

By the time I'd flogged my favelin up and down the country for some ten years I began to find that more and more tin boxes <sup>seemed to</sup> manage to obtain a tow from me and one or two even overtook ~~me~~. Obviously either I or the favelin was becoming ageing - A dose of monkey gland <sup>extract</sup> had no effect - obviously it must be the favelin and some sort of "pick-me-up" was required.

As the "Wheelbase" team went out I took the opportunity to visit the interesting locations to and see how it was done. Westlake and his gas meters seemed too complicated for me & enlarged valves and modified camshafts were also out of the question. However, the Broadspeed boys seemed to do very well and insisted it was mainly due to very accurate balancing of the bits that move.

A start was made, the crankshaft reground a new starter ring - clutch plate & assembly & the lat. balanced by Jack Brabham. - How long it stays balanced with the starter pinion chipping bits off each time <sup>its operated</sup> ~~no~~ one seems to consider - Mr Clarke of Laystall's wouldn't comment himself when I asked that question.

- To be certain you only use the starting handle !!!!!

However now came the con rods. First of all they ~~were~~ all filed the forging marks were removed

progressively

by filing and finer grades of emery cloth until they all were polished all over. All the filing and polishing was along the rod and never across, and I considered they were so work hardened by the time I'd finished that shot peening would be a complete waste of time & money. This operation literally took some months to do, and a common sight on Western Avenue was a garchin, stuck in the traffic, its driver busy with a con rod in one hand a file in the other scratching away day after day, week after week, month after month.

Came the time when I decided enough - now to balance them. A small mandrel was mounted on miniature ball races and the rods balanced end for end.

Now to balance overall weight - The scientific supply houses were secured, but the <sup>prices</sup> ~~figures~~ quoted were quite astronomical ~~as~~ as I'd specified the tolerance I wished to obtain <sup>better than</sup> was 1 gm in 1 Kg.

accurate balances  
for ~~the~~

Obviously I had to find another way - weighing each end by letter balance didn't work very well and was soon abandoned.

Eventually I devised my own balance, the sketch shows the arrangement, and the rods were balanced to better than the weight of one 8 BA shakeproof washer.

The pivot for the balance arm was made by soldering a bit of hacksaw blade (ground & honed to a knife edge) into a slot cut in the end of a bolt and mounted on the upright which was merely held in the vice. The balance arm had a small vee cut in to locate it and the pointer was a piece of piano wire.

The deflection obtained with an 8 BA shakedown washer was about  $\frac{1}{4}$ " (should I now state 6mm) and all the rods & pistons were well within this. The final track being merely a sort of <sup>half hearted</sup> 2" stroke with a very fine file.

The heads were balanced, the rockers lightened, and this engine has many many times done 7000 rpm. - the trouble is that it tears the teeth from the layshaft cluster, - but it was competitive with the 1600 GT Copre.

One of these days it will be back on the road.

(in top)  
(with the wheel  
behind gear)

