Remobilisation of a 1937 Morris 8 Sports

Episode 6: Additional Instrumentation

The author in a relaxed moment.

Hi, my name is Alister (Al) Gardiner. I have had some really interesting and useful feedback from earlier articles – much appreciated. For ongoing feedback I can be contacted on 0279222242, or at grannybigal@xtra.co.nz.

Topics

This instalment covers the fitting of some additional instrumentation and electrics - LEDs, turn indicators and a 12V auxiliary supply. In some areas not really necessary, but I couldn't resist doing this stuff just for fun. After all I was an electrical/electronic engineer in an earlier life.

I have just three future topics planned:

- upholstery trim - a bit of individuality on the door pockets
- starting issues - how can some things so simple be so difficult?
- my car battery – a custom solution using the ubiquitous 18650 lithium ion cell

See earlier issues for other topics.

Changes and upgrades to the electrical system

I had already made the decision to stick with 6V electrics (apart from at present being defeated by the starter motor, which I am driving at 12V) so the question arose as to what modifications and additional accessories were required or desirable. I created a list:

- LED lighting wherever possible, as this would substantially reduce night time demand on the battery, and eliminate lamp failure,
- Flasher turn indicators front and back, with cockpit indication
- Double stop lamps with number plate illumination both sides,
- An immobilisation switch or simple hidden ignition cut-out as a first level discouragement for potential joy riders
- A digital voltmeter/ammeter to help monitor the condition of the battery, which is difficult to manage due of the simple "manually" controlled charging,

- Cockpit indications for side and head lamps status (I have been spoilt by modern cars with auto lighting doing it all for you),

- As a final touch, it would be nice to add a charger socket (cigarette lighter socket) in the cockpit to more conveniently top up the battery (as done on my other old cars), and a 12V/USB supply for “infotainment” systems.

Quite a list, and in practice this added a fair amount of wiring to the otherwise pretty simple Morris 8 electrical system. Below are a few notes on how I implemented these features.

Head Lamps

A selection of old lamp bits came in the parts box but they were not entirely compatible with each other. I assume the car originally used the solenoid RHS dipping system, but none of these parts were present. I found a UK supplier of 6-12V “double dipper” BA15d LED head lamp bulbs at £28 each which fit into the existing socket. These bulbs have two LED elements. For dipping, the lower “Main beam” element is simply switched off. I understand that authorities are not enamoured with this approach, but we will see how it goes at the first WOF assessment. The dipping switch was rewired, utilising the previously unused “normally-closed” contact to switch the main beams OFF in Dip mode.

Side Lamps, Turn Indicators and Stop Lamps

For the front, a pair of side lamps was provided in the box of bits. These were fitted with new BA15s LED lamps sourced from AliExpress. The original semaphore type turn indicators had not been re-fitted into the rebuilt body, so turn indicators for both front and rear were required. For the front, the side lamps were arranged to operate at low illumination as side lamps, and at high illumination as turn indicators, i.e. when the side lamps are ON, they flash between low and high illumination. This required the addition of a 75 ohm resistor and two steering diodes for each side, to reduce the side lamp intensity,

I purchased two BMC style rear turn indicators which I mounted on the rear bumper. Amber LED bulbs are installed in these. With hindsight, freestanding motorbike lamps would have looked better.

For the tail/stop lights, two “porkpie” ST38 units were found in the box of bits, and since the holes for fitting were present on both sides of the rear valence, they were used to provide left and right tail and stop lamps. Separate BA15s LED bulbs are used for each function in these housings. The white LED tail lamp bulbs provide illumination from both ends of the number plate.

The flasher module is a 6V 2 wire motorbike unit, which I have now discovered also delivers a piercing audible bleep. I provided pilot lamp turn indication, although you would have to be stone deaf not to hear the bleeper. Being a 2 wire unit, the flasher module requires a minimum load to operate, and since the LED lamps draw such a low current, this load was provided by a 4.7 Ohm 10W resistor.

Immobilisation Switch

One of the earliest things I can remember as a nipper is the key which my father used in his 1938 Series 2 Sports. It was a chopped off teaspoon handle hammered flat, and I always thought how easy it would be for someone to steal the car. Of course, in those good old days that sort of thing never happened, especially way out in the country.

As a first line of defence in this less honest age, I have installed a hidden immobilisation switch. This two pole switch cuts off the petrol pump and shorts the ignition contacts, via separate wiring paths. Simple “hot wiring” will not work, unless the shorting wire is also spotted and removed. Now my main starting problem is remembering to disable this immobilisation switch!

Digital Voltmeter/Ammeter

Battery operated digital meters are available for just a few dollars and provide much more accurate indication of battery charging/condition than the existing ammeter. I purchased a combined voltmeter/ammeter unit, and since the existing ammeter measures net battery current, I decided to connect the digital ammeter to measure dynamo output current. Because of my dual 6V/12V battery requirement, I arranged the voltmeter to measure both 6V and 12V supplies via a selector switch.

Auxiliary Instrument Panel

I struggled to decide where to mount the additional instrumentation. As a temporary measure, I have mounted all the new items on or at the back of a new panel to the right of the steering wheel, just below the driver's glove pocket. If you look closely in the photo, you just might recognise the profile of a short length of Marley plastic spouting being used as the temporary panel. Mounted on the front are LED pilot lamps for left and right turn indication (amber), Side lamps ON (red) and High beam ON (blue). Beneath these are a couple of auxiliary switches, a 6V charging port, and the digital voltmeter/ammeter module with selector switch.

The temporary auxiliary instrument panel.

On the back side of the panel are resistors, diodes, the turn flasher unit and connectors. Once I have confirmed what I do want to keep and what is overkill, I intend to rebuild these additional features into a tidier solution.

12 Volts Auxiliary Supply

I “kinda like the idea” of having 12V and USB supplies available in the car (even just to charge my phone). At present a 12V battery looks to be a permanent feature with the starter motor operating at this voltage. So I have wired 12V through to the rear compartment, and installed an (old) 12V amplifier and speakers behind a baffle panel, which also act as a storage hatch. This sound system is connected to a tiny USB powered Bluetooth receiver, so I can now listen to anything my smartphone can store or find on line via mobile data! Not exactly an up-market head unit, but WTH, it cost me nothing.

Sacrilege in a Morrie 8?? Maybe, but it’s my car!

That’s it for this this instalment -more next time.