



P6 ROVER OWNERS CLUB

P6 3500, 2200 axle ratios and a 5 speed box

This came to me via email from a very knowledgeable Club member Tony Ryalls after a conversation at the Lakeland All Rover Rally.

With the increase in fitting the five speed SD1 box behind the V8 engine I thought that the information might be useful to other's members out there considering doing the job.

Pete (Editor)

Standard 3500 rear axle ratio = 3.08:1

Standard 2200 rear axle ratio = 3.54:1

5 speed top ratio is overdriven = 0.833:1

Standard 3500 rear axle and 5 speed will give an equivalent rear axle ratio of:-

$$0.833 \times 3.08 = 2.56:1$$

As the original auto top gear is 1:1 the over speed will be:-

$$1.00 \times 100/0.833 = 120\%$$

2200 rear axle ratio and 5 speed will give an equivalent rear axle ratio of :-

$$0.833 \times 3.54 = 2.949:1$$

Therefore overspeed is $3.08 \times 100/2.949 = 104.4\%$

A further way of looking at this is to use the speed ratio of MPH per 1000 engine revs.

Most cars of my experience have approximately 21-25 MPH/1000 RPM

3500 tyres will turn approximately 840 revs per mile

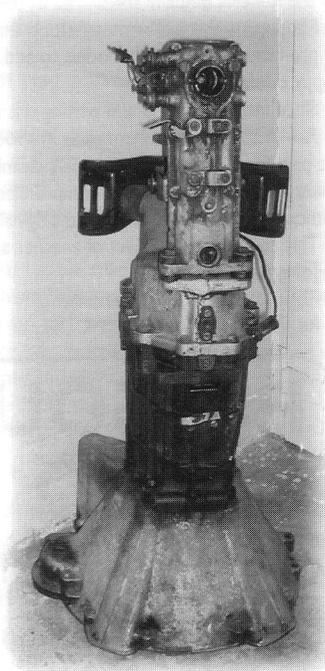
Therefore with 3.08:1 axle the speed ratio is :-
 $(1000 \times 60) / (840 \times 2.56) = 27.9 \text{ MPH}/1000$

and with 3.54:1 axle speed ratio is:-
 $(1000 \times 60) / (840 \times 2.949) = 24.22 \text{ MPH}/1000$

It would seem advisable to use the 2200 ratio 3.54:1 with a standard tune engine, as it would provide very good acceleration and still only 2900 RPM at the (UK legal) speed limit. Also the speedometer will not require recalibration.

However with increased engine power (as in your particular case Pete) it will pull very well with the higher ratio but from my point of view I would prefer to surprise all the hot hatches.

Hope this is useful. **Regards Tony**



The 'new' 5 speed SD1 gearbox for the editorial Series I V8