and care should be taken not to have the throttle too wide open or the car may accelerate too rapidly and overtake the towing vehicle.

### **Fuel Feed.**

Fuel is supplied from the main tank to the carburetter by means of a dual electric pump mounted in the frame (see Fig. 11). The total capacity of the main tank is 18 gallons.



### **Fuel Gauge.**

The electric fuel gauge on the instrument board is graduated to register the total quantity of fuel in the main tank. The gauge is inoperative when the ignition is switched off.

Special contacts carried by the tank unit cause the green warning lamp to light when only about three gallons of fuel remain in the tank.

### **Chassis Lubrication.**

When starting the car for the first time in the day, it is a good plan to form the habit of operating the chassis oil pump pedal. The foot-operated pump should be used according to the mileage travelled, and the pedal should be given three or four strokes at first starting, and subsequently repeated every 200 miles. This will ensure adequate lubrication at remote parts of the system.

### **Controllable Shock Dampers.**

In order to provide comfortable riding at all speeds, controllable shock dampers are fitted to the rear axle.

The control is effected by the lever, mounted above the steering wheel, and marked **Ride Control**.

For ordinary town work, or touring with moderate loads, it will be found that the damper loadings as set by the pump are adequate when the hand lever is at **Normal**.

With heavy loads, improved riding comfort will be obtained by moving the lever towards **Hard**, the control being progressive.

### **Battery Charging.**

This is entirely automatic, as the provision of an automatic output regulator in conjunction with a shunt wound dynamo, adjusts the charge rate to suit the state of the battery.

When the battery is low in charge, the ammeter on the instrument board will show a higher reading towards **Charge** than it will when the battery is well charged. In making such comparison, however, other factors which affect the ammeter reading must be taken into account, chiefly engine speed and current-consuming apparatus in use at the time.

Whenever the master switch and the ignition switch are **On**, and the engine running above idling speed, the battery is being charged. This should be checked by reference to the ammeter.

Further information regarding the electrical system is given in Chapter X.

### Lighting Control and Switch.

As already mentioned, the movement of the master switch and the ignition switch to **On** not only switches on the ignition and charge, but brings into operation the electric fuel pumps and fuel gauge.

The ignition switch also switches on a red warning light on the instrument board, which is automatically extinguished when the engine is running at a speed sufficient to cause the dynamo to excite up to battery voltage.

The master switch controls the head, side and tail lamps, alternative **On** positions being provided, viz.:—

**S** and **T**.—Side and Tail lamps on.

**H, S** and **T**.—Head, Side and Tail lamps on.

**PL**.—"Parking" lights on, e.g. Side and Tail lamps on, accessories off.

In addition, a foot-operated switch is provided, by means of which the beam of the driving lights is altered to allow anti-dazzle precautions to operate, thus extending courtesy and safety to passing traffic.

### Accessories.

Windscreen wipers, de-misters, direction indicators and a car heater are normally fitted to all cars.

The windscreen wiper has two speeds controlled by a two-position switch (see Fig. 1). Operate by turning switch knob to the right; the first position gives **Slow**, further turning to the right to the second position gives **Fast**. Hard over to the left is **Off**.

The higher speed of wiping is intended for use during heavy rain. It should not be used in heavy snow or with a dry or drying windscreen, i.e. when the load on the motor is in excess of normal.

For de-misting the windscreen, warm air is taken from a special heater under the front wing, through suitable ducting to vents in the capping rail.

The normal forward motion of the car is usually sufficient to ensure adequate de-misting; under severe conditions switch on booster motor (11, Fig. 1), the operation of the switch being "Pull on", "Push off".

The rear window is of the electrically heated type formed by moulding a series of wires into the glass. A switch on the facia board marked "R.W." should be operated when required.

The car heater, normally fitted on the dashboard under the scuttle, consists of a water heated matrix with which is incorporated an electrically driven fan to circulate a current of warm air. A rheostat switch on the facia board, see Fig. 1, controls the fan.

The winking light system of direction indicators is fitted, and the control switch is mounted in the centre of the capping rail as shown in Fig. 1.

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### **FAULTY IGNITION CONDENSER.**

In cases where the engine misfires or fails to start, and that this condition is obviously not due to petrol starvation, it is possible that the ignition condenser is at fault.

Two condensers are mounted on the side of the ignition distributor, one being carried as a spare. (See Fig. 43, page 97.)

In the above circumstances, it is recommended that the wire is disconnected from the terminal of the suspected condenser and reconnected to the spare. The faulty condenser should be renewed at the earliest opportunity.

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Also, a press button switch on the facia board, see Fig. 1, is available for ascertaining the engine oil level which reads on the fuel gauge.

All these features are controlled by the master switch, which should be regularly switched off when leaving the car, to avoid leaving one of the accessories in operation.

### **Radiator Thermostat and Thermometer.**

A thermostat is provided in the upper radiator coolant pipe which automatically restricts the flow through the radiator, until the coolant in the system attains a temperature of about 78° C.

A thermometer is provided on the instrument board to indicate that the thermostat is operating properly and that there is no shortage of coolant.

### **Coolant Level in Radiator.**

The radiator filler cap, which is located beneath the bonnet on the left-hand side, should be removed occasionally for inspection of the coolant level, but it *must not be removed when the engine is running*.

The level of the coolant should be maintained to the bottom edge of the filling orifice. Top up if necessary with the correct anti-freeze mixture. (See page 86.)

### **Frost.**

The car is delivered with a suitable anti-freeze mixture in the cooling system. (See page 83.)

If the original coolant has been replaced with water, and the car has to stand exposed to frost with the engine not running, it is of vital importance that the system should be drained by opening the drain taps on the water pump inlet pipe, and on the cylinder block (see Fig. 38), and releasing the filler cap. The car heater must also be drained by opening the tap on the return pipe.

*Before attempting to start, or even move the engine again, hot water should first be poured over the water pump, as otherwise damage may be caused to the pump rotor by the presence of particles of ice within the casing. Warm water can be used with advantage for refilling the radiator.*

### **Snow Tyres.**

Special tyres are now available from certain tyre manufacturers, which are recommended as an alternative to "chains", as they give an easier and better ride and allow faster driving over snow-covered roads.

The tyres recommended for use on the Bentley car are:—  
“India—Winter Type”.

It is suggested that two spare wheels might be fitted with Snow Tyres and held in the garage, for change-over with the rear wheels of the car when conditions warrant their use.

There is no objection to the use of these tyres on ordinary road surfaces, except that they would probably be noisy.

The tyre pressure should be maintained at the normal tyre pressures as quoted in the Handbook.

### **Fitting of Snow Chains.**

In the event of snow chains being preferred, they should be fitted to the rear wheels only.

A Parsons' chain, known as the “Special Bentley Type”, is available. It is recommended that these be obtained through Messrs. Bentley Motors (1931) Ltd., or one of their “Special Retailers”, in order to ensure the supply of the correct type.

When fitting these special chains, it is essential to commence by fastening the one hook on the inside of the wheel and to ensure that the outer joining links are fitted as low down on the tyre wall as possible. The tensioning springs which are supplied to go on the outside of the wheel must always be fitted.



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## **AUTOMATIC GEARBOX.**

### **SERVICE AFTER 1,000 MILES RUNNING.**

#### **Important.**

During the early life of the Automatic Gearbox, a certain amount of initial bedding-in of the brake bands occurs. This cannot be compensated for in the original factory adjustments, and it is therefore most important that after the car has completed the first 1,000 miles running, it should be taken to the Bentley Retailer in your territory for the appropriate adjustments to be carried out.

No charge will be made for this service.

If it is inconvenient for you to send the car to the retailer from whom it was purchased, any Bentley Retailer will be pleased to carry out this adjustment.

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