

DETAILS OF ROAD AND ENGINE SPEEDS FOR VARIOUS REAR AXLE RATIOS

This information is specifically for the Derby Bentley chassis.

These figures are based on information provided by Vintage Tyre Supplies as to the number of road wheel revolutions per mile travelled:

701 turns per mile for 5.50" x 18" tyre (most Derby Bentley 3 1/2L and 4 1/4L chassis, excluding M-series cars)

696 turns per mile for 6.50" x 17" tyres (Bentley 4 1/4L M-series chassis and a few other 4 1/4L chassis)

Table showing comparative performance for different axle ratios in top gear

<u>Axle ratio</u>	<u>mph /100 rpm</u>	<u>mph @ 4,000 rpm</u>	<u>Engine speed @ 70 mph</u>
10 x 41 = 4.10:1	20.88	83.52 mph	3,352 rpm
11 x 43 = 3.91:1	21.90	87.58 mph	3,197 rpm
11 x 41 = 3.73:1	22.96	91.84 mph	3,049 rpm
11 x 40 = 3.64:1	23.54	94.16 mph	2,974 rpm
11 x 39 = 3.54:1	24.14	96.56 mph	2,900 rpm
10 x 43 = 4.30:1	23.59	94.36 mph	2,967 rpm

The first ratio listed (10x41) is that supplied as standard on all Derby Bentley except for M-series (overdrive) chassis. However, the second ratio (11x43) was offered as an option, mainly for cars expected to be used for Continental touring. The fourth ratio (11x40) was used for evaluation purposes on cars that were tested extensively in France. However it was felt that, under the road conditions of the time, this ratio was too high, and it was not offered to customers.

The last ratio listed was fitted to all standard M-series chassis. The performance figures result from the use of the overdrive gearbox in conjunction with 17" wheels.

It will be seen that the 11x40 ratio with the non-overdrive chassis gives almost identical performance figures to the production overdrive chassis.

Table showing road speeds per 1,000 rpm engine speed in the intermediate gears together with the road speed at 4000 rpm for the standard 10x41 axle and an axle equipped with the 11x40 ratio.

	<u>10 x 41 ratio</u>		<u>11 x 40 ratio</u>	
	<u>Per 1,000 rpm</u>	<u>At 4,000 rpm</u>	<u>Per 1,000 rpm</u>	<u>At 4,000 rpm</u>
1 st gear	7.57 mph	30.28 mph	8.54 mph	34.16 mph
2 nd gear	12.09 mph	48.36 mph	13.63 mph	54.52 mph
3 rd gear	16.78 mph	67.12 mph	18.92 mph	75.70 mph