

A Tale of Two Tails

(See Motor Sport May 1988)

Together for the first time the two Invicta team cars with pointed tails.

S62 "Speedy" On the left was campaigned extensively by A. C. Lace from 1932, and after the 1933 TT was sent back to Van den Plas to have it's present pointed tail body fitted in time for the 1934 Ards TT. Sold by us, "Speedy" is now being prepared to re-enter the competition fray after 67 years and has one of our well known 200 BHP engines.

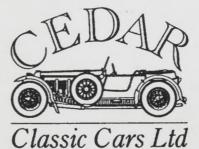
S90 "Simplon" On the right was fitted with its pointed tail body by Carbodies, in time for the 1931 TT when it was driven by Tommy Wisdom and then continually raced by Dudley Froy until sold in 1933. "Simplon" has had a little sympathetic TLC and is now ready for magnificent touring. **For Sale**

Contact us if you are interested in the definitive S Type Invicta with an impeccable history.

It is fascinating to have these two "Works" cars in the "Stable" at the same time to be able to compare. They are getting on very well together and we are hoping that it may lead to the pitter-patter of tiny Invicta feet! Why not bring yours to join the party?

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FRONT COVER

West Country Tour. John Fitton's 2 litre HC heads the line-up as the cars cross on the Dartmouth Ferry

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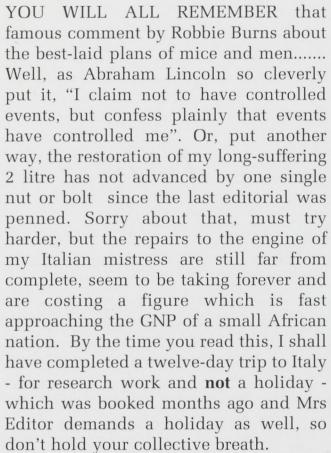
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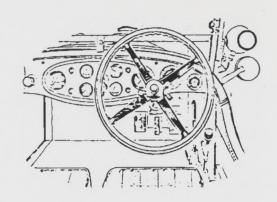
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From the Driving Seat

by Ken Painter



My trip across France and into Italy involved very few sightings of vintage or classic cars. There were several British examples about to board a different ferry at Portsmouth, which I never saw again, a few post war Citroens and one Renault in France, plus a splendid French registered early 1920's Hotchkiss thundering along the Route Nationale



near Orleans, then nothing until I crossed into Italy and caught sight of the tail end of a Continental vintage car rally, where I met several cars of the twenties and thirties on their way back to France. In fact, I saw more cars of "our" period on my journey from Portsmouth to Suffolk than I had on the rest of the 2000odd mile trip. We tend to take for granted the free and easy way we can use old cars in this country and it takes a trip like mine to remind us that we are the very lucky exception. And in case you are wondering, yes, I was travelling in a post-war classic, but nothing so grand as a Lagonda!

There have been few Club events since the Spring magazine was published, so this edition brings together a selection of technical articles, some of which have been 'on hold' for some time. There are more in stock for future magazines, but additions will always be They don't have to be technical, of course, historical material is particularly welcome, either original research, or archive material you have discovered. Never assume that everyone else knows all there is to know about Lagondas. Ask Arnold, even he keeps learning new things about them!

Last date for copy for the Autumn magazine is . . . 21st September 2001 . . .

In Register

Arnold Davey delves into some more marque history

AT A RECENT BONHAM & BROOKS AUCTION I discovered that the BRDC appear to be selling off some prewar records (give 'em a hiss, lads). So I occupied part of viewing day by going through them and copying out the relevant Lagonda stuff, principally the 1928 and 1929 Tourist Trophy races in Ulster. We have never before seen the lap times for the Lagonda team cars in these races and for the benefit of posterity and the interest of historically-minded members I set them out below.

There are some unexpected conclusions to be drawn from these times. The first is that the 1928 cars were quicker than the 1929 ones. I doubt if this is all down to the drivers and the circuit was not altered between the two races, so far as I am aware. It may be that Arthur Fox set a lower rev. limit in the interests of reliability or it may mean, perish the thought, that the low chassis car just was slower than the high chassis one, a feature of the 1929 Double Twelve, where Couper in PK 2339 (HC) easily

outran the PERR Syndicate's low chassis cars.

The second unexpected feature is that none of the contemporary accounts of the race seem to have noticed Jackson's pitstop of nearly 3 hours in the 1929 race. As he put in one further lap they must have got the car going again briefly. But as he would have been about 15 laps down there was little point in resuming except to confirm that he could drive home in the car.

To save you looking up the results, in 1928 Baron d'Erlanger was flagged off (made to retire) for being too far behind, Hall ran a big end and had to retire, as did Hayes. Three DNFs. In 1929 Jackson retired, Rose-Richards was outside the time limit, so classed as a non-finisher and Hindmarsh, the fastest Lagonda driver, was 20th overall and third in his class behind two Alfas.

The other BRDC results sheets concerned Brooklands events, like the 500 Mile Race that didn't involve Lagondas (1936 results not included).

BRDC RECORDS Examined 23.4.01. at Hendon Auction

1928 Ulster Tourist Trophy

Class E (11/2 to 2 litres. All given 2 credit laps on scratch class)

42 F.I	E.Metcalfe (Entrant)	Baron d'Erlanger	Completed 25 laps
43	do.	Major E.Hayes'	Completed 24 laps
44	do.	E.R. Hall	Completed 23 laps

Only one other car in the class, Oats's OM

Intermediate lap times:

Lap3
Lap 4

13.0	12.55	12.47
12.58	12.53	12.38
12.53*	12.47	12.42
13.44	12.58	12.40
32.24	12.57	12.43
18.11	12.52	12.43
14.37	13.7	12.36*
14.43	12.54	12.45
27.28	12.52	12.46
15.11	13.0	12.51
15.13	13.11	13.10
14.54	12.49	13.5
14.55	14.32	14.42
14.46	12.51	12.53
14.47	12.43	18.10
14.42	12.47	22.10
14.48	12.41*	24.25
15.32	12.48	
15.12		
		*
* Fastest lap	*Fastest lap	*Fastest lap
63.62 mph.	64.62 mph.	65.05 mph.
(PK 1059)	(PH 8595)	(PK 1060)
		•

1929 U1ster Tourist Trophy Class E (11/2 to 2 litres. All given 2 credit laps off scratch cars) Entrant for all 3:- A.W.Fox Reserve driver for all 3 cars: C.A.Broomhall

44 T.E.Rose-Richards

45 R.R.Jackson

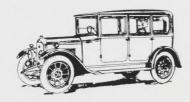
46 J.S.Hindmarsh

Intermediate lap times:

No 44	No 45		No 46	
14.7 Lap 3	14.37 Lap 3		15.22	Lap 3
13.24	13.18*	13.3		•
13.32	2hrs 58.46		13.14	
14.8	14.13		13.31	
13.37			13.12	
13.17			13.7	
13.8			13.1	
13.3t			13.29	
13.47	*		13.0	
14.4	*Fastest lap		13.5	
13.45	61.62 mph.		12.55	
13.26			12.45*	
13.17			12.46	
13.10			13.23	
14.58			13.1	
13.1*			12.52	
13.7			15.23	
13.2			13.6	
13.5			12.47	

	12.55
	12.48
	13.3
	13.24
	13.12
	13.7
	12.55
	13.4
	13.47
(PK 9204)	*Fastest lap 64.28 mph. (PK 9203)
	(PK 9204)

Other cars in the class:- 3 blown Alfas, 2 OMs and 2 S.A.R.A.s.





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The Lagonda Club West Country Tour, 2001

Walter Thompson reports:

A CHANCE CONVERSATION WITH Gill and David Edwards at our Midland Area meeting followed by a telephone call to John and Joan Fitton the organisers of this tour and my wife Rosemary and I were booked at the Thurlestone Hotel near Kingsbridge Devon complete with sea view. One or two late cancellations enabled us to scrape in at the last minute. Our gratefulness meant that I gave in to a little arm twisting and agreed to the invitation to write up the trip for the magazine. All those school trips spoilt by the requisite essay on return - but here goes!

We set off from Evesham after serious last minute problems, which required fitting new valve guides and an interesting and so far successful method of keeping the water out of the oil by sealing a cracked casting around the valve guide. Perhaps more of this on another occasion.

A champagne reception at the Thurlestone Hotel on our arrival was a good opportunity to meet the other nine couples whose cars were securely parked in the substantial hotel garage.

Our chairman Cive Dalton and his wife, Shirley, were there to welcome us having already covered much of the tour on the previous few days. They kindly joined us however on the frst day trip to Castle Drogo before wishing us farewell on their return joumey.

Castle Drogo, designed by Lutyens for Julius Drewe of Home and Colonial Stores, was a unique architectural commission. Peter Jennings the resident administrator gave us VIP treatment a free lunch and a fascinating insight into the family and the trials of the construction period. One or two of our party seemed to dwell on the leaking

granite walls whilst perhaps forgetting the occasional indiscretions of their own Lagondas. I found the quality of accommodation and detail design quite fascinating. Ten Lagondas lined up on the forecourt must have been a first for the house.

John and Joan cleverly arranged the seating at dinner with different people rneeting each night. The tall stories and old Lag tales cirulated to maximum effect.

The next day all the cars were up and running for an early start in convoy on a trip of 60 miles to the-Eden Project. All came to a halt having missed a turning on one occasion and some of the faster types at the tail end had to stretch their legs from time to time. Amazingly the convoy arrived intact to be accorded further VIP treatment and reserved parking at a convenient entry point.

Still early days with planting in the tropical biome only starting last September after the builders moved out, it represents a real lottery project success. A great idea, leading edge technology of both structure and environmental control and a young dedicated team of mainly plantswomen achieving so much in such a short time. An evolving experience certainly worthy of further visits With such emphasis on sustainability and conservation I couldn't help but feel an opportunity was missed by not parking cars and buses a field or two further away and-entering the clay-pit through a tunnel on a continuously moving train. Not a car or car park to detract from a micro world of plants. Perhaps in the next phase it might become a possibility.

Last to leave, we travelled with David and Gill Edwards only to lose



The participants outside Castle Drogo



.....And the cars lined up behind them

them less than a mile from the Hotel. A burst radiator hose and not a detour to the beach, as we wrongly assumed, delayed their return. A splendid garage in the village, like an Aladin's Cave and its equally resourceful owner Bob, was able to effect a pemmanent repair the next moming. Michael and Georgina Drakeford were also successful in finding a suitable hose for their M45. May Bob and his garage remain unchanged for many more years to come.

The third day, which was to have been Alan and Pat Elliott's Wessex Rally, was cancelled due to foot and mouth restrictions. Instead, they arranged a lunchtime meeting at a superbold pub, The Church Inn at Torbryan, followed by a Thomas the Tank trip on the Dart

Railway.

Evening entertainment with style, was provided for us, and other appreciative guests, by John Fitton and Alan Elliott on the piano.

The tour closed after breakfast the

following morning. Fond farewells were exchanged and new friendships made, and, with promises to meet again at the AGM in September, we all headed for home.

In spite of the doom and downpour weather forecasts that we anticipated would be our lot, we enjoyed instead fresh but sunny skies without a drop of

rain in the four days.

I now have a wiring diagram for flashers courtesy of John Fitton, and if I have correctly remembered it, John Batt's formula of the diameter of the brake drum minus the diameter of the unloaded brakes on their shoes, divided by 2 to arrive at the thickness of the shims required. The time spent was not all just eating and drinking to excess. Someone be kind enough to tell me if that was all my eye and Betty Martin.

Congratulations and many thanks to John and Joan for arranging such a

splendid event.

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Enjoying a pub lunch en-route



 $Another\ view\ of\ cars\ at\ Castle\ Drogo$

LAGONDA PERFORMANCE DEVELOPMENT The 1928 Speed Model 2 Litre H C

Peter Docker Gives his Car More Urge

FOR MORE THAN 20 YEARS I have been driving a very elegant 2 Litre Lagonda 1928 Speed Model trying to keep up with my friends in their quick Vauxhalls and Lancia Lambdas.

The Lagonda, weighing some 27 hundredweight, has an engine capacity to weight of 4.5 cubic inches per hundredweight (1.46 cc per 1.00 kg.). This is about half that of the Vauxhalls and Lancia Lambdas. Also the Lagonda's performance is not helped by its close ratio gear box. with a very ineffective 3rd gear.

These Lagondas are superbly engineered in all other respects and in many ways were far ahead of their time. They are comfortable touring cars with good road manners and good brakes, but like many English cars of the time the

Lagonda was under-powered.

The Lagonda engine, designed in 1925 by Arthur Davidson (ex Lea Francis), is a unique 4 cylinder engine built by Lagonda along with all other major components of the car. The engine has twin high cams (no push rods), a hemispherical head with the valves at 90 degrees and spark plugs on the centre line. This high cam design allows the head to be removed without touching the valve timing and it also provides effective oil troughs for the cams to run in. The engine bore is 72 mm and the stroke is 120 mm. It has a robust fabricated 5 bearing crank shaft with hollow big end journals and a pressure fed lubrication system.

The whole engine was designed for excellent accessibility for servicing all components and auxiliaries, in fact all work can be done just as easily with the engine in the car as it can on the bench. The only defect in the engine is in its breathing, with four right angle bends in

the intake and three right angle bends in the exhaust.

Having lived with the car for so long, I have given a lot of thought to how its performance could be improved without any detrimental effect to its original design and its unique characteristics. Also without any adverse effect on the life of any mechanical components. Three areas were identified where substantial improvement was possible without major work.

(1) Lower the third gear to half way between top and second gear - this was done in a gear box rebuild with new gears a few years ago by John Needham.

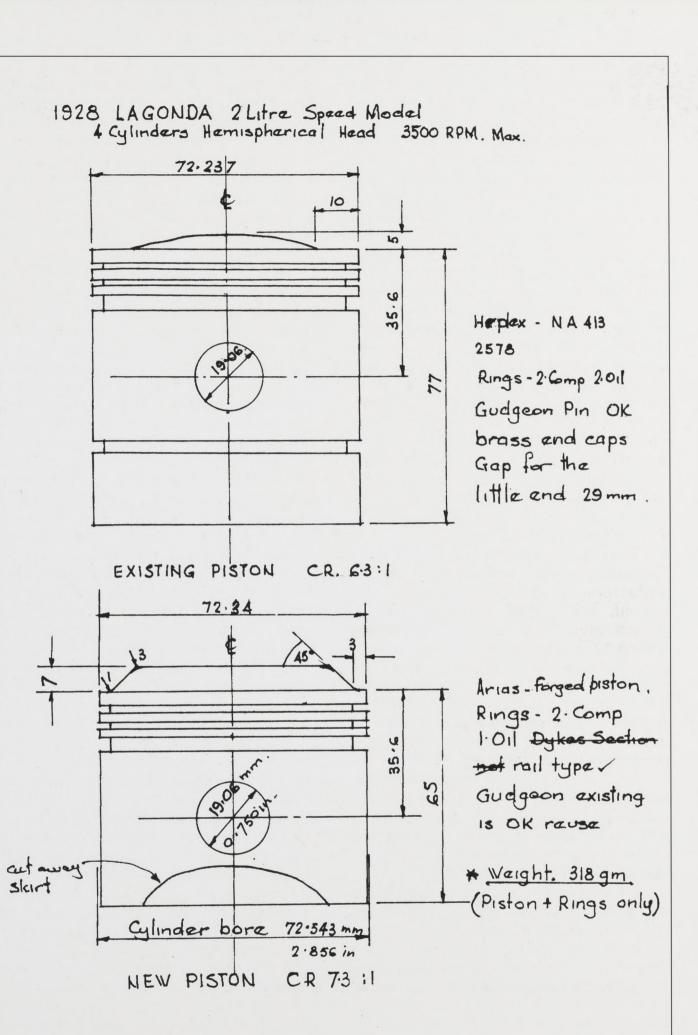
(2) Increase the compression ratio of the engine from 6.3: 1 to 7 3:1 with new Arias forged aluminium pistons with 7 mm. raised crowns. At the same time reducing the piston skirts and reducing the rings from 4 to 3 to limit friction loss.

(3) Replacing the single Zenith carburetor with twin bronze body S.U. carburetors, thereby cutting out two right angle bends in the intake. This has been done on several of these cars as these carburetors were available at the time of

The possibility of fitting a blower was considered but this engine was not built for the additional stresses that a blower causes. Blowers were fitted on some of the later 2 Litre Lagondas but not many survived as most were destroyed by over rewing.

Last year the engine ran a big end bearing, probably due to an oil line blockage. So it was decided that this was an opportune time to rebuild the engine and do the upgrades that had been planned for some time.

The engine was removed, stripped down, thoroughly cleaned and all oil lines washed out and blown through.



The damaged bearing was remetaled and all bearings scraped and refitted. The forged steel conrods were filed and polished to remove any crack inducing nicks, then crack tested and metal bead blasted to improve their load capacity with the higher compression. The camshafts were ground to the original profile as it was considered that it could not be significantly improved by any alternative profile. At the same time the rocker shoe faces were ground and the camshaft and rocker bearings were checked, some minor refitting was required. The timing drives were checked and adjusted and a new magneto drive fibre skew gear was fitted.

The new Arias pistons were machined and rings and gudgeons fitted in New Zealand. They were purpose made to fit the cylinder bores which had been sleeved years ago and had no more than 15 thou. wear. Honing the cylinders was not recommended prior to fitting the new pistons as this would cause more

wear to the new rings.

The valve timing with the higher compression was studied, as by other contemporary designs it was very relaxed, being inlet valve opening 3 degrees after TDC and exhaust valve closing 12 degrees after TDC, an overlap of 9 degrees. Consequently the inlet valve opening was set at 5 degrees before TDC increasing the overlap to 17 degrees. This change has no doubt contributed to the improved performance of the engine.

All the auxiliaries were stripped, worn parts were replaced and refitted and all flexible couplings were replaced with new ones. Also new neoprene engine mounts were fitted and the

engine realigned when installed.

When cleaning up around the engine bay prior to replacing the engine the main cross member in the chassis behind the engine was found to have cracks at each end, which had probably been there long before I owned the car. The cracks were cleaned out and mig welded and the chassis is now as good as new.

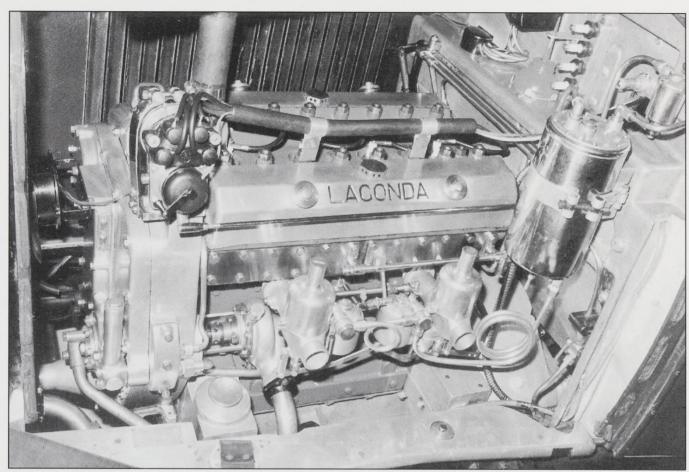
After all the work was done and

engine reassembled, it would not run or even pick up oil pressure. Every possible cause was rechecked, valve timing, ignition timing and carburettors, all to no avail. The twin S.U. carburettors were suspected, so to eliminate this the original Zenith carburettor which had always worked well was replaced, again it would not run. So the only remaining possibility was sticking valves, the head was taken off again the valves removed, cleaned, reseated and oiled. It seems that some exhaust valves, one or two, were not fully closing due to carbon build-up around the stems, thus causing the to backfire through carburettor when the incoming fuel charge contacted hot exhaust gas at the unseated exhaust valves. The valves were the only item that was not stripped and refitted during the engine rebuild as the engine had only done about 2,500 miles since the head was completely serviced and it looked good. The valves had appeared to be closing when on the bench initially. However after replacing the head the engine ran perfectly. So the lesson here is to do every thing including the valves when the head is off.

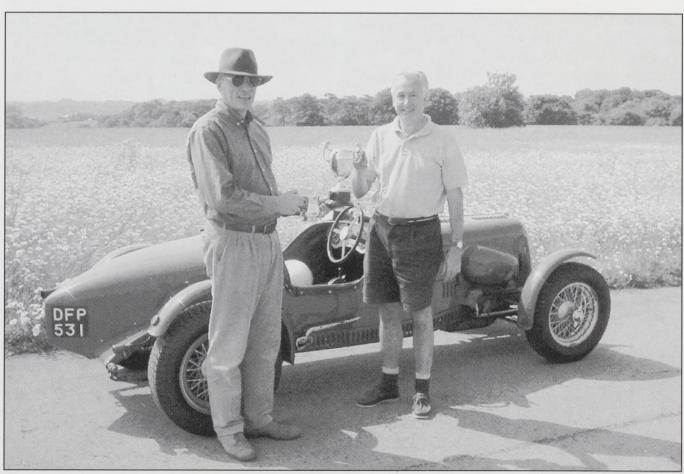
The oil problem was not due to the pump, the filters or oil lines, all of which were in excellent condition. It was due to using a grade of oil that was heavier or more viscous than any I had used previously and appeared not to be flowing through the sump filter with sufficient volume to maintain the supply to the pump. Although the sump filter is approx. 20 square inches in area and not unduly fine, it, together with an external oil pump about 5 inches above the oil level in the sump, will not cope with anything above a standard 30/50 grade oil. (note, the pump will self prime with

this grade of oil)

Having the engine running again and driven for about 150 miles, the twin S.U. carburettors were reinstalled and with a little tuning the performance and power, although not measured, is assessed as about 20% more than it was originally. A very noticeable improvement in top gear and well worth all the time and expense.



The beautifully prepared engine in Peter Docker's 2 litre



Tim Wakeley is presented with the Fox Mobile Trophy by Christopher Mayes at Prescott



Hon Sec Colin Bugler gets a good kicking from a passing hooligan



...then has to drive him to the medical centre to attend to that nasty swelling just above his knees.

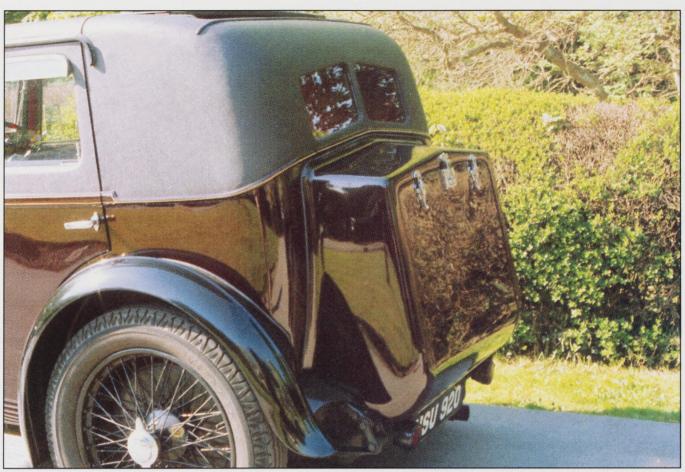




The full report of the Northern Dinner will appear in the next magazine, but here are a few pictures of the event. Denis Clarke receives a liquid award from Herb Schofield for coming the furthest distance in his 2 litre.



Nick Hine receives his trophy from Eleanor Townsley



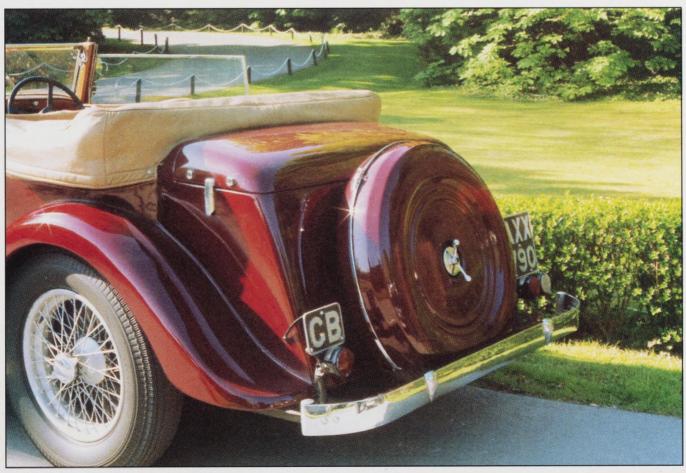
Some elegant tails at the Northern Dinner - Nigel Hall's 3 litre Selector Special



Herb Schofield's 3 litre saloon



Denis Clarke's 2 litre



Phil Erhardt's M45F & W DHC

Sorting the 16/80

Ron Gee shares his experiences of repairing and servicing the Special Six

JOE DEFALCO RECENTLY PHONED ME from New York and asked a series of questions about the overhaul of a 16/80 engine. Hopefully I answered these correctly. As other people are probably in the same situation, I have drafted this article in order to assist them in their task.

First let me express a couple of caveats. I have often repaired my 16/80 engine, therefore the advice may not be as good as that offered by a person who has only overhauled his engine once. Second, the reported conversations are not verbatim and they are in the British dialect of English, which divides us from our North American friends. Joe and I had to spend time establishing the difference in terminology of such items as gudgeon pins, So I will apologise now to readers in Canada and the USA for my biased reporting.

Joe started by saying that he had removed the cylinder head and poured some oil on top of each piston. On two of the six pistons the oil had drained away over the weekend. Therefore probably the rings were broken.

Q) Could the pistons be extracted via the top of the cylinder block, or did the whole engine have to be removed in order to enable the dismantling of the engine?

A) The conrod diameter of this longstroke engine is too large for the removal of the rods and pistons from the top of the block. However the engine was designed to permit the removal of these via the bottom of the block and the liners had a taper which enabled easy insertion of pistons back into the bores without the need to use a piston ring compressor. In the case of my own engine, I have recently had this resleeved. Liners (made in India) were available for the task. However the new liners lacked the taper and I had to insist that a taper was specially machined in order that future piston ring' remedial work was possible.

In order to remove the conrods, the relevant journal has to be positioned about halfway between TDC and BDC. When reassembly is underway, as more conrods and pistons are assembled so "stiction" makes it more and more difficult to rotate the engine by the "laying on back" mechanic/owner. Therefore I would advocate that cylinder number one is tackled first in order to get the feel of the reassembly process. Once this is successfully achieved, then assemble number 6 rod and piston. This isbecause the rod has to be somehow coaxed around the oil pump. Hence the need to tackle this most diffficult cylinder early on in the reassembly.

Q) Do I need to remove the timing cover?
A) Probably not, unless the gasket between this and the upper sump is damaged beyond repair by Silicon

Rubber. If you do need to remove the timing cover, remember:

(a) that the fanbelt pulley has a left-hand thread and that it is clockwise to undo. (b)that the bolts through the timing cover also support the weight of the engine at the front. Therefore before removing these, the engine should be supported. (c)some of the timing cover bolts are BSF and some are Whitworth.

Q) Are pistons and rings available for the 16/80?

A) Perhaps. Piston rings are currently available from Sutton Rebore in South

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London (Tel 020 8642 5685). Pistons will be diffficult to find. I append extracts from the 1959 Hepolite and Wellworthy catalogues. These extracts include piston and ring details for several Lagondas as well as the 16/80.

Before I had the "Crutty Sark" resleeved back to standard, It was fitted with Rover 10 pistons (Hepolite number RS 7819). These are 1.5mm oversize on the 65 mm 16/80 pistons and gave the benefit of an increase in compression ratio. Such pistons do have a ring below the Gudgeon Pin and this can foul the bottom of the liner with disastrous results. Hence it would be prudent not to fit the bottom ring if these pistons are used.

Q) What have you done about the water pump (head-fitted type)?

A) I have fitted a "Standard Vanguard" water pump into the housing. This had a similar pulley shape and position. The choice of pump was made in 1965 on the strength of a walk around a friendly breaker's yard just looking at the engines of cannibalised cars until a similar pump was seen. If you use a Vanguard water pump, then a different fan belt will be required. I obtained mine from J & M Belts, Grays, Essex. (Tel 01375 373975).

Q) Have you any tips on removing the sump?

A) First drain the 3 gallons of oil from the sump or if you wish to use the oil again support the sump

Q) Why would I wish to use the oil again?

A) One reason would be that one has removed the timing case cover inorder to adjust the valve timing. During reassembly of the timing chain, part of the connecting link has dropped out and fallen onto the gauze that sits on top of the sump. A precaution against this is to insert some tissue into the hole at the bottom of the timing cover, thus blocking off one of the escape routes for the connecting link bits.

Q) Would one want to adjust the timing?

A) Probably not, as the engine is very sensitive to incorrect valve timings i.e. it will only start if the valve timing is correct or nearly so. I usually time it so that the inlet valve opens at TDC. If one accepts some oil loss, the valve timing can be tested by starting the engine with

the timing case off.

Obviously one way to establish the valve setting is with a mercer (clock) gauge. However as an alternative, I have established TDC by feel (with the timing cover off and the timing chain on one can the engine backwards forwards by means of a ring spanner on a large nut at the forward end of the Magneto drive). Next one has disconnect the timing chain (don't forget the tissue in the hole at the bottom of the timing case) Then, with the tappet clearance set to the correct value, insertion of a feeler gauge under the tappet and waggling the feeler enables one to determine just when the valve starts to open.

Q) What torque values should be used when re-assembling the big-end and the

main bearings?

A) My crankshaft was recently remetalled by John Kirby of Croydon. He recommended 20 ft-lb as the torque relevant to the big-end nuts and 30 ft-lb for the main bearings. However, such figures should be used with discretion. It is very easy to "nip" the big-end caps through over-tightening and careful assembly is more important than just slavishly utilising the torque wrench figures. (Your Editor is probaly no more skilled or qualified on engine rebuilding than Ron, but he has always been advised by his bearing re-metallers that their recommended torque figure is actually the one at which the relevant nuts were tightened before the bearing concerned was machined to its finished size. Ask the company who re-metal your bearings what settings they used and you should avoid the dreaded "nip").

Q) In view of the intricacy of the big-end assembly operation, is it advantageous to pay for a professional mechanic to

perform this?

A) Possibly, but not necessarily. In 1959, I entrusted the overhaul of my 16/80 to a firm who advertised in "The Lagonda", with the slogan "Specialist work at prices you can afford." 1000 miles after the rebuild, a "ring below the pin" emerged from number 6 piston and jammed in the liner. The car was towed back to them and repaired. After the repair the car was outshipped with a "nipped" big-end bearing. No redress was offered, so I undertook another rebuild myself and learned a lot in the school of experience.

Fortunately, the firm in question has long since ceased to trade and I believe that I was not the only Lagonda owner to

be disillusioned with them.

If you do decide to pay for your car to be repaired or restored, then, probably, the best yardstick is to use a firm with a full order book and/or a waiting list of customers, plus a "word of mouth" recommendation.

Q) Are 16/80s difficult to start after a long hibernation?

A) very much so. You need to get the engine turning over at sufficient speed to get a good spark from the magneto. Once thae car starts, do not switch it off until the water temperature gauge shows 30° C. Otherwise, the plugs may become impregnated with petrol and oil.

Q) Have you any other suggestions?

A) Ignore the above answers. You have just been reading the thoughts of a man who has just spent hundreds of pounds and hours refurbishing a cylinder head, valves, guides etc in order to cure a misfire. In a way the misfire has been cured, but that is because the car will not start. Alternatively sell the car and let some other sucker have the hassle. On a more serious note, most modern cars incorporate rubber or neoprene oil seals around the valve stems. The oil seals from a Vauxhall cavalier (1600/2000cc) also fit the 16/80 valves. They offer a significant reduction in oil leakage down the valve and into the combustion chamber.



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Extract from Hepolite Piston Catalogue

	Pistons Model		Cylinder Bore	Bore	Ref No				
	1.1934/38 10 hp 1104 cc Rapier	Metal Al.	lns mm 2.4606" 62.5 mm 5077	nm 32.5 mm	5077	Comp 1 15/16"	Length C 3 9/16	Cyls 4	Head Dome
	2. 1933/35 15.7 hp 1991 cc Special 6	H' lex.	2.5590" 65 mm	35 mm	1348	41.5 mm	79.5 mm	9	Dome
	3.1926/33 12.9 hp 2 litre, Speed C.R. 6.2 to 1	Al.	2.8346" 72 mm	72 mm	2578	1 19/32"	3 7/32"	4	Dome Stepped
24	4. 1946/53 22.6 hp 2580cc OHC 2 1/2 litre, LBS Mark l and ll	H' lex.	3.0709"	709" 78 mm	11258	2 5/32	3 1/2	9	Dome Radiused
	5. High Comp for above, C.R. 8.16 to 1	Al.	3.0709" 7	709" 78 mm	11941	58.86 mm	92.99 mm 6	9	Cone
	6. 1954/58 25.6 hp 2922 cc OHC 3 litre	A1	3.2677" 8	677" 83 mm	12466	2.199"	3.494"	9	Dome
	7. 1934/5 30 hp 4 1/2 litre, Z (RBP)	Al.	3.4842" 8	.842" 88.5 mm S3402	S3402	1 25/32"	3 11/16" 6		Dome
	Rover Ten Pistons: 1347/37 10.8 hp 1389cc	Al.	2.6181" 6	181" 66.5mm	RS8783	RS8783 1 37/64"	3 5/64 4		Flat

LINERS	Ref No	FS.1118		FS. 171		FS.251	PF.1459			PF.1459			PF.2461	(To 1957) 1958 onwards PF.2607	0000	FF.2508		FS.1042	
	Ref No	2824A		70A		363B	4190A			4190A			4579A	1958 onw	9000	1900		134A	
PINS	Dia Type	13/16" S.C.		13/16" S.C.		3/4" F.F	3/4" RC26			3/4" RC26			3/4" RC26			15/16" A.C.		5/8" S.C.	
Ref	No	P.142	DO.1717	P202	DO.215	P.405	KTP.7357	MP.5595	MDO.7269	KTP.7357	MP.5595	MDO.7269	KPC.10345			F.2263		P2001	
	Width	1.5 mm	3 mm	2 mm	4 mm	3/32"	1.5 mm	1.5 mm	2 5/32"	1.5mm	1.5mm	5/32"	1.5mm		"0070	3/32"		2mm	
Rings No of	Rings	1. 2	2	2. 3	1	3. 2	4. 1	1	2	5. 1	1	2	6. 1			7. 2	Rover Ten Rings:	2	



Michael Drakeford's M45



The rear UJ sans spring and extra bowl

That Vibration

Michael Drakeford gets a dose of the shakes - and a cure

"YOU REALLY SHOULD sort out that vibration" commented Richard Wills, former owner of AUL 720, my M45 tourer as he drove her for the first time since he had the car in the 1980s. How

right he was.

Strange, I thought I had done just that. Having taken the 'Red Lady' on the Champagne Rally, when she ran without a hitch. I had become concerned about vibration. It seemed to me that the car vibrated when stationary and in neutral. First I tried realigning the gearbox and replacing the soggy engine mountings. It was a bit better, but still there. I turned to the spider, which looked reasonable. Incidentally the fibre drive couplings were new, having been replaced by Peter Whenman when he replaced clutch parts.

Having taken the spider off, I started playing with a school compass and protractor. Sketching round the subject matter. I found that the holes on one side were about 1/32-1/16 out of alignment. Problem solved. Off to my friendly machinist, who agreed to have the holes filled by welding, and after making a template for aligning up the holes properly this time, redrilled accurately. Job done. Well not quite. It was fine at rest, but the vibration was still there running, as pointed out by

Richard.

Incidentally, from the large number of receipts for clutch and associated bits, I wondered if I had resolved a long-time problem by sorting the spider.

Further inspection revealed that there was a problem with the propellor shaft. It wobbled when at certain positions when shaken at the vertical.

Talking to several experts, the

comment was that this type of shaft never worked properly and after 67 years mine should be thrown away and a modern one fitted. Well my reckoning is that if anything can work for 67 years it cannot be all bad. Surely it can be fixed. The bearings must be worn. The acknowledged dealers in propellor shafts first ask if they are roller joints ("terrible things to fix"), or brass bearings ("not worth fixing and cannot get the bearings anyway"). There seemed little hope. Nevertheless I set about seeing just what the problem was.

Looking back at the records of AUL 720 I saw that the propellor shaft had been replaced secondhand some four years ago, presumably untested. As you can see from the photographs it is a covered cone type by Hardy Spicer. The later LG45 had open ends with grease nipples. This is where the rub lay. The idea of the cone was that is was a sealed effort in which you had to pump oil every 2000 miles using a grease gun. To quote David Hine, expert on all things M45, "...and oil went all over the place". That may be a problem for some, but it probably explains why my chassis is so rust free! Even the original 1933 BRG paint is still there.

The oil is theoretically kept in situ by cones, springs and cork seals. The bearings were constantly washed in oil. Even so it must be less efficient than forcing grease in between the bearings. as

can be seen on the later versions.

Looking at the pieces in my hands it became obvious that the rear joint differed from the front in that there was a concave bowl part missing and also a spring to tighten all the parts together. With all the proper bits present and fitted correctly this presumably helped



The Spider, bearings and retaining clips



Wear on the shoulder, which, with wear on the spider, gives up to 25mm movement

to create a reasonable seal for the oil. All of the cork seals had disintegrated. Incidentally these bearings are not brass but a softer steel than the centre spider joint, which was no doubt hardened. Brass would be far too soft.

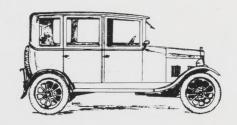
I set about removing the bearings which are held in by a semicircular spring on two of the spider joints only. That I found a pain and blunted many sharp tools in the process. In the end I found the best tool was a small sharpened screwdriver. At last they were all off. Some bearings were looser than others in their movement. Most were badly pitted, and some self welded to the extent that the metal had melted into lumps. Unfortunately overheating of the bearings caused by general lack of lubrication had created excessive wear on the sides of the shoulders of the 'fingers', for want of the technical term. At the worst end there was wear approaching 25 thou. The only way to solve this appears to build up the metal by welding which could distort the surface and make matters worse. On the other hand, use of shims might do the trick as a temporary measure once the shoulders have been ground to present a flat surface.

Another solution may be to ask fellow owners for cast-offs in the hope that I can match a good front with a poor back or vice versa. Any offers? As for the spiders and bearings, I am applying to the good offices of Alan Hancock, our Club Spares Officer for a run of parts.

As with all these things it takes time. But although modern bits such as shafts are no doubt better, I still believe that we should do our best to keep originals as far as possible. That reminds me, there is another story about Rotax distributors that I simply must relate....another time.

In the meantime I succumbed to a temporary modern propshaft, specially made with the six holes rather than the modern four, at a cost of about £250 from Kestral Engineering. And yes, the vibration has gone, and yes it will be replaced when I get the original shaft to work correctly.

P.S. Having seen this article, David Hine commented that vibrations on his M45 had, over time, been caused by problems with the main bearings, with a loose flywheel, and a loose pinion in the rear axle. And I thought mine was serious.



Letters

Dear Ken,

It was nice to speak to you on the phone a few days ago. I was prompted by reading the good news that you are thinking about restoring your 2 Litre Lagonda. What a daunting but very

worthwhile project.

As promised I am enclosing some notes I made after recently rebuilding my Litre engine, together with photograph of the completed engine. The 2 Litre car, particularly the saloon is quite heavy and needs all the power it can get from its engine. Hence the few things that I have done in the engine rebuild to improve its performance may be of interest to you. These were relatively simple modifications that have not spoilt the historic characteristics of the engine and are not irreversible. Having now driven the car some 1500 miles with the rebuilt engine, the results are outstanding. The car is such a pleasure to drive, smooth and flexible with so much better acceleration and power.

It is perhaps presumptuous of me to suggest these modifications to you when your knowledge of these cars is so extensive. However I thought you may be interested to know what a surprising improvement can be made without any adverse effect on the life of the engine, particularly if you keep the revs below

3000 rpm.

Unfortunately I don't have anyone to consult about the technical details of the 2 Litre machinery as they are very rare cars in Australia. Even on inquiry from Phil Ridout he was unsure of the outcome of the modifications I was proposing particularly in advancing the valve timing (IVO + 5 degrees). So you can imagine my excitement about the

excellence of the results.

Recently I have had some delightful letters from Dr. Arnold Young (now 83) and it is good to know that he is in such good spirits after so many years of family sadness. He has sent me lots of interesting history of my car and photographs from Malaya and Singapore days. He is quite chuffed to know his old Lagonda is in such good health. If you had a moment or any of his old friends from Singapore could phone him it would certainly please him as he is now alone except for an occasional family visit. His phone number is 0803 605121. Your good work with the Magazine is most appreciated, particularly the technical articles and the letters to the editor with your succinct comments. It is sad that Uncle Guru has gone on leave, hope he is alive and well and may return

Best wishes for the 2 Litre project.

Kind regards,

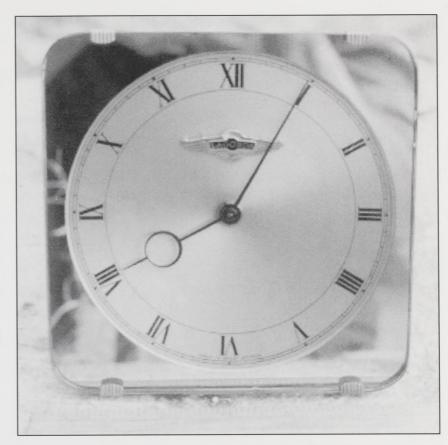
Peter Docker

Dear Ken,

Sometime ago (measured in years I'm afraid!) a friend of mine found a Lagonda-badged clock at an antiques fair or some such. I eventually got round to taking some photos, and then lost the film for a year or so, and after I'd finally found it I sent the pics to Arnold to see if he knew anything about it, but it was not something he'd come across before. He thinks it is a one-off made up by some keen owner, rather than something to do with the factory. As the badge on the face [not the glass as Arnold thought from my pics has droopy wings we deduce it is post-war, and as the clock has a very loud tick, it would seem to be of the cheapish alarm-clock-style movement,

Left: The "Lagonda clock" found by Michael Jones

Below: More than one kind of wheel appears to have become detached from this once beautiful sports touring car as the remains of BPJ 137 lie at the side of the road. Shocked and in such a daze that he still appears to be steering, the gentleman on the right can still manage a wry smile as he and his pipe smoking friend survey the wreckage. Has the bus driver stopped by to enquire if the gentleman might by any chance require a lift? Reproduced from "Old Glory", July 2000, with grateful thanks.





rather than anything posh. As Arnold says, it pre-dates the battery movement take-over of the market. He did suggest perhaps a short bit in the mag., to accompany the photo(s) which he will send on to you, might jog someone's memory.

I'm not sure if my friend still has it; she was taking it to another sale at one point, but I forgot to ask if it had sold (and for how much!)

Best wishes from one editor (of the Bean Car Club mag.) to another glossier one!

Yours,

Michael Jones

Arnold's letter to Michael read as follows:

Dear Michael,

Thanks for the pictures of the Lagonda clock. Now that I have seen it I suspect that this is a one-off made up by some keen owner, rather than anything to do with the factory. What makes me think that is that the bright "gold" wings of the badge are the same as you can buy at many autojumbles today. In contrast, the little lapel badges that Lagonda dealers and staff wore had silver/white wings and the whole badge was quite tiny, not much above a half-inch across the wingtips. I am the proud owner of one of these, given to me at the factory many more years ago than I want to remember.

There isn't much from the clock itself, is there? It could have been made anytime since the war up to the point where battery movements began to take over. Do you know how the badge is fastened to the glass? If it is glued on it must be later than the invention of epoxy resin glues, I should think, as sticking metal to glass presented considerable problems before that (although my father managed it in 1936 when we bought a house in Southgate with a glass front door and nowhere else to put the number).

Regards,

Arnold

Dear Ken,

David Hine's advice in the last magazine to use oil instead of grease is, indeed, good advice for cars which are used and greased infrequently. Even if the specified mileage/greasing advice is adhered to, a long temporal interval between greasings does lead to grease solidifying. In their 1957 book on "The Restoration of Vintage Thoroughbred Cars", Wheatley and Morgan wrote "we wholeheartedly deprecate the use of anything but steam cylinder oil for lubricating any of the socalled greasing points on the chassis". Fortunately, Steam Cylinder Oil is still available from Morris Oils of Shrewsbury (01473 232200) and their agents.

Best wishes to the Dirty Fingernail Brigade,

Yours sincerely

Ron Gee

Dear Ken

Arising out of David Hine's article on Grease versus Oil I have two comments.

Wheatley and Morgan in "The Restoration of Vintage and Thoroughbred Cars" support David's assertions strongly. They advocate Steam Cylinder Oil which is still obtainable. Shell supply one called Macoma 96.

Secondly, my days working for a roller bearing company have led to a permanent interest in these devices. Hence the comments that follow.

David describes taking the front wheel bearings apart every 5-10,000 miles and liberally smearing the bearings with grease. This is an action to be approached with care. There is some convincing research showing that a very common cause of premature bearing failure is foreign particles introduced during the regreasing process. The utmost cleanliness must rule. Buy your grease in tubes rather than buckets.

Neither do you need all that much grease. The reason that packing the hubs full of grease went out as David says was that churning in the grease can overheat it, the bearings and their mountings and in a bad case causes failure. Now to another matter.

On warming the car up - or not.

Going to meetings in which there is an overnight stop one comes out in the morning, late in our case, and is greeted with the sight of several of the cars being 'warmed up' usually at a tick over.

Fisher, in his book on carburettors, reports some work done in the 1920s showing two things. First that the rate of wear in a car engine is very much the greatest just after cold starting. One can convince oneself of this by looking at cars that never get properly cold such a police cars and taxis. They usually have very long engine lives.

The reason is that the rich mixture needed for starting washes the oil off the bores. Until this oil film is restored bore

wear is much increased.

Fisher also reports that the rate of wear is least when a cold car is driven off immediately after starting rather than being warmed up first. The cylinder bores are lubricated by oil thrown off the crankshaft at the edges of the big ends. Driving the car off raises the engine rpm and thus flings the oil off hard enough to reach the bores in reasonable quantity despite the thickness of the cold oil. Warming the car up at a tick-over allows this oil to fall back to the sump without reaching up the bores properly.

If it is felt essential to warm up then it should be done at a fast idle, somewhere between 1200 and 1500 rpm.

There is more...

Serendipity 1

Noticing that the oil groove in the king pins was in the loaded area of the bearing. Grinding another flat for the cotter on the opposite side of the pin and thus fitting the pin turned round 180°. Finding the steering magically improved.

Mind you it could do with improving. After a long period of motorway running the effort needed to go round the roundabout at the end nearly induced a coronary.

Serendipity 2

Noticing that oiling the ballrace at the top of the steering column seriously improved the steering. Suspecting that the bearing at the top of the steering column was being loaded axially when it should not be. Undoing the bearing housing cap a turn or two, it's a fine thread, and finding the steering much improved.

This is a temporary solution, to be corrected permanently when the steering box is next out of the car - in 2010?

Curiously there does not appear to be any perceptible axial movement in the steering column at all and certainly no free play in the steering.

Tyre Pressures

My 2 Litre has been much troubled by punctures due to the inner tubes developing longitudinal cracks and pinholes around the inside circumference where the tube lies on the rim. This happens despite careful fitting, a well placed, tapered rim tape and correct use of french chalk. These failures have been going on many years without explanation or solution.

After our return from the West Country Tour by courtesy of Green Flag due to our running out of tubes I faxed Longstone Tyres last week and got a very interesting reply. Here it is, verbatim.

"The problem you are suffering is one of the problems with cross-ply tyres and has been going on for years to the point that it has been given a name "Heel and Toe Rock". It is due to the movement in the bead of the tyre in conjunction with flex in the sidewall of the tyre. So increasing your tyre pressure will **reduce** the wear (not stop it) Also reinforced tubes i.e.Michelin.

In the post to you now is a Michelin catalogue with recommended tyre pressures related to the weight of your car. If you follow this table it will **reduce** wear."

The table in the catalogue says that these tyres should not be run below 2 bars pressure which is 29 psi. It is significant that I have been running at 26 psi for a little while now which pressure I worked out from someone else's load/inflation pressure table.

Regards

Clive Dalton

Dear Ken,

I enclose a picture that Alec Downie spotted in the July 2000 issue of "Old Glory", a steam enthusiasts' magazine. The car is a 1934 M45 and the registration number coaught my eye as it is an anagram of my BPJ 317. The car was photographed in "The Autocar" in March 1936 when it was for sale and was fitted with a highly unusual body for an M45, in that it was a pure two-seater with a slab tank. It locked for all the world like a 1 1/2 times full size T-type MG. The car has never been on our books and from the picture we can see why.

There are several intriguing features in the photo. First, the car must have suffered the most enormous impact to have snapped the rear axle casing. Second, I think the bus in the background has its wing edges (at the front) painted white, indicating wartime, even though you can't be sure whether the M45 has been so treated or not. Third, the spare wheel is still attached to its mounting bracket, but the tyre has

come off it. I am beginning to suspect bomb blast rather than an accident, particularly as the fuel tank has vanished altogether. Odly, though, the radiator and headlamps look totally undamaged. I wonder if the tank exploded? I wish we knew more.

Regards,

Arnold Davey

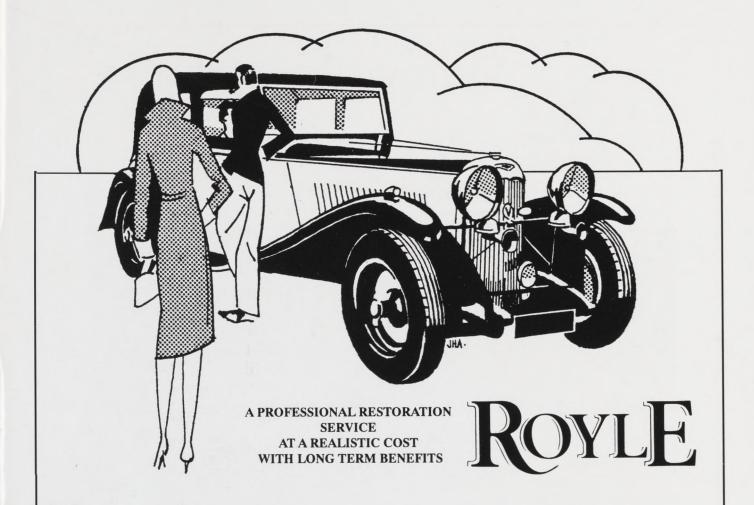
Dear Ken,

I have just read Maurice Leo's letter in the Spring Magazine (on page 35). He refers to LG6 DHC FMA 723 which was owned in 1962 by a Mr F.E.G.Keen. If there is still no trace in Club Records of this car, I might have a lead. When I was teaching in Milford on Sea, there were two brothers at the school named Keen: this would have been around 1993-6 ish. Their father had a DHC Lagonda of late 30's vintage, although I don't know the type or number. "Dad" and Lagonda appeared on Panorama at about that time; he was being interviewed about the arms trade, which was the subject of the feature. I could follow this up if the car's whereabouts is still a mystery. (Yes please! Ed.)

Best wishes

Stephen Weld





There is something about Lagondas that appeals to people, whether it is the styling, the fine engineering or the quality of the coachwork. Whichever it is it certainly attracted me, I have owned and enjoyed Lagondas for forty years. This company was founded because of them and our long established team of craftsmen and engineers have now restored over 700 motor cars in our Staindrop workshops (not all of them Lagondas!)

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