DAIMLER & LANCHESTER OWNERS' CLUB

The Driving Member

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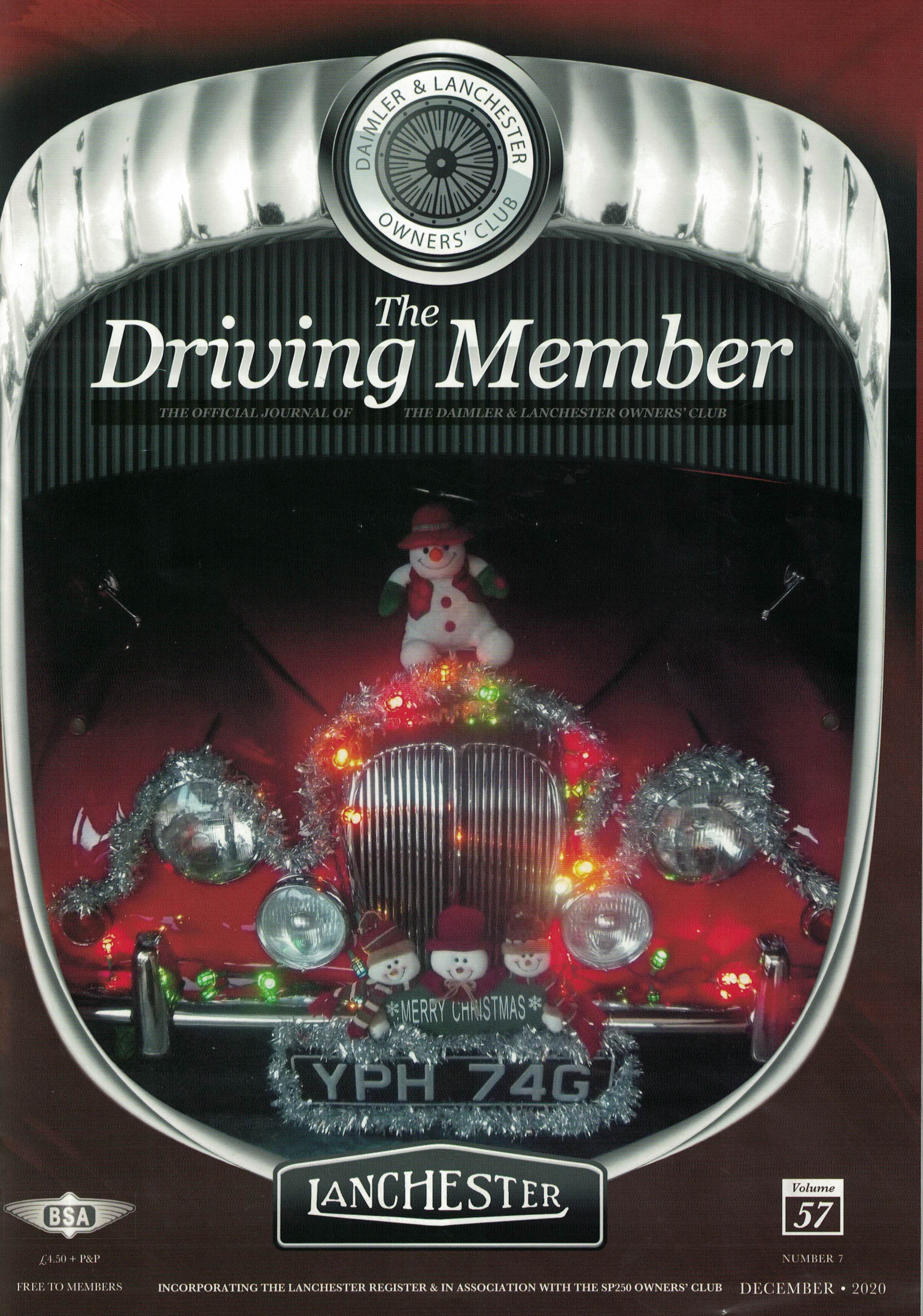

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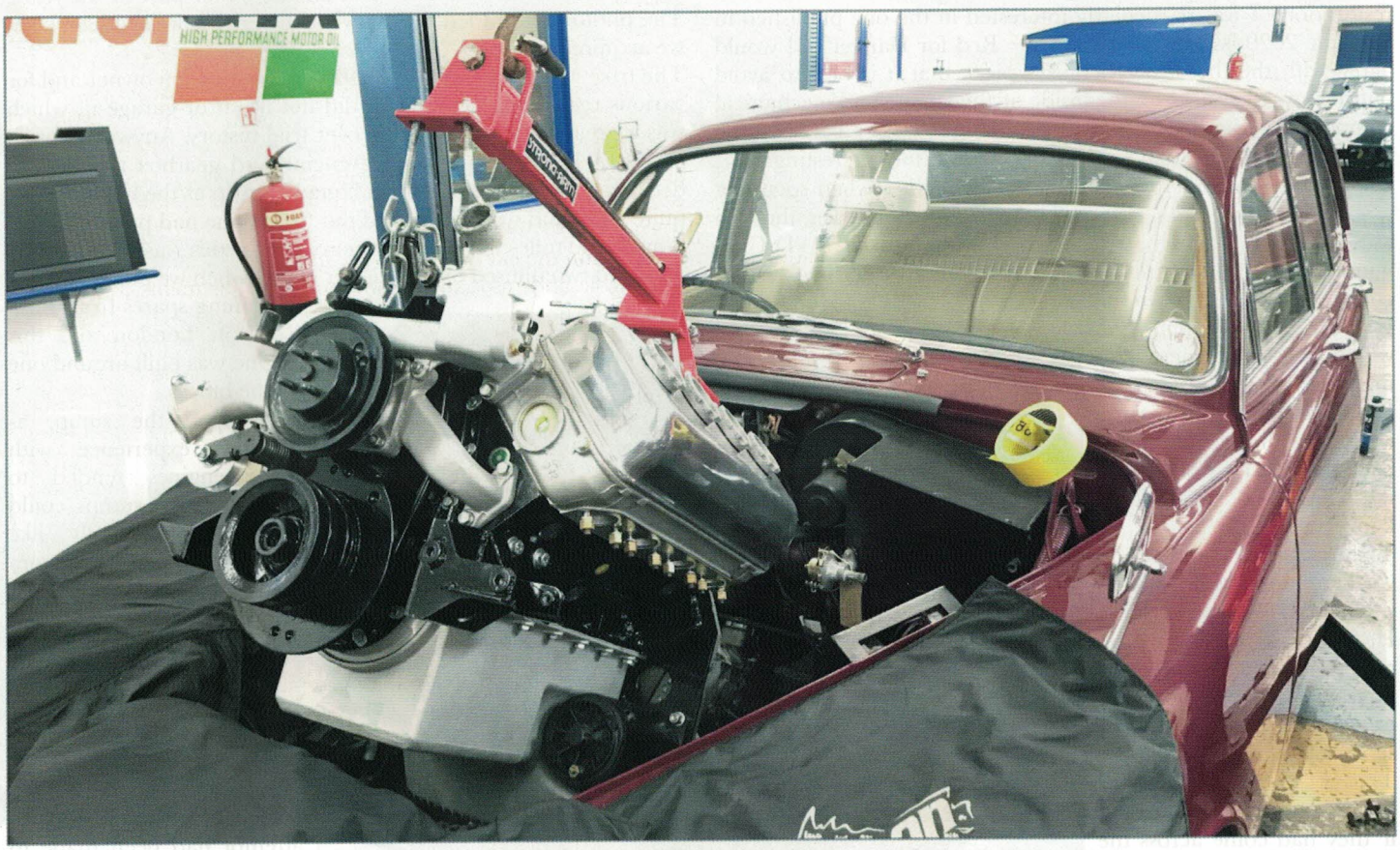
Eric Goes Toyota

(AND GETS A NEW ENGINE - PART 8)

RICHARD LONG

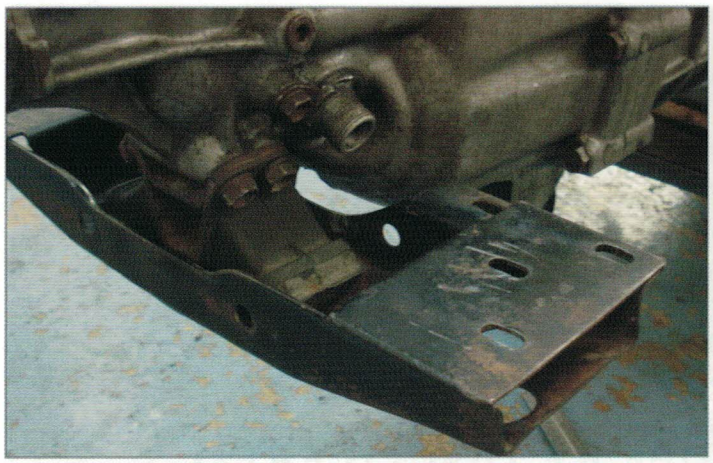


With 2020 up and running it was now time to fit the engine and gearbox in to the car. The choice was fitting the units either individually or as a complete assembly. The latter option was chosen for simplicity and of course the OE gearbox cross member required modifying to ensure the Lotus Excel gearbox seated correctly. To assist that modification it was necessary to purchase a Toyota W58 gearbox mount (via eBay) and this would bolt to the modified Daimler cross member. The process was straight forward with little work required on the OE cross member, other than some reshaping. With the engine now secure on its engine mounts and the gearbox supported, the modified cross member was offered up and I'm pleased to say it fitted perfectly; this in turn was then bolted to the car as per the standard fitment. In effect the OE cross member acts as a bridging support for the Toyota gearbox mount when fitted, as you can see from the photo. With that task completed the gearbox support was removed and the two units were now secure in situ. It is worth mentioning that should the gearbox ever require removing, it can be done as an individual unit from under the car; whereas the Daimler OE manual cars require engine & gearbox to be removed as a complete unit, through the engine bay – to facilitate removal of the gearbox from the engine.

Attention now turned to the propshaft. The Lotus Excel gearbox is slightly longer than the OE auto box and this meant the propshaft would need shortening. Measurements were taken from the diff flange to the gearbox flange and with that figure I went to Feltham Propshaft Services (part of the Bailey Morris Group) with the original propshaft. Prior to visiting the workshop, I had already discussed the requirements and they said it would be a three day turnaround with the required parts already in stock. The propshaft was to be overhauled in full, along with having the compatible W58 gearbox / propshaft flange fitted – once that was done the whole assembly would be fully balanced. With the work completed I duly collected the refurbished propshaft which looked excellent, knowing that new UJ's and the central coupling had also been replaced with new parts. Back at the workshop, the shortened propshaft proved to be the correct length and it was merely a simple case of sliding the new prop flange on to the splines of the gearbox tail to fit as required.

However this proved not to be the case!! The new flange slid part of the way in to the gearbox tail but then substantial resistance was felt – not a good sign. Removed the flange, rotated ninety degrees and still the resistance was felt on trying again. Conclusion: the new flange was at issue as I knew it was not the gearbox - having stripped that previously and fitted new seals etc. Took the propshaft back to Feltham and a replacement flange was fitted along with rebalancing again. Back at the workshop with propshaft version 2 – and the flange slid in perfectly without issue. What you should detect, is minimal resistance against the flange as it slides in to the tail past the oil seal. If the flange fitting is too tight the running friction will cause severe issues to the gearbox and could seize; too loose and you have an oil leak. With the propshaft fitted, the final check was to ensure that its running angle length was no greater than three-degrees to the horizontal. The reason this is important, is that an angle in excess of three-degrees places undue stress on the UJ's and the oscillating geometry of the shaft accelerates that wear – Eric's propshaft angle proved to be well within that tolerance. The car was now at the stage where drive from the engine to the rear diff was complete. On a side note, with all the exhaust pipe heat shields off the car I had those shot blasted and resprayed them with silver VHT exhaust paint – this made for a much improved heat reflector appearance.

The transmission tunnel had been measured to accommodate the new manual gear stick position and in order to enclose this properly, a box was made to house the gear stick base-to-remote assembly. Again, straight forward and the inside of the box was padded out with closed cell insulating foam as this ensures that no fumes or noise can enter the cabin, unlike open cell foam.





In essence, the modern 5-speed manual gearbox installation was now complete. These W58 units run with a fully synthetic oil and I chose Red Line MT-90, which is a high-spec quality oil. My local Toyota dealer was able to supply a gearbox tail cone guard which is a shield that prevents the ingress of dirt towards the rear oil seal and they also supplied a new gear stick rubber gaiter. One item they could not source for me at a decent price (£100+) was an angled speedo drive; I got one from the United Arab Emirates via eBay which ended up being 50% cheaper including import duties plus being a genuine OE Toyota item – absolute madness, no wonder the UK struggles!!

Next stage was to fit all the ancillary components to the engine and engine bay along with the exhaust system plus the revamped heat shields. A braided flexible Goodridge clutch hose was used to connect the master cylinder to the slave unit, again all very simple. With the underside fixings now complete and the engine fully reassembled, it was nearly time to fire the engine up since its rebuild and gearbox conversion. I have to say that this was probably the most anxious of all moments, not because I doubted any of the work undertaken, but because this was really the moment of truth when the whole project comes together. This was not a case of individual upgrades over a period of time, but a collection of new untested modifications; of which I had no template to follow!! In Part 6, I mentioned the significance of correct running-in lubricants and of course the correct running-in of a rebuilt engine is a critical operation. The lubricant I chose for Eric's engine was Lucas 20W/50 Break-In Oil (purchased via Demon Tweeks) which is specifically designed for this purpose and is used by the Americans for their V8 muscle cars. It's a proven winner with a very high zinc content for the correct bedding-in requirements of a newly rebuilt engine. With all lubricants and fluids installed, the engine required its oil pressure to be built before running it. This was done by loosening the cylinder head oil feeders to allow the escape of air. The engine was spun over, until pressure was showing on the oil gauge along with weeping from the cylinder head oil feed pipes. With readable oil pressure achieved the pipes were re-secured. This was it, the moment of truth!! The ignition side was re-assembled and on pushing the start button the car burst in to life immediately with that beautiful V8 burble and resonance. Some minor adjustments to the carbs and the car was up & running with exceptionally healthy oil pressure. Car was checked for leaks etc. with nothing to report. With the choke closed down asap the car was held at 1500rpm to ensure the electric fan cut-in which it did in due course. The heat stickers on the cylinder heads were reading correctly – any issues with cylinder heat is picked up immediately via these stickers which are far more sensitive to overheating issues than any coolant gauge!! Rebuilt engines should always have these affixed, it's a real safety net and the sign of a quality engine rebuild.

The next stage of the conversion to be tested was movement of the car under its own power with the new gearbox. For this the car was driven on the road and all froward gears engaged smoothly along with reverse – this really was excellent news and the car could now look forward to being run-in properly. An extra bonus was that the refurbished speedometer arrived the day the engine was fired up and with that fitted I could now take the car for some long distance journeys to bed the engine in. I decided that the running-in time would be approx. 1200 miles which was well within the Lucas Break-In Oil specifications and that has now been achieved, as I write this article towards the end of September. Throughout the running-in period no issues occurred and speed was kept to a maximum of 70mph and or 3000rpm for the first thousand miles, it was then "opened up a bit" after that!! I would certainly class the whole project as a complete success and worth the time and money to achieve this goal. The conversion is certainly different and not one for the purists, that said you have the balance of a superb V8 engine with a modern day high spec 5-speed manual gearbox. As for performance, the car now returns 30-32mpg on a long run with the tachometer showing 2500rpm at 70 mph in 5th gear – that is a very much removed from the original BW 3-speed auto gearbox!!

I hope you have enjoyed these series of articles giving a small insight into this project. My grateful thanks to Jonathan at J&E Engineering Services, James at CCK Historic who helped me with the final stages and of course Kevin, for providing space within the DM re these series of articles.



