SOME EXPERIMENTS AND OBSERVATIONS ON REAR SPRINGS

Norman Bacon  

Further to my letter last month on the subject of rear springs for Sea-Beasts, here is some data which may prove interesting:
Inner spring box shows 3 1/2 in. with 7 3/4 in. springs free and under no load.
Inner spring box shows 2 5/8 in. with 7 3/4 in. springs free and under no load mounted in machine on rear stand.
Inner spring box shows 3/4 in. with 7 3/4 in. springs free and under no load with 2 male passengers (about 25 stone) on full bump load.

Therefore total movement equals 2 3/4 in., or total working movement equals 1 7/8 in. These two figures are for springs 1 x 0.276 in. wire and 1 x 0.300 in. wire, or alternatively 2 x 0.281 in. wire, which comes to about the same thing, and compares with the total practical working movement of the pair of standard factory springs of some 3/4 in. to 1 in.

With 2 x 0.276 in. wire (obsolete "Comet" gauge) 7 3/4 in. springs I found handling much improved, without the excessive steering lightness which I mentioned last month, and front and rear seemed to be as ideally matched as could reasonably be expected. At the same time, none of the faults noticeable with standard factory springs was present. On the other hand, with two males of moderate masculine sturdiness in the saddle, on bump load only 1/4 in. inner rear spring box was left protruding and there was a slight tendency to bottom under some M.O.T. Road Improvement conditions at speed. This being so, except for strictly solo use this rate of springing struck me as being too light, especially as one ought to allow for the springs settling a little. My own standard Rapide springs have settled very considerably over four years.

My conclusions, therefore are that 1 x 0.276 in. and 1 x 0.300 in. or 2 x 0.281 in. by 7 3/4 in. springs are the job, though perhaps if one wanted to be very clever 1 x 0.276 in. and 1 x 0.281 in. would give absolute maximum of movement, and therefore comfort, without undue risk of bottoming. Alternatively, 2 x 0.281 in. with a length of 7 1/2 in. would be the smart thing, but with all this extra movement compared with the standard factory springs one could probably look for rather more settling before final breakage, and it might be best to stick to the 7 3/4 in. length. Incidentally, breakage does seem more likely, and one should be prepared for same by keeping the odd spare on hand.

All the above refers to solo and pillion work only. Ken Petteford tells me that his 2 x 0.312 in. by 7 3/4 in. arrangement works very well with sidecars also. For Comet owners the Comet gauge wire would very likely be best.

Any of my remarks refer to fast touring requirements. The really swift brigade with Speed Trial and other suicidal tendencies should, one supposes, go in for very much firmer suspension all round than that considered here.

Ken Petteford

Referring to Norman Bacon's letter in February M.P.H. the point of the long springs is that they retain the same number of coils as the originals so that there is the additional one inch to be absorbed as rear wheel movement. There is one error in the text, the gauge of the wire should be 5/16in. not 15/16in as stated. (We hang our head.-Ed.) With reference to the shortening of the rear seat stays, I found this necessary in order to allow the pillion passenger to get his feet on the deck at halts, also to make mounting easier. I have now had the original set of long rear springs in use for about two and a half years and there is only about 3/16in. settlement, needless to say I am satisfied with this. The springs have now become rather more soft than new but this only adds to the comfort and does not impair the handling.

John Macdonald uses them on his machine and if handling is doubted just wander along and see him perform. I now recommend S.A.E.30 for Vincent pattern damper at rear. I have used the springs with a sidecar attached with good results, still no bottoming (S350 Steib).