Figure 1 – inhibitor switch accessed by a rubber plug

MGBGTV8 – readjusting the overdrive inhibitor switch (and a surprising discovery)

In his previous V8NOTE681 Jim Livingstone suggested that the cause of his V8's overdrive cycling in and out of engagement was low oil level in the gearbox caused by a leaking output shaft seal. This conclusion appeared to be confirmed by subsequent testing on local roads. However, the cycling returned on the first long run with extended use of overdrive. On revisiting the problem last month he discovered that adjustment of the inhibitor switch has proved more long lasting. He has recorded the procedure he adopted in this note.

The next step

I first repeated the static checks from my earlier testing but these failed to reveal any faults. The next step was to repeat these dynamically by wiring up the solenoid to an internal light or multimeter. The car's previous owner had wired an indicator lamp to the overdrive stalk but this would not confirm the integrity of the circuit and my plan was to reroute this to the solenoid.

The surprising discovery

I had recollected seeing a rubber plug adjacent to the inhibitor switch (**Figure 2** arrowed) when I was under the car dealing with the previous oil leaks. There was no reference to this in the workshop manual or parts catalogue so I assumed this was not an original part of the car. Anxious not to spend any more hours on my back under the car I decided to investigate if this would be an easier route for the wiring or maybe even facilitate replacement of the switch should it prove faulty. **Figure 1**

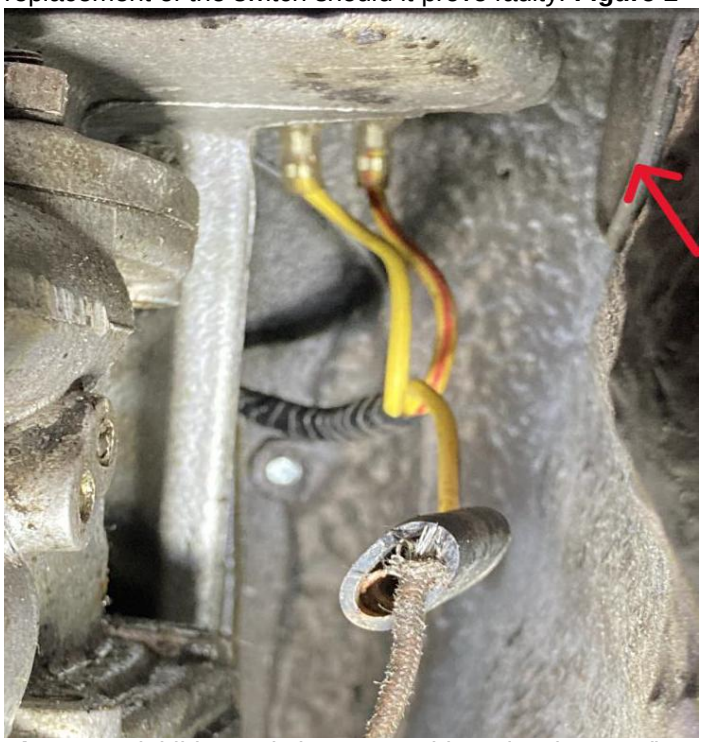

Figure 2 – inhibitor switch next to rubber plug (arrowed)

The conventional approach

For reference, normal access to the inhibitor switch is by unbolting the gearbox crossmember, lowering the assembly on to the fixed crossmember and displacing it to the right. This will provide clearance on the left side to access the switch and its sub harness.

Preparation

Access to the plug required the floor carpet to be folded back which in turn necessitated removal of both consoles (centre tunnel and radio) as well as the gear lever. The latter would also be necessary for more conventional access to the inhibitor switch. While I am grateful to the previous owner who provided this access feature I doubt if I would have undertaken it myself for what is, hopefully, a rare service requirement. However, it was so well executed using an original MG blanking plug that I have described it in an appendix to this NOTE.

Facilities

As much of the work would be conducted under the car for conventional access to the switch it would obviously be more convenient and comfortable if a pit or car lift was available. However, the provision of a tunnel aperture

removes the need for this and can be conducted at ground level via the passenger side of the cabin.

Parts
Parts are only required if the switch is faulty. However, enough sealing rings/spacers should be purchased to adjust the position of the switch plunger for consistent actuation.
- Switch BAU1074A
- Sealing ring, spacing 1B3664

Tools
- 27mm ring spanner
- 27mm open ended spanner

Procedure
Check and readjust the overdrive inhibitor switch (using the access plug)
1. Remove the rubber blanking plug from the passenger side of the transmission tunnel (**Figure 3**).

Figure3 – rubber blanking plug
2. Remove the spade terminals from the inhibitor switch.
3. Loosen and remove the inhibitor switch using the 27mm spanners.
4. Visually examine the inhibitor switch. This one had signs of wear on the plunger (**Figure 4**).

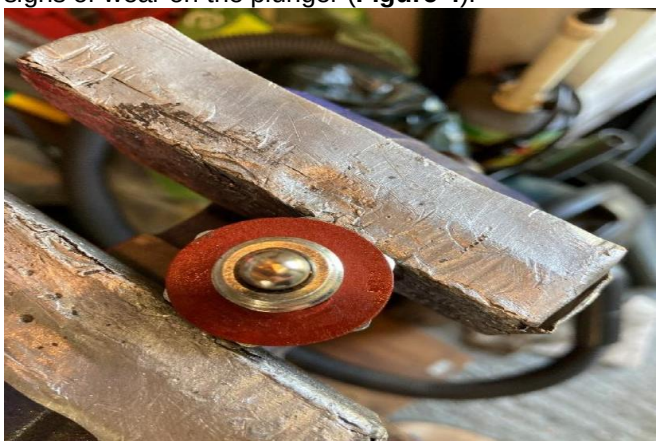

Figure 4 – inhibitor switch
5. Test the switch electrical operation.
6. Examine the inhibitor pin in the gearbox and measure its depth from the flange in 3rd and 4th gear (**Figure 5**).

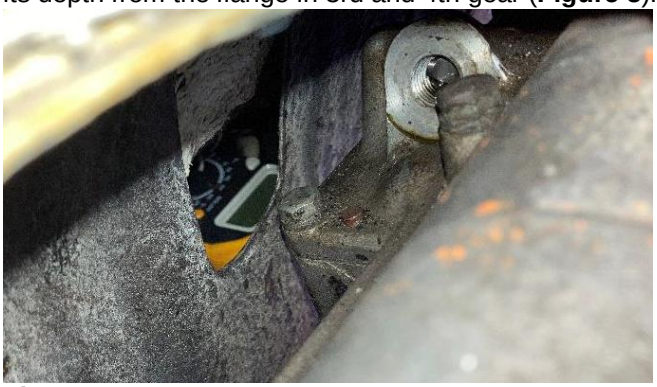

Figure 5
7. Measure the existing spacer (**Figure 6**).

Figure 6
8. Establish the thickness of spacer required to ensure overdrive engagement in 4th while inhibiting it in 3rd. I changed the thick original copper washer for a thinner fabric one.
9. Grease the switch plunger, reinsert and tighten.
10. Check the operation mechanically and electrically before reconnecting the spade terminals.
11. Refit all components removed on disassembly.
12. Test the operation of overdrive on the road.

Appendix
Arranging access to the overdrive inhibitor switch via the transmission tunnel

Parts
- Blanking plug 14B640

Remove the identical blanking plug from the engine bulkhead in front of the passenger seat and produce a

card template by tracing round the profile of its aperture. Establish the position of the inhibitor switch by drilling a small pilot hole. Position the template on the tunnel and mark the position of the aperture. Cut out the aperture with a Monodex or similar tool.

Note: I have not done this personally and have simply reverse engineered what I have observed on my car and found to be useful.

How does a Laycock Type LH overdrive work?
The Laycock Type LH overdrive fitted between the gearbox and propeller shaft is a self-contained gear unit which provides a higher overall gear ratio than that with the final drive. The overdrive gears consist of a central sun wheel and three planet gears which mesh with an internally toothed annulus. Fitted inside the annulus is a uni-directional clutch. A sliding clutch member is secured to the sun wheel and is free to move forward and backward on the sun wheel splines. Attached to a ball bearing, secured to the sliding clutch by a circlip, is a static thrust ring. The thrust ring is actuated by two hydraulic pistons and returned by primary and secondary return springs. An electronically operated solenoid valve, mechanical pump, relief valve and low pressure valve comprise the main components of the hydraulic system.

An article that looks at the overdrive disengaged, so direct drive applies, and then with overdrive engaged with diagrams alongside explains how a Laycock Type KH overdrive works. See pages 3 to 5 via the link to V8NOTE457. Link