



The 'Clunk'

By Dave Michel

Because it is almost always out of sight, the MGB differential/rear axle assembly is mostly 'out of mind' of the typical MGB owner. It holds up the back end of the car and makes the car go, so what's the problem? In a word, PLENTY. And because this writer continues to receive questions concerning MGB differentials (despite the fact that the MGCCWDCC conducted a tech session in the fall of '96 to address these matters), a written discussion of the problem appears to be appropriate.

First, the differential of concern is the Tube-Type differential and axle assembly used in all MGB/GT's and in MGB tourers (convertibles) after 1967. Second, please be aware that these are robust units intended for long life and they will withstand considerable punishment. However, they are NOT indestructible. And that is the reason for this discussion.

The central feature of the tube-type differential and axle assembly is the differential 'carrier' to which the ring gear is bolted. The differential carrier also supports the differential and pinion gears which provide the 'differential' action. The pinion gears are held in place by the pinion pin which is inserted through the differential carrier. The entire assembly is lubricated by the differential gear oil. O.K., so what's the problem? The problem is that each time the car starts and stops, the MAXIMUM cyclic load on the pinion pin occurs at the point where the pin passes through the differential carrier. After about 60,000 to 100,00 miles of driving, these loading cycles alter the shape of the pinion pin hole from round to oval at the point where the pinion pin EXITS the differential carrier. **The ovalization of the pinion pin hole is the primary cause of the famous MGB 'rear-end clunk'** which is manifest by the 'play' or 'slop' in the action of the rear axle.

This situation should not be confused with other, far less serious, sources of 'clunky-type noises' from the rear of an MGB, including universal joints, suspension, and splined hubs/wheels. Providing that the 'clunk' is not excessive (i.e., that the pinion pin hole is only slightly ovalized), the condition may be minimized by installing thrust washers between the differential and pinion gears and the carrier. However, all MGB tube axles should be checked for the 'clunk,' and thrust washers installed between 30,000 and 60,000 miles to reduce the rate at which the problem develops. In time, however, the pinion pin holes in the differential carrier will become ovalized to the extent that a replacement differential carrier will be required. This presents a

VERY BIG problem because **the differential carrier is NOT available as a new part!** And neither are tube-type rear axles!

Recommendations: First, **service your tube-type rear axle regularly**, like the remainder of your MGB, and install the thrust washers. Second, if you intend to retain ownership of your car indefinitely, you should consider acquiring a 'good' (i.e., low 'clunk'), spare tube-type rear axle for your car. They are quite available and relatively cheap now as more MGB's leave the road to become parts. However, once the current supply is gone, they are gone forever. It's not like the tortilla chip commercial, 'crunch all you like, they will just make more.' *They won't!*