Bert Ward Reflections: Modifications to the 20hp

By Bert Ward

CLUTCH

On early 20HP chassis, the clutch had woven linings that were joined together by sewing. This type of lining had smooth operation but was not a success due to the sewing breaking away where joined. These were replaced with a moulded type of lining, Ferodo RAD11. This type has been used ever since, also on the 20/25 HP, until the clutch was replaced by a Borg and Beck type clutch on the K2 series 20/25 chassis GTK42. This chassis was also fitted with Marles's type steering box and hypoid rear axle. This type of 25HP chassis finished with GTK63. GUL l chassis started the 25/30 models.

SPRINGS

As regards to these, an early article I wrote re the strength of these to suit Australian roads was referred to. What I am writing about now refers to spring squeaks, which were unknown before, with all the leaves of the Silver Ghost springs being ground-fitted up with ground leaves.

The early 20HP chassis springs, although fitted with leather gaiters, did suffer badly with squeaks. In fact, one 20HP - chassis number 73A4 - was that bad on arrival that the car had to be rectified before delivery. To do this, all springs had to be removed, dismantled and all leaves ground, to give each a proper bedding and rectify the cause: leaves digging into each other.

All springs were then assembled with graphite grease and refitted to the chassis. Later models were of an improved manufacture and on OA series 20HP chassis number GEN72 all springs had cadmium-plated leaves. On "O" series 20HP centralised chassis lubrication system was installed and spring leaves grooved so that excess oil from the shackle bolts would pass down to spring leaves to lubricate same and as oil only was used in the centralised chassis lubrication, oil could flow.

FRONT AXLE AND WHEEL WOBBLE

The axle as fitted to the two-wheel brake 20HP was the same type as the Silver Ghost, except on a smaller scale. Also, the kingpins and bushes were the same (but smaller) and the top king-pin bush was also fitted with the fibre friction disc to both sides, which was fitted to the Silver Ghost as a modification to cure wheel wobble. However, on the 20HP this fibre friction device did not cure the wheel wobble experienced on this chassis, so new kingpins and top bushes were designed which incorporated a series of bronze and hardened steel friction washers. These were fitted in the top bush, some with serrations on the outside and

some on the inside. Those on the outside fitted to the top bush, those with the serrations on the inside fitted to the kingpin.

This modification cured all wheel wobble and was fitted to all chassis produced with the fibre friction device and was made a standard fitting to all chassis until the four-wheel brake model was produced in 1925.

With the four-wheel brake chassis we experienced the same trouble, wheel-wobble. With the 4WB model, the kingpins had a bronze friction washer situated at the bottom of the king--pin but the modification R-R produced to cure the wheel wobble was a new type of kingpin to be fitted to the near side stub axle. With this kingpin the lower portion was serrated which incorporated a series of steel and bronze washers, the same as fitted to the top bush of the 2WB model. With this series of friction washers, the wobble was cured.

This fitting became standard on "J" series chassis GMJ1. However, on "K" series, chassis GAJ42, a spring- loaded cross-steering tube was fitted and this, with the single bronze friction washer on the bottom of the kingpins rectified all steering wobble. A lot of chassis fitted with the modified multiple friction washer kingpin was changed to a single washer type, but the spring-loaded cross steering tube had to be fitted.

CARBURETTOR

On some early chassis, trouble was experienced with the operation of the automatic air valve once the engine got warm, in that the air valve would not operate smoothly and when the engine got to normal temperature, the air valve would stick and not operate at all. The trouble was that not sufficient clearance had been allowed where the air valve operated in the carburettor body and with the expansion when hot, the clearance was too small. Once this increased, the air valve operated normally.

REAR AXLE

Early 20HP chassis were fitted with crown wheel and pinions with fine teeth, which in fact made the pinion look very weak and did prove so soon; what did happen was the pinion started to drop teeth.

A new modified type of crown wheel and pinion was produced and was used until the Hypoid rear axle was produced. However, with this new type of crown wheel and pinion it also incorporated the fitting of the new departure double thrust bearing in the pinion drive, in place of the double ball thrust which was a built up thrust race of thrust washers, ball-cages and balls. This type was not satisfactory, and great care was necessary in replacing this type to obtain the correct clearance and pre-load, plus make sure that when the whole unit was fully assembled and tight, that no end float was apparent.

Even with the fitting of the "new departure" type double thrust bearing, early failure of the race occurred. The trouble was found to be due to the New Departure bearing being too tight a fit in the housing. The new races were then supplied with the outside diameter

reduced by .0003" and when the pinion housing was fully assembled and tight, the housing should be able to float in the pinion .002 of an inch.

The New Departure double thrust bearing became a standard fitting on "G" series chassis G0K44.

ENGINE: 20, 20/25 HP CHASSIS

A warning to any owners of these chassis who may be overhauling the engine of their cars: Please check the big-end bolts, as these do stretch and if the car has done 100,000 miles, DO fit new bolts and nuts. These bolts have been known to break (I have seen them and the results). The 3 and 4 litre pre-war Bentleys suffer with this complaint too, so Please Check!