I have a 1947 Big 4 with an upright tombstone gearbox. Very uncertain gearchange and sticking gear lever. Never jumped out of gear once found and no nasty whines or noises. Problem driving me to distraction so I’ve taken out the box, dismantled it & I’m sure the problem could be attributed to wear in the ratchet mechanism and a tired gearchange return spring.

I’m replacing all bearings and using sealed bearings to obviate the need for the pensteel washers that always get chewed up and contaminate the oil with nasty hard little bits. I found Ken McIntosh of MacIntosh Racing in NZ to be particularly helpful. I got all the sintered bushes from him plus a radial needle roller bearing conversion that gets rid of the bronze thrust washer that always wears and then reduces clutch movement. He supplies shims too.

Lastly don’t trust the exploded diagrams in the Norton parts books or manuals. I have several. In one the hard steel washer that goes between the bronze thrust bearing and the rollers in the sleeve gear isn’t shown. To leave it out would be a complete disaster. In other diagrams the rollers themselves aren't shown and in other pictures it isn’t clear if the dished washer should go on the mainshaft or the layshaft etc.

The good WD bike site in the Netherlands also mentions some of these problems and says that in several of the boxes dismantled by the writer on that site the dished washer cannot be found.

So, make sure that the endfloat on the shafts and sleeve gear are minimal by shimming and make sure that the dogs on the cogs engage fully without bottoming and take all the slop out of the ratchet mechanism with new parts and rebushing the external linkage and then getting the throw of the levers right. Hope this is of some help.

John Clement

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