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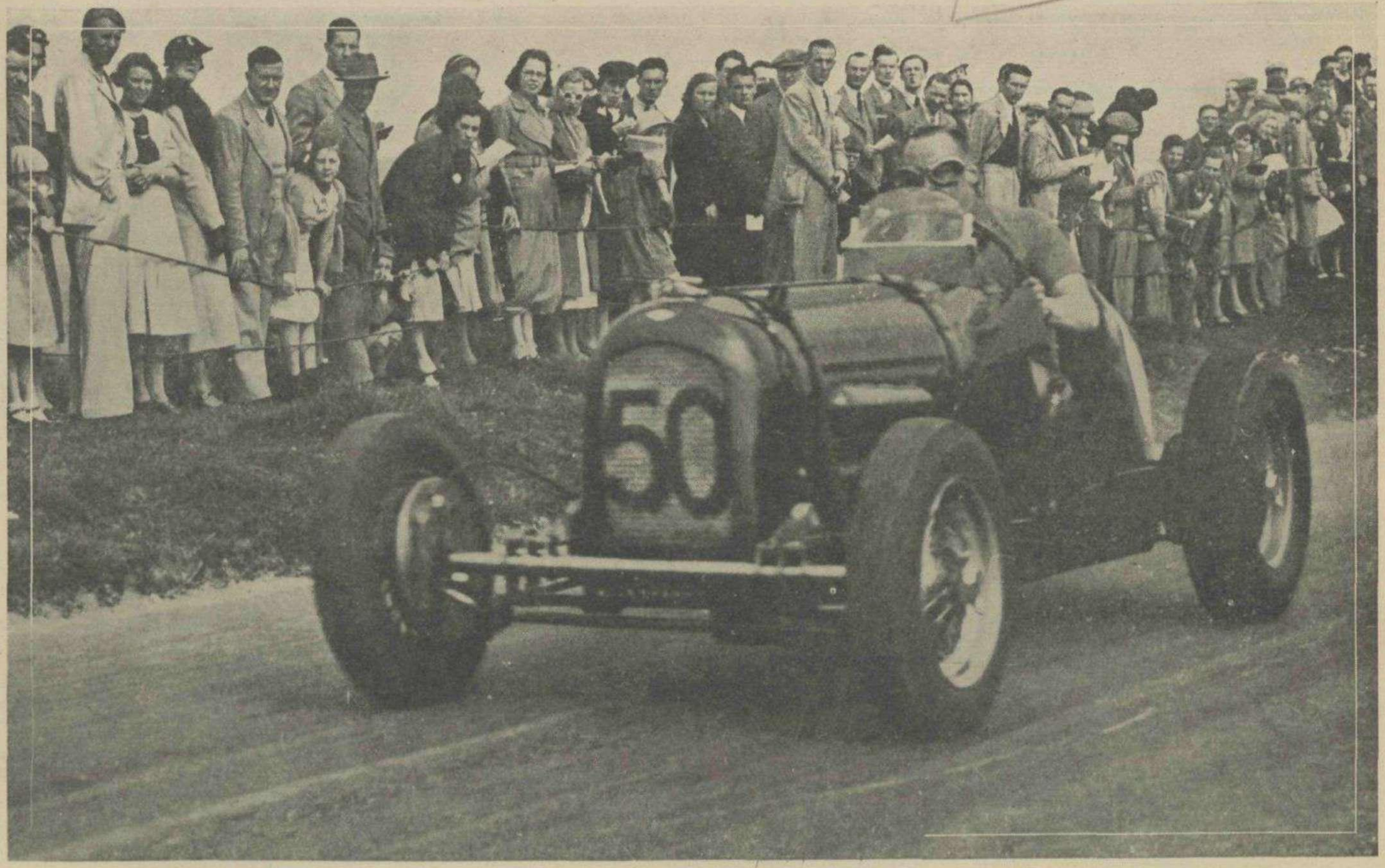
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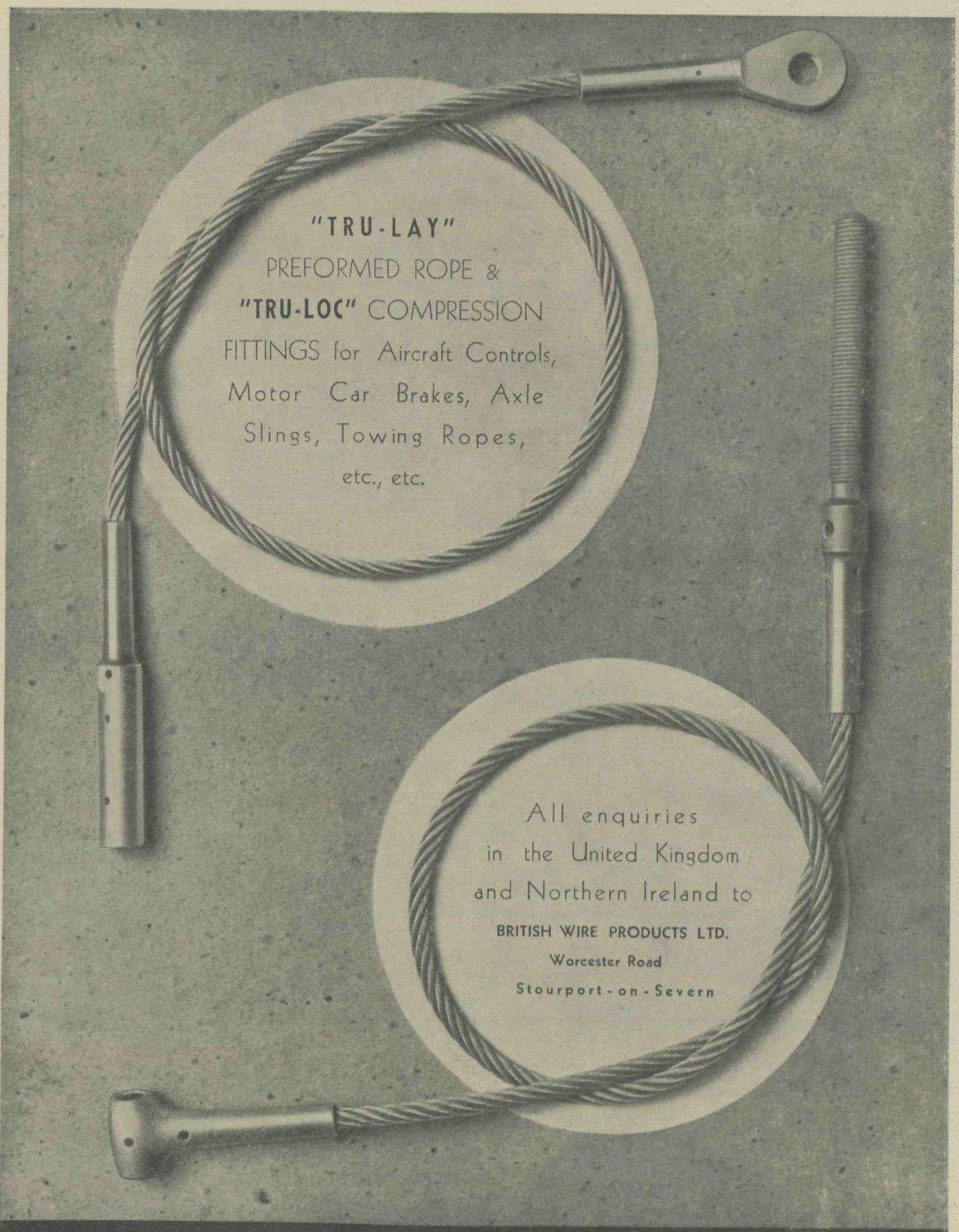
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A 1922 40/50 "SILVER GHOST" ROLLS-ROYCE

In this article A. C. Molyneux critically examines the design and construction of one of the most famous and most typical of Rolls-Royce cars. We think this is appropriate, for last Christmas we published a description of a Rolls-Royce amongst bicycles, and we now enable those who wonder just how the "Silent Ghost" was laid to digest this great design and form their own opinions of this engineering masterpiece.—Ed.

I WOULD commend to everybody who is genuinely interested in real engineering the excellent book of Nockolds, "The Magic of a Name," in which is described the hard life of a hard man, and everybody knows that this hard man is Royce. As a Manchester man it is good to know that "the world's best motor" was born and reared in Manchester. Having just completed the reading of this book, it was most appropriate that a client should telephone and ask us to collect a "Silver Ghost" from a breaking-up yard in the Wilmslow direction. This was indeed a brilliant discovery on his part, for the price of this thoroughbred was a mere £26 10s. The owner's intention was to convert it into an ambulance, so the first operation was the removal of the 7-seater limousine body by Barker's. This body was a beautiful piece of work, and was panelled throughout in $\frac{1}{8}$-in. aluminium sheeting, and the panels, to prevent drumming, were lined with $\frac{3}{8}$-in. 3-ply wood, and even the floor boards were made of cypress. At this point I think a remark made by an old engineer is well worth mentioning. After the gigantic body had been lumbered off and the complete chassis exposed this engineer, on viewing the transmission, gearbox, etc., said, "Even if I had not seen the radiator I could tell that this was the work of Royce, as I was familiar with his electrical cranes, and his name is written in every detail."

The chief measurements of the frame are: track 4 ft. 9 in., and wheelbase 12 ft. 6½ in. The depth of the side-members at the deepest point is 6 in., with 2¼ in. flanges, tapering to a depth of 2¾ in. at the rear, and 1¾ in. at the front, with a constant width of flange. At the rear there is a slight upswept portion to clear the rear axle. The cross membering of the frame is most thorough. Starting from the rear there is the usual light channel-section member situated just to the rear of the axle casing. The next member is a 2 in. tubular one, situated precisely where it should be, namely, where the cantilever springs are anchored to the chassis. As may be expected, the next member appears in the precise position for it, where the shackled ends of the cantilever springs lie. Some 8 in. further forward there is a larger-section tubular member, 2¾ in. in diameter. This member also supports the two rear anchorages of the gearbox and ball-ended torque tube. From the outer ends of the first-mentioned tubular cross-member two members, tubular in section, extend forward towards the member supporting the gearbox and are substantially clamped close up to the torque-tube socket. Carrying on forward again the next member lies just ahead of the gearbox, and is of the same section as the last; to this member is attached the forward gearbox anchorage. Approximately at this position the chassis sweeps slightly inwards until it reaches the rear anchorage of the front springs, whence it again becomes parallel. The only other cross-member is a 2½ in. diameter one slightly aft of the front axle, and incorporated with this member are the two diagonal arms which strengthen the dumb irons. A noteworthy feature of the chassis is the absence of rivets. The suspension at the front is by half elliptics, 44 in. long; the complete spring comprises 14 leaves. The rear cantilever springs are 4 ft. 7 in. long, with ten leaves. The anchorage of the centre part of the spring is a delightful piece of work and is arranged so as to relieve the side-members of twist. This is achieved by extending the fulcrum to the inside of the chassis and dropping a forged bracket from the cross-member. The side-members are also braced by the dropping of two king-posts approximately 8 in. in length, separated by some 4 ft., and united by round forged members. An interesting point here is that where the forged members are attached to the king-posts a hardened steel bush is used and the whole clamped together by a half-inch nut and bolt. At the rear, single Hartford shock-absorbers are used, with shock-absorbers of Rolls-Royce design at the front, which work on the cone-clutch principle and appear on the small side for their job. The front axle is the usual I-section forging, and there is nothing outstanding in the general lay-out of this axle. The rear axle is of the fully-floating type, and the most astounding point of interest here is that the axle shaft is splined on to the hub, instead of using the usual taper and key. The main brake drums are some 17½ in. in diameter, and the inner brake drum is 6 in. smaller. The normal two-shoe braking system is used, but there is an adjustment for re-setting the brake lever on the camshaft. Both sets are compensated, and there is a master adjuster for the foot-brake. I can give little information as to the crown wheel and pinion assembly, but it is well worth while mentioning the astonishing number of studs which are used in the rear-axle casing. For instance, the tail pinion housing is held in place by no fewer than 23 $\frac{3}{8}$-in. bolts, and there are some 20 for the axle tubes. The torque tube is split in the middle and there must obviously be a large-size ball race in this position. A ring of 19 bolts make good this joint. Over the complete rear-axle assembly there was not a trace of escaping oil. (Compared with this attention to detail I remember some few weeks ago examining an E-type "30/98" Vauxhall and noted with astonishment that the tail pinion housing relied on four $\frac{3}{8}$-in. bolts to keep it in position.) Rough calculation shows that the rear axle ratio is 3.714 to 1 and the tyre size is 895 by 135.

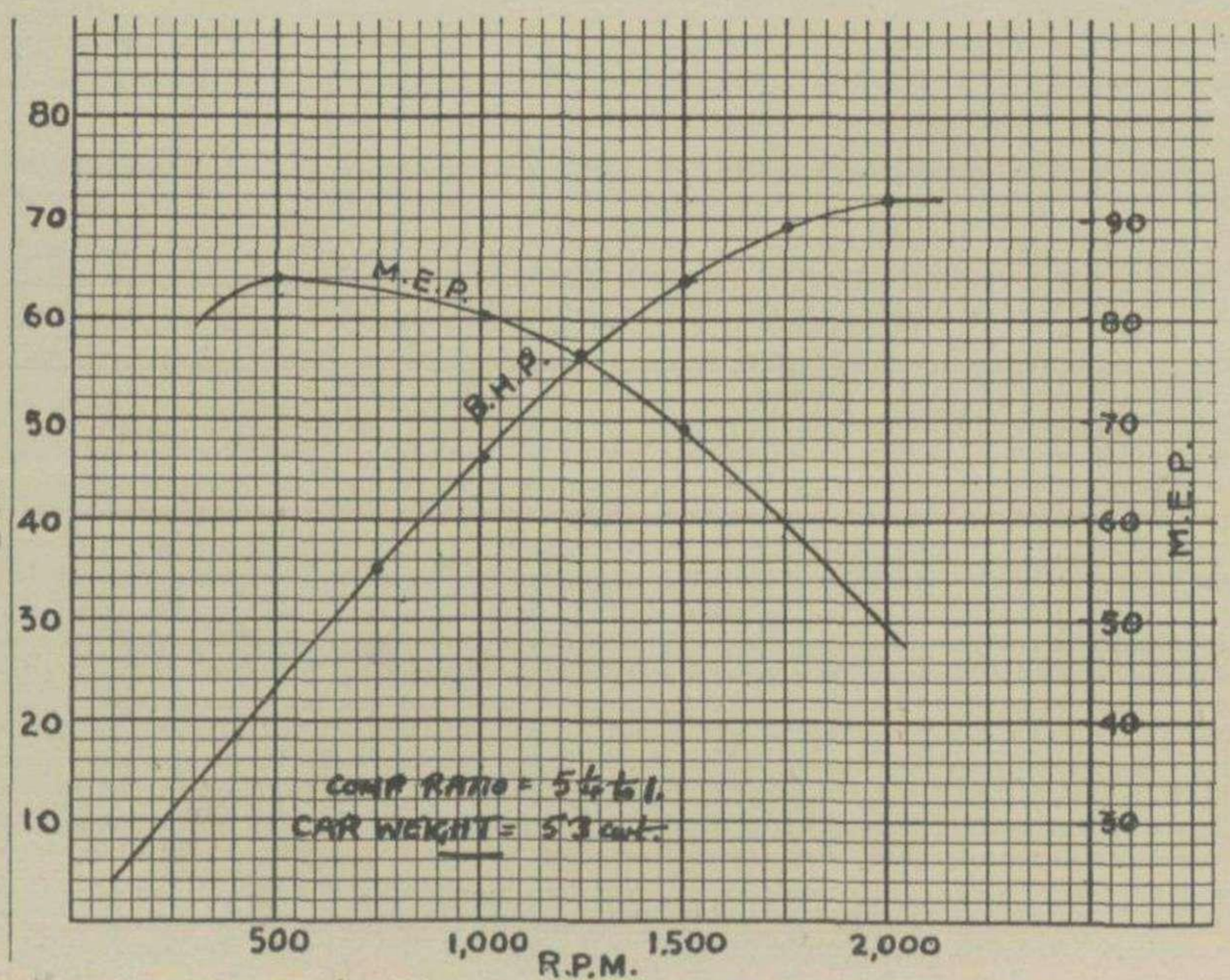
As previously mentioned, the gearbox is suspended at three points, and there is nothing unusual about the design except the attention to detail. The constant mesh uses helical wheels and the first motion shaft is supported on both sides of its gear wheel. The main shaft is supported at its mid-point, and at the rear there is a substantially-sized ball race. The selectors are of particularly heavy section. The gate change is spring-loaded, so that the gear lever always flies into the neutral position, and there is a very definite reverse stop. The gear lever itself follows the design of the normal hand-brake lever. The constant mesh wheels are in a separate compartment, and the main and layshaft wheels are in additions of 70 ; starting from the spigot end of the crankshaft they are as follows : 37/33, 40/30, 47/23, giving ratios of 3.7, 5.5, 8.27 and 12.65 to 1.

A cone clutch is used and it is of very generous dimensions. Situated on an extension of the crankshaft which appears to form a spigot bearing, there is a valve which permits a leakage of oil on to the clutch. A clutch stop is, of course, provided, and is fully adjustable. Oil-drain plugs are provided in case the clutch should be over-oiled when using an oil gun.

Turning to the 7,670-c.c. [4.25 in. by 5.5 in.] 6-cylinder engine, there is nothing really outstanding about the design, and it is again that attention to detail which is most obvious. The most unusual appearance is created by leaving the valve springs exposed, and as far as I can see there is no reason why they should not be provided with covers, even in the year 1922. The lubrication system is perfectly straightforward. The oil is sucked through a large filter at the rear of the sump by a gear-type oil pump. From the pump it is distributed to the timing gear wheels and main bearings, and then through the drilled crankshaft to the big-end bearings and, finally, *via* an external pipe on each connecting rod, to the gudgeon pins. All the piping is exposed and there appears to be a complete absence of internal ducts. The pressure of this system is 20 lb. maximum, and can be regulated by means of a relief valve. The drive to the pump is *via* a vertical squared shaft, and a squared tube which is intended to open up should the pump become jammed by foreign matter ; this appears to be going just a little bit too far ! There is also an auxiliary oil supply to the base of the cylinders on the off side. This supply comes into operation at about $\frac{7}{8}$-throttle opening. Rolls-Royce appear to have forgotten themselves when they mention that as soon as the engine is running this auxiliary oil valve should be depressed by means of a screwdriver or other suitable tool, in order to add a little additional oil to the cylinder walls. Surely the typical thing to do would be to have another lever on the dashboard, connected to this valve by divers cunning levers, bellcranks and rods ? Provision is made for priming the pump in the event of its having been dismantled. A reserve oil tank is fitted on the near side and the filler is provided with a tyre-valve adaptor so that air pressure can urge the oil along its lengthy passage in the $\frac{3}{8}$-in. pipe. The crankcase breather is the main oil filler and is about 1in. in diameter.

The crankshaft runs in seven main bearings, the size of which I cannot quote, as the engine is in such perfect running order that there is no excuse to drop the sump. The pistons appear to be just normal pot-type, with three rings above the gudgeon. The cylinders are cast in threes and possess a separate exhaust manifold, but a common induction pipe. This induction pipe is an amazing and somewhat stupendous piece of work, as it comprises a copper tube running the length of the engine, and in the centre a branch is formed which proceeds over the top of the engine and then inclines down to the carburetter on the off side. It is a little difficult to gauge the internal diameter, but $1\frac{7}{8}$ in. would be a fair estimate. There is no hot spotting or heating arrangement, and it is difficult to conceive why these cars average 15 m.p.g. The carburetter is of Rolls manufacture, and is a most complicated but, nevertheless, as the consumption bears out, a most efficient piece of work. Very briefly it comprises two adjustable jets with individual air passages, one jet functioning as a slow-speed jet and the other as an automatic power jet. In addition, there is an automatic extra air valve. There are no throttle stops and slow-running adjusting screws, as the governor takes complete control of the throttle. The slow running is adjusted by the adjustable slow-speed jet to the front of the carburetter. Both these jet needles are coupled, and the mixture as a whole can be varied from the steering column. Before starting a form of Ki-Gass is used. (Who were the first to use this method of starting, Ki-Gass or Rolls ?) This is cleverly arranged by having a two-way tap in the air hand-pump delivery line, which enables petrol to be drawn from the base of the float-chamber and blown into the manifold *via* two jets situated at the branch on the near side. One shudders to think what would happen to the engine if this priming tap were not turned to the running position as soon as the engine started, for neat petrol would be drawn into the cylinders. That this method of starting is as near perfect as possible was proved by the fact that this car, although it had been standing outside for two years, started up on the first press of the button after its carburetter and ignition had been overhauled. As though to confirm the desire for no heating of the induction system, there are round the jet assemblies two very small water passages fed by $\frac{5}{16}$-in. piping. The circulation of water must be exceedingly sluggish, and one is tempted to say that the scheme seems inefficient. The throttle is governor-controlled and this scheme was, to my knowledge, used up to the "Phantom II" series.

The device was very straightforward in its application and comprised a tension spring inserted between the hand throttle lever and the carburetter throttle. This spring applied a varying tension tending to open the throttle to a degree dependent upon the height to which the throttle lever was raised by the driver. With no other counteracting force this spring would be capable of opening the throttle fully when the lever was at the top of the quadrant. The restoring and counteracting force was supplied by a centrifugal governor driven from the engine timing gears at half engine speed, the force of which was directed by control rods to the throttle in such a way that increase of engine r.p.m. would tend to close the throttle completely. The throttle was compelled to take up a position decided by the point of balance between the manually-operated spring tending to open and the governor force developed by engine speed trying to close the throttle. For example, with the engine running, the driver sets the hand control roughly one-third open, the spring, with-



1922 "*Silver Ghost*" *Rolls-Royce—Approximate Power Curves*

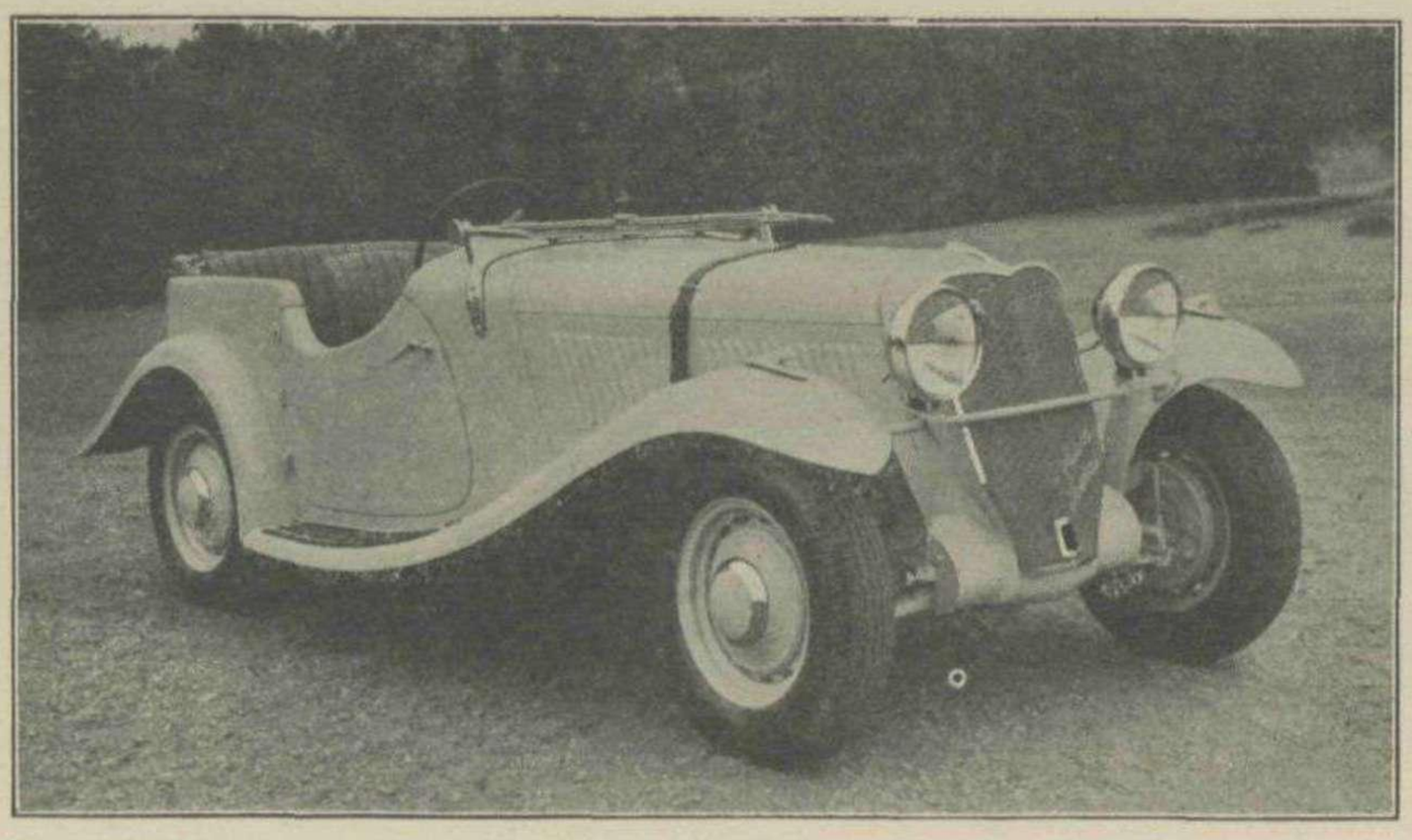
out any opposing force, would considerably over-open the throttle, the engine speed would increase and continue until the governors developed a power which would close the throttle and reduce the engine speed to such a point where the governors could only balance the initial tension given to the spring. The engine speed would remain constant at that figure until some disturbing factor upset the balance. This may be due to the position of lever being changed, or to load being applied to the engine through engagement of the clutch to get the car under way. In the latter case, under any sort of load, providing the clutch was subjected to a reasonably smooth engagement, the car would get away with the governor control in the slow running position only, because the application of load would reduce the engine speed and weaken the closing force of the governor and the tension spring would open the throttle to provide the power necessary for the particular load applied. In actual practice to avoid a too critical clutch engagement, the governor lever would be set in a position to give an r.p.m. slightly faster than slow running.

Owing to the tremendous inertia of the clutch and gearshaft assemblies a quiet gear change on the "Silver Ghost" was not easy to obtain, except with the most skilful of operators double de-clutching with a high degree of precision, and it was here that the governor proved most useful, as the engine could be set to give a change into a lower gear at certain specific readings of the speedometer. Alternatively, another method was to take the control momentarily from the accelerator pedal to the hand lever, when a change could be made from top to third by dividing the road speed by five, which gave the number of notches to advance the hand lever to obtain perfect synchronisation of engine speeds. Lastly, the accelerator pedal was quite independent of the governor control, and through a pick-up operated the carburetter throttle directly, although the governor, under the influence of engine speed, would be attempting to close the throttle completely. This effect could never be felt, as the leverage obtained by the foot on the pedal was too great to be influenced. At the same time, on "luffing," immediately the foot was removed from the accelerator pedal, the governor would come in and completely close the throttle, in an endeavour to bring the engine speed down to the hand-lever setting, which would probably be the idling position.

Dual ignition is provided. A Watford magneto lies on the near side and is driven by an extended shaft with a vernier at each end; a self-extracting nut is fitted on to the appropriate timing wheel, so therefore the timing of the magneto is a very simple operation. The coil-distributor is on the off side and is driven from the same vertical shaft as the oil pump. The contact breaker assembly is, I am sure, the largest and most substantial one ever made. Likewise the rotor and distributor are a sensible size and the leads are most carefully marked. The magneto and coil are coupled together and the manual advance is situated on the steering wheel. Mounted just below the distributor is the automatic air pump for providing pressure in the petrol tank. This comprises a very neat cylinder and piston driven by an enclosed eccentric on the vertical drive. The compression ratio of this pump is arranged so as not to permit a greater pressure than 3 lb. per square in. in the petrol tank. Needless to say, a hand pump is provided to produce the initial pressure, and at the near side just below the bulkhead there is a tap which gives the following variations: hand pump only; power pump only; hand *and* power pump; release. On the off side, in approximately the same position, there is the petrol tap. Consider the necessary actions for starting this car. They comprise turning the priming tap, priming the engine, and then turning on the main petrol supply by walking round to the opposite side of the car and setting the tap to the desired position. Then comes the actual starting of the engine, and finally a nimble leap from the driving compartment to depress the valve controlling the extra oil to the base of the cylinders—quite a formidable programme. There are one or two more things about the engine which are worthy of mention. One is the fitting of a thermostat, in a very neat manner in the cylinder head, which is still functioning to this day. Circular nuts are used on manifolds, water connections, and the exhaust system; these nuts are a particular curse when used on exhaust manifolds, as they

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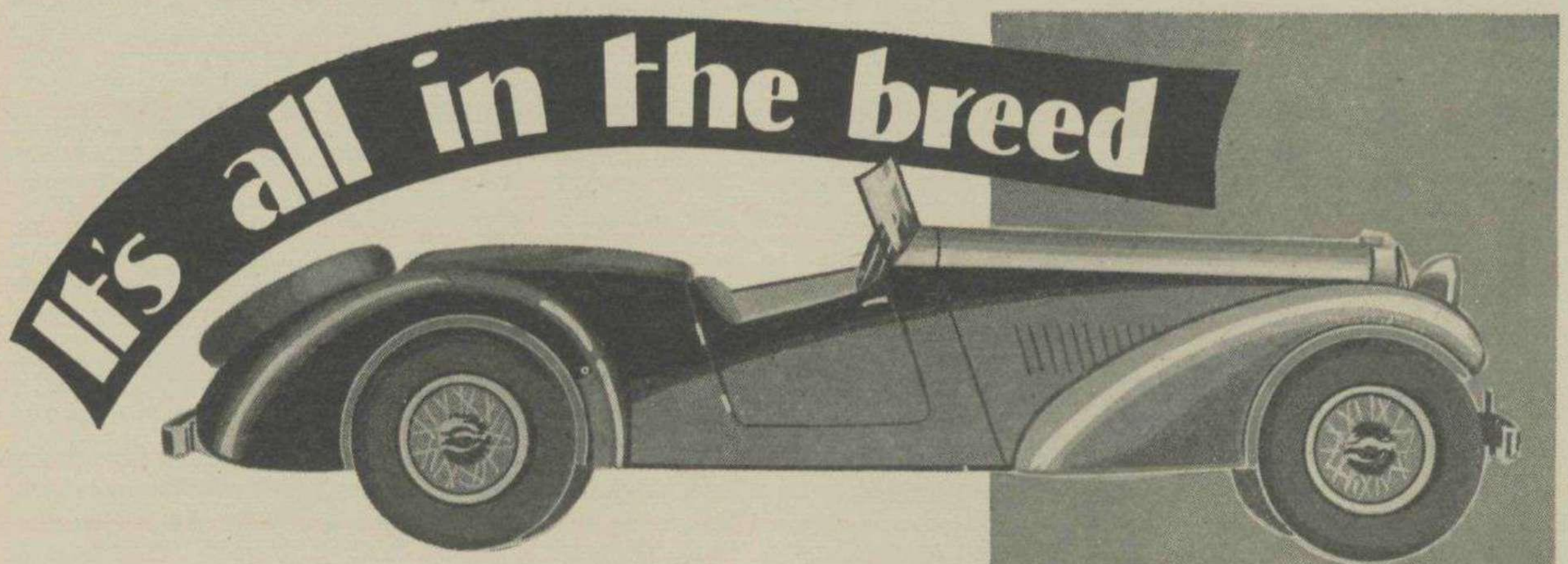
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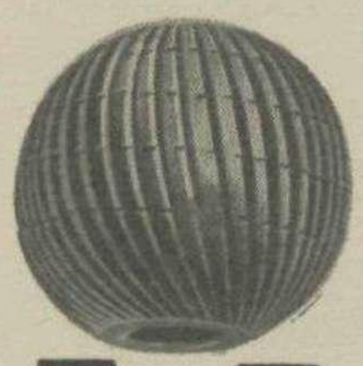
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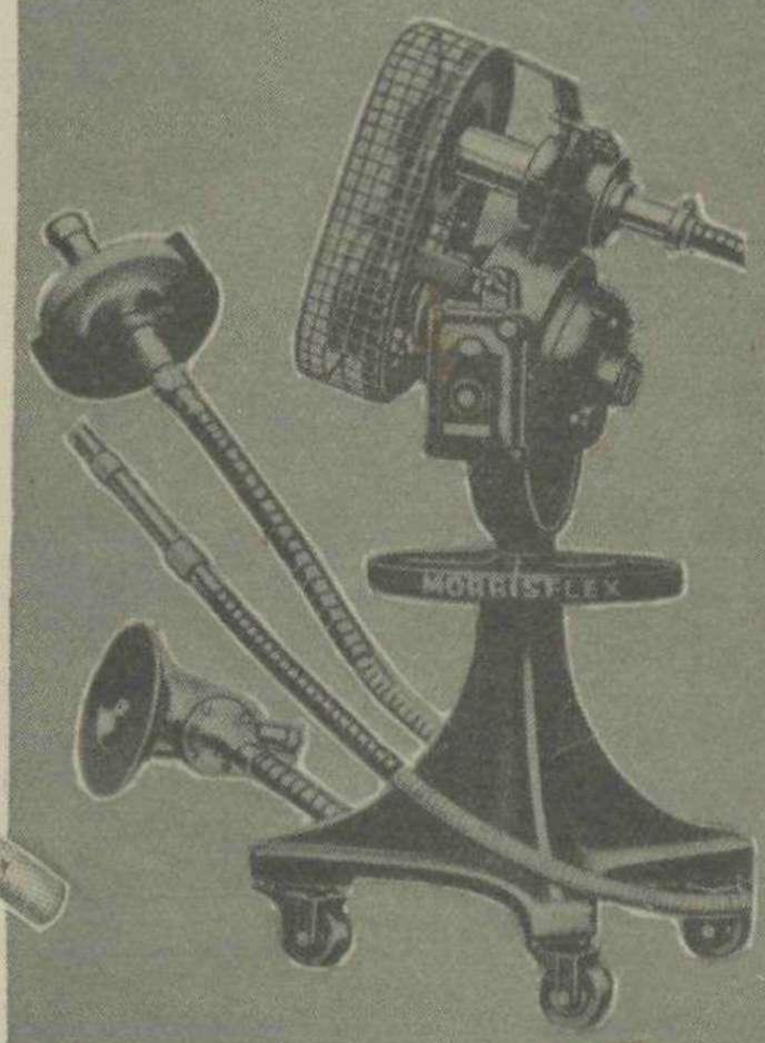
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corrode, and a ring of small-section bolts is a much more practicable proposition. There is a very crude brake situated on the magneto, which is most obviously an afterthought, and for this afterthought I can offer no explanation whatsoever. Lastly, there is the absolute wizardry of the coppersmith's art in pipe bending.

The outstanding feature of the electrical system is the operation of the self-starter. This is slung between the two cross-members supporting the gearbox, and drives by chain to a shaft running inside a hollow layshaft. At the rear of the layshaft there is a dog clutch. Pressing the starter button energises a solenoid which, by means of a lever and rods, draws this dog clutch into engagement, and when the other solenoid closes the main contacts, the starter motor delivers its power through the constant-mesh gears to the crankshaft. The only noise heard is the slight threshing of the chain, and as the solenoids are of Rolls-Royce manufacture, this system must be as efficient as it is silent. A very interesting point is the use of carbon contacts to make the initial contact and final break, while copper contacts are arranged to take the weight of current. A dynamo is slung in a similar manner on the off side of the gearbox and is belt-driven. Two-pole wiring is used throughout, black and red wires being utilised, and all the switching is done in the negative leads. The dynamo is of the plain, shunt-wound type, and is of a size more than sufficient for requirements. A substantial Lucas switch box is carried on the instrument panel, and contains three switches for head and side lamps and dynamo respectively, and the dynamo field fuse and the cut-out. A Weston moving-coil ammeter is used, and conduits and junction boxes grace the engine side of the bulkhead. Strangely enough, the magneto-and-coil ignition switch is on top of the steering column.

The foregoing is an unprepared series of notes which, it is hoped, will be of interest, but which could be enlarged upon many times, as every detail on this real engineering job provides in itself a lesson in the art of engineering. There is one point which I should have mentioned, and it is a fitting which has annoyed, I think, nearly every person who has called in to view this vintage motor, and that is the diminutive steering wheel, which is 16 in. in diameter and has a horribly thick rim, some 1½ in. in diameter. Such details as this, and the magneto brake, "do cause one furiously to think."

PRESERVE or PERISH!

by Marcus Chambers

The opinions which follow do not necessarily comprise those of this paper, but they merit an airing as representing the point of view of a well-known enthusiast. Real motor-cars, too, become scarcer every day.—Ed.

I HAVE often met enthusiasts who go round trying to locate historic racing cars with the laudable view of putting them into good order and letting other enthusiasts share their pride of possession. These same enthusiasts wrinkle their brows and furrow the surface of the cranium with distress at the apparent nonentity of the aforementioned racers. "Where," they say, "are the racing cars of yesterday?" Often they see them, but fail to recognise their old loves, so thick is the layer of enamel and false trimmings.

It is time that the subtle frame of mind known as "good taste" was more apparent among the pure enthusiasts. I will go so far as to say that there are many who will let their zest to be up and doing get the better of them before they have given the matter due consideration. If you had an Old Master, would you like to see it in a chromium frame? Would you like to see the Old Berkeley Coach swing silently round the corner with wheels and horses shod in pneumatics? Why not chromium-plate all your old copper warming pans to save cleaning them? Very bad taste, you will say, quite ridiculous, and what has this got to do with *voitures* or *voiturettes de pur sang*?

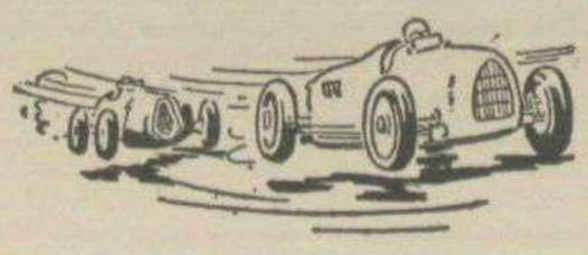
There seem to be two main classes of misguided, and the first is not such a menace as the second. He buys a good example of a particular decade. The car is spent, but it is all there. It matters not that it will consume more petrol in a day than he can afford in a month, and may even be a difficult car to handle and quite beyond the capacity of the owner. He scorns all textbooks on workshop practice and armed with the equipment beloved of "Bill Sikes," namely, a hammer and chisel and perhaps a jemmy or adjustable spanner with the jaws spread, he gets to work. The engine must be dissected in the shortest possible time in order that he may inform his admiring cronies that "there is literally no wear in the cylinder bores, old boy; not a trace of play in the big ends." The gearbox, brakes and back-axle receive the same treatment. At this point Fate steps in and he is either called to serve King and Country, or the car changes hands in boxes which range from old Players' tins to packing cases. Sometimes the "Any old iron, guv'nor?" gentleman comes along just as our hero is beginning to blame it all on the designer of the vehicle. If the new owner is keen and his book-shelves contain other things besides purely documentary works on motor-racing, and he has a respect for tools and machinery, there is yet hope. This leads me to the second line of attack. I implore the new owner to try to get as much data about the car as possible before starting on the job. Ancient or modern, a photograph of the car as it originally started life will help; please do not have a horn that plays "Le Chemin du Paradis" on a Monza Alfa.

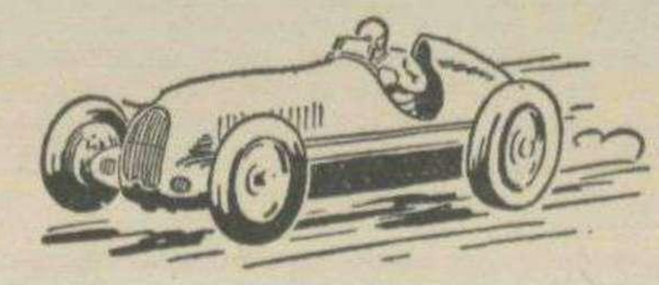
Why must enthusiasts with real technical ability try to modernise a car that in its own age was pre-eminent? I have seen independent suspension on Bugattis and Bentleys. I have seen chromium-plate and electric bells on Mercédès of the old school. There is also the radiator cowl school, who must put one of these excrescences on anything that comes their way. (The dictionary says: "Excrescence—that which grows out unnaturally from anything else.") As for non-period silencers, why should a Bentley suffer in silence, or be made to produce an almost improper noise?

Last, but not least, we have the engine-swapping fraternity. I will excuse anyone who puts a 4½-litre Bentley engine into a 3-litre "Red Label" (provided it is not a team car), but can you excuse anyone who puts a Ford V8 engine into a Lancia "Lambda" or a Type 55 Bugatti? Here are some of the cars which have come to untimely ends, or suffered major alterations. The owners were entitled to do what they liked with them, but I mourn them, both good and bad:—

The Vauxhall Villiers.
A Type 54 Bugatti.
The *Bi-motore* Alfa-Romeo.
A 2-litre Grand Prix Sunbeam.
A Thomas Special.
A Grand Prix Delage.
A Type 37 Grand Prix Bugatti.
The Birkin single-seater and Birkin 4½-litre Blower Bentleys.
An Alpine Talbot, a team car; and also many lesser known.

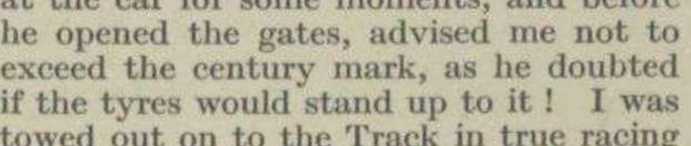
I will admit that I did once fit a down-draught carburetter to an Edwardian. It is still on my conscience. . . .





CARS I HAVE OWNED

Gordon Woods, the well-known Frazer-Nash exponent, tells of his troubles, trials and high spots.



MY first introduction to the Sport came as a small boy still at school, when I was taken, as a treat, to Brooklands by a friend who was a great enthusiast and to whom I owe my sincerest thanks for introducing me to the grandest sport of all; for I think it was the tang of Castrol-R from the exhaust of his Montlhèry M.G. Midget that got in my nostrils and therefrom changed the whole course of my life.

I was still too young to drive when I bought an old Austin Seven of 1924 vintage, and pulled it to pieces, much to my family's horror. I eventually prevailed upon another of my more adventurous friends, who held a licence, to drive it and, believe me, we had more adventures than we ever bargained for, as all journeys were carried out by night, since no insurance company would insure it, and tax had to be borrowed from another car. These adventures nearly ended with disaster on two occasions. First, when all the lights went out when descending the road from Epsom Downs. We were flat out (nearly 50 m.p.h.), careering madly from side to side, my friend holding the hand-brake with one hand, the wheel with the other, and standing on the foot-brake. I was holding the door shut, and at the same time the bonnet closed, as both had the unfortunate habit of jettisoning themselves without warning. Suddenly everything went black; a terminal had nearly fallen off the battery, which was under my seat. The sudden blackout gave me such a shock that I must have jerked my seat, which pressed the terminal back on to the battery, and there was light—enough to see that we were heading straight for the cemetery wall, a resting place we afterwards thought was a trifle premature!

The second occasion which I remember with much amusement was caused by my inability to hold the bonnet on any longer when we were proceeding at terminal velocity. The said bonnet was torn off by the wind, and on looking round we saw it had deposited itself just in front of the bicycle of a hefty policeman who was endeavouring to cycle fast enough to take our number. Needless to say, he did not take it; nor did we stop to collect the remains of the bonnet after he had hit it.

After this the car proved too much for us, so I exchanged it for another Austin Seven. This time I paid six pounds (twice the price of the original Austin), but then this was a model as late as 1925. She seemed quite modern to me, so much so that I built a special body on her, made, of all things, from zinc sheeting and plywood. I bought the steering column off a 2-litre Lagonda from a breaker's yard, and this I adapted to the chassis, putting the seats over the back axle so that my already prodigious length of leg could be accommodated, and causing the bonnet line to run the full length of the wheelbase; the seats themselves were mounted on outrigger pieces of wood, a piece of zinc sheeting screwed to their backs thus holding the spare wheel mounting. The great snag with this car was that the Lagonda steering gear, when connected to the Austin front-axle layout, gave a steering wheel ratio of half-a-turn from lock to lock. It was a trifle hectic.

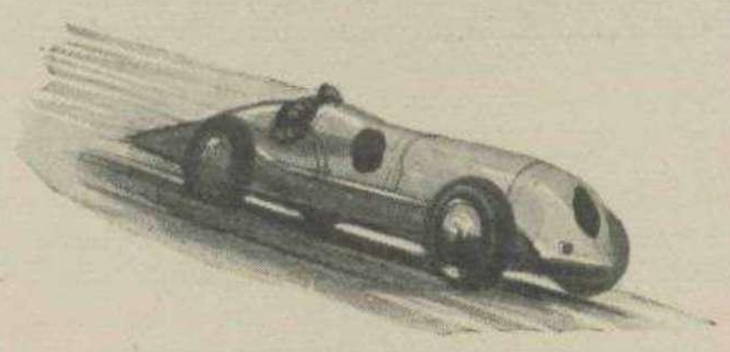
Now, although I held a driving licence, I was still unable to obtain insurance on the Austin, so I could see no chance of using it on the road until the sudden realisation that there was nothing to stop me using it on the Track, as I had just joined the B.A.R.C. as a junior member, which allowed me to use the track whenever I wished. As soon as this thought came to me I made careful plans, and the very next week-end saw me making for Brooklands, swaying crazily on a tow rope attached to my friend's "N" type M.G. Magnette. Apart from running over the tow rope once or twice, everything went smoothly. Arriving at the Track I filled up with petrol to the brim of the tank, which was gravity-feed, situated above the engine, and in my excitement I forgot to replace the filler cap. The gatekeeper caused us some amusement as he looked critically at the car for some moments, and before he opened the gates, advised me not to exceed the century mark, as he doubted if the tyres would stand up to it! I was towed out on to the Track in true racing fashion, and immediately we gained the Railway Straight, I put the Austin into second and, holding my breath, let the clutch in with a bang. From then on things happened so quickly that I can hardly remember their true sequence. What actually occurred was that the tow rope was slack when I let the clutch in, and it consequently brought the car up with a hefty jerk, throwing the majority of the contents of the petrol tank out of the open filler cap over the engine, which was hot, as I had started it several times on the way down. There was one sheet of flame, which leapt up past the plywood bulkhead, melting the rubber soles of my shoes and setting my trouser turn-ups alight. I was told that the manner of my departure from the Austin driving seat could only be described as meteoric, and the next five minutes were indeed hectic.

It was after this that my first real motor-car came along. It was found in an old lock-up—a 1931 Frazer-Nash with a side-valve Anzani engine. It was a crude and temperamental motor-car, but when it went, it went fast, and after three or four weeks rebuilding of the more dilapidated portions, I got it on the road, my first car. Yes, it was even insured. Soon I got to know its tricks, and when it was likely to break a chain, which it did often. I think it was these troubles that first aroused my enthusiasm for the "chain gang." The Anzani engine is, to my mind, a wonderfully reliable, light and powerful piece of machinery, and its only snag is its extreme roughness, which always plays havoc with the chains, and its appearance, which can only be likened to a piece of rusty agricultural machinery. The first piece of unpleasantness occurred when the crankshaft broke in half when I was going quite fast, necessitating a rebuilt engine. I did not grumble, as the engine was in such a poor state that something was bound to go sooner or later, and the rebuilt engine never gave any trouble right up to the day I sold it, even though it was completely submerged in water for twelve hours at one period.

The next mishap gave me a chance to completely rebuild the body, which I did to the best of my ability. I had gone down to visit my brother at his service station on the Brighton Road, and when the time came to return there happened to be nobody about to help me start the Frazer-Nash, which always required pushing. So I had a brain wave. I would push the car myself from the outside, and when it was going fast enough I would ram the outside gear-lever home, and when she fired whip it back into neutral. With this idea in my mind I pushed it up the slight slope at the far end of the garage drive, jammed the throttle open a trifle and summoned up my strength. As soon as I had got her really moving I jammed it in third and she fired immediately but, alas, the throttle was too wide open and the engine would not allow me to get the third gear out, and before I knew where I was the car had torn itself away from me and was bounding off by itself across the rough meadowland that separated the garage from the river, and before my horror-stricken eyes it at last hit a tree, turned sideways and rolled over the bank to disappear into the water. On reaching the bank myself a sorry sight met my eyes; the car was the right way up still, submerged to its sidelights in water and surrounded by an ever-growing cloud of oil. The bonnet had come off and was half-way down the bank, and the spare wheel had completely detached itself and was floating off downstream. I rushed back to my brother, who had nearly burst his sides laughing at the whole affair, which he had seen from the window, and armed with his walking stick I pursued the spare wheel downstream, eventually falling in during my frantic efforts to get it out.

The following day I borrowed the breakdown lorry from the local garage, and with the aid of this my brother towed me downstream to a part where the banks were less steep. This journey remains in my memory as being the most hazardous ever undertaken. The edges of the stream were very rocky and it was decided that I should stand astride in the cockpit and steer up the centre of the river hoping, of course, that there were no holes in the bed *en route*. There was one, and to my horror, half-way along the radiator suddenly dipped and disappeared below the surface, but it was only momentarily, and we managed to get through it. During the final salvage operation, which consisted of lifting the car by the breakdown crane bodily out of the river and over the bank, the chassis was actually twisted to such an extent that at one moment the front axle was almost at right angles to the rear one, and yet, later on, when the car was back on the road again, the chassis did not seem in any way distorted or malaligned. The

next few days were spent removing barnacles and seaweed. It was then that I decided to rebuild the rear end, fitting a larger tank and generally modernising the shape of the body. Unfortunately, I did not make a success of this, as the back of the body used to slide across the top of the petrol tank on corners owing to insufficient support, causing the car to appear to lean over on bends when seen from the rear. After a time the rear of the body fell into such disrepair that when a well-known trader advertised a 1932 T.T. Replica Frazer-Nash for sale, I somehow scraped the money together and bought it, trading the old 'Nash in part-exchange. The following day the trader rang up in a furious temper, saying that when he took the tonneau cover off the back of the old 'Nash to get at the chains, the body literally fell to pieces in his hands, and what was I going to do about it. I told him: Nothing! The new car was just what I had always wanted, a genuine T.T. Replica and with a history, for it had been highly placed in three Alpine Trials. The engine was, of course, the standard "12/50" Meadows and not the original, but it seemed to give plenty of power, and 80 could always be obtained on the level. The brakes were a trifle shaky, however, due to expanding drums. Petrol consumption was in the region of 30 to 32 m.p.g. Taken all round, it was a very good car and gave



me a lot of fun for over a year. But soon the old urge for yet a faster 'Nash came upon me, and seeing a Gough-engined T.T. Replica for sale, I regretfully parted with MV1620 and bought this.

My first acquaintance was decidedly negative, and throughout the time I had the car the more I drove it the less I liked it. On ringing up the Frazer-Nash works to find out its history I was greeted with great sympathy and told that the car had always been known as "The Pup," and was originally fitted with a Meadows engine, which blew up! The o.h. camshaft engine which replaced it was one of the first productions and had never run properly since it was made. On closer investigation of the car I found the chassis was broken in two places, both of which were badly plated, allowing the car to sag visibly in the middle, and the steering box was mounted on a lump of wood, which gave it a strange springiness quite foreign to Nash steering. Later I went down to see the designer of the engine, and he took one look at it and said, "Sell it quickly, it's one of the first and it is impossible for it to run without trouble!"

This was the last straw, so naturally, when I saw a Frazer-Nash Six for sale I determined to sell or part-exchange "The Pup" for it, as the advertisement said, "completely reconditioned," a phrase which caused many a laugh afterwards.

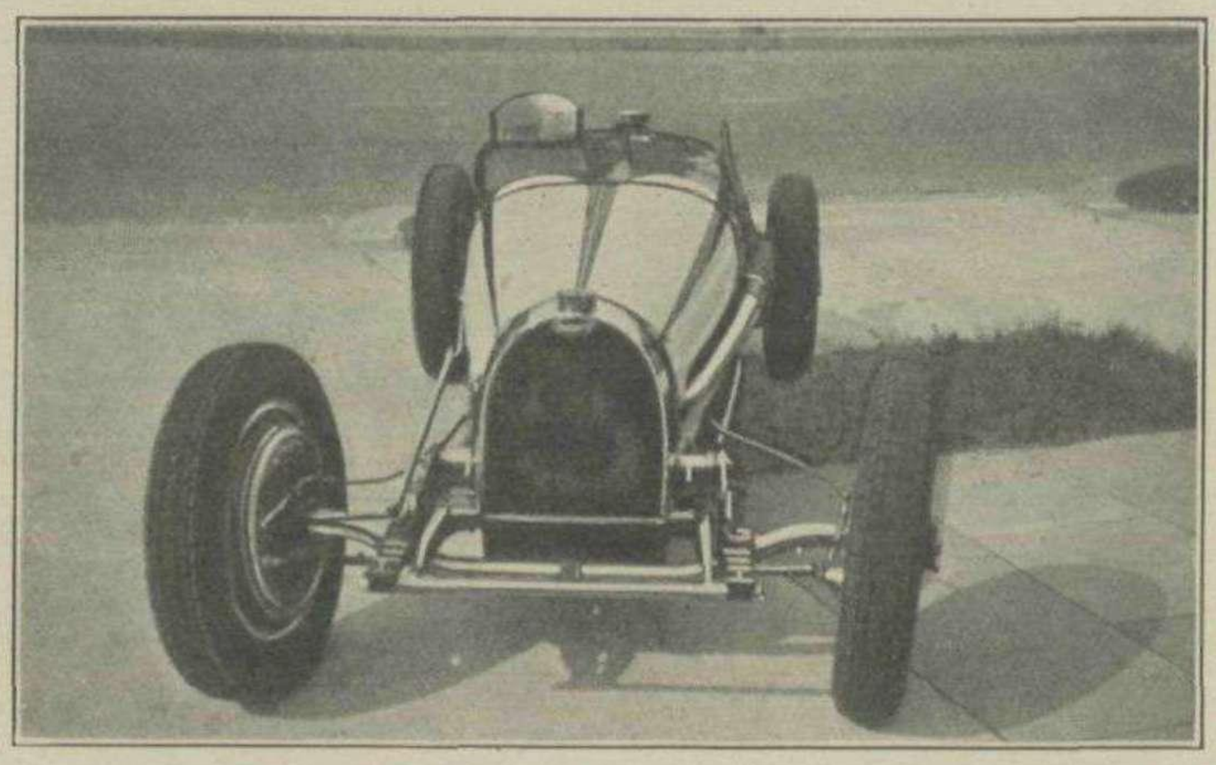
After a few letters to the owner, Sir Anthony Stamer, extolling the merits of our two cars, we met at the "Wheatsheaf," Virginia Water, and changed cars in a level swop. I will not bother you with our individual feelings as we drove away in our new cars, as Tony has already done this in his own reminiscences.

I was exceedingly impressed by the new car, despite the lack of reverse gear (an almost incurable fault). The engine was wonderfully smooth and would happily turn over at 5,500 r.p.m., very different from the old Meadows, with its peak 4,000 r.p.m.

I motored many happy miles in TJ2556 until eventually the water pump started to leak badly, and I decided to remove it and repack the gland. This was when I got my first shock, for after disconnecting the drive, nuts, etc., it did not want to leave the side of the crankcase at all. When it finally did,

EN AVANT, ETTORE!

CHRISTMAS
GREETINGS
to
BUGATTI
ENTHUSIASTS
from
JACK LAWRENCE



166, CLARENDON ROAD,
HOLLAND PARK, W.11
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"ORTHODOX MAGNIFIQUE"

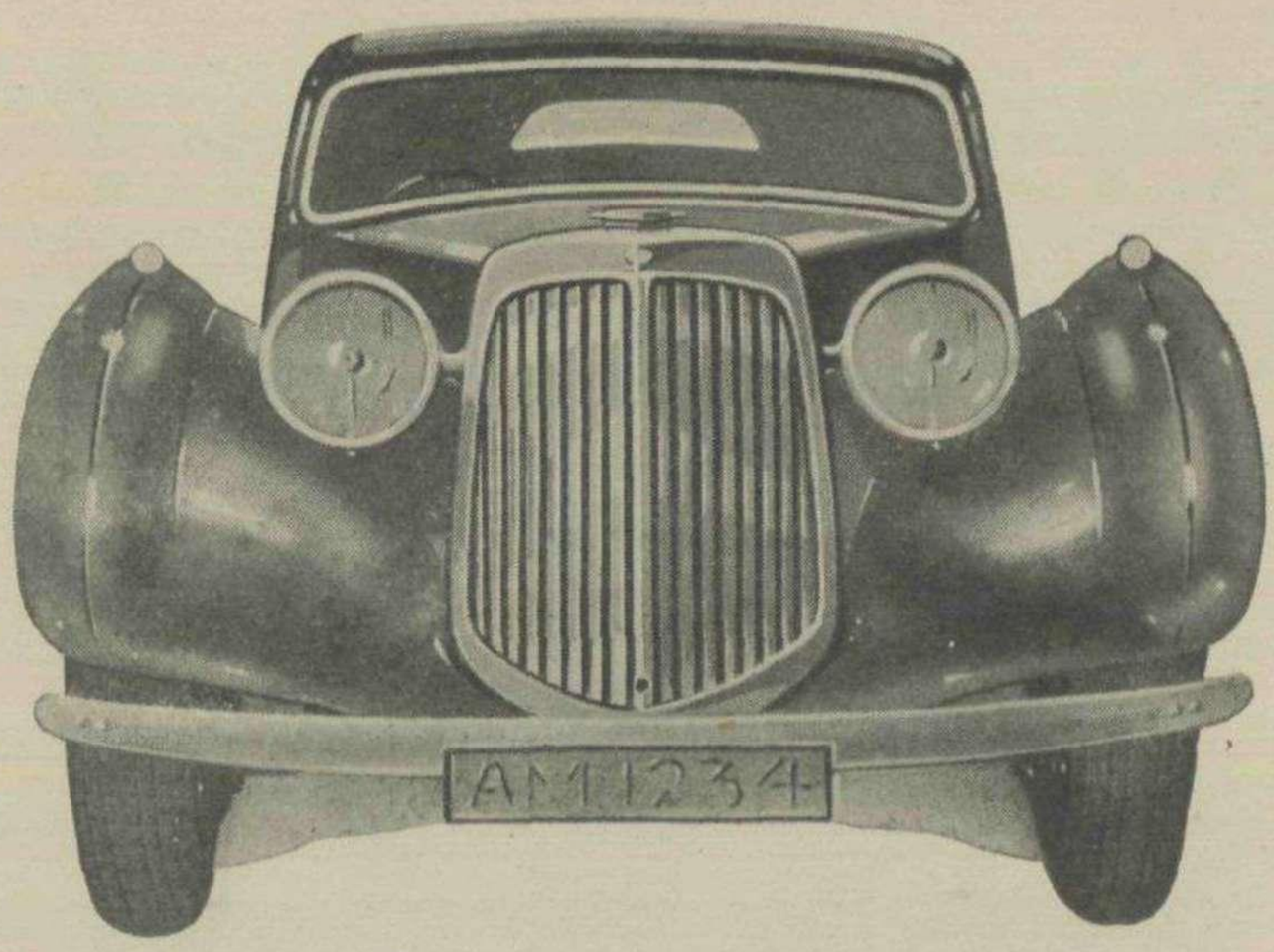
half the crankcase flange came with it, as the Wonderweld put in by the former owner had eaten the inside out of the electron crankcase and the flange had been stuck on with a mixture of red lead, Neverleak, chewing gum, and what have you. There seemed nothing for it at the time but to put it back as I found it, which I did, only substituting a piece of cork jammed in with gasket cement for the flange pieces. This dodge lasted perfectly until I sold the car. Tony had sold the car with the explanation that it had been filled with Wonderweld owing to "a slight internal leak which he could not find." This leak gave the amusing situation that there was oil if you opened the radiator filler cap, and water if you looked at the dipstick. Another spot of bother was the nearside sleeve in the back axle, which had practically worn through, allowing the back-axle near-side ball race about a half-inch float up and down in the torque arm housing, also giving a variable wheelbase on acceleration and braking. In spite of all this I was very fond of the car and it gave me the greatest pleasure. I finally sold it, and helped the new owner to completely rebuild it. I was amazed at the perfect job made of the electron crankcase repair by a firm of scientific welders on a nearby aerodrome.

During the gap between buying a new 'Nash and selling TJ2556, I bought for £12 a 1928 Austin Seven, with a home-made saloon body, a truly remarkable car, always known as the "Baker's Van," which it certainly resembled. Soon after I bought it I used it as a conveyance for five people to a small celebration, and the following day I had to remove all the celluloid windows, as an elbow had been put through each one. One hot day I opened the screen to add to the blast, and as soon as I got "cracking" the vibration loosened the glass, which no longer had any support, and it promptly fell out on to the road *via* the bonnet. As it was now impossible to keep any headgear on owing to the slipstream, and as the steering was slightly uncertain and the brakes conspicuous by their absence, the car was re-christened the "Gremlin Box," a very apt name.

It then happened that I made the acquaintance of a garage owner who possessed a 1937 Frazer-Nash Six, one of the last to leave the works, or so he said, and it turned out that he would be willing to part with it for an enormous amount of cash. As there seemed to be no other possibilities about, I was forced to accept his price in order to acquire the car (ALO300), which was in perfect condition except that the steering was so heavy that I nearly went straight on at the first corner. After checking up the king-pin angles I decided that the axle must be on back to front, which proved to be the case, as on replacement the steering was as smooth and responsive as ever a 'Nash steering is. I still run this car during the week and it gives me perfect satisfaction. I cover about 180 miles and never once has she let me down. ALO300 is to me the *dernier cri* of 'Nashing, and it is with the greatest regret that I shall have to betake myself to learn something more of this "flying game" with the few who are many.

My sentiments as regards Frazer-Nash's are simply that I can think of no other sports car that can motor me as fast so economically or that could cause so many amusing incidents. Or at the same time be taken as part and parcel of one's character. I may also add that one of the truest sayings I have heard about a Frazer-Nash is: "It wasn't designed, it merely happened!"

The Proprietor and Staff desire to extend to all readers at home and abroad the Compliments of the Season, and a sincere wish that 1944 will bring peace, and with it the opportunity to enjoy the greatest of all Sport.



"The great aim of culture, the aim of setting ourselves to ascertain what perfection is, and to make it prevail"
Matthew Arnold

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SOME ADVANCED-DESIGN BRITISH SPORTS CARS

The Editor writes of Superchargers, Twin O.H. Camshafts, Dry-Sump Lubrication, and All-Independent Suspension

NO matter what his personal car, the enthusiast never fails to take kindly to the type of sports car which has something out of the ordinary under its bonnet. To specify just what is meant by an engine of "advanced design" is not easy, although it is reasonable to say that its ultimate form is represented by the twin o.h.c. supercharged power-unit. On the other hand, the 328 B.M.W. engine, for instance, would be held by most people to be an engine of advanced conception, although certain quite touring, outwardly uninspiring engines have been constructed with two overhead camshafts whereas, strictly, the B.M.W. is merely a push-rod unit. Perhaps the definition of what I have in mind is best met by an engine the construction and finish of which appeal to those who lift the bonnet which covers it, the design of which shows more inspiration than that of quantity production s.v. or push-rod o.h.v. units, and which endows the car into which it is fitted with performance equal, usually superior, to that possible with engines of lesser conception and allure. You know the sort of thing I have in mind and you are doubtless all turning over the names Bugatti, Alfa-Romeo and Maserati on the tips of your tongues.

For that very reason I have dug out some pictures of specialised *British* sports cars and asked that they form a double-spread in this issue—which is the nearest we of MOTOR SPORT get to producing a Christmas number. I know that Bugatti, Alfa-Romeo and Maserati have produced very beautiful and well-tried examples of just the sort of twin o.h. camshaft, supercharged engines we have in mind. I know that the cars illustrated in our middle pages mostly did not last long and were in very limited production, which could quite well have been because there were snags of one sort or another—that the bugs were not properly gotten out, as our American allies would aptly express it. Nevertheless, I do not think we should scorn these cars. They pointed the way, they showed that Britain *could* produce engines that were real engineering jobs and not tin cases of apologetic machinery, and they serve to remind us that the continentals did not have things all their own way in this specialised field. Whether there will ever be a market for such cars again—cars which, of necessity, have to be largely hand-assembled and which need engineer-attention all their life—is another matter. Indeed, the limitations of the market probably did more than the bugs to kill those examples which were extra-short-lived. Against which, of course, the 2-litre Aston-Martin and the Alta lived successfully up to the outbreak of war.

Let me explain that this portrayal of British sports cars has been done in a sort of premature Christmas spirit and within the space limitations prevailing, otherwise I should have included certain other cars, such as the Q-type or K3 M.G.s, "Shelsley" Frazer-Nash, Rapier, Beverley-Barnes, etc. I feel obliged to refer in the text to the Triumph straight-eight because this is so typical of what I have in mind, although no photograph of it has come to hand.

The Triumph "Dolomite" straight-eight came along in time for the Show of 1934, and on the eve of the Exhibition the late Brian Twist proved on Brooklands that this startling car would exceed 104 m.p.h. I always recall Twist's remark, after several times reaching 85 m.p.h. on the run to Brooklands, that "We were filled with fresh air and ready for anything"—it has a pleasant ring these days, when eyesight and health are severely stressed most of one's time in the stuffiness of offices, and by the nerve-strain of transport in public inconveniences. The original "Dolomite" was certainly a motor-car, for it did a standing ¼-mile in 17.8 sec., a flying ¼-mile at 102.47 m.p.h., and lapped Brooklands at 98.23 m.p.h. It also got up the Test Hill in 8.4 sec., and pulled up from 30 m.p.h. in 24 ft. The straight-eight engine, of 60 by 88 mm. (1,990 c.c.) ran up to 5,500 r.p.m. and developed 140 b.h.p. It had twin o.h. camshafts driven from their middles by a gear-train, *a la* Alfa, and the crankshaft had ten plain bearings, the big-ends also being white-metal. The cylinder blocks, in two pairs of four cylinders each, heads and pistons were of R.-R. Hiduminium alloy, and crankcase, valve covers, etc., of electron. Nitrogen-hardened cast-iron liners were shrunk into the cylinder blocks. The valves were set at 90° and had three springs each, the plugs were masked, and each cylinder had its own exhaust off-take. Pump cooling was used and lubrication was of dry-sump type, with a ribbed three-gallon electron tank between the dumbirons. The engine was supercharged at approximately 10 lb./sq. in. by a Roots blower set low down on the off side of the crankcase and gear-driven. It drew from a twin-body Zenith carburetter, and there was choice of coil or magneto ignition. The compression ratio was around 6½ to 1. In unit with the engine you had a Wilson pre-selector gearbox with the delightful ratios of 12.4, 7.4, 4.92 and 4.0 to 1. The gearbox had an electron casing, was lubricated by a double oil pump, and had needle-roller bearings. The chassis, measuring 8 ft. 8 in. by 4 ft. 6 in. between the contact points of its 19 in. by 5¼ in. Dunlop Forts, had ½-elliptic suspension damped by hydraulic shock-absorbers, dual at the rear, steering asking only 1¾ turns, lock to lock, and Lockheed brakes with 16 in. ribbed drums of electron with steel liners and R.-R. alloy shoes. There was a special means of adjusting the brake clearance by .025 in. at a time. That, then, was the Triumph "Dolomite," to sell at £1,125 as a 2-seater. The chassis weight was given as 14 cwt., and the complete car as 18 cwt. The Triumph Company underwent a change of policy soon after its introduction, and very few were built, but it will be remembered that Tony Rolt ran one at Donington some years later, before he became one of our foremost E.R.A. drivers and, subsequently, a prisoner of war in Germany. Habershon and Parnell have two others, the former's developed by High Speed Motors.

About the same time the 1½-litre Squire came into being, at the factory at Maidenhead, where G.W.K. and Marendaz cars were once manufactured. The engine was basically an Anzani design, of 69 by 100 mm. (1,496 c.c.) It was supercharged at 10 lb./sq. in. by a David Brown or Marshall Roots blower driven from the crankshaft and drawing from an S.U. carburetter. The compression ratio was 6½ to 1 and 100 b.h.p. was developed, the engine running up to 5,000 r.p.m. The steeply-inclined valves were operated by twin o.h. camshaft *via* tappets, the camshafts being gear-driven. The crankshaft ran in four white-metal bearings and the lubrication system incorporated a ribbed cooler and a two-gallon supplementary oil supply float-fed to the sump. Ignition was by coil and cooling was by twin pumps driven one from the forward end of each camshaft. 14 mm. masked plugs were used. The gearbox was again a Wilson pre-selector, and the chassis used ½-elliptic springs, hydraulically-damped, and Lockheed 16 in. brakes, and had automatic lubrication. The Squire was made in two chassis lengths, the short chassis costing £950 and the long 2-seater £1,250. The Squire would do 100 m.p.h., and when MOTOR SPORT tried a long 4-seater with 15,000 miles to its credit, under difficult conditions at Brooklands in 1937, it clocked 93.75 m.p.h. over the flying ¼-mile, screen up, while in 1935 we recorded 100 m.p.h. and 10-60 in 10 sec. with this model. Some 20 m.p.g. was attained, with acceleration of the 0-50 in 10 sec. order. The short chassis measured 8 ft. 6 in. by 4 ft. 6 in. and weighed about 15 cwt, and the long 4-seater weighed about 22½ cwt. The gear ratios were 16.15, 9.5, 6.25 and 4.25 to 1, but certain cars apparently had a 3.8 to 1 axle ratio.

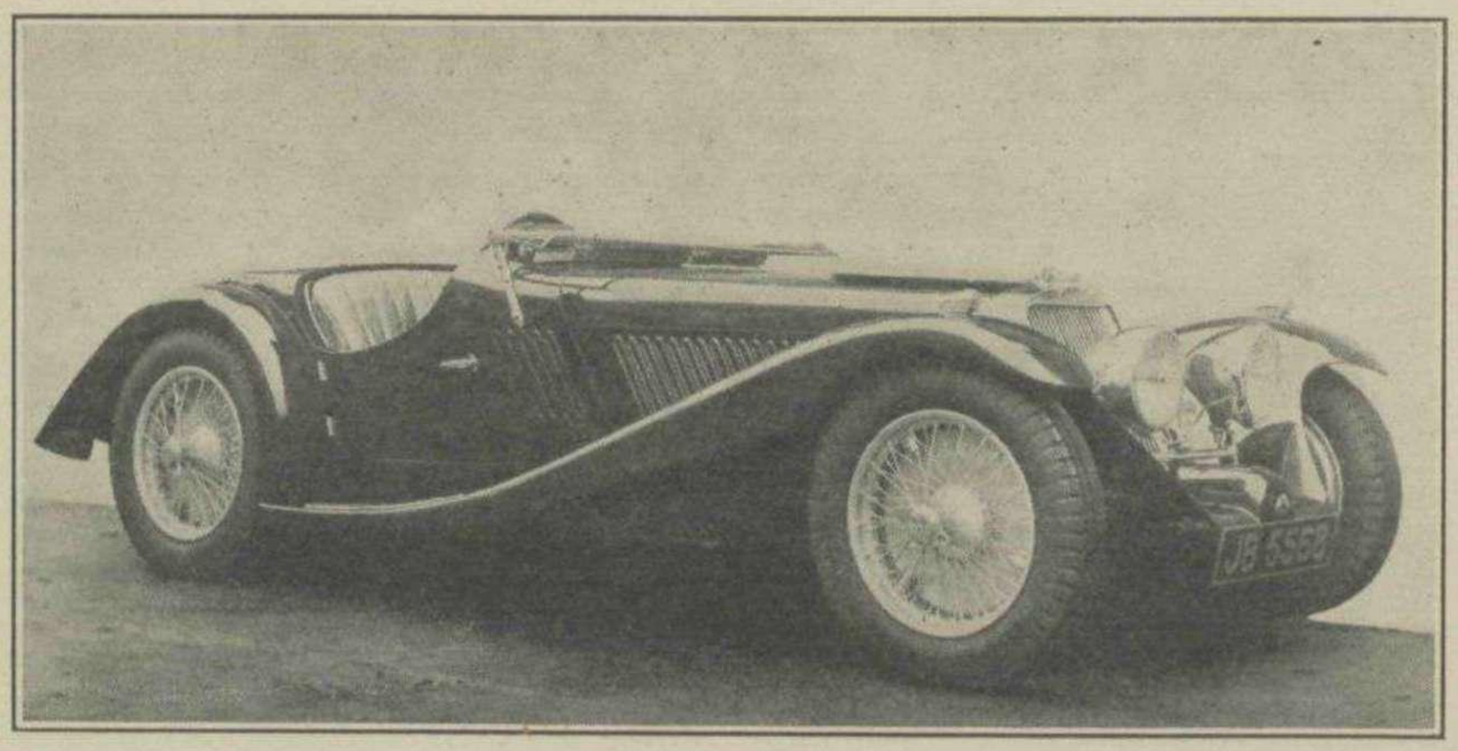
Production ceased fairly soon after the car's introduction, and Adrian Squire was killed by enemy action early in the war. Those examples still in existence, however, show the Squire to have been an honest attempt to market a car of modern conception and high performance.

Next we have the Atalanta, built near Staines, and in production up to the outbreak of war. When announced, it comprised 1½-litre and 2-litre versions with an entirely new o.h.c. engine, chiefly notable for having three valves per cylinder, while supercharged versions had a Centric or Arnott blower clutch-controlled by the driver, yet still contriving to suck from the carburetter, involving complex induction arrangements. These technicalities were, even so, overshadowed by the chassis features, for all wheels

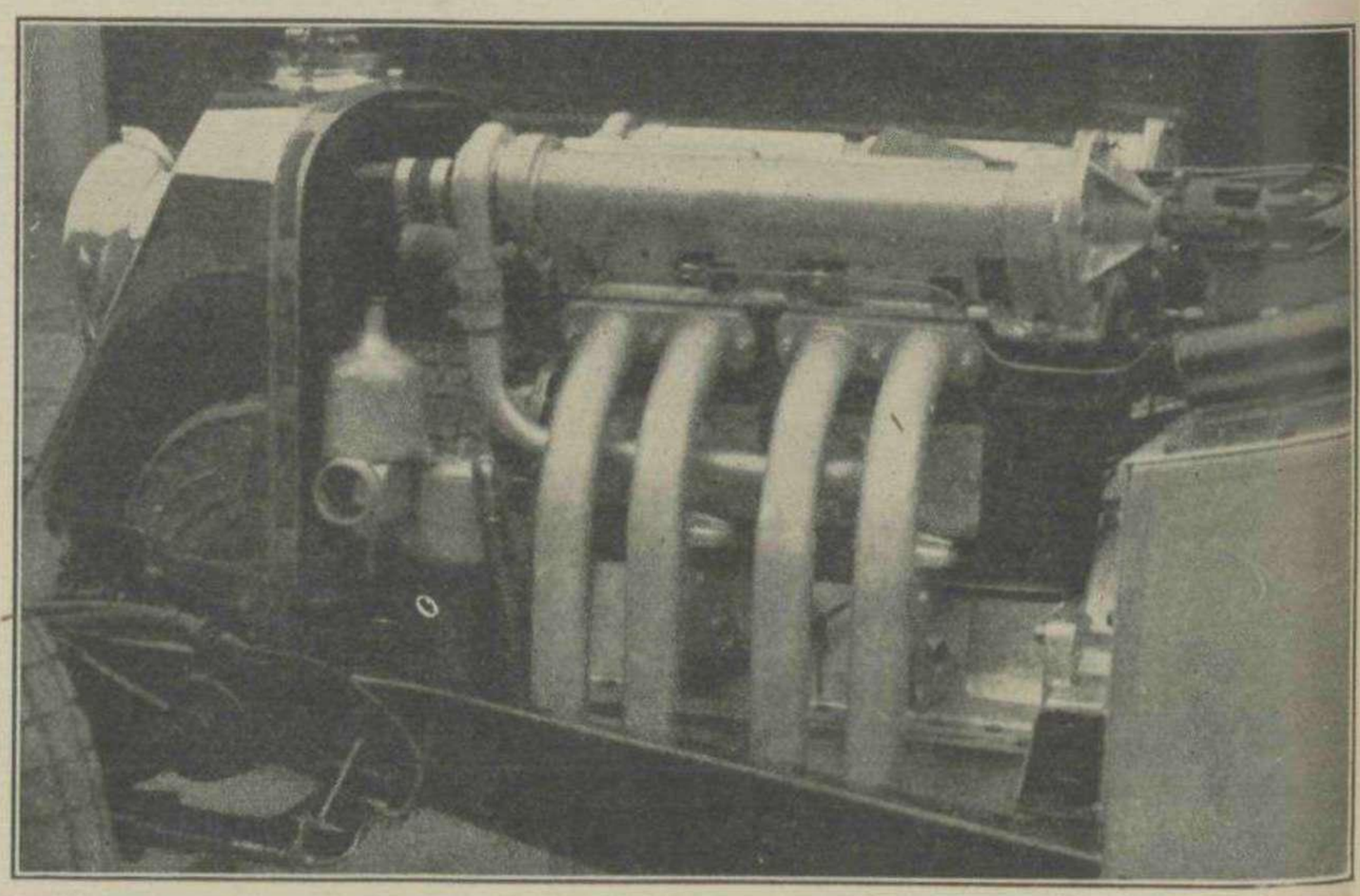
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BRITAIN *CAN* PRODUCE ADVANCED

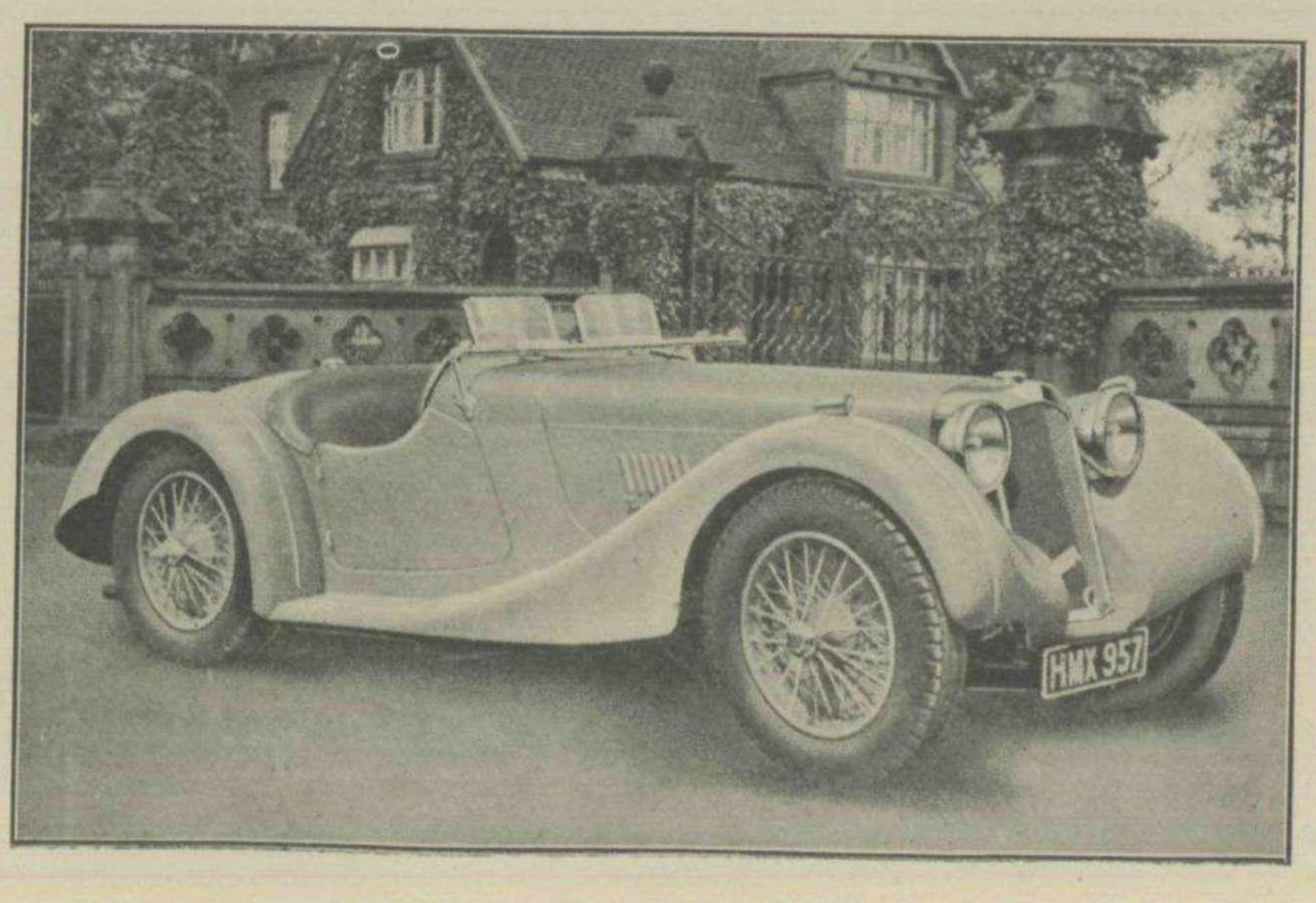
We present this collection of photographs, picked at random, as a reminder that other concerns besides Alfa-Romeo, Bugatti, Maserati and Amilcar have marketed sports cars of advanced engine design and construction, with consequent very high performance for a given swept volume.



The 1½-litre supercharged Squire, introduced in 1934, had a maximum of 100 m.p.h. at 5,000 r.p.m.

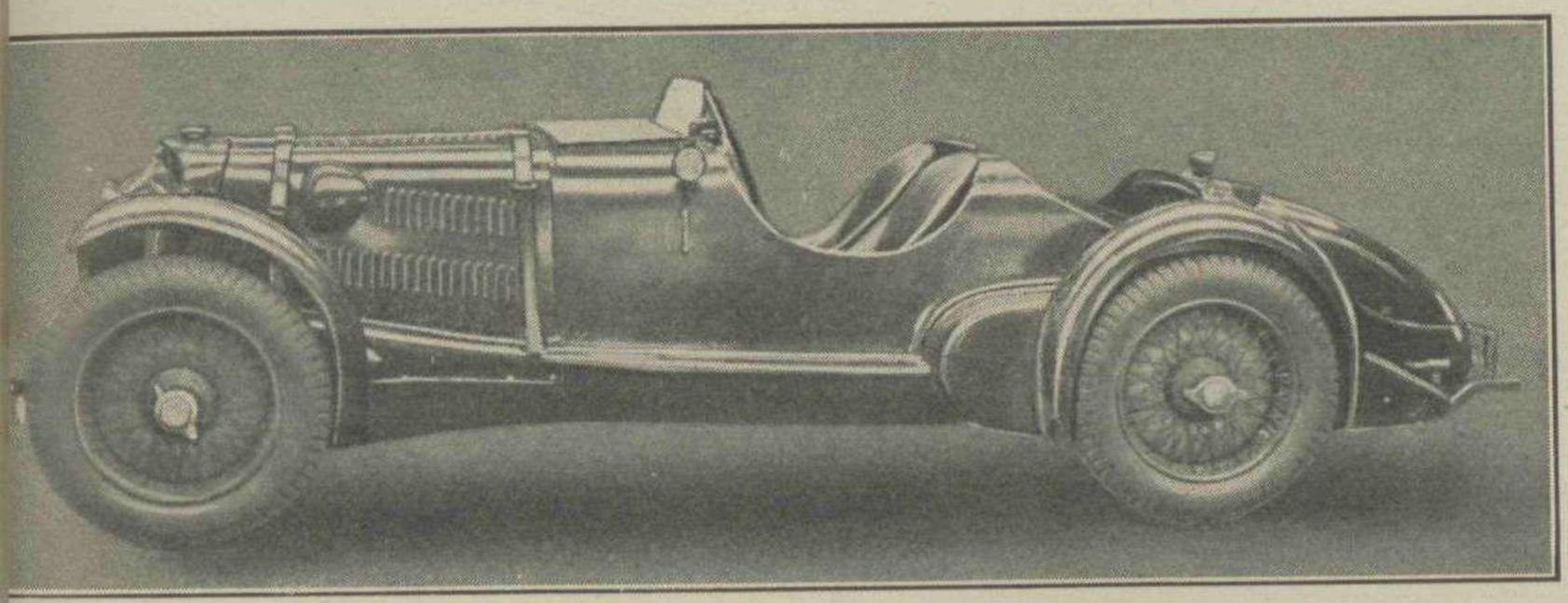


The engine of the Squire was a supercharged, twin o.h.c. 4-cylinder of basically Anzani design. Note the water pumps driven from the front of the camshafts and the ignition distributor driven from the near-side camshaft; also the separate exhaust off-takes.

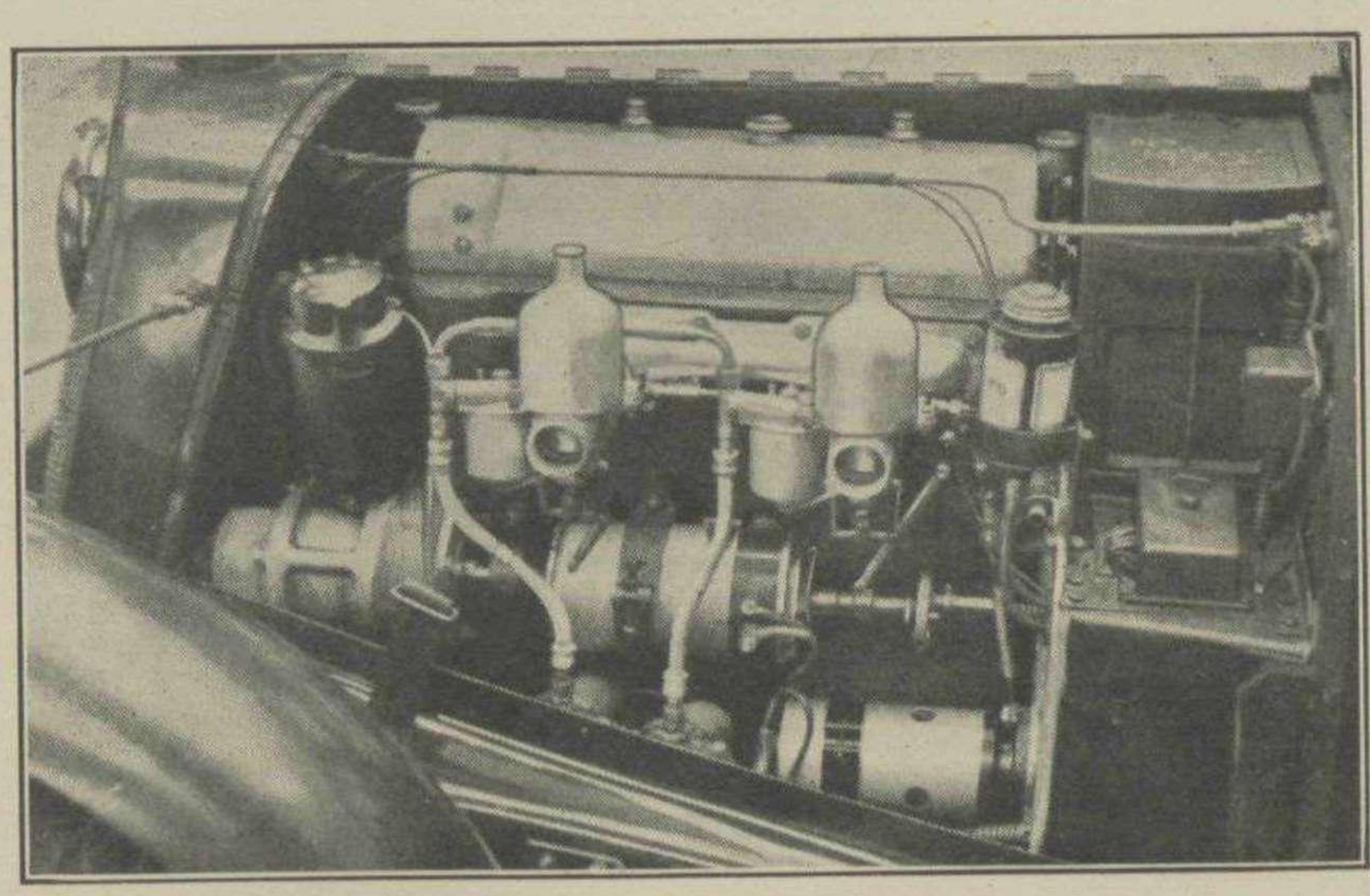


The Atalanta, available in 1½- or 2-litre size, had a 12-valve 4-cylinder o.h.c. engine and full independent suspension by coil springs. When supercharged the blower was clutch controlled, involving two separate induction tracts.

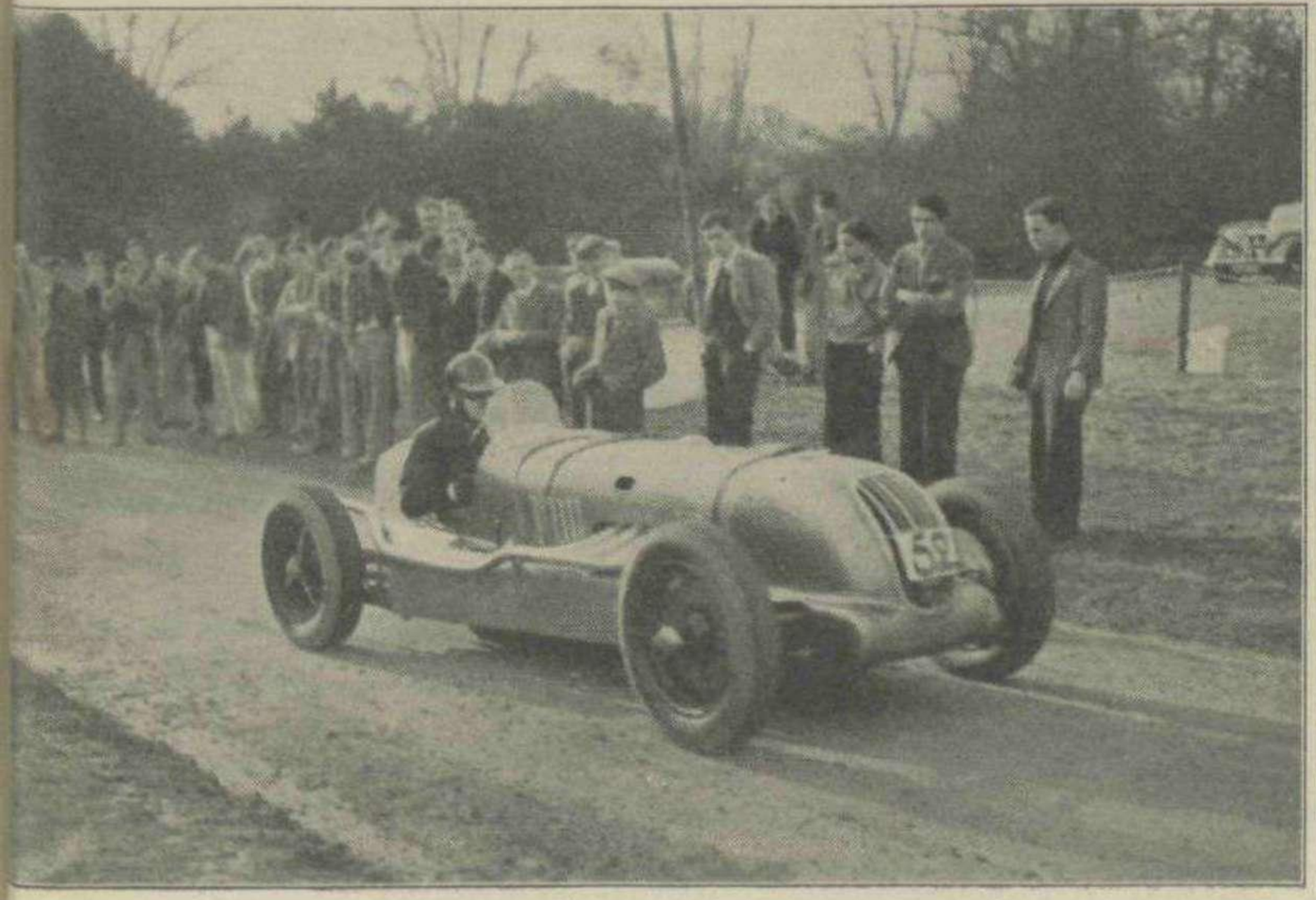
ESIGN HIGH-PERFORMANCE CARS



The 2-litre Aston-Martin "Speed Model" appeared in 1936, and, unsupercharged, could do approx. 100 m.p.h.



The engine of the "Speed Model" Aston-Martin. Note the Scintilla "Vertex" magneto, twin S.U. carburetters with separate feeds, and accessible accumulator, fuses, etc.



The Alta is here seen in 2-litre racing form, capable of some 120 m.p.h.—perfectly permissible, because it was marketed in this form, with the well-known supercharged twin o.h.c. 4-cylinder engine.

Continued from page 251

were sprung independently with coil springs, and there was a Cotal electric-charge epicyclic gearbox.

Eventually the makers put in V12 Lincoln "Zephyr" motors, but the brilliant suspension was retained. Miss Wilby introduced the Atalanta to competition motoring, and at least one of the earlier cars has been in use during the war, while Nixon is having a Talbot engine installed in such a chassis.

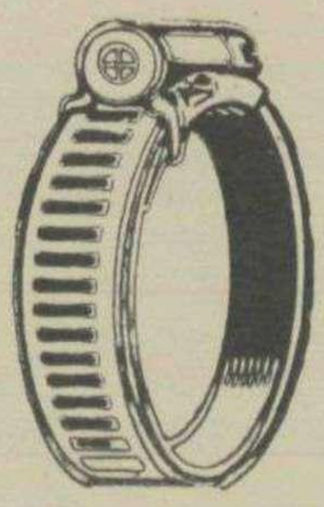
The 2-litre "Speed Model" Aston-Martin is the least specialised of the five cars I have chosen to include, having but a single o.h. camshaft operating only moderately-inclined valves, and scorning forced induction. Yet it is one of the most satisfactory and successful, and certainly does not lack performance, as "Two-Point-Six" reminded us in his article of last October, over which controversy still rages. Bertelli introduced the modern conception of 1½-litre Aston-Martin in 1927, and the Feltham works turned these excellent cars out steadily almost up to 1939. But in 1936 the 2-litre made its debut, and just before the war it rather overshadowed the 1½-litre. Normal versions were of more sober design, but the "Speed Model" retained the characteristic dry-sump lubrication system and had quite a high compression ratio, and two S.U. carburetters. A "plain" gearbox was used in this instance but with satisfyingly close ratios—4.4, 6.11, 8.33, and 11.38 to 1. When MOTOR SPORT tried a private owner's car in May, 1938, speeds of 75 in 3rd and approximately 100 m.p.h. in top, on the road (and *not* with the super-streamlined body) were easily attained, while the engine ran very cool and gave about 19 m.p.g. at ordinary speeds. The chassis cost £695, and ignition was by Scintilla "Vertex" magneto. Dick Seaman's T.T. lappery with this car live in the memory to this day.

We conclude this survey with the Alta, Geoffrey Taylor's famous child. The first 1,100 c.c. car was built by him as a hobby and so took the fancy of enthusiasts when they saw it perform in M.C.C. trials, that he went into limited-output production at the works at Tolworth, off the Kingston By-Pass. 1½-litre and 2-litre cars followed, all with 4-cylinder twin-o.h.c. engines and E.N.V. pre-selector gearboxes in that wonderfully low chassis sprung on ½-elliptic front, and ¼-elliptic rear, springs. Invariably the engines were supercharged with Taylor's own Roots blower, and in this form the 1,074-c.c. car did something like 86 in 3rd and 105 in top on an axle ratio of 4.6 to 1, while it sold for £498, and gave 25 to 28 m.p.g. The 1½-litre blown Alta was claimed to do 110 m.p.h. on a 4.1 to 1 axle ratio, and nearly 100 m.p.h. in 3rd, while the supercharged 2-litre car was capable of about 120 m.p.h. and cost £575. We have illustrated it in racing trim, which is perfectly permissible, for Geoffrey Taylor was one of the very few persons to offer genuine racing cars for sale "over the counter" in this country. How well they performed is nicely evidenced by his capture of the course record in the Brighton Speed Trials with a 2-litre car.

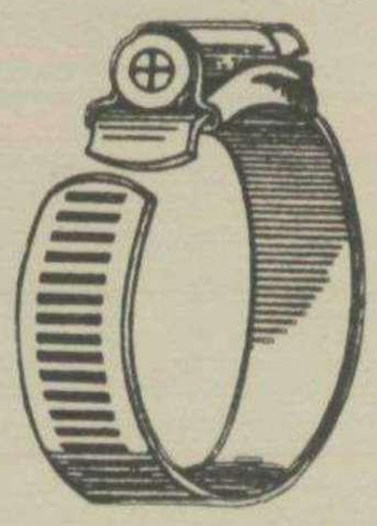
That, then, constitutes the cars in our centre-page picture gallery. The "Dolomite" Triumph, the Squire and the "Speed Model" Aston-Martin may not happen again; the Atalanta and Alta we shall hope to see on the post-war market. Whether such cars will be wanted in such specialised forms in sufficient numbers in this country after the war to justify them as a commercial proposition remains to be seen. The future will doubtless be bound up with better independent suspension, streamlined bodywork, and light-weight construction, enabling moderate-output engines to present economically a highly satisfactory performance. But there is every reason to suppose that specialised engines will continue to give a still better performance, all other factors being equal. Such engines will cost more, will need more expert servicing, and will make their presence evident, but I, for one, hope that we shall still number amongst us enthusiasts to whom this sort of thing will seem worth while. You can make a very sporting-looking car to-day and give it a foolproof and exciting performance by installing a large motor of quite straightforward design and construction, for example, a big Yank. But to my way of thinking that is only half a car, and does not savour of the real article until you have substituted something of the blown twin o.h.c., light alloy sort under its bonnet and rehashed the other vital parts of the chassis to suit. In its favour, one may say of the latter type of engine that you should be able to about halve the capacity and yet gain some 20 m.p.h., with other performance improvements in keeping, and for the same fuel consumption. As the better behaved amongst such engines no longer call for repeated plug-changes and a drop into 3rd below 25 m.p.h. or so, there is every hope that they will retain their place after the war. And so I present the centre-page spread to remind you that this country *can* produce this sort of engine, if she wants to.

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CONCOURS DE SPORT

Miss B. M. Haig, whose motoring sport before the war was mainly confined to continental events, writes in decidedly nostalgic vein.

YESTERDAY I touched 80 m.p.h.! Moreover, I was not driving one of these popular Maseratis or Lancias —I was in England. Like a ghost from a lost world, the grey A.C. competition 2-seater, with its louvred bonnet and twin spare wheels, had emerged from its shroud of dust-sheets, drawn up its permanent jacks, and with a rather uneven beat from the three-carburetter engine after two years' hibernation, crept out into an unfamiliar world to make a short cross-country journey to another garage for storage.

It was a curious sensation, after long months spent among heavy ambulances and six-wheeled trucks, to experience again the almost forgotten pleasures of a good driving position and a correctly-placed spring steering wheel. The broad instrument panel looked good, with its dials and switches. Everything was registering satisfactorily, as the engine warmed through. In the early autumn morning we travelled along the deserted roads and began to climb into the hills. At the summit of one of them a long, straight stretch lay ahead, quite empty, without a single lorry or Bren-carrier in sight. This was too good to resist; the exhaust note changed and the needle of the large rev.-counter sprang to life as it swung across, mounted to 3,000 r.p.m., and soared upwards in one short, joyful, disgraceful burst of speed. It seemed terrific to one long unused to such excitements.

Now the dust-sheets have been replaced, but this time with an optimistic feeling that it may not be long before they are removed for good. However, I am very doubtful if this car will ever find itself at the weighing-in of an International trial. Perhaps it may be possible to hold a few small events in England soon after the war, for those who have tyres to spare, but for many reasons there seems little possibility of organising any of the long-distance continental trials and rallies for a very long time. It is sad, for they were good fun, with all the strange adventures that befell us and the wonderful variety of people we met. In 1939 I suppose most of us realised that it was the last year; for those who drove on the Continent there were many signs. Now we look back over four years, at a different life.

My last link was broken when my present car arrived to take the place of the M.G., which, with its ten-pound boost and high-lift camshaft, obstinately refused to adapt itself to the dwindling basic ration in 1940. I ran this car in the last Paris–St. Raphael. It was not a very suitable car to enter for a five-day trial, with climates ranging from Swiss snows to Cote-d'Azur sunshine, but I thought, anyway, it would be an experience. It was! However, contrary to all expectations, I did finish. Anyone who has owned a small supercharged car will know something of their unbalanced mentalities. This M.G. was no exception. Its behaviour before every speed test was unvarying; during the last few miles of the preceding *etape* sudden signs of a temperamental crisis would appear; plugs would start to oil-up, flat-spots appear and, finally, the whole engine would die, amid a dismal swan song of spits and bangs. Frenzied activity on the carburetter seemed to produce little or no improvement, while precious minutes flew past (there was never much time on this trial for mechanical adjustments). Then, when all seemed hopeless, the engine would suddenly galvanise to life, and, apparently independent of my efforts and with a healthy exhaust note, would scream its way through the test with a formidable turn of speed.

I entered for the Paris–St. Raphael from 1935 until the outbreak of the war. Miss Riddell and Countess Moy were two other British "regulars." There were always many amusing incidents. In a high-speed winter trial with short controls and frontiers to cross, things are bound to happen, and they did, unfailingly. However, with the wonderful reception that we had everywhere, the friendliness and enthusiasm of the organisers, and the last impression of the Mediterranean sunshine, flowers, mimosa, and "vin d'honneur," we were always left with the impression that it had been a thoroughly good party from start to finish.

One memory in connection with this trial, in the light of subsequent events, gives me unexpected amusement; this is when I think of the discomfort and inconvenience that we suffered every year in the hotel which was our headquarters at the Vichy control, namely, the Hotel du Parc. Many times since the fall of France have I dwelt upon the thought of poor Marshal Petain and his satellites of the Vichy Government, immersed in the sinister gloom of those expensive bedrooms, with their stunning wallpapers, central heating that never heats, and carefully-ordered breakfasts that never come! Cold, hungry and cross did we leave its rich portals, to collect our cars from the *parc-ferme*.

Another interesting rally on which to look back is the German Olympic Rally (Olympia Sternfaht von Deutschland). This took place in the summer of 1936 and was run in connection with the Olympic Games in Berlin. It was organised, of course, with tremendous pomp and efficiency; steel-helmeted sentries with fixed bayonets mounted guard at the controls, and as I presented my control book beneath mighty red banners, sprang to attention to present arms. I was driving a 1½-litre "Le Mans" Singer, and as the only British entrant I received a magnificent official welcome at every point. With my rally numbers I was issued with two smart pennants, one the Olympic flag with the five coloured rings, and the other the swastika! I decided that the latter was a little overpowering for my small British car, and that the Olympic pennant would be quite enough to use.

At Aachen, the first German control, a triumphal arch spanned the road, draped with wreaths and greenery and bearing the words "Wilcommen in Deutschland!" Again, on entering Berlin I was handed an official document with the heading "Welcome in Berlin." (On looking through these old papers to-day one has a certain suspicion that one might not be quite so welcome in either Aachen or Berlin.)

After checking in at Cologne, Heidelberg, Friedrichshafen and Nurnberg, we went to the Czechoslovakian frontier before turning back to Potsdam and Berlin. Here, in brilliant sunshine, we reached the Avus Track, and drew up at the finishing control amid a perfect welter of uniforms and an orgy of heel-clicking. I am glad to say that, out of over a hundred entries, the Singer won the highest award, the Olympic Gold Medal.

All these pre-war trials belong to the past, but let's conclude on a note of optimism with the hope that our generation may still see another Monte Carlo Rally and perhaps a few of our own particular pet trials. No doubt the cars we drive will be very different from our old "Le Mans" type 2-seaters (at least I hope so!), but if we can find anything with which to cover our wheel rims, perhaps one day we may once more be filling in our "feuille d'engagements."

CLUB NEWS—continued from page 259

overseas, especially to those in P.O.W. camps. Meetings now happen on the first Wednesday evening in each month, at the "Windsor," Cannon Street, Birmingham. Chairman: Stewart Forrest, 7, St. Martin's Lane, Birmingham, 5.

★

ENTHUSIASTS' CAR CLUB

This club continues to function in the North and to issue an interesting "Bulletin" at intervals. Hon. Secretary: D. L. Gandhi, 134, Heaton Moor Road, Stockport, Lancs.

★

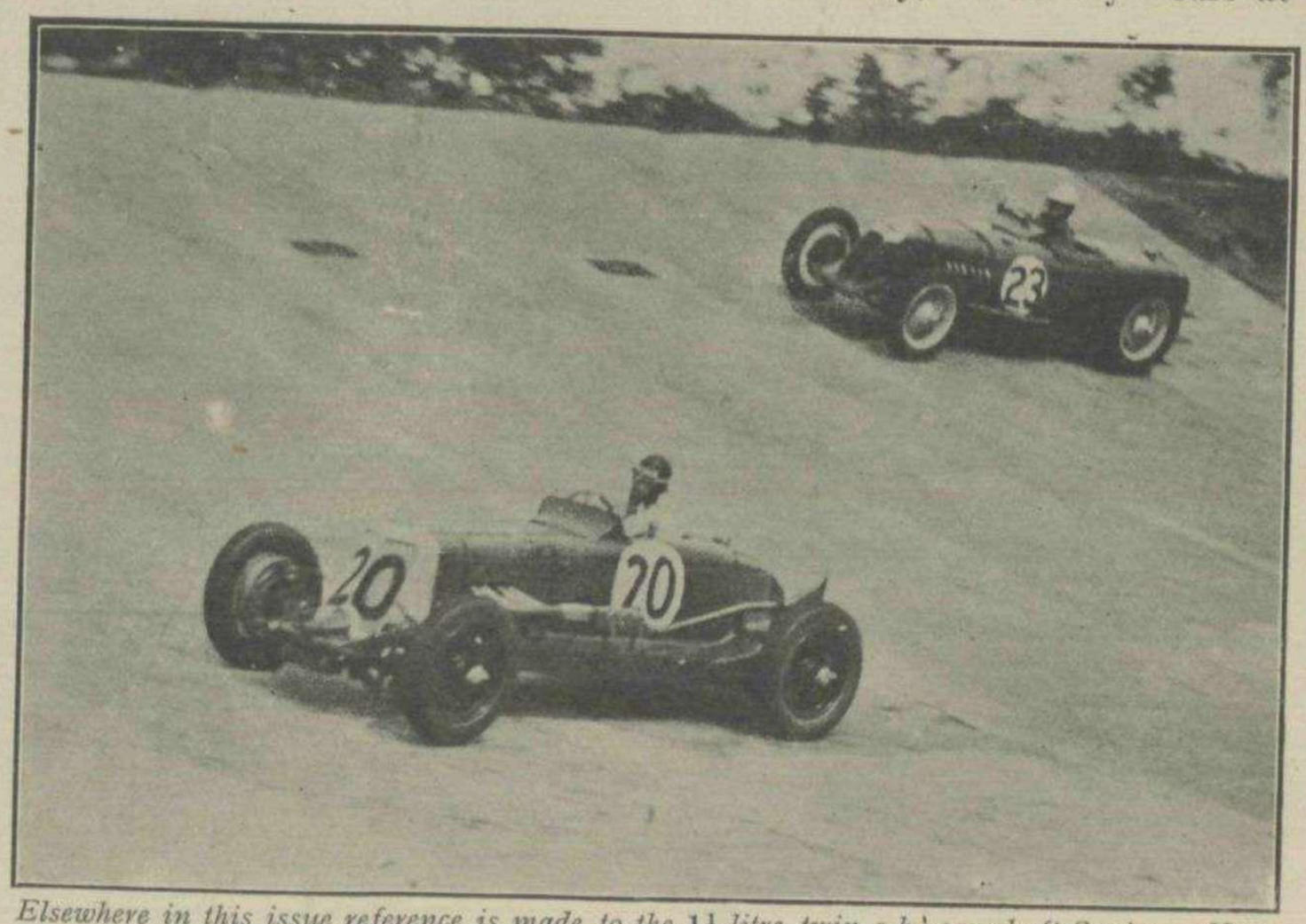
COVER PICTURE

The cover picture this month shows H. Whitfield Semmence leaving the line at Lewes in his Semmence-Special. This car had a modified 2-litre A.C. Six engine in a Frazer-Nash chassis. The car clocked 21.16 sec. at Lewes, crossing the line at over 95 m.p.h., and 23.61 sec. at Poole, and, although it was only just getting over its teething troubles when war came, it has lapped the Mountain Circuit at 68 m.p.h. and done a s.s. ¼-mile in 15 sec. The engine ran up to 7,500 r.p.m., and the car weighed about 11¼ cwt. Our photograph is taken from a rather close aspect, which makes an impressive picture; low aspects are often used also, but we prefer more natural shots. What do picture makers think?



Clues Wanted

Even the more optimistic members of the Vintage Sports Car Club admit that it seems unlikely that any more pre-1914 cars with racing associations will come to light for restoration and subsequent participation in veteran speed events. A sufficient number exist to ensure very interesting contests after the war, and only those who crave ownership of such cars really regret that all known specimens now have good homes. However, just to whet the appetite, as it were, let us recall a few cars which, although doubtless lost to posterity, were in existence many years after they were built, so that there is just a possibility that they could still be traced by diligent search. For instance, apart from the 1905 " St. Petersburg-Moscow" Itala in the Isle of Wight, whose owner will neither sell it nor run it, what has become of the 1908 " Four Inch " T.T. Metallurgique which Mortimer Batten so carefully rebuilt after the last war? Warwick Wright drove her in the T.T. of 1908, and we believe that Philip Rampon owned her before Batten. The latter had her rebuilt regardless of cost, the engine by Laystalls and the chassis by Rubery Owen. The crankshaft was ground and drilled to convert the original splash lubrication to pressure feed, a new camshaft was made, and the cylinders rebored. New pistons, valves, valve guides, tappets and bearings were fitted, and three sets of new valve caps were made up, to provide three different compression ratios. The flywheel was reduced in weight by 18 lb. and drives were provided for an oil pump, dynamo and rev.-counter. The chassis was trued and then heat-treated to obviate crystallisation, the kingpins and stub-axles were built up by Fescol, and a new radiator, of Metallurgique shape, made. The new lubrication system employed a double pump from a Sunbeam "Arab" aero-engine, driven by chain from the camshaft. The bottom part of the pump scavenged the sump and returned the oil to a new dashboard tank and the upper part supplied the crankshaft *via* a h.p. valve and the cams and timing wheels *via* a l.p. bypass. It may seem sacrilege to thus convert such an historic engine, but it was excusable, for in the I.O.M. the timing wheels failed to stand up to lubrication by screw-down greaser! The bills for this rejuvenation came to nearly £200. Then matrimony intervened, and the car was roughly assembled and sold to Eric Vereker, to whom we are indebted for information about the car. This was early in 1928, and as Vereker was due to sail his father's yacht through the French canals to the Mediterranean that summer, he decided to sell the car, but no one showed any desire to possess her. That winter work on the yacht kept Vereker busy, and the next summer he sailed to Holland. Incidentally, the family's cars at



Elsewhere in this issue reference is made to the 1½-litre twin o.h.c. camshaft Squire. Here a special single-seater version is seen in the 1935 500 Mile Race at Brooklands, driven by Fontes and about to be passed by a Riley.

that time comprised a "Boulogne" Hispano-Suiza, and a Renault 45, and the Metallurgique seemed little more than a curio. However, in the winter of 1930 work was commenced on her. The clutch, brakes, gearbox and back-axle were found to be original, the clutch having the expanding bronze shoes which gave the marque its name, and the brakes having internal-expanding bronze bands. The clutch and brakes were in poor condition, but Vereker managed to fit new clutch levers, clutch shaft and ball races and new races in the back axle. He had bought a 1914 sports N.A.G. intending to transfer the beautifully made, wooden, pointed-tail body to the Metallurgique, but, anxious for a drive, he merely put on sheet iron wings and bonnet, and a 3-ply body. The engine started after a short tow and a very brisk drive ensued, the clutch being useless except for get-away, but the gears going in well nevertheless. Vereker describes the get-away as the greatest he has experienced, before or since!

Shortly afterwards lack of garage space made it necessary to get rid of her, and Vereker sold her, with the N.A.G., for £8, because he rather liked the youngster who came to see her. It was then 1931, and when the Vintage S.C.C. was formed soon afterwards Vereker could have kicked himself. He had reason to believe that the Metallurgique would be the fastest of the pre-1914 cars. When Oscar Cupper brought it to Brooklands later in 1908 he exceeded 100 m.p.h., so there were certainly great possibilities. The engine had its four cylinders in two pairs, each measuring 100 by 170 mm., the capacity being 5½ litres. The crankshaft ran in three bearings, the con.-rods were tubular, and 105 b.h.p. was claimed at 2,500 r.p.m.

The exhaust valves were in the heads, push-rod operated, and the inlet valves at the side, in cages. There was a Zenith carburetter feeding into an oval-section manifold, and Siamesed ports. The cylinders were *de saxe*. The original system of lubrication was drip feed to cylinders and main bearings. Cooling was by pump, and the pistons were cast-iron. The gearbox gave ratios of 2, 4, 6 and 8 to 1; the rear axle had semi-floating shafts and a differential. The foot-brake worked on the transmission. The wheelbase was 8 ft. 2 in., the track 4 ft. 8½ in., and the tyres 820 by 120. Suspension was ½-elliptic front, ¾-elliptic rear. The chassis was extensively drilled and weighed 15 cwt., the complete car, in T.T. trim, weighing under a ton. When rebuilt alloy pistons, composed of 4½-litre Bentley castings, were fitted, and Vereker used a rear petrol tank in place of the original scuttle tank. Where, then, is this car now? As soon as he heard to whom Vereker had sold it twelve years ago, the Editor commenced yet another of his persistent and exhaustive searches. It appears that the youngster who bought it found no use for it (in spite of the Vintage S.C.C. meetings) and that it lay for years at his father's garage in London. He entered the R.A.F. at the outbreak of war and went overseas, and the Metallurgique and his Bugatti have both vanished without trace. There is, however, some hope of tracing the old car, because we believe it was sold only 2½ years ago, although, alas, our informant said to a breaker. Up to the time of writing no direct evidence of this is to hand, and the Editor is pursuing the slenderest of clues.

News of this T.T. Metallurgique has whetted the appetite for pre-1914 ex-racing cars, and we recall two others which at least existed after the last war and which, remote as the chance is, may still be in hiding somewhere, although never discovered by Vintage S.C.C. members. The first is a 1914 Grand Prix Nagant, which finished sixth in the hands of Esser at Lyons. It had a 94.8 by 158 mm. 4½-litre twin o.h. camshaft 16-valve 4-cylinder engine and a 4-speed gearbox with an overdrive top of 2.8 to 1. Fitted with lamp and wings, it was run on the road by a Glasgow motorist, at least until late in 1923, giving 10–12 m.p.g. from a Zenith carburetter. The other is a Nazzaro, which appeared at Lewes, as a competitor, about the early nineteen-thirties. It bore a London registration—XW3431—and had sports bodywork, curiously flowing exhaust pipes coming from the bonnet side. This *may* have been a standard example, but it seems more likely that it was the 1914 G.P. Nazzaro, which Capt. Miller used to enter for Brooklands short handicaps up to 1925, modified for road use. We believe that the car was not mentioned in reports of the meeting, and as we have no Lewes programmes of this period, we do not know who drove it on its last public appearance. Can anyone throw more light on the possible fate or whereabouts of these three pre-1914 ex-racing cars?

* * *

Challenge!

In connection with the British *versus* the Continentals controversy we have received by air mail from India a most interesting communication from Lt. P. F. Whalley, dated September 28th. This contains a series of challenges to Lt. Peter Hampton, and we reproduce the letter below, for it certainly merits greater prominence than the correspondence pages would afford it. We sincerely hope these duels will take place after the war, and that we shall be invited to witness them and to report on them. We would gladly hold the stakes and judge the contests if the participants should so desire. Peter Hampton has acquired the ex-Monkhouse Amilcar Six, so that it should not be necessary for him to borrow Charlesworth's car, if he agrees to run against Peter Whalley's K3 M.G. Magnette. Lt. Whalley's letter reads as follows:—

Sir,

I feel that Mr. Hampton's letter calls for some reply. I will pass over his, in my opinion, gross under-rating of British sports car successes on the Continent, and confine myself to personal experiences which may be of interest. First of all, in 1939 I tested a Lancia "Aprilia," current model, in perfect trim, against a T.B. type, absolutely standard M.G., for acceleration from 0–60. The M.G. won quite easily. I can supply the Lancia owner's address if anyone doubts this. It was a pre-arranged and very careful test.

Secondly, I believe that the Delahayes, Lago Specials, and Delages raced so successfully on the Continent are as unlike as chalk from cheese when compared to the models of these marques sold to the public in England. I mean that the one you buy new in England is very inferior to the "publicity motors" used for racing. I further believe that they are grossly inferior in performance as well as quality from the "4.3" Alvis, 4¼-litre Bentley, 4½-litre Lagondas. I have owned a 3½-litre "Competition" Delahaye, bought new in 1938; also driven an earlier "3.2" Delahaye for big mileages, and they simply did not compare with a "4.3" Alvis I had later, though it was a long-chassis job. The "3.2" Delahaye was the roughest car I have

ever handled, not excluding " 36/220 " Mercédès-Benz, and early vintage cars of many makes. I was beaten at the Inter-Varsity speed hill climb in 1938, driving the 3½-litre " Competition " Delahaye, by a 1½-litre H.R.G. coupé. The Delahaye had been de-coked by T. and T.'s and was in perfect trim. I put my foot down hard the whole way, too ; the course is nearly straight and driving hardly entered into it.

Thirdly, Mr. Hampton's statement that the " 1,100 " blown 6-cylinder Amilcar can out-perform the M.G. Magnettes (unqualified) sounds like rubbish to me. Surely the K3 M.G. successes, which reached their ultimate peak in 1939 with Gardner's world records, rather disproves this ? The original 2-seaters could do 120 m.p.h. minus lamps and wings.

Finally a challenge. If Mr. Hampton is game, after the war, I'll back an unblown British sports car of equal litreage to beat his Type 57 S.C. Bugatti on five laps of the Outer Circuit, and if he can raise an " 1,100 " Amilcar (I believe Mr. Charlesworth has a good one), I'll race him on my K3 M.G. on any circuit he chooses. The car to beat his Bugatti is the ex-Mike Cowper Talbot, which is now mine. In both cases I'll put up a £50 stake. Further, I'll race him in his beloved standard Lancia " Aprilia " in a T.B. M.G. at the Palace or at Donington, and if he can raise a Mille Miglia model Lancia, I'll guarantee to take his pants off with an Altá, which he seems to despise.

Thanks for keeping MOTOR SPORT going ; it's the staff of life to me !

I am, Yours, etc.,

P. T. WHALLEY (Lieut.).

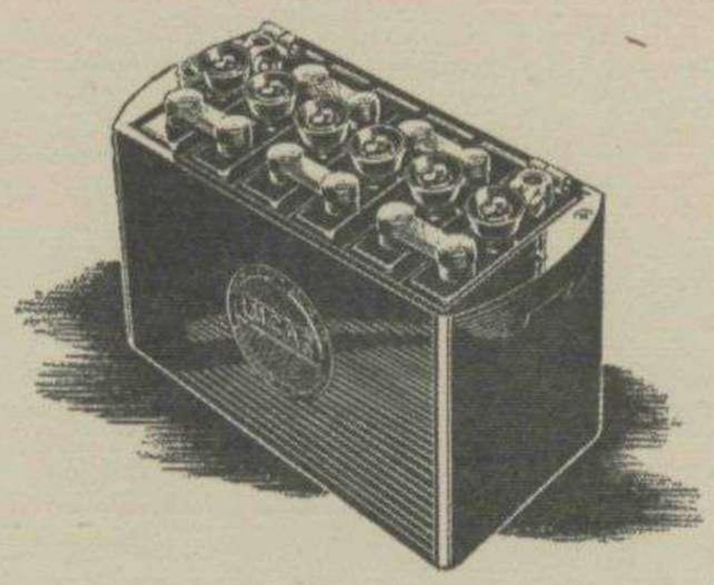
Arising out of Hampton's letters, we have now further investigated the M.G.-Maserati duels in the 1,100 c.c. class of the Mille Miglia races. In 1933, as recently described in detail in MOTOR SPORT, the M.G. Magnettes very conclusively vanquished the Maserati and Fiat cars. In 1934 Lord Howe again ran his team of M.G. Magnettes, with McConnell as team manager, the cars now having Roots blowers delivering at a lower pressure, to obviate the previous year's oiling-up troubles. This made the M.G.s slower than before, although Howe's car, with high compression-ratio, exceeded 100 m.p.h. The drivers were Howe, Lurani and Penn Hughes, and Hall and his wife. while the Germans Fork and Charly drove a T.T. M.G. Magnette. Howe crashed, and Hall retired early with water in the sump, but Lurani and Hughes finished second in their class and were one hour faster than the best 1933 1,100 c.c. time, while Fork was 21st in the race. But Taruffi won the class with his beautiful little Maserati at 64.16 m.p.h., 5.38 m.p.h. faster than the M.G. He was 2 h. 20 m. faster than Eyston's 1933 record, and 5th in the race.

OUT OF PRINT

To avoid unnecessary correspondence, those subscribers desiring back numbers are informed that the following issues are unobtainable :

1924 : Mar., Dec. ; **1925 :** Feb., April, Aug. ; **1926 :** Aug., Sept., Oct. ; **1927 :** April, June ; **1928 :** Jan., Feb., Mar., April, May, June, July, Sept., Dec. ; **1929 :** Jan., Feb., Mar., April, June, July, Aug., Sept., Oct., Nov. ; **1930 :** Mar., June, July, Aug., Oct., Dec. ; **1931 :** Jan., Mar., July, Nov. ; **1932 :** Jan., Mar., May, July, Aug., Oct. ; **1933 :** Jan., May, June, Aug., Nov. ; **1934 :** Jan. ; **1935 :** Mar., May, Sept., Oct., Dec. ; **1936 :** Jan., April ; **1937 :** April, May ; **1938 :** July, Nov. ; **1940 :** Feb., Sept., Oct. ; **1941 :** Sept.

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Club News

WE HEAR

Eric Vereker, who is responsible for much war-time essential road transport, has been using an "1,100" N.S.U. Fiat Balilla saloon as his latest mount and finds it very satisfactory. The gearbox came to pieces recently but has been repaired. It is interesting, perhaps significant, that much of the interior of the box, such as synchro-mesh design, method of locking gears, etc., is very reminiscent of Ford practice. A Bentley, which sounds like one of the short-chassis 100 m.p.h. 3-litres with a narrow saloon body, has come to light in Scotland and could be purchased for around £50. Ian Metcalfe has a Type 43 (blown 2.3) Bugatti with the typical 4-seater body. Grosscurth recently sold a s.v. Aston-Martin, the ex-Mrs. Dobson open 2-seater Balilla Fiat, and the ex-Ashwood Lea-Francis, in order to buy Piercey's Blackburn-engined Frazer-Nash Six, the owner having obtained an H.R.G., which is believed to be the original blue works demonstrator, now with outside exhaust pipe. Holland Birkett has acquired the 4.9 Bugatti which Kaye Don used to drive; it has Lockheed brakes but no engine. He has recently rebuilt his Austin Seven tricycle, using a wider rear axle and an "Ulster" engine, and is employing it professionally while he rebuilds his Type 40 Bugatti. Marcus Chambers has sold all his Bentley parts to Shortt and proposes to build an Austin Seven special and to go motoring about in a 1936 Austin Seven "Ruby" saloon. F. W. Roberts would like to hear from anyone who has for disposal a No. 8 or No. 9 Cozette supercharger and Cozette carburetter; he has a 1928 "Hyper" Lea-Francis, but some vandal has discarded the blower. It looks as if the saloon Anzani Frazer-Nash which ran in the 1928 T.T. is coming on the market, and the Editor of this paper and D. S. Jenkinson hope to share it between them. We know of a 1932 "12/60" Alvis sports saloon, with very sound and tight engine and metal body, which the owner would exchange for a 1936 Singer "Le Mans" coupé in sound order. The 100 m.p.h. type 3-litre Bentley saloon mentioned last month was in the Edinburgh area and was to be sold for £50 or thereabouts, the balance to go to the R.A.F. Benevolent Fund. It looks as if the formidable 15/22-h.p. Brazier, at Buckingham, is saved, as Alan Smith, of Orpington, hopes to restore it. Kenyon has had bad luck lately with his Singers, but by dint of much hard work, still motors in a rather special Singer Nine "Le Mans" 2-seater; he is one of those fortunate mortals whose war-winning effort entails much long-distance motoring by day and night in all weathers. In Johannesburg, H. B. Keljkens is trying to buy the Earl Howe "3.3" G.P. Bugatti, and we were able to air-graph him to the effect that Lemon Burton has a spare crankshaft assembly for it, this component being broken as the car now stands. Lieut. J. R. Normanton recently had the good fortune to buy at an auction sale a very immaculate "30/98" Vauxhall—car OE44—which has been in storage since 1933. He requests a handbook or any general information, as he is a Frazer-Nash enthusiast and has not had previous experience of the "30/98." If anyone cares to assist, his home address is "Heathside," Park Road, Hale, Cheshire. An R.A.F. squadron leader, who has owned some 52 cars and who says he has got to the state when he likes something about so many cars that he can no longer be trusted to buy without advice, seeks a 10-h.p. car that will cruise at 45–50 m.p.h. with reasonable economy, give good service, and not require rebuilding each month. His price-range he gives as £5 to £350, and Riley Nines and a Hotchkiss Ten occur to him; he would appreciate readers' experiences, and would also be glad to stand beer to an enthusiast in his area (Hampshire). Letters will be forwarded. The Sizaire-Frères mentioned in "Rumblings" last month has a 3-speed gearbox, brakes operated by enclosed cables and Dewandre vacuum servo, push-on handbrake, o.h. camshaft driven by single roller chain, the jockey sprocket for which drives the twin ignition distributors, Gabriel dipping headlamps, and a dashboard carrying thermometer, oil gauge, clock, 120 m.p.h. speedometer, ammeter and petrol gauge. With five good tyres, safety glass screen, many spares, etc., the price asked was £40; curiously, the car has no sidelamps or shock-absorbers. We were intrigued by a 4-seater Aston-Martin for sale at Rowland Smith's, for on the facia was a small plate informing us that it finished 11th at Le Mans in 1934, covering 2,435 kilos, and that 23 cars finished out of 44 starters. The car is APC591, and apparently the one driven by Noel and Wheeler. John Morris has the big Benz safely stored in a dry barn; his personal car is now a 2-seater 3-litre Invicta. A 1902 Wolseley has been on view in Morris Garages, Oxford, and Deacon's Garage, Dorchester, Oxon., had a 3-litre Bentley for sale, while there was a 1928 "12/50" Alvis tourer for sale for £25 in Yorkshire. Congratulations to Robson, on engaging in matrimony. The D.P.O. looks unfavourably on his 17-h.p. 8th series Lancia "Lambda," and he would be glad to hear of a cheap vintage sports car of twelve, or fewer, horses. Zere, of Z.N. Motors, is still building up his racing Amilcar Six, having improved the cooling, opened up the ports, lengthened the chassis and improved the streamlining, etc. He also has the ex-Brian Twist Amilcar Six, and uses an N-type M.G. Magnette with oversize tyres and K-type body as his personal car. In the Harrow Road is to be seen a slightly-battered 7th Series Lancia "Lambda" utility van—alas, it is shortly to be sent to Scotland to end its days as a workmen's shelter. A blower 4½-litre Bentley and a 2-litre "Ulster" Aston-Martin were noticed running in London last month. If anyone has for disposal 1934 issues of *The Autocar* containing Nos. 1 to 9 of the "Races that Made History" series, B.A.R.C. Year Books prior to 1926, or a copy of T. H. White's "England Have My Bones," will they kindly write to the Editor. Foxlee is very thoroughly rebuilding a 1928 beetle-back "12/50" Alvis, and Boddy hopes soon to replace his 1928 coupé of this make by his 1924 "duck's back" aluminium 2-seater with short wheelbase sub-frame chassis, ex-Michael May long-stroke engine with 1927 block on a 1923 crankcase and big-port head, *and* "Silver Eagle" front axle.

★

750 CLUB

The 750 Club sat down to a very inferior lunch on November 7th, and the promised talk on 1,000 miles a day in the States in a Ford V8 failed to materialise, due to the late hour at which members were fed. Peter Monkhouse and family, Rivers-Fletcher, Penny Fletcher, Marcus Chambers, Potter and Mrs. Potter, Douglas Tubbs, Lockwood-Marsh, Denis Jenkinson, Holland-Birkett, W. Boddy, Nigel Orlebar and his wife, F/O. Mallock and Jesty, and many others attended. The next meeting is scheduled for December 5th.

★

ANOTHER REMBRANDT

Another Enthusiasts' Gathering will take place at the Rembrandt Hotel on December 12th. Luncheon tickets cost 15s. each, and attendance at the afternoon session 3s. per head; the latter period will be devoted to a learned debate by famous designers on the best layout for a commercially-practical post-war sports car. Laurence Pomeroy, of *The Motor*, will take the chair, and we understand that such personages as W. O. Bentley, Cecil Kimber, Peter Berthon, H. R. Godfrey, W. A. Rowbotham, Cecil Clutton, etc., are being invited to participate. Orders for tickets had commenced early in November, and immediate application should be made to S. H. Capon, 159, Upper Tulse Hill, London, S.W.2, who is handling this side of the organisation for A. Rivers-Fletcher. Profits go to the Royal Armoured Corps Fund.

★

MIDLAND ENTHUSIASTS' CLUB

This club recently held most successful meetings and a dance, a substantial sum being handed to the Merchant Navy Comforts Fund as a result of the latter. Membership is hoped to exceed 100 by the new year, and the club sends seasonal greetings to all enthusiasts in the Forces

Continued on page 255

Letters from Readers

Sir,

Whilst I found Mr. Hampton's article very interesting, I would like to say that I entirely agree with Mr. A. F. Brookes in both his letters to MOTOR SPORT. Mr. Clutton was, I think, the first to sweep aside all British sports cars, presumably because there is nothing quite comparable with Bugatti and Lago Special Darracq, which I suppose is true. But that gentleman also admitted in his article, "Vintage *v.* Modern," that the modern Mercédès was woolly-engined (like a good many others), and the Alfa-Romeo completely rotten.

Apart from patriotism what I dislike about foreign cars is their low-roofed saloon bodies, hard cloth seats, sparse instrument boards, and fixed screens, sometimes too sharply sloping. On the design side there are such dubious features as gravity petrol feed, front wheel drive, Cotal gearbox, and total independent suspension. They do not in every case have a good i.f.s. system either. As regards the spares question I say, "Hear, hear," to Mr. Dix. The same applies to other things like instruments, which sometimes talk only their native language. Then we all know that make which dispenses with a starting handle, another with a very inadequate-sized battery, and that one that requires three carburetters to produce 55 b.h.p. from a 2-litre engine. Finally, judging by their second-hand prices, their lasting qualities and reliability do not seem to be too good.

I realise, of course, that I have been generalising and that there are a few outstanding continental cars, but only about five out of three other large car-producing countries against our own, which has no *autobahns* demanding high speeds, and not so many bad roads, which have contributed to the advancement of independent suspension. Talking of high speeds reminds me that streamlined bodywork seems more forward on the Continent, although it is strange that, since it was proved in 1935 by Adlers, even in 1939 streamlined cars were not tumbling off the production lines. The vaunted Fiat "1,100" was a special job, and the best small streamlined car, to my mind, was the 1938 Steyr. I have also noticed that, in general, continental cars are higher-geared than our own, except Frazer-Nash and H.R.G. Does anyone know why this is so? I am stumped there!

Defending the British car is a big subject, and, summarising, I would say that, while all are not perfect, most are good, honest jobs, with performance more dependent on individual tuning, and more amenable to it than foreigners. On the question of feel, personally I am not faddy, as long as a car steers well on the straight. I have always found that I could corner faster than most people, and my own opinion is that, on the whole, British cars are not as bad in these respects as some people make out.

In conclusion, I agree with Mr. Fitzpatrick about the d.h. coupé body, although I have often wondered whether it is possible to fit a tonneau-cover to it. I would also like to mention that I have ridden many pre-war miles in all conditions except absolute blizzard on a thing called a motor-cycle, and enjoyed it. Indeed, I have been interested in motor-cycles since the days when their riders wore multi-coloured berets, and agree with many of Mr. Clutton's views in his article of some time ago, "Shall We Go Motor-Cycling?"

I am, Yours, etc.,
R. W. J. CLARKE.

Birmingham, 21.

* * *

Sir,

In reply to C. W. P. Hampton, I think that he is rather narrow-minded in some respects.

For instance, the "half-wit" who wrote a lot of "bunkum" on Lancia "Lambdas" and other continentals merely wrote what was in a large measure true, viz., that whilst being good cars, they were *not* as good as other "half-wits" made them out to be.

Far is it from my mind to sneer at the continentals, many of which, like the Type 540K Mercédès-Benz, 328 B.M.W., Le Mans 2-litre Peugeot, and also a super streamlined Delahaye (type unknown, but featured in the cigarette card series in 1937) I admire immensely. All I maintain is that, as far as I am concerned, British cars offer better value for money, in performance, and breeding.

However, everyone knows there are two sides to every argument, ours and the wrong one!

I am, Yours, etc.,
"TWO-POINT-SIX."

* * *

Sir,

Without wishing to become embroiled too much in "Two-Point-Six's" argument, I think the final comment by the Editor referring to "race bred cars" raises an interesting side line to the duel. From 1924 to about 1932 all the well-known sports cars took an active part in competitions. In the Irish G.P. and T.T. races of 1928 and 1929, for example, we have such names as Alvis, Lea-Francis, Aston-Martin, Bugatti, Bentley, Austro-Daimler, Mercédès, Alfa-Romeo, O.M., Amilcar, Riley, Lagonda, Austin, and Sunbeam; and the rivalry between these firms and the enthusiasm created amongst the motoring public was considerable. I have by me a copy of the *Motor* which devotes no fewer than ten pages to the report of the 1925 Le Mans race, and I do not remember the last Le Mans race causing so much enthusiasm. Not only did the manufacturers enter teams and use these races as a testing ground, but, furthermore, they put on the market replicas of the T.T., Le Mans, or Ulster cars, and it is the association of these cars with the big races of the period, together with their undeniable race-bred qualities that has caused them to be remembered and respected for so long.

Since those days sports car racing has gradually deteriorated until (with one or two obvious exceptions) manufacturers no longer supported events like the T.T. and Le Mans. Consequently the enthusiast is disappointed when he finds the entry list comprised of expensive streamlined continental makes that are seldom seen in this country, and a gallant handful of privately-owned cars in ones and twos.

After all, sports cars are designed for the enthusiast, who in turn is a keen follower of motor sport and is greatly influenced by a car that does well in open competition. Many of the vintage cars given in the above list were developed from Grand Prix racing, and further improved by the lessons learnt in sports car races. It is not surprising, then, that the real enthusiast shows a lack of interest towards the many modern "sports" cars developed from tourers and which are seldom seen beyond the car parks at Donington and elsewhere. We all know that there were some very fine sports cars being built just before the war, but I do not think they will be remembered and argued over like the cars of ten and more years ago.

I am, Yours, etc.,
E. G. M. WILKES.

Luton.

* * *

Sir,

"Two-Point-Six" may have achieved his ambition when his article appeared in the October issue of MOTOR SPORT, but, so far as modern sports cars are concerned, he seemed to offer nothing new either in fact or opinion. He did, however, manage to rid his system of much thinly-disguised exasperation with vintage enthusiasts. Evidently his verbal arguments in favour of the modern car have fallen on such stony ground that he decided to try the effect of "getting at" them through the medium of the Press, rather forgetting that the enforced regimentation of minority opinion is regarded with more than usual disfavour at the present time. He would also do well to remember that the leading spirits of the vintage movement are men who command respect and admiration by virtue of their achievements in the competition world, and the fact that they are authorities on the history of the Sport and the drivers and cars who made that history lends weight to their opinions. They have always been ready to explain quite clearly why these old cars appeal to them and why they, personally, prefer them to the modern variety. That they stand firmly by their convictions is surely no sign of affectation, but is the manifestation of a national characteristic of no mean value.

We come next to "Two-Point-Six's" somewhat confused paragraph concerning very wintry motoring, followed by a

number of rhetorical questions which he then answers to his own satisfaction, arriving eventually at his triumphantly-italicised conclusion "discomfort." As no vintagent would be so affected as to don a hairshirt and/or busby in a heat-wave, they cannot have shared "Two-Point-Six's" experience, but I am sure they will take his word as to the result. It is an inescapable fact that the pursuit of any sport is attended by a certain amount of physical discomfort, mainly climatic in character. There is no "he-man" attitude, and certainly no seeking after discomfort for its own sake, among the followers of any sport; it is just accepted with resignation, ignored, or even enjoyed, entirely according to the temperament and physique of the individual. The enthusiast who sets out on a 300-mile journey in cold and snow, who decides to ignore the discomfort and get as much fun out of the run as possible, *will* enjoy it. Surely his *joie de vivre* is to be envied rather than condemned.

In conclusion, to ridicule the possessions of those less well-endowed financially than himself cannot be considered as an argument in favour of the newer cars. Those who have purchased old cars, put them into as good running order as funds permit, often with no proper tools or equipment, have a pride of ownership and sense of achievement that mere money cannot buy. It is not surprising that when two such enthusiasts meet they find much of mutual interest to discuss, leaving captious criticism to the more dogmatic devotees of the up-to-date.

I am, Yours, etc.,
J. MEDOWS.

* * *

Sir,

I cannot agree with "Two-Point-Six" that "half this vintage stuff is affectation." We keep and use our old cars because we can, and do, appreciate well-made and beautifully-finished machinery; some of us even loathe the pressed-tin abominations that pass for cars to-day. Who can raise any pride of possession in a Sten as against owning a S.M.L.E. or P17 rifle?

Granted that most mass-produced articles do their job, but their life is usually short compared with that of the craftsman-made article, and it is this which seems to militate against one imparting something of one's individuality to them, so that they become part of one's being, while they are being used, and that to part with them or to allow another to use them fills one with a sense of discomfort until their return.

Further, the vintage-minded person is usually proud to tinker with his car, and in so doing gets an almost paternal pride of possession, but the person who merely owns a car as a means of rapid transport and no more, will never become vintage-minded and will decry our love for our old favourites.

I have had the very great pleasure of owning and driving Bentleys for nearly 20 years, and the apple of my eye to-day is my 16½-year-old 6½-litre, which is neither a junk heap, nor crawls painfully along the highway at from 25–35 m.p.h.

During this last month I have driven several models of a modern car fitted with independent front-wheel springing, etc., and yesterday, in the course of my duty, I had the too rare joy of taking the 6½-litre out. The comparison between the various vehicles as to handling, feel and capabilities was so marked that I am more confirmed in my vintage-mindedness than ever and, what is more, so unrepentant that I have burst into writing about it.

I should be very grateful if someone could find for me an induction manifold and twin carburetters (S.U.) with controls as far as the bottom of the steering column for my 6½-litre.

I am, Yours, etc.,
O. A. BATTEN.

Rushlake Green,
Sussex.

* * *

Sir,

I wish to seek the aid of any of your readers who may be versed in Lagondas. With the assistance of my brother I hope to rebuild after the war a 1927 2-litre Lagonda which is at present stored in a London garage. It is a long-chassis effort, in good condition mechanically, but rather slow in its present condition. The main drawback is a wide-ratio gearbox, and it is concerning the latter that I mainly require some information.

Is it possible to substitute a later-type close-ratio gearbox without too much structural alteration?

We hope to extract a few more hairy-legged horses by a thorough top and bottom overhaul of the engine, and I am considering fitting later type "Speed Model" pistons which would give a higher compression ratio, different camshafts permitting a longer valve-opening period, and/or higher valve lift, more advance on the ignition timing, modern type of carburetter, and possibly modifying the exhaust manifold. Any suggestions?

The whole idea is to improve the performance with moderation yet preserve the vintage characteristics.

We will be extremely grateful for any replies to the queries raised and also for any other suggestions or general information on 2-litre Lagondas.

MOTOR SPORT continues to arrive regularly despite my frequent changes of address, and great is the joy on its arrival.

I am, Yours, etc.,
H. G. HANMER (Sgmn.).

By Air Mail,
M.E.F.

* * *

Sir,

I saw with interest Mr. Clutton's mention of the Scott 6-cylinder 2-stroke giving 50 h.p. per litre.

I had one of these engines installed in my 1928 I.S. Aston-Martin in 1937, and it was one of the most attractive vehicles it has ever been my good fortune to drive.

I saw the engine giving 86 h.p. on the dynamometer after it was first built up, and McCall, the designer, said, if I did not mind a heavy petrol thirst, I could by port modifications have 126 h.p. from it, or for sprint work, 170 h.p. with a frightful consumption. This is in all cases unblown. In the last case, of 86 h.p. per litre, the engine could never be restored to normal. The engine was of 2-litre capacity.

The car would readily exceed 80 m.p.h. with the "touring" layout of engine, and gave a marvellous acceleration with

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PAIR 5-in. Smith's Speedo, rev.-counter, £8 10s. Scintilla Vertex, 6-cyl., £10. Write BM/WLTB, London, W.C.1.

8/43 differential and pinion assembly, in housing, for J. M.G. or Minor, 45s. M. D. Tooley, 28, Queen's Road, Colchester.

ALVIS "Speed 20" chassis, engine just rebuilt, P.100 headlamps, good tyres. Ideal enthusiast, £35. F/O. Wood, South Farm, Thornhill, Woolton Bassett, Wilts.

1928 Alvis "14/75" 4-seater, ideal for rebuilding. 100 per cent. chassis. £10, or offer. Salmon, 154, Prince Albert Square, Horley Road, Earlswood, Surrey.

TALBOT "G.5" chassis, complete, except engine and brake controls, good tyres, 16-in. brakes. D. Manning, "Far End," Heathervale Road, New Haw, Weybridge.

WANTED

BUGATTI, 1½, 2 or 2.3-litre Grand Prix, complete, or parts for same. F. O. Cleveland Harmer, 83, Old Oak Road, Acton, W.3.

ALFA-ROMEO. "1750" preferred. Open 2- or 4-seater. Blown or unblown. Holdsworth, Pannal, Harrogate.

WOLSELEY "Hornet Special," 1933 engine, chassis, and spares. Instruction book for same. G. Black, 630, Saffron Lane, Leicester.

ALFA-ROMEO, Bugatti, Bentley, or similar sports car. Full particulars to H. Ashwood, 20, Lancaster Mews, London, W.2.

SET of cycle-type mudguards, suitable for 6.00 by 20 wheels. F/O. Wood, South Farm, Thornhill, Woolton Bassett, Wilts.

BUGATTI G.P. or Supercharged Alfa, or ex-racing car. Complete, or requiring assembly. J. G. Peter, 1, St. Michael's Church Road, Liverpool, 17.

Spares Section,
MOTOR SPORT,
21, CITY ROAD,
LONDON, E.C.1

"12-cylinder" torque and total absence of vibration. The petrol consumption was round the 25 m.p.g. mark.

Unfortunately, owing to the underslung worm drive of the A.M., I had very little clearance under the rear of the crankcase, and this did not fit in well with Yorkshire S.C. Club trials, so I had the engine removed and was intending to have it fitted in a 2-litre G.P. Bugatti chassis, but financial stringency put a stop to that.

The conversion was carried out for me by Messrs. F. Hambling & Co., of Leeds.

I enclose a photo of the engine as fitted.

I am, Yours, etc.,

Leeds. R. WOOD.

* * *

Sir,

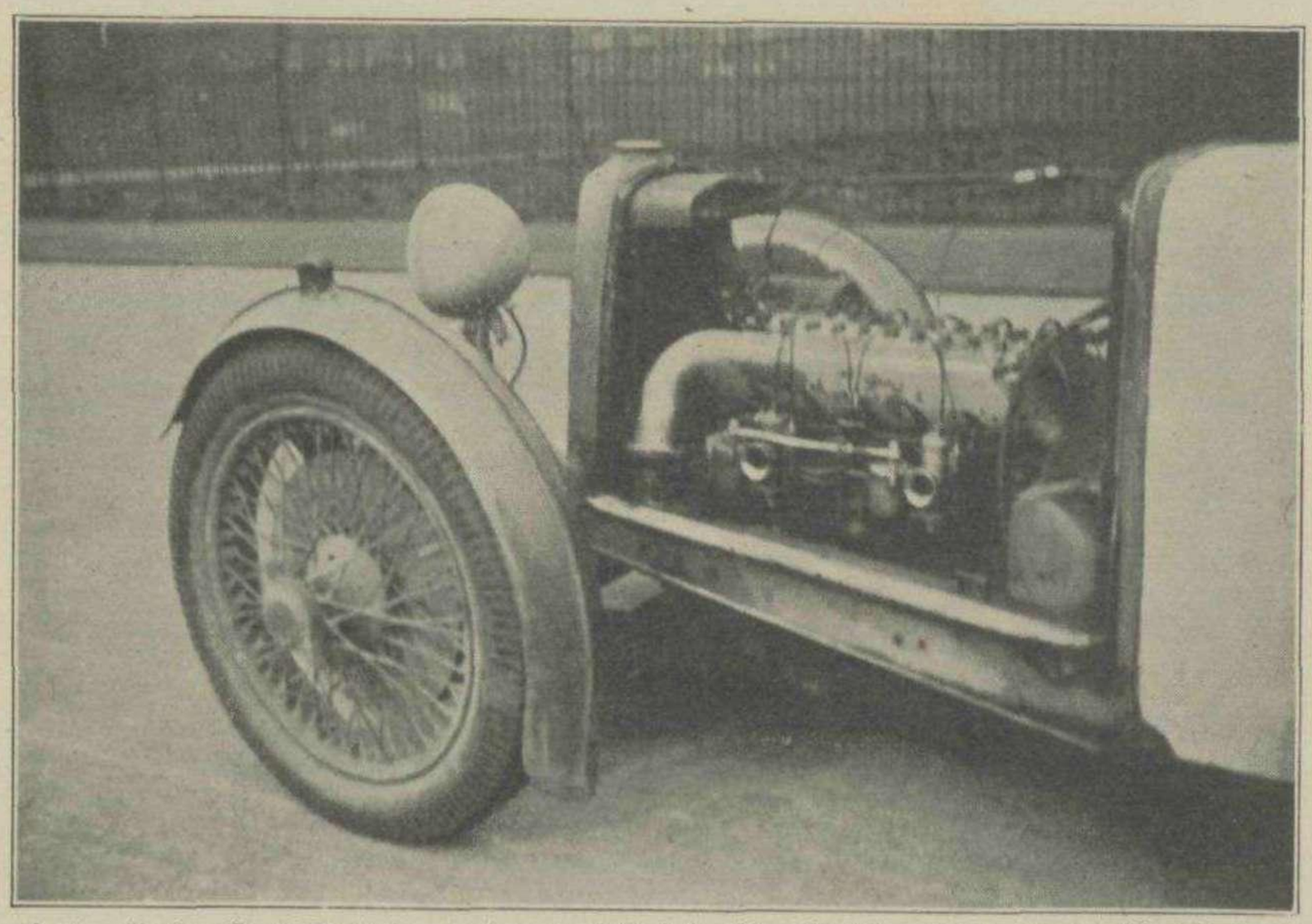
The outline for a design of a post-war sports car by Capt. J. S. Moon is very interesting and, in the main, will be wanted after the war by the connoisseur.

Some time before the war I had a complete design for an ideal sports model giving roughly the performance he mentions, *i.e.*, a cruising speed of 70–80 m.p.h. and a top speed of 100 m.p.h. for an engine output of 70 b.h.p., and total weight of 13 cwt.

I do not think that an engine with a bore of 69 mm. to peak at 5,000 r.p.m. would be reliable; the volume of heat to be dealt with calls for very difficult piston design. Further, a heavy crankshaft must be employed, and to limit the speed to 3,500 r.p.m. for safety means too big a reduction of power. It is, therefore, better to keep the bore to 60 mm. or under and increase the number of cylinders and have a bore-stroke ratio approximately square and use a supercharger. Power can be used up to 6,000 r.p.m. with absolute reliability, the piston speed and inertia stresses being kept down. Good balance should be the primary object in the layout of the engine; if good balance is obtained very light engine and transmission can be used; also heat losses in the head should be reduced to a minimum.

I agree that the gears should be of the constant-mesh type and have a bearing between each set of pinions and a light remote control be fitted under the steering wheel; also a differential lock should be fitted, controlled from the driver's seat.

Without question, the tubular backbone chassis is the lightest form of chassis



A 3-cylinder Scott 2-stroke engine installed in R. Wood's 1928 Aston-Martin—the first published photograph, we believe, of this installation.

construction, and by placing the engine at one end, gearbox and driving axle at the other, the load carried in the centre gives an ideal balance of weights.

The springing should be independent and under the driver's control.

The body will then be a shell with the wings moulded into the body lines and completely covered in underneath, and the seat should be wide enough to seat three at a pinch; the whole must be bolted to the chassis so that the body could be removed in one piece and a form of detachable coupé should be fitted; this is not an easy job to make really neat, but is required all the same.

The demand is, therefore, for an individual sports car with character, and this can only be obtained by designing the car as a whole. Such a car is under way, based on years of experience with all types of sports models, which will mark a new era without departing far from sound engineering practice.

I am, Yours, etc.,

F. H. HAMBLING.

Leeds.

* * *

Sir,

It was with great interest that I read, in your November issue, that your contributor, Mr. G. F. Lomas, had owned a Douglas car, the more so as it was a special o.h.v. version. I had one of the side-valve cars in 1924; it, too, was rather special, having been the property of Mr. S. L. Bailey, of the Douglas Company. As I think I mentioned in these columns some time ago, I exchanged one of my special Duzmos with D. E. Calder for the car. At the time I had no interest in four-wheeled speed, and so my recollections are not very complete.

The engine was a water-cooled, side-valve, horizontally-opposed twin of 92 mm. bore by 92 mm. stroke (1,223 c.c.). It was fitted with two vertical Zenith carburetters which occasionally caught fire when starting. There was, of course, no starter, but the magneto was fitted with a device which, when cranking the engine, wound up a spring which spun the armature across the contact-breaking point, thus giving a fat spark for starting. It was put out of action centrifugally at a higher speed. The chassis had half-elliptic front suspension damped by Houdaille shock-absorbers, and the rear axle was mounted on a pair of transverse bell cranks which had coil springs between their inboard extremities. The body work was definitely "Grand Prix," consisting of two staggered bucket seats and an enormous bolster petrol tank, in which the pressure was maintained by hand-pump. Mudguards were very sketchy, and I generally drove without them, as was allowed in those days.

So far as I remember, the gearbox was four-speed, with a right-hand gate inside the body, the hand brake being outside. Like Mr. Lomas, I found the steering perfect, and the brakes not so! The maximum speed was approximately 65, and the "putter-putter" of the exhaust extremely pleasant to hear. This would change to a thunderous boom whenever the perforated lids blew off the 2½ in. straight-out pipes which comprised its silencing arrangements; I always carried a supply of these lids in the car! I have before me a programme of the Essex Club's Brooklands meeting of August 13th, 1921, at which Miss D. Addis-Price drove this same car off a long start; I do not know the results, as I was only interested in the motor-cycle entrants.

I had some agreeable runs in this car (I think it was built in 1913) in the company of S. S. Tresillian, of 12-cylinder Lagonda design fame, in the 1,100-c.c. J.A.P.-engined Eric Longden he drove at C.U.M.C.C. events in those days. I finally disposed of it to the Service Company, at Cambridge. They, in turn, sold it to a coloured student, known as "Prince Paraffin," who drove it through a water splash, and the combination of the low carburetters and the fact that water is incompressible rather spoilt the engine.

I lost touch with the car until it turned up in 1932, in trials, driven by Miss Marshall (I confirmed this with Rodney Walkerley, of the *Light Car*) and then it disappeared into oblivion; may it rest in peace.

Mr. Lomas may be interested to hear that two years ago I met a fellow who had, so he told me, worked at Straker-Squires. I gathered from him that the 6-cylinder 3.9-litre engine weighed 447 pounds, with generator, and was designed by Fedden; compression ratio of 5.2 to 1. Kensington Moir's track car, with a ratio of 6.8 to 1 and lightened valve gear with return springs, gave 120 b.h.p. on a mixture of petrol-benzol-alcohol at 4,000 r.p.m. He was instrumental in painting the celebrated dazzle stripes on this famous car.

I am, Yours, etc..

Enfield. HAROLD BIGGS.

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B.S.A. 9-h.p. 4-wheeler "Scout": hood, tonneau cover, side screens, fold-flat screen, stone guard to lamps and radiator. Good condition, trial, £30. Witthames, 30, Burwood Park Road, Walton-on-Thames.

HILLMAN Spares and Repair Specialists. Reconditioned engines and chassis components. Large stocks of new and secondhand spares for "Minx" and "Fourteens." Blanchflowers, "The Motor People," Kettering. Phone : 2359.

1912 Renault 24.8, one owner, perfect in every detail, sell for £35 or exchange for D.B. 12-bore hammerless gun. Box No. 125, MOTOR SPORT, 21, City Road, E.C.1.

Continued in next column

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Sports and Racing Car Specialists in Peacetime, now fully engaged on work of National Importance, look forward to the day when we can give your requirements our undivided attention. In the meantime, we have a small stock of specially selected cars for sale which may be seen and tried by appointment.
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FOR SALE—*continued*

C. C. TURPIN, LTD., 222, Gt. Portland Street, W.1, have a selection of Austins for sale. Competitive prices. Euston 5677/8.

PURKESS offer a very special low-mileage CORD saloon which has been most lavishly equipped and improved by its one owner. First registered July, 1937, and unused since 1939; it has been brought up-to-date with the later modifications. Use of the usual adjectives would not do justice to this car, because their too frequent employment has made them negligible, but IT IS UNBELIEVABLY CLEAN for its date. Special features include sunshine roof and no-draught ventilation, dual electric petrol pumps, rev.-counter, electric clock, trafficators, built-in radio and electric vacuum gear-change. All five tyres nearly new. The *Autocar* says of this machine: "Exceptional average times are possible, for this car has no speed that can be called a cruising rate, and is virtually as happy at a full 80 as at 60 m.p.h." This road test gives a maximum of 93. Price is £450. 18, Carlton Avenue East, Wembley Park. ARNold 1962; and 1, Brentfield Road, Harlesden. WILlesden 3417.

MOTOR Racing Library for sale. Includes MOTOR SPORT, unbound, 1936–1943 (4 copies missing), "Bugantics," unbound, all 8 volumes (2 copies missing), Kraftfahrsport im neuem Deutschland, Lure of Speed, Speed, Combat, Motor Racing (Davies), Motor Racing and Record Breaking, Ten Years of Motor Racing (Jarrot), Bits and Pieces, Dick Seaman, Flat Out, Assorted Brooklands Programmes, and Year Books. Offers to Ogle, "Berrywood," Oriental Road, Woking.

HEAP of Austin Seven parts. All essentials for Special. Include lowered frame, coupled brakes. Mag. engine. Big crank. Ulster rods. Alta head. 4-speed box. 2-seater body, rough, very light, not too J2. Hood and folding screen frames. Registration £13 lot only. Birkett, 3, Pondtail Road, Fleet 588, Hants.

TALBOT 20-h.p., 1933. Preselector gearbox, P.100 lamps, open body, with folding screen, partly dismantled prior to rebuilding. Two spare wheels, also spare gearbox. Owner needs room. Offers, Sheppard, East Green Drive, Stratford-on-Avon.

DISMANTLING 200 cars, all parts cheap Albert Motors, Albert Avenue, Albert Square, Clapham,

Continued in next column

FOR SALE—*continued*

FORD Eight, special coachbuilt 2-seater roadster, blue and silver, perfect condition. New battery, good tyres, economical. £65. Hadingham, Pathlow, Stratford-on-Avon.

BENTLEY, modified "Blue Label," polished aluminium, open 4-seater, really good tyres, four spare wheels. Perfect running order. Laid up for 5 years. New tonneau. Railed anywhere. Price to enthusiast, £80 or near offer. Statham, 354, Gower Road, Swansea.

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SPORTS CARS. T. & T. interested in purchase of good sports cars. Thomson & Taylor (Brooklands) Ltd., Portsmouth Road, Cobham, Surrey.

4½-LITRE Bentley, Reg. Number YT 159, black, open 4-seater. "Le Mans" wings, condition immaterial. Marcus Chambers, 142, Hatherley Court, London, W.2.

AUSTIN Seven racing, side-valve engine, ex-works, blown or unblown, with additional studs to head and block. Any date. Marcus Chambers, 142, Hatherley Court, London, W.2.

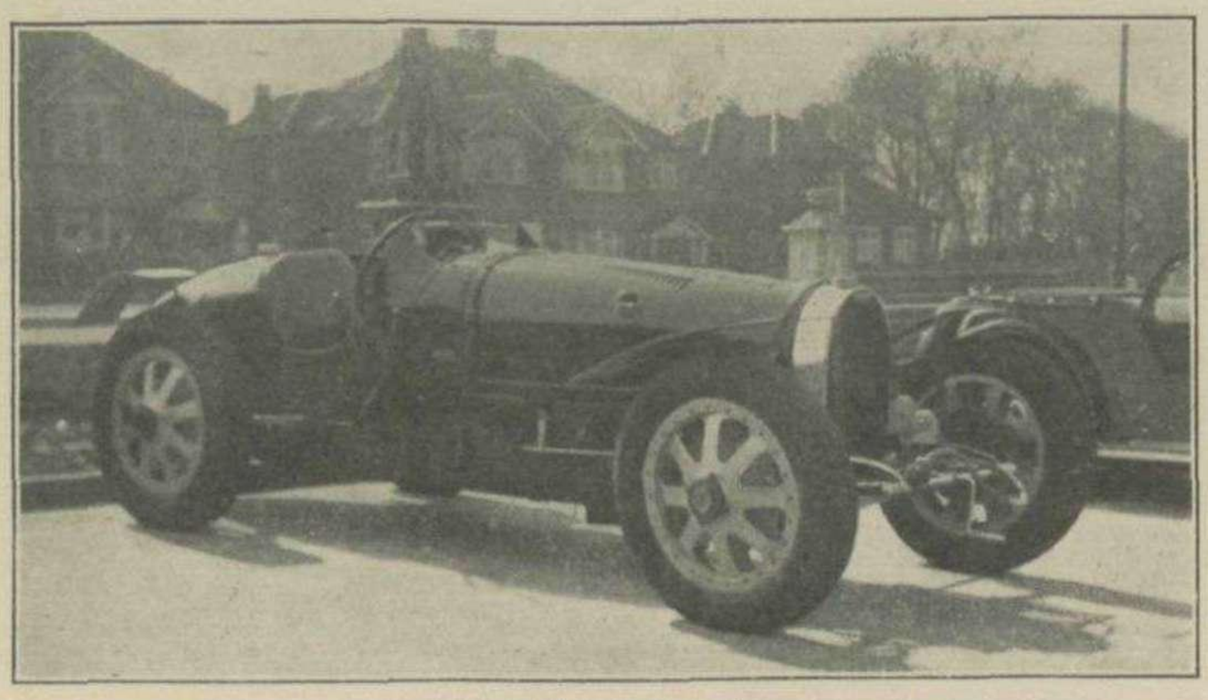
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Photograph by D. S. Jenkinson

BUGATTI CLASSICS—No.2

Photograph from the Jack Lawrence Collection

Type 35C, supercharged, 2-litre G.P. Bugatti. Produced in 1927 the 35C and 35B secured 18 first places in major races from 1927 to 1930. Consistently successful, it truly upheld Bugatti prestige. Amongst those who have handled this particular Bugatti are J. Lemon-Burton, R. S. Shapley and Jack Lawrence. The picture shows this Type 35C present at a Wartime Motoring Rally.

★ Cars illustrated in this series are not necessarily for sale, but shown for the interest of Bugatti enthusiasts by Jack Lawrence, of 166, Clarendon Road, Holland Park, W.11. Phone : Park 5705

RECENT MOTOR SPORT ROAD-TESTS

IN the issue of May, 1937, we published an Index of all the road tests conducted by this paper since it was founded, as *The Brooklands Gazette*, in 1924. From this Index we have been publishing extracts, but these did not embrace the tests published during the last six years. In order to make good this omission, we give below a revised selection, including tests published from May, 1937, to the present issue. Read in conjunction with the Index of May, 1937, it provides a reference to all the MOTOR SPORT tests—251 in all. Readers' accounts of their cars and technical descriptions of new models, moreover, are not included in this Index. Many of the issues concerned can still be supplied, at the prices given below. Please quote date of issue when ordering.

Make of Car	Issue
A.B.C. 11 h.p. 2-cyl. 2-seater	Feb. 1926
A.C. 2-litre, short-chassis, 15.7 h.p. 2-seater	July 1936
A.C. 2-litre, 16/40 h.p. 3-seater	Oct. 1927
A.C. 2-litre, 16/66 h.p. 4-seater	June 1934
A.C. "Ace" 16/80 h.p. 2-seater	July 1937
Alfa-Romeo, 1½-litre supercharged 6-cyl. Charles 2-seater (1929)	March 1934
Alfa-Romeo 1½-litre supercharged 8-cyl. "Zagato" 2-seater (1932)	July 1934
Alfa-Romeo 2.3-litre supercharged 8-cyl. "Zagato" 2-seater (1933)	Aug. 1936
Alfa-Romeo 2900B, Type 8C supercharged 2-seater (1937)	Jan. 1942
Alvis 6-cyl., "Silver Eagle" 4-seater coupé (1929)	Aug. 1931
Alvis 3½-litre saloon	Feb. 1936
Alvis Speed Twenty 4-seater	June 1932
Ansaldo 2-litre, 4-cyl., o.h.c. 4-seater	Sept. 1924
Aston-Martin Mark II, 11.9 h.p. 2-4-seater	Jan. 1935
Aston-Martin Ulster 11.9 h.p., T.T. 2-seater	Oct. 1935
Aston-Martin 11.9 h.p. 2-seater	Jan. 1930
Aston-Martin 1½-litre Ulster racing 2-seater	Aug. 1937
Aston-Martin 2-litre Speed Model 2-seater	May 1938
Aston-Martin 1½-litre Mark II, long-chassis 4-seater (1934)	Aug. 1940
Aston-Martin 2-litre streamline saloon	June 1942
Atalanta V12 saloon	March 1939
Auburn 30 h.p., 8 cyl. supercharged 2-seater	June 1935
Austin Seven Boyd Carpenter 2-str.	Sept. 1930
Austin Seven "65" 2-seater	Jan. 1934
BENTLEY 4½-litre, 6-cyl., Park Ward saloon	June 1936
Bentley 8-litre "Special" 2-seater (1931)	April 1938 & Dec. 1940
Bentley 4½-litre drophead coupé	Aug. 1938
Bentley 4½-litre Mark V saloon	Feb. 1941
Bentley 3-litre "Blue Label" "Special" 2-seater (1928–9)	Feb. 1939
Bentley 4½-litre "Le Mans" 4-seater (1928)	Jan. 1942
Bugatti 2.3-litre 8-cyl., Type 43, supercharged 4-seater	May 1930
Bugatti 3.3-litre 8-cyl., Type 57 saloon	May 1934
Bugatti 3.3-litre Type 57 saloon	May 1939 & June 1939
Bugatti 3.3-litre Type 57C supercharged saloon	June 1939
Bugatti 3.3-litre Type 57 SC supercharged coupé	Aug. 1942
Bugatti 5-litre Type 46 saloon (1929)	April 1942
CROSSLEY 20/70 h.p., 4-cyl., s.v. 4-seater	Nov. 1925
Crossley Ten, 1,122 c.c. 4-seater	April 1932
Crouch Anzani 12/30 h.p. 2-seater	Aug. 1924
DAIMLER 2½-litre 18 h.p. saloon	June 1940 & Nov. 1941
Darracq 12/32 h.p., Weymann saloon	Sept. 1924
Delage 8-cyl., sports saloon	April 1930
Delage D8/180 drophead coupé	May 1938
Delahaye 3.5-litre "Coupé des Alps" drophead coupé	Aug. 1936
D.K.W. "Special" saloon	Feb. 1938
Dodge 25.3 h.p. "Custom Six" saloon	May 1938
EXCELSIOR 5½-litre, 6-cyl., super-sports test chassis	Sept. 1927
FIAT "Balilla" saloon	May 1934
Fiat "Balilla" 10 h.p. 2-seater	Jan. 1935
Fiat 6 h.p., Type 500 coupé	March 1937
Fiat "Balilla" 1,100-c.c. saloon	March 1938
Ford Eight "Anglia" saloon	Aug. 1940
Ford V8 "30" Estate car	Oct. 1938
GEORGES-IRAT 2-litre f.w.d. 2-seater	May 1940
HILLMAN Fourteen saloon (1939)	June 1941
Hotchkiss 3½-litre "Grand Sports" saloon	July 1939
H.R.G. 1½-litre, Meadows engined 2-seater	June 1937
H.R.G. 1½-litre Le Mans racing 2-seater	Dec. 1939
INVICTA 4½-litre saloon	Dec. 1929
Invicta 4½-litre Estate car	June 1941
LAGONDA 4½-litre 4-seater	May 1936
Lagonda 4½-litre 4-seater	Jan. 1934
Lagonda 4½-litre, 6-cyl. saloon	Sept. 1939
Lanchester Eighteen saloon	Feb. 1938
Lancia "Aprilia," Type 238 saloon	June 1938
Lea-Francis 1½-litre supercharged T.T. 2-seater (1929)	June 1934
Lea-Francis Fourteen saloon	Dec. 1938
Leyland Eight 2-seater (1927)	Feb. 1938
MERCEDES-BENZ 12/40 h.p., supercharged 2-seater	June 1925
Mercédès-Benz 33/180 h.p., supercharged 4-seater	Aug. 1927
Mercédès-Benz 2.3-litre saloon	April 1938
Mercédès-Benz 1.7-litre, Type 170V 2-seater	Feb. 1939
M.G. Midget "J1," 850 c.c. 2-seater	Sept. 1932
M.G. Midget "T" 2-seater	Jan. 1937
M.G. 14/40 h.p., 4-cyl., super-sports 2-seater	May 1927
O.M. 6-cyl., 2-litre 4-seater	Oct.-Nov. 1928
PEUGEOT "201" 4-cyl., 1,132 c.c. saloon	Sept. 1931
RAILTON 8-cyl. Cobham saloon	Sept. 1938
Riley Nine 4-seater	June 1931
Riley 16 h.p., 4-cyl., "Kestrel" saloon	June 1938
Rover Ten "Special" 2-seater	Aug. 1939
Rolls Royce Twenty, all-weather (1927)	March 1942
Rolls Royce "Phantom I," supercharged	Nov. 1942
SINGER Nine 4-seater	March 1933
Squire 1½-litre, 4-cyl. 2-seater	Aug. 1935
Steyr Type XII, 14/35 h.p., Weymann saloon	Aug. 1928
Stutz "Black Hawk," supercharged 4-seater	Jan. 1930
Stutz 5-litre, 8-cyl. 4-seater	Dec. 1927
Sunbeam 3-litre, 6-cyl. (twin o.h.c.) fabric saloon	Nov. 1927
TALBOT "90," Brooklands-bodied 2-4-seater	April 1931
Talbot "105" sports saloon	April 1934
Talbot 3½-litre saloon	March 1936
Talbot Ten "Rally" 4-seater	Oct.-Nov. 1936
Talbot "105" Vanden Plas 4-seater	Nov. 1932
Talbot Ten tourer	June 1938
Terraplane 29 h.p., 8-cyl. 4-seater	July 1935
Triumph 2-litre "Vitesse Six" saloon	April 1935
Triumph 10 h.p. "Gloria Southern Cross" 2-seater	June 1935
Triumph 10 h.p. "Gloria" saloon	Jan. 1934
Triumph Nine "Southern Cross" 4-seater	June 1932
Triumph Eight "Gnat" 2-seater	Aug. 1931
Triumph Eight, supercharged 2-seater	Dec. 1929
Triumph "Dolomite" 14/60 h.p. saloon	June 1937
VAUXHALL 20/60 h.p. "Hurlingham" 2-seater	Feb. 1930
Vauxhall 17 h.p., 6-cyl., "Cadet" saloon	Sept. 1931
Vauxhall Twenty-five saloon	Aug. 1937
WINDSOR 4-cyl., 11 h.p., "Special" 2-3-seater	Nov. 1926
Wolseley Hornet Swallow 2-seater (1933)	April 1934
Wolseley Hornet (12.08 h.p.) saloon	Sept. 1930

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