

TO: ALL ROOTES GROUP DEALERS  
MODEL: SUNBEAM IMP  
SUBJECT: TRANSAXLE UNITS

This bulletin is issued to provide additional guidance in instances where it is necessary to overhaul a transaxle unit, and has been compiled from experience gained in the Home Market.

We list below the complaints we have found, together with the rectification action which will probably be necessary. All work, however, should be carried out in close conjunction with the instructions which appear in the relevant Workshop Manual.

#### GENERAL NOTES

After removing the combined engine and transmission unit from the vehicle, the greatest care must be exercised when dividing the two units. The transaxle must not be allowed to hang by its primary shaft on the clutch centre plate otherwise the plate will be damaged. It is equally important that similar care is taken during reassembly.

Before dismantling a transaxle proceed as follows:-

1. Examine for oil leaks and make a note of them. Possible sources of leakage are:-
  - (a) Gear Selector Shaft.
  - (b) Casing joints - check that the nuts are tight i.e. 12 lb. ft. (1.66 kgms).
  - (c) Drain and Filler plugs.
  - (d) Detent plug.
  - (e) Diff. Shaft Seals.
  - (f) " " Nut - check that the nut is tight, i.e. 105 lb. ft. (14.5 kg.ms).

AUGUST, 1964

- (g) Clutch and shaft seals - sometimes the clutch housing will be smeared with engine oil, if there is no visible oil track from the clutch shaft seal to the bottom of the clutch housing, then the clutch seal is all right.
2. Clean the outside of the gearbox thoroughly to prevent dirt entering the mechanism later.
  3. Drain oil and measure after releasing air pressure in unit by removing filler plug if the transaxle is hot. There should be  $4\frac{1}{2}$  pints (2.56 litres). If the oil level is low and is green or brown, there is usually nothing to fear, but if it is low and black, then bushes, bearings and oil seals have probably been damaged. Damage of this sort is usually present if the oil volume has fallen below 3 pints (1.75 litres).
  4. Follow the Workshop Manual carefully for rest of strip.

### OIL LEAKS

#### Casing Leaks

These can usually be cured by tightening nuts up to correct torque (12 lb. ft) (1.66 kg.ms). If this fails, break the joint and remake with jointing compound (Hylomar or Autogel II) examine the faces for damage. Do not be tempted to overtighten casing nuts.

#### Oil Seal Leaks

Remove and examine the shaft for scratches or damage. Very tiny scratches can be removed with 'wet or dry' emery paper or rouge cloth. For greater damage, replace the shaft or drive flange. Fit a new seal in every case.

#### Detent Plug Leak

Remove and examine. If cross threaded or if the thread in the cover is stripped, fit a new cover. If the threads are all right, fit a new fibre washer and tighten to correct torque.

#### Diff. Shaft Nut Leak

Tighten nut to correct torque 105 lbs. ft (14.5 kg.ms).

### SEIZURE

If this occurs in the gear bushes, it may have been caused by low oil level. The 4th gear bush, synchro hub and key should be removed and then the hypoid pinion shaft can be pressed through the assembly, the box being in position shown in Fig. 18, Section E of the Workshop Manual.

AUGUST, 1964

Throw away the gears with seized bushes and any parts which are burned or worn, i.e. washers, synchro hubs, etc. Rebuild with new parts.

JUMPING OUT OF GEAR  
ALL GEARS

Replace the offending driven gear, bush, synchro hub/sleeve assembly,  $3/4$  Woodruff key, and selector fork assembly with new parts. Remove any sharp edges from the new selector fork pads.

Check that the detent mechanism in the gearbox mounting cover is satisfactory.

If the other selector fork assembly shows any signs of wear, replace it and also the synchro sleeve/hub assembly.

3RD OR TOP

In addition to above work, check for any signs of damage to the hypoid pinion shaft and Woodruff key adjacent to the  $3/4$  synchro hub. Should damage or signs of wear be noticeable, change the pinion shaft, crown wheel and Woodruff key.

MUFF COUPLING - ADRIFT/BROKEN

Remove drive flanges and spring rings from screwed sleeves and slack off inner screwed sleeves. Remove clutch housing and fit new seal.

The muff coupling may possibly have moved off the input shaft due to the circlip not locating correctly in its groove. Examine all relevant parts and replace damaged components.

DIFFICULT SELECTION  
ALL GEARS

Excessive resistance to the fore/aft movement of the gear lever may result from the selector shaft binding against the side of its bore in the rear cover. This can be overcome by drilling out the seven stud mounting holes in the cover from  $11/32$ " to  $23/64$ " which will permit better alignment of the cover relative to the shaft.

Before removing the cover, clean off any rust which has formed on the exposed part of the shaft, and when the cover is off, check the shaft for truth with a straight edge.

When reassembling, renew the 'O' ring and lightly coat the joint faces with Hylomar Jointing Compound.

AUGUST, 1964

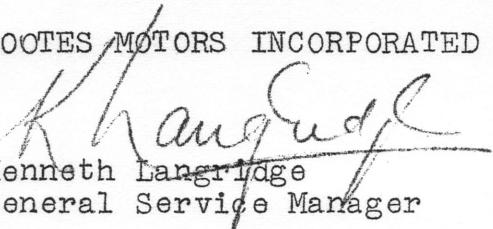
1st Gear

Check 1st gear dog teeth, if burred - replace with new 1st gear.

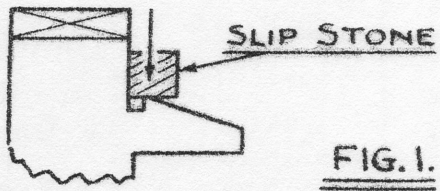
Remove the top edge of the cone by stoning carefully all round (Fig. 1). Do this on the new gear or to the old 1st gear if it is to be refitted.

Sketch No. 7610 attached.

ROOTES MOTORS INCORPORATED

  
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KL/jd  
Enc.



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FIG. 1.

