Frustrations with tracing and solving a starting problem

Dave Wellings (Black 0974) from Yorkshire describes a frustrating route to solving a starting problem on his MGBGTV8. But it's a tale which fellow members could very usefully recall should they ever meet similar difficulties. He also mentions some very useful tools to help remove the starter motor with the manifold and column in place.

This is one of those stories where at the beginning, the problem seems obvious but by the end you are left feeling rather daft, having missed the obvious. It all began on Good Friday. I always crank my V8GT for five seconds from cold without choke just to get the oil started. On this occasion I also noted a slight fall-off in the turning over speed as I switched off at the end of that process. On the next pull with choke - all that happened was a 'buzz' and the rev-counter lifted off the stops slowly to about 2,000rpm. I tried again and it was the same.

A natural assumption at this stage is that the **starter solenoid relay** is arcing and the impulses are being read through the rev-counter circuit. Next I temporarily changed the relay for a known good one. This had a small effect, in that now I was getting the starter solenoid chatter which comes with 'below par' batteries - that's a '**Daggadaggadagga**' noise for those who've never heard it. So knowing the cause, I suspected the batteries. Twin sixes, five years old, a voltage check showed a shade over 12v. Good batteries will show more, and mine spend winter on a battery conditioner, so are always tip-top. Next I collected **two new 6volt Vartas** (06617) on Easter Saturday, and was full of optimism. I fitted them and charged them up. They showed a whisker under 13volts on the voltmeter. All terminals were cleaned, tightened and given a smear of Vaseline. So I tried a start - and I was shocked to get '**Daggadaggadagga**'. There was no difference!

Now I'm getting really frustrated. What can this be?

Next I **tested the voltage at the starter** - it was the same as at the batteries, no voltage drop was evident. I have had occasional solenoid trouble in the past, so my next step was to change the solenoid - I always have one in hand. It's fiddly and you'll need a long box spanner but it's not a bad job. Even more optimistically I tried again - '**Daggadaggadagga**'. Now I'm getting really frustrated. What can this be? I shorted the live feed into the starter by placing a spanner across the two large terminals. The starter didn't turn over - it should have done so. I was now resigned to removing the starter. With the benefit of hindsight this was hasty.

Extended reach socket *- this photo shows the length of the extended reach socket in relation to the access.*

The **starter motor** has not been off since I fitted it in 1992. I didn't know at that stage whether it would come off without removing the right hand exhaust manifold or the steering rack and lower column. The upper starter bolt was a real challenge. No question about that. It's 9/16ths AF, by the way, and should have a screwdriver slot in it, (as original) which is no use whatever in that position since all horizontal access is blocked by the manifold (mine is a Janspeed tubular system) and upper steering column. I got this top bolt out with an open ended spanner right up against the bulkhead, one flat at a time. It was touch and go, and difficult to get started.

The lower bolt was much easier, but note you will need a thin wall socket as access is slightly restricted. The starter eased out without moving anything else, is a really tight fit, scraping the manifold on the way out. On testing, the starter turned over on the bench, but not as vigorously as I remembered. Anyway thanks must go now to Clive Wheatley for his quick delivery of a reconditioned unit.

Socket in position *- the shiny cylinder just above the steering U/J pinch-bolt nut is the socket in position, and this is the alignment required for an open ended spanner to be applied.*

In the meantime I'd been onto the Machine Mart site and ordered some **special tools to help do the job** - a Clarke fine ratchet 3/8 drive socket handle (PRO131 Clarke 72 tooth pro ratchet (code 040215131), and a set of long reach AF sockets (PRO35 8 Piece 3/8 drive - deep AF socket set -flat drive code 040212467).

***New socket set and Clarke handle** in all its glory.*

All arrived just in time for the refitting the starter motor. The motor slotted back in. Note that it's a heavy weight to handle with one hand and in a very restricted space. It helps to temporarily remove the rubber cap which protects the end bearing. Cover the end temporarily with masking tape. I fitted the lower starter motor bolt and tightened as 'finger tight' as it would go. Then I used my new ratchet handle with the long reach socket which just fits between the exhaust manifold between the third and fourth cylinder on that side. Using a screwdriver with my left hand to stop the bolt unwinding on the ratchet stroke, this arrangement worked really well, a couple of clicks at a time until the bolt was tight. All power was re-connected and finally . . . . . '**Daggadaggadagga**'.

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Now I'm getting annoyed. OK, back to first principles. Check & clean battery earth lead - OK. Check & clean lead between batteries - OK. Check & clean the positive battery terminal - OK. Refit and tighten. The battery clamp won't tighten - how odd. Try another turn on the spanner and the clamp disintegrates into two halves. On inspection I could see there had been a small vertical crack on each side and the final tightening had caused one to fail. I didn't notice this when I fitted the new batteries. So a week later I bought a new battery clamp for £4 and fitted it when I got home from work. I turned the key and **BRRooommmmmm** . . . . . I'll say one thing, new batteries and a 'new' starter don't half make a difference. Do I feel stupid? Yes I do. That battery clamp was a poor quality item which looked to be a cast metal, hence the fracture.

But looking on the bright side, the batteries were five years old. The starter motor has a '73 stamp on the side, so is original. I had Lucas check it out in 1991, but at 35years old it is past its best. So now I feel a bit better. Note that your ability to remove your starter without removing the manifold will depend upon the manufacturer of the manifold. The original cast manifold must be removed on that side. Tubulars will depend on clearance and that will vary with manufacturer.

***Shows the upper starter motor bolt**, centre of picture with the screwdriver slot shown in white. Note the proximity of the upper column.*

***This shot shows the ratchet handle in position with socket engaged**. The handle is at the bottom of its travel, and can move up almost as far as the spark plug electrode.*