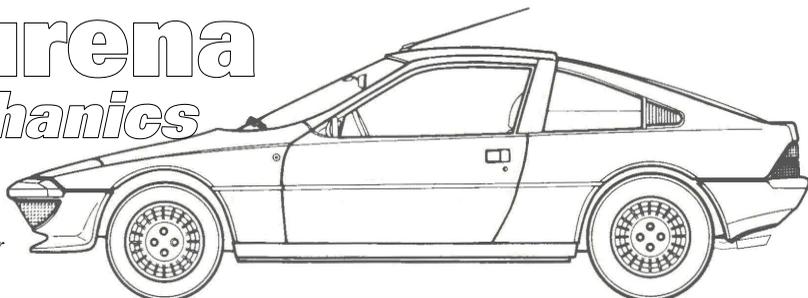


Murena *mechanics*

Peter Chaloner



Replacing Headlamps

Since buying my Murena a year ago, I have rather taken the headlamps for granted. They popped up and lit up and that seemed all that was required. That is, until I came to fit the beam deflectors for the Club run to Romorantin. One lamp was loose in its holder and the other had rusting and lifting silvering. Also, they had holes for pilot bulbs so were clearly not correct for the car. Roy, in his FAQ's, had recommended a Wipac conversion to enable British 7 inch sealed beams to be used. I decided to go one step further and use a quartz halogen type, with standard H4 twin filament bulbs and so I ordered a pair of open body mounting kits (5669) and a pair of Wipac Quadoptic lamp units (4694) from the Wiring Products website:

<http://www.vehicle-wiring-products.eu>



The kit (*below left*) comprises a mounting body, a rubber gasket, a chrome bezel to hold the lamp unit, five self-tapping screws and dished spire nuts, and an instrument head self-tapper and a gold spire nut. The latter two items are provided to fit an external trim ring so are not required in this application.

I removed the existing mountings by drilling out the pop rivets. I found access was made much easier by opening the bonnet, disconnecting the lamp pods from the raising mechanism and propping the pods open.

Slight modification required

It was at this stage I discovered a snag. The mounting body is designed to mount the lamp with two adjusters at twelve o'clock and nine o'clock for vertical and lateral adjustment and a fixed mounting at four o'clock. However, the sharp angle of the headlamp pod means that there is no room for the top adjuster. The bezel is designed so that the lamp can only be fitted on one position, but fortunately has provision for the vertical adjustment to be at either the top or the bottom. After a lot of head scratching and trial fitting, I decided that the solution was to turn the body 90 degrees anti-clockwise, providing adjustment at

nine o'clock and six o'clock. This would make the vertical adjustment a little tricky to reach, but the original lamps had an adjuster there, so I reckoned it would be all right.

To fit the body, I drilled an 8mm hole for each of the adjusters and offered it up to the pod. I had to shave a small segment off the top of the body and the gasket. (*see below*) That done, I could again offer the mounting body up to the pod and drill a series of 4mm holes to fix the body to the pod, using the self-tappers and the dished spire nuts. The holes are already provided in the body and the gasket. I also had to cut a small notch to clear the raising bracket.



I was now able to fix the lamp to the bezel and then fix the assembly to the mounting by slotting the tags over the adjustment screws, after plugging in the electrical connector at the back of the lamp. The existing connector being universal still fits.

The rotation of the body meant that the fixed mounting point was now in the wrong position, so I made a replacement with a 12mm spacer and secured it with a long self-tapper and the redundant gold spire nut. There is a convenient hole in the mounting and gasket in the right place, but it was necessary to drill a 4mm hole in the front face of the pod.

After re-connecting the headlamp raising ball-joints, I could align the headlamps. Wipac provide instructions for this with the lamps, but it is probably a good idea to get them properly set up by a garage with a beam-setter.

Finally, I replaced the front black plastic trim on the lamp pods and I had a pair of lamps as good as any new car, at less than the cost of a single replacement lamp unit for my modern car.

Peter Chaloner

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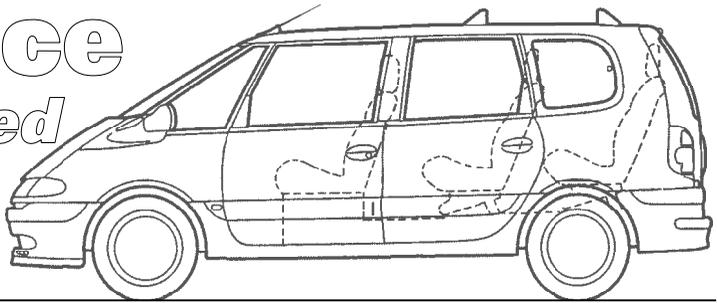
As for the original faulty Espace, I replaced the braided earth lead, and the injection computer, and all was well. Where did we get a computer? As the Espace Quadra injection computer was about £550 new, a new one was deemed too expensive, but it was no longer available anyway. So we checked for vehicles being scrapped and managed to get another from an Espace which was being broken up. Fortunately these early ones are not coded to a particular vehicle so you can use them on any Series 1 Espace. It also turns out that the 2WD Espace computer although supposedly different will run the engine on a Quadra, just fine. If they are different, it must be such a small difference in the mapping that it is almost undetectable.

Roy Gillard

Espace

examined

Roy Gillard



Modern control systems

The modern automotive computer may be considered a nightmare by many owners who still wonder why we have them; and think of them as a mysterious 'black box' which they will never understand. However, they are now a necessary component which actually is more your friend than your enemy.

The need for them

Owing to the complexity required for modern engines to meet ever tightening emission regulations and tougher user demands, you could no longer run an engine without electronics. There is just too much that needs to be processed in a finite time. A carburettor is such a crude device that it could never deliver the fuel in the accuracy that is now demanded to keep the exhaust pollutants as low as possible. Also if you think about it, we now have engines producing far more power on far less fuel. You could never have had this from carburettors and mechanical ignition.

Rule of thumb

Many years ago when we first started to get electronics on vehicles, I was told by someone who understood them far better than I, that if an integrated electronic circuit was going to fail owing to a faulty component or poor assembly, it would generally fail within the first 24 hours of

use. Note, this is not the first day of start up, but 'of use'. So if the item is used for say one hour per day, it could therefore be any time in the first 24 days. This is quite a good 'rule of thumb', which I have found over the years to be pretty accurate.

Incorrectly blamed

In those early days, I found that many mechanics would blame the electronics whenever the engine would not run, regardless of the actual problem, and more than 99% of the time it was nothing to do with them. Sometimes it was obvious if they thought carefully about the problem. Other times a few simple tests would show them that the fault was elsewhere.

If you tend to assume the electronics are fine when tackling a problem, you will check everything else more thoroughly first, and only if everything else proves to be fine, will the diagnosis finally lead you to the (expensive) computer. However, most of the time you will find the fault long before then, and even though vehicles have become far more complex over the last 25 years, I find most electrical problems are still due to the same simple things - poor quality connections and wiring faults, owing to the fact that in their bid to build cars as cheaply as possible, manufacturers never use better components or build them as well as they could.

Build quality

Admittedly, the early computers were probably better made as the producers were working in 'unknown' territory and now they have more knowledge of them and their components; with mass production and cost cutting the latest ones are possibly not as well made and may be more prone to failure than before, but then there are far more around today so it is also relative. However, it does mean that the computers on older cars like my Espace are probably sturdier than some of the newest versions. This would seem to be borne out by the following incident.

Starting problem

Unknown to me, the braided engine earth lead on an Espace had broken right by the attachment bolt, and was hanging on by a few strands of copper. So it could not pass the high current required during starting, and was reluctant to start. Now there are two other smaller earth leads fitted that could also pass a fair amount of current if required, but for some reason, when trying to start this engine it chose to try and use the earthing in the computer too and it had destroyed its computer. Unfortunately, I briefly tried the computer from my Espace on the vehicle before I understood it had a broken earth lead, and it burnt out one track on the circuit board. This caused a misfire, and generally poor running. I repaired the circuit board, and fortunately all was well again, except the computer fault warning light no longer extinguished. It should come on with the ignition and then go out when the engine starts, if everything is correct. Now it stayed on, even though the engine ran fine. No further faults emerged over an extended period and the engine proved to run correctly, so the warning light was simply ignored.

'Self-healing' electronics

After many weeks of running, and ignoring the warning light, it was noticed one day near the end of a journey, that the warning light was occasionally going off. Over the next couple of journeys I kept more of an eye on it, and it appeared to go off and stay off, after the first half of the journey, but sometimes it would come on again near the end. It seemed to be that it would stay off whilst the vehicle was cruising in top, but would come on or flicker in stop-start traffic. This was odd, and I thought it was a portent of further problems with the computer, and maybe even a sign of impending failure. However, against all expectations, it finally returned to its normal mode of coming on with ignition and going out once the engine is running. After some months working correctly, I can only assume it has finally 'repaired itself'!

I do know that some computers are designed to keep a memory of an intermittent fault, and if it doesn't see the same fault repeatedly for a while, will assume it has gone, and wipe it from its memory. It works like this: it notes a fault and may display the warning light, but if the fault goes, it then logs it in memory. It then checks for something like 40 consecutive starts if this fault is detected, and if it is not, it clears its memory.

The high current and burnt out track was much more severe than a normal fault, and ordinarily the computer would have been replaced. However, since I had repaired it instead, it seems like it took a lot longer before the computer was prepared to accept things were correct again and operate the fault warning light as normal!

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