Ignition problems again

In 2015 Peter Spurrs had serious ignition problems. Sometimes the car would run well, but at other times not at all and at random times in-between it would fail. There was always a slight hesitancy when accelerating, but he took that to be normal. The previous owner had fitted Aldon ignition, but everything else was pretty much original. He re-made all of the earth connections – no change. The vacuum advance was seized; he replaced it - no difference. He then replaced the spark plugs, rotor arm and distributor, and then fitted Magnacor plug leads and an Aldon Flame-Thrower coil - still no improvement. The solution turned out to be an intermittent fault in an earth lead. He ended up with a working ignition system with lots of new parts. In 2019, half way through a 50 mile journey, the car went from running smoothly to spluttering, then a few minutes later, it backfired a few times and stopped. After a while it restarted, but it had no power and stopped. A recovery vehicle got him home. Here he explains how the problem was solved.

Peter Spurrs says "my first response was to clean all of the earths. This seemed to do the trick, but due to other commitments, I only tested it on the road in February. It worked well until the engine became hot, then it would lose power, backfire, refuse to rev and stop. With my good friend, John the garageman, following in case I needed to be towed, I spluttered my way home.

Believing the problem would be the ignition unit – the oldest part of the system - I emailed Aldon to ask their advice and ended up talking to a very helpful chap called Paul. He had two lines of questioning:

- **Does the coil get hot?** Oil filled coils are 'all over the place' when they're hot. Given that the coil is between the radiator and overflow reservoir, yes it gets hot. He recommended a resin filled coil which is stable when hot – Aldon part number 40111.
- **Is the coil supply ballasted?** The answer is 'yes', but it is not a discrete component. It is a piece of resistive wire in the feed from the fuse box to the coil. He asked me to check the voltage at the coil when the engine was being cranked and when it was not. When cranking, it was **8.5 volts**. That's normal because the starter motor takes a huge load and leaves little for any other electrical system. The factory set-up was to have a secondary coil power supply running via the starter motor. That by-passed the ballasted line and gives the best possible voltage on starting. When not cranking, the meter showed a **miserable 5.3 volts**, proving that the ballast resistance had not been removed when the electronic ignition was installed. The Flamethrower coil is designed to work on 12 volts and most certainly would not be at its best at 5.3 volts. The next test was to take a fused wire from the fuse box to the coil having removed both of the existing positive coil connections (normal ballasted and via the starter motor). That produced **11.5 volts** when not cranking and **8.5 volts** when cranking. Paul recommended that I by-pass the ballasted line and add a new line from the fuse box to the coil.

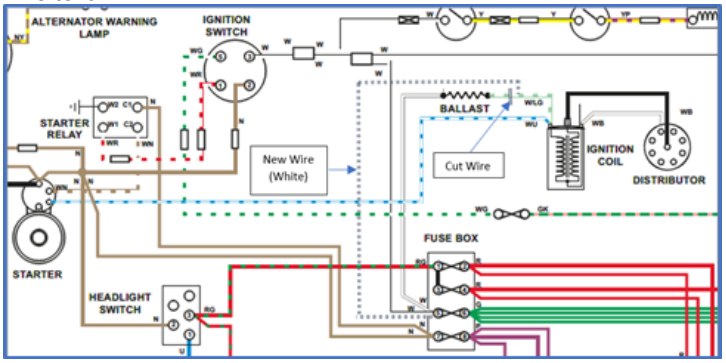
Taking his advice, I bought the coil (called a Flame-Thrower) and set about solving the problem.

Solving the problem

To be 100% safe, my first step was to disconnect the battery. Although the circuit is fused and is dead when the ignition is off, the terminal in the fusebox is next to the 'always live' brown wires. A short circuit is possible.

Replacing the coil is straightforward – undo all of the connectors on the coil noting polarity, remove the coil from its clamp, insert the new coil and reconnect the electricals. If you are moving from an original coil to a Flame-Thrower, a new mounting bracket (Part 10001) may be needed.

I chose to leave as much of the original wiring in place and connected as possible. The spade connector at the fusebox remains attached and the supply via the starter is all in place. Only the supply via the ballasted line has been cut at the coil end. The single spade connector at the positive terminal of the coil connects both current sources, so I chose to use it by connecting the new wire to it.



See a full size copy of this diagram on page 3. Please note that there is an error in the wiring diagram. The feed from the negative coil terminal to the tachometer has been omitted.

I first removed the radiator grille. The top is held in place by three screws.

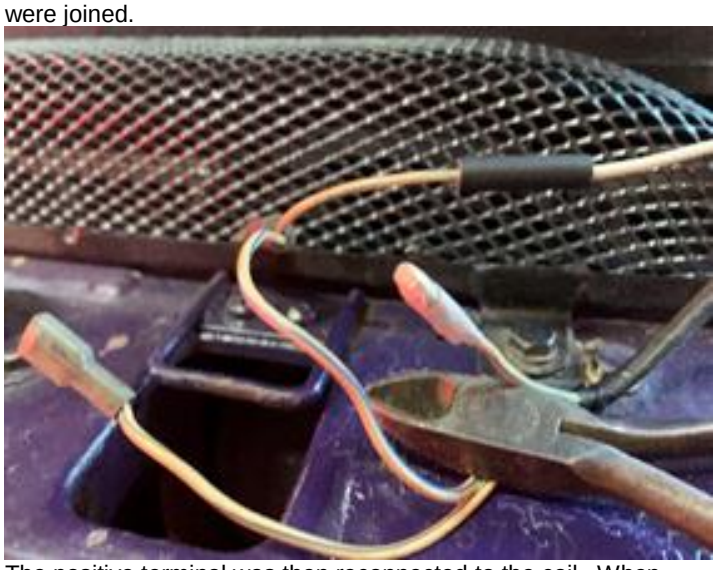
There are also three bolts at the bottom, none of which is easy to extract. The offside is the most difficult for two reasons, the oil

cooler hose is in the way and the bolt head is very close to the grille. I found a 3/8" drive socket worked – just.

The wiring loom runs in clips just under the slam panel (cross-member), so it may be possible just to remove the three top screws. A secondary advantage of removing the grille is the opportunity to clean behind it.

The next task was to cut a length of white wire to run from the fuse box to the coil. The fusebox end needed a spade connector and the coil end a bullet connector. I then connected the white wire to the spare terminal next to the two white wires which supplies the coil.

The ballasted wire was cut at a convenient point where it emerges from the loom on the nearside of the car. The feed from the fusebox was made electrically safe and a bullet connector fitted to the feed to the coil. The new wire and the old connection to the coil were joined.



The positive terminal was then reconnected to the coil. When pushed back into the clips, the new white wire is an obvious eyesore. I chose to add a layer of wiring loom tape to hide it.

When the job was complete, the car started first time and responded healthily to the throttle – a clear indication that the

ignition was working well. Full of confidence, I took the car for a test run and the **engine died** when it became hot.

As far as I could reason, the hottest parts (excepting the plugs) were the distributor cap and rotor arm. There was no visible problem with them, but I ordered replacements for both from MGB Hive, fitted them, started the engine and went for a 40 mile run with no problems whatsoever. **Problem solved**.

Wiring diagram

Please note that there is an error in the wiring diagram below. The feed from the negative coil terminal to the tachometer has been omitted.

Conclusions

What I have seen from working to solve these problems leaves me with two conclusions:

- Many modern coils require a 12 volt supply and don't work well with the old ballasted wiring. In my case, I was running on 5.3 volts. Adding a 12 volt feed to the coil makes a very noticeable difference to the way the engine runs and responds to the throttle. I have no proof, but using a coil which is stable when hot must make a difference too.
- Even though parts are relatively new, it doesn't mean that they still work".