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1921 Lanchester 40hp Saloon XF-7024 by James Milson

It just had to be a 40hp. The Lanchester 40hp was the earliest of the Lanchesters of which there are still reasonable numbers around and was the last model to have the famed epicyclic gearbox.

The love affair began in 1995 when I saw the array of Lanchesters at the Centenary Rally in Coventry. That was a stunning sight, to see a procession of approaching 90 Lanchesters of varying sizes coming in to their parking spots in formation. The sound was even more memorable than the sight however; a quiet, unlaboured purr. Then I discovered that the engines are bolted to the chassis – no rubber mountings as the engines have been engineered to be smooth enough without – and they still run like that.

I don't judge myself to be a mechanic so wanted something that ran while accepting that any 91 year



Figure 1. Resplendent in 6 new wheels & tyres fitted 2011

old machine will need sustained care. It was acquired in 2003, carries a seven seater saloon body and is still capable of substantial journeys having been driven from Cornwall to Northumberland in 2010. Its history is only patchily known. It was first registered 16th June 1921 and has had 4 owners including myself since 1986 and before that was registered to Willie Dale, the founder of Myreton Motor Museum in Aberlady, East Lothian.

Between 1924 and 1986, nothing is known of its history except that it was believed to be in the Beaulieu Collection for a period of time. In 1924 it was photographed on return to the Lanchester service department for repairs. In those days, it was not infrequent for cars to be sent back for

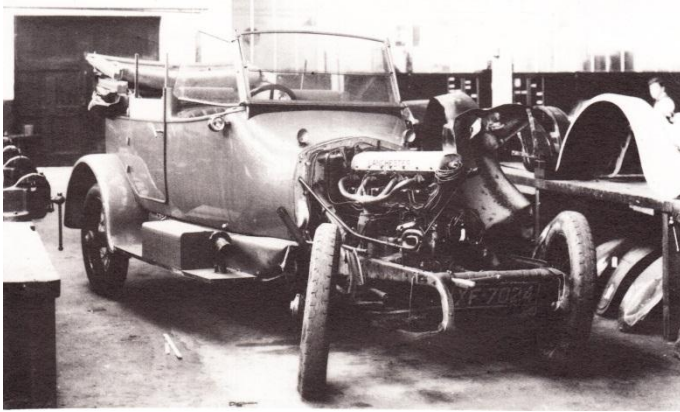


Figure 2. In Lanchester Service Dept. for repairs 1924

service. This figure shows a front end collision necessitating considerable repair and shows that the car started life as a Lanchester bodied seven seat sports tourer.

It is plausible that at the time of the 1924 repair, the present saloon coachwork was added waist-up on top of the Lanchester tourer. What is known is that the saloon coachwork is by T.H.Gill & Son, London. There is a fascinating discussion to be had about originality – the saloon body that it has been carrying for 88 years or restore it back to an absolutely unique

and very elegant looking sports tourer. Which is the more original? While it is tempting to recreate the unique tourer, it would have to work and look the part and my thinking falls back to the advice of the old proverb – When in doubt do nowt.

One further piece of trivia – the mahogany tool box on the running board, restored a few years back looks like original equipment.

The car still sports the original leather seats and door coverings (shown right). The rear seat is supremely comfortable and makes the passengers feel like royalty – not surprisingly Lanchester was the future King George VI's favourite make. The seat benefits from a small lift up sun roof.

Two fold down occasional seats facing back are on the centre partition which also has a wind up glass partition shown in the view forward from the rear seat (below). One seat is shown up and one down so that the repaired and newly varnished mahogany framing can be seen. In the distance is the dashboard – a thick casting of aluminium with a machined surface. The machining is not quite good enough to be the top surface. It had been covered in a white kitchen laminate but would have originally had a black covering. It will be spray painted satin black when I get to preparing it. To the right of the steering column are the switches for the magneto and coil ignition systems: rather utilitarian at the moment but will ultimately



Figure 3 Original leather rear seat upholstered in characteristic Lanchester design

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get up the priorities for cosmetic improvement. Similarly, the steering wheel boss is somewhat inscrutable without its original labelling for the throttle, ignition advance/retard and mixture controls.



Figure 4. Occasional seats, centre partition and dashboard

200cm² of rubber on the road severely limits the stopping distance. Those points aside, it would be a dream to drive if it were not for all those impatient modern car drivers!

The engine has six in line vertical cylinders cast in two blocks of three with a bore of 4in and stroke of 5in – a capacity of 6,178cc. This had a Treasury rating of 38.4hp and had a measured output of about 90bhp at maximum 2,400rpm. There is lots of torque of course with the engine comfortably and smoothly accelerating off at 10mph in top gear.

Fuel is fed from an Autovac (on offside bulkhead) to a four jet Smiths carburettor and thence through a photogenic brass and copper inlet manifold. You will note that the middle two pairs of cylinders both share inlet manifolds. There are two spark plugs per cylinder. One set of plugs is driven from a modern coil almost out of shot at the bottom fed from a distributor which is attached to the front end of the camshaft. The other set is driven by a magneto on the nearside of the engine immediately above the water pump. The magneto was recently rewound and reinstalled: it now works even better than the coil which is a standard negative earth coil wired into a positive earth system so is working at somewhat of a disadvantage.

A vertical shaft on the offside front of the cylinder block (just visible on the right of the picture) takes power up to the single overhead camshaft. The worm of this drive shaft is in the foreground of the figure below showing the valve gear with the valve cover removed. This shows the OHC and slightly inclined inlet and exhaust valves (offside & nearside respectively). This shot was taken about 2 years ago showing No.1 cylinder exhaust valve jammed open. Fixing this problem was a good example of the elegance of the design. In this case, the valve stem slides in a brass bush push fit into the top of the cylinder and retained by the pressure of the valve spring. Once the valve stem was freed (thanks to the help of Chris Clark), the brass bush



Figure 5. Offside view of engine with its magnificent inlet manifold

could be removed, reamed out and refitted. The cylinder head is in the same casting as the rest of the cylinder – simplifying water channels. The valves are removed via the removable inlet valve port.

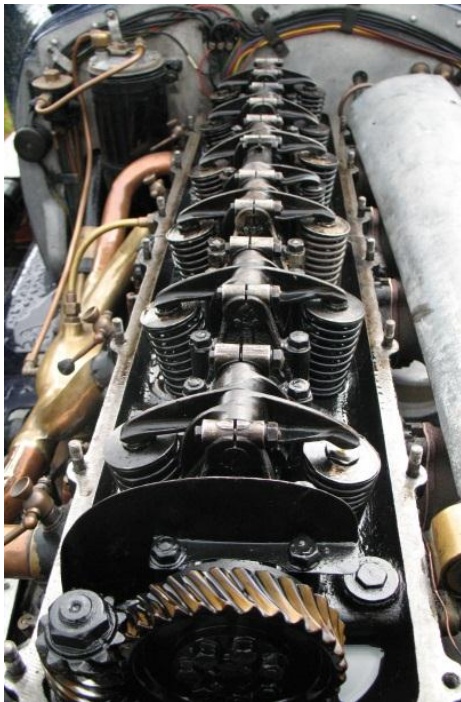


Figure 6. Valve cover removed showing camshaft and valve gear

The camshaft is hollow, the inside having a high pressure oil feed which lubricates the bearings. A frequent feature in different parts of the engine design is that any moving surface is bathed in oil which of course minimizes wear. While sometimes a nuisance for the garage floor, it does mean that virtually all of the mechanicals are original as bearings are large and oiled, so built to last.

The water pump also takes its power from the vertical shaft to the camshaft. It is an aluminium casting, which, like some of the other castings is becoming brittle and porous. It has needed repair (with a new welded flange and some JB Weld remodelling). The stop-gap repair has worked well for two years but as no other owner appears to have any spare pump bodies, this will eventually need a new casting.

It is the gearbox that chose the car for me and it is the gearbox that makes it easy to drive. The gearbox contains 3 epicyclic gear drums (reverse, low & 2nd gears) and a direct drive top gear. It was engineered to seem like a conventional gearbox with a gated gear lever. Gear change is as smooth as a modern car – except for the man-sized springs on the clutch pedal! There are subtle differences however.

Engaging a gear is a two-step process: push the gear lever into gear and the gear drum clutches partially engage; push the lever more firmly & they fully engage. If reverse gear is engaged whilst proceeding forwards, the car simply slows down (I have done this once in error). It is a shame in a way that it is another braking system that operates only on the back wheels but would not be a sympathetic use of the gear drum clutches!



Figure 7. Three roadworthy 40hp at Longhirst Hall, Northumberland, 2010

Chris Clark's seminal work on the engineering genius of the Lanchester brothers (The Lanchester Legacy) lists that there are 21 40hp cars still in existence. Of the three pictured together at the 2010 Northumberland Rally of the Lanchester Register, the red saloon (TDP-5) has been exported to Australia, so sadly, it is possible that there are now only three 40hp on the road in UK. One of the many problems of these low numbers is that they do not provide a critical mass by which these wonderfully engineered machines get better known. The Trust can help in this as can writing/talking about them but most of all it needs as many as possible of them running and out on the road.