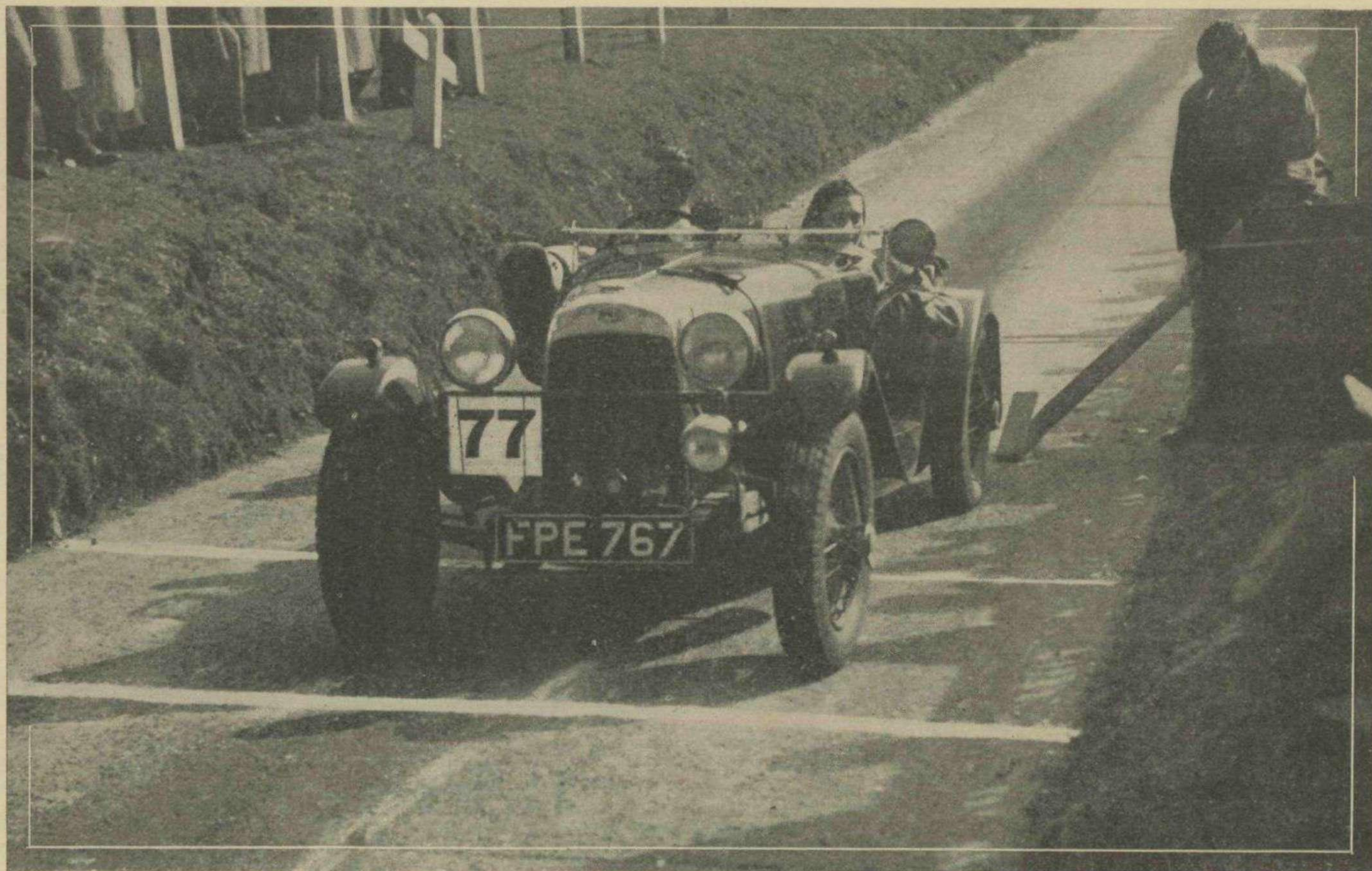


# MOTOR SPORT

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

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## A BLOWN SEVEN-FIFTY

TO the large majority of us, a run in anything approaching a sports car is, under present conditions, a very rare treat. When the car happens to be a very close approach to a racing car and one of the fastest (if not the fastest) of its kind in one piece at the present time, then it is well and truly an occasion about which to write home. This was my good fortune recently, when the happy coincidence of a period of leave after service overseas, with its petrol allowance, and the purchase by a friend of a very potent Austin Seven enabled me to assist in its transference to its new home station in the Weybridge area.

The car in question is the blue competition 2-seater W-Special, built for his own use by L. Williams, of Auto Conversions, which will be known to many readers of MOTOR SPORT from its appearances at Dancer's End and Markyate in 1939, and also from at least two occasions when it has appeared at the war-time meetings of the Seven-Fifty Club at Coulsdon and at Osterley.

Actually, its competition history has not yet really begun, as it was constructed during late 1938 and early 1939, and pressure of other work and the outbreak of the present conflict limited its appearances in competition to two events. The first of these was at Dancer's End in May, 1939, in which it was entered for the supercharged 750-c.c. sports-car class. The scrutineer spotted the absence of both spare wheel and provision for carrying the same, so that the car was relegated to the under 1,100-c.c. racing class. Williams's troubles were not yet over, however, as peak r.p.m. proved unobtainable due to a cause that remained obscure for some time, and only third place in the class resulted. Its second appearance was shortly afterwards at Markyate, for which occasion the blower was removed and twin downdraught carburettors on a special manifold were substituted. Once again misfiring became apparent at high speeds. It was not until the magneto was tested for the second time that an obscure short in the armature was located and rectified.

Those readers who like little motor cars with tiny engines which go round very fast indeed to produce very respectable performance with extreme economy, will enjoy this account, by Capt John Moon, of the ex-Williams Austin Seven and his road impressions of it.—Ed.

As far as it can be said to follow any particular model of the Austin Seven, it is on the blown "Ulster" that this car is based, but it is really a complete hybrid and illustrates well the versatility of Austin components.

The engine is a normal blown "Ulster," with the usual 1½-in. big-end journals and a crankshaft without counterbalance weights, but drilled for pressure lubrication of the big-ends, oil being fed in through a bush which fits over a parallel part of the starting-handle dog at the front end of the shaft. A set of racing Austin con.-rods, polished all over, are used, and the pistons are very light Martletts with very narrow rings. The valves and valve gear follow normal "Ulster" practice, with light, non-adjustable tappets, but the camshaft is a special one, giving a high lift and considerable overlap, so that the engine can be run unblown and still give a respectable performance. The blown "Ulster" camshaft, as provided by the maker, is a very mild affair, giving approximately the same timing as, and 0.090 in. less lift than, the normal touring camshaft. The cylinder head is the unblown "Ulster Ricardo" type, giving about 7 to 1 compression ratio, and is copper plated. The gasket is normally a standard-thickness C. & A. one, but a thin C. & A. gasket can be used.

The blower is a Cozette (the blown "Ulster" has either this or a Roots-pattern blower of Austin manufacture) and delivers at a maximum pressure of 5 lb. per sq. in. through the Y-shaped

inlet manifold which curls round from underneath the blower to the two inlet ports above it. The carburetter is an Arnott, specially made for the car, and works on the constant-vacuum, variable-choke principle like the well-known S.U., and is mechanically very similar, but has a rather peculiar square appearance. It has the advantage that the mixture strength is readily adjustable without any dismantling, a great asset for competition work.

The exhaust manifold is an external one, specially made up to suit the narrow body, and is flat instead of being slightly upswept as the "Ulster" one is. It also avoids the rather poor feature of the "Ulster" manifold—the abrupt T-shaped junction where the third branch joins the main pipe.

The radiator actually started life on a Wolseley Hornet, but was rebuilt by Serck, the radiator people, to fit the car, with different header and bottom tanks, and with a hole through the core for the starting handle. It is mounted on two peculiar brackets which drop it just in front of the spring mounting, slightly more forward and lower than normal. In conjunction with the pump on the engine it is over-efficient, so that it has to be partially blanked off, despite the absence of the fan with which the blown "Ulster" is normally equipped. Ignition is by an M.L. magneto, and three grades of plugs are normally used. The soft plugs which we used on our delivery journey are K.L.G. K1, the medium plugs which are usually used for road work are M50, and the hard plugs used for sprints are M30.

The extensively-lightened flywheel carries the cast-iron linings of the "Ulster"-type clutch, which has heavier springs than the touring one, these making their presence felt when traffic-driving is indulged in. The gearbox is a four-speed, close-ratio ("close-ratio" is a relative term only, as third speed is 1.49 times the top gear ratio), having synchromesh on top and third and a constant-mesh, but plain, dog-engaged, second gear. The gear-change is remotely controlled by



means of an external rod with fork ends and pin joints. The four-speed box necessitates the use of a geared-type starter motor, the switch for which is mounted on the dashboard.

The propeller shaft is the solid type, with a fabric coupling at the front end and a Hardy-Spicer joint at the rear end, and it has been cut, welded, and sleeved in order to shorten it to suit the short wheelbase frame. The rear axle is a quite normal narrow-track one, with a 4.9-to-1 ratio at present, though 5.67 to 1 and 5.25 to 1 have been used at times.

The frame is actually "Ulster," but is very much the same as any short-wheelbase frame of 1932 vintage. It is extended at the rear by two 1½-in. by ½-in. angle steel members which pass under the axle to support the 7-gallon rear petrol tank and the tail of the body.

The front axle is dropped about 2 in. lower than the normal "Nippy" or "Ulster" axle, and has a piece welded in the centre to make it wider than standard and so give the car a 6-in. crab track—3 ft. 10 in. at the front and 3 ft. 4 in. at the rear. The reversed camber front spring is a specially wide one to suit the wide axle, and the special radius rods were at one time boxed in, but are now normal channel section again.

The usual Austin worm-and-wheel steering is used, with a malleable iron steering box to prevent any risk of fracture. It is mounted on a forged-steel bracket to give increased rake, and is some 6 in. further back than on an "Ulster." This, with the longest Austin-produced steering column and the deepest wheel hub available, brings the wheel right back into the driver's chest. The steering wheel is a 17-in. Ashby—an inch larger than that normally provided on sports Austins—and an inch well worth having, as it seems to add a lot to the controllability.

The braking system is the Austin system, with Williams's conversion to Bowdenex operation for the front wheels, the shoes and drums being the (relatively) wide type which were in standard production between 1932 and 1935, while the hand-brake is extensively cranked to bring it within reach of the driver.

The rear springs are of reversed camber and have the same number of leaves as the tourer, but have extra clips to prevent them spreading sideways. Incidentally, they are much softer than those on Austin-produced sports models, which have springs with the same number and thickness of leaves as the 5-cwt. vans!

The wheels will, I am afraid, shock people who hold that wire wheels are the only permissible wear for a sports car, as they are of Austin "Big Seven" pressed-steel variety. Actually, I do not think that these wheels look out of place on a car that has a forwardly projecting radiator cowl as this one has. As a matter of fact, they are the only Austin wheels in standard production with 16-in. rims, are very little heavier than the wire type, and fit any Austin Seven hub when the dowels in the brake-drums have been removed. Incidentally, they provide the solution to a problem which I have been turning over in my mind for some time, namely, how to adapt bigger brake-drums to an Austin axle without having to replace

hubs and so on. Tyre sizes are 4.75 in. by 16 in. front and 5.25 in. by 16 in. rear.

The body is built of ash with aluminium panelling, and is based in shape on the 1½-litre single-seater Maserati racing car of a few years ago, except that it has been made just wide enough to take two people. The beaten aluminium radiator cowl, carrying a neat "W Special" label, is reminiscent of the Brooklands Talbot of Dr. Roth. The bonnet is hinged along the centre, has louvres cut along the top, and is held down by two external clips on each side. The fold-flat screen is mounted well forward on the scuttle, so as to avoid the cowl which is provided on the driver's side only. The spare wheel rather mars the lines on the off side, but has to be carried to conform with Sports Car Race regulations, as has the hood, which, with its single hoop, stows away on the top of the tank in the tail. The proud new owner, incidentally, wanted to photograph the car with the hood erected, but soon changed his mind when he saw it so equipped, as it is a very comic-looking affair which merely serves to keep the scrutineer in his place.

As regards the other external features of the car, the wings are small flat-blade affairs, the front ones of cycle-type attached to the back plates of the brakes, a feature of which I do not entirely approve as it increases the unsprung weight by more than a little, though any other fixing would be a rather tricky matter. The car's owner agrees with me that the rear number plate is in the wrong place, mounted as it is on the top of the tail, and the numbers will probably be painted on the sides of the tail at some future date, though this is only permissible when the sides of the tail are in a plane, and, anyway, makes illumination rather a problem. The exhaust system rather throws itself at one, I think, giving the impression of a "Promenade Percy" motor-car, but it is difficult to see how it could be tucked away so as to be less obtrusive.

The dashboard, which is finished in a special blue paint giving a most attractive appearance, carries a complete set of instruments down to a grab handle—which is actually most useful in assisting the passenger's entry and exit. The instruments, from left to right, are as follows: four tumbler switches, controlling the charging circuit, the ignition and the side and tail lights (which are all that are at present provided), plus a spare switch for the spotlight that will be fitted to act as the headlight; underneath, the starter and choke controls; then the air-pressure gauge above the pressure pump for the petrol feed; the ammeter; the boost gauge above the strip-type [!—Ed.] speedometer; the 3½-in. Smith's rev.-counter, and, on the right-hand side, the water thermometer above the oil-pressure gauge.

Incidentally, the body was made to measure to fit Williams, and for anyone much over his size entry is a matter of some difficulty. This recalls to my mind the groan of anguish loosed by the prospective owner who, having looked over the car and fallen in love with it, tried to insert himself into the cockpit and found that he could not make it. Fortunately, a demonstration by Williams taught him the correct technique, and he

now slips in and out with the greatest of ease!

My first impressions of this little car on the road were as a passenger during the journey from Kew into the middle of Surrey, and I was soon completely fascinated, though after about 15 miles the car began to impress upon me the fact that it is not really intended to carry a passenger, as my right hand grasping the off-side wing stay was very close indeed to the rear wheel, so that I had to mind my knuckles when we went round corners, the exhaust pipe behind my left shoulder began to get quite warm in spite of the asbestos string binding, and my left leg got cramped, due to the restricted leg room caused by the battery living on the floor boards just behind the bulkhead. These, however, are very minor discomforts compared with the joy of travelling in a really potent little car again.

Later on, when the delivery journey was over and the car was taken out for a short run to try out its paces, I took the wheel and was able to sample its real fascination for myself. Certain acrobatics are necessary to insert oneself behind the steering wheel, but once there one feels completely at home with the big (for an Austin) steering wheel close to one's chest, all essential instruments under one's eyes, and the gear-lever just where one's hand drops on to it from the wheel. The foot brake and the accelerator are rather close together—there is no room for them to be anything else, so that it is essential to have narrow shoes, and in order to be able to feel what one is doing, it is desirable that these be light as well.

When driving on the road, I prefer to use bottom gear for starting away from rest as second gear feels a little on the high side, but one's getaway is rather spoiled by the change from first to second unless this is carried out in a very brutal manner (which I did not like it to be with someone else's motor). On the other hand, when one really is in a hurry, an exceedingly rapid getaway can be achieved in second gear if the clutch is engaged with care. Once under way in second, 6,000 r.p.m. is attained in a very short space of time, and the same speed in third is reached just as effortlessly and nearly as quickly. The performance in top was limited by bad misfiring, which became apparent at just over 4,500 r.p.m., which, according to my calculations, is somewhere around the 80 mark. This trouble was in all probability due to unsuitable plugs, as a medium hard set only was available at the time, but in any case the very limited amount of fuel obviously precluded any serious attempt to trace the trouble, which was only apparent on top gear. In order to gauge the Austin's accelerative ability, it was tried out against a 500-c.c. sports B.M.W. motor-cycle, which is one of its stable companions. The conclusion was, of course, inevitable, but the two-wheeler's lead was much lower than we had expected. What impressed me most of all with the Austin was the way in which it sits down on the road. On roads with a reasonable surface, it remains glued down in a manner which completely belies its weight of only 8½ cwt., and which, if I, as a full-blooded Austin enthusiast,



may say so, is completely unAustin. The credit for this must, I think, go to the wide front axle and to the extra clips on the rear springs, which are firm enough to give steadiness at speed without being dead hard at low speeds. Over not so smooth surfaces, the front wings dance about like mad, but the fixings are sufficiently flexible to allow this movement without any detrimental effects. The brakes were definitely not up to the performance of the car (what Austin Sevens ever are?), but as there was a lot of free play on the pedal which could have been taken up, it is not fair to criticise them adversely.

A point which came in for adverse criticism from both the owner and myself

is the external remote control for the gear change, which is made up with a piece of  $\frac{1}{16}$ -in. steel rod with fork-ends which pin on to the gear-lever stub and to the ball-jointed remote lever. The arrangement is light in weight but lacks any other virtues, as the pin joints are inadequate in size and the play that has developed through wear completely spoils the gear changes, especially through the gate. The present arrangement is to be replaced either by a welded-up enclosed type or by an open type with a thin tube for the horizontal extension and with large-size pin joints, such as those on the Allard Special, when the necessary facilities for that sort of job are available.

Although a small blown engine such as this does not demand such close gear

ratios as an unblown one would, a closer set than those now fitted would make a great improvement. I have often wondered whether it would be a practical proposition to turn or grind the existing constant-mesh gears from the Austin four-speed primary and lay shafts and to press and key into position another set having one or two less teeth on the driven gear and one or two more on the driving gear, so making all the ratios closer. All these points, however, are passing thoughts which are far from being serious criticisms, and which certainly in no way detract from a very interesting and potent little car, which it is confidently hoped will appear at the first and at subsequent post-war sprint events. May this day be soon!

## A Very Fast Unblown Eleven-Hundred

Some Notes on the Singer Nine Single-Seater developed for Hodges by Alec Francis

AT about the time Donington opened Hodge ran there very successfully with an outwardly normal "Le Mans" Singer Nine 2-seater, prepared by A. Francis. So successful was he that Hodges, a fellow J.R.D.C. member, decided to let Francis build him a single-seater on the same chassis. This car, based in outline on Widengren's Hour Record Amilcar Six which Francis also prepared, was originally intended to be supercharged, but a blower never materialised. This naturally restricted the ultimate performance but, notwithstanding, the Singer is said to have lapped Brooklands at around 96 m.p.h., a very creditable performance indeed.

The chassis was lowered, the clearance between front axle and frame being a mere 1 in., which allowed a wheel movement of about 2 in., while the rear axle was allowed about 3 in. rise and fall, rubber buffers being used to prevent the axles hammering the side-members. Castor action was increased by fitting aluminium-alloy blocks, tapered  $\frac{1}{4}$  in. to  $\frac{1}{2}$  in., beneath the spring pads. The spring leaves were very carefully bedded-in and then cord-bound and taped. A slightly higher axle ratio than standard was used in view of the intention of fitting a supercharger. The gearbox was given close-ratio gears and an ingenious device

We have received some very interesting material from Alec Francis, whose career we touched upon in "Rumblings" last month, dealing with his hotting-up methods in general, with particular reference to Hodges's single-seater Singer. We have decided that this matter is better split in two, and the following notes deal with the Singer, which was an extremely potent car for its size, being capable of lapping at around 96 m.p.h. although handicapped by having an engine intended to be supercharged but which was normally aspirated. The tuning tips will follow in a later issue.—Ed.

enabled the layshaft to be disengaged when in top gear—a method of reducing drag used in earlier times by Cushman on his 200-Mile Race Bugatti. A remote gear-change was used, and the steering column was lowered and raked towards the centre of the chassis, the clutch pedal being bent to clear it; the clutch itself was quite standard. A special crankshaft, with full balance weights for each throw, was used, and the con.-rods, of 100-ton, KE 805 steel, were of special design, with cooling fins on the big-end caps. The gudgeon pins were also of heat-treated 100-ton steel, and heavy pistons,

intended to dissipate heat in blown form, rather detracted from the performance in unsupercharged guise. The compression-ratio was 8 to 1, obtained by machining about  $\frac{3}{32}$  in. or  $\frac{7}{8}$  in. off the head, a limit being imposed by the dome-top pistons and the location of the plugs. Increased oil pressure was obtained by using new gears in the pump,  $\frac{3}{16}$  in. wider than standard, a packing piece making up space in the pump body. Feed was via an external cooler and filter, the former beneath the water radiator. An air-bleed from the crankcase to the induction pipe provided a measure of upper cylinder lubrication, a tap being fitted in the pipeline. The body consisted of 1 in. by  $\frac{1}{2}$  in. aluminium T-section strips and runners covered with sheet metal. The radiator was inclined and lowered and cowled-in and the tail was separate, so that a short one could be used for road races and a longer one at the Track. The body alone gave a speed increase of 6 or 7 m.p.h. The car had been built to give 100 m.p.h. in blown form and, considering that its crankshaft, connecting rods and pistons had a safety factor to suit and the camshaft gave a valve timing intended for forced induction, the single-seater Singer's performance in unsupercharged form was most encouraging and should inspire others.

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# THE OUTER CIRCUIT "200s"

## THE 1923 RACE

*(Continued from the July issue.)*

AT 9.45 a.m. on Saturday, October 13th, 1923, in an animated atmosphere, 13 cars in the 1,100-c.c. class of the J.C.C. 200-Mile Race went down to the Fork. Bueno, O. Wilson Jones and Robert Benoist had the three Salmsons, which were the favourites, W. D. Hawkes, Norris and Ware the Morgans, Tollady, his ancient 2-cylinder Crouch, Bassett England's A.B.C., Heaton a Derby, England the little Austin Seven, Frazer-Nash his G.N., Hawkins a D.F.P., and Peaty his Eric-Longden. Beart experienced ill-luck, as his Morgan died coming to the line. The G.N. goes out in front as Ebblewhite's flag falls, followed by the Morgans, but after a lap the Salmsons are 1, 2, 3—Bueno, Benoist, Jones. Norris and Hawkes ran close behind, however. Fifty miles went by with only one customer for the pits—Ware's Morgan for a wheel change. Then, after 20 laps, the Eric-Longden came in with broken petrol pipe and took on water as it was mended, and the D.F.P. broke a rocker pedestal and, in repairing it the mechanic broke a file in a hole; after 30-min. attempt to drill it out the car was retired, after a good run. Ware found his had forgotten to put back the Morgan's tie-rod on his previous stop and, not surprisingly, came in to do so (!) and Hawkes went out with a broken valve collar. Norris, too, was dropping back, after a fierce duel with the Salmsons. Bueno took the 50-mile record at 87.85 m.p.h., or nearly as fast as the winning 1½-litre average of 1922. Norris finally retired with stripped timing gears, and as he went out Bueno was two laps ahead and a lap in front of his team mates. At 50 laps Lombard called the leading Salmson in for water, but Bueno was away in 45 secs. Excitement! Smoke was seen to be issuing from Benoist's cockpit, and he came skidding to a standstill with his engine on fire. The sheet-steel water jacket had sprung a leak and emptied the radiator and, after the leak had been caulked, poor Benoist had still to come in for water every two laps. Tollady brings his Crouch in and the mechanic wrenches the top off the radiator in trying to get the filler cap undone. A marshal demands safer packing of the car, but Tollady has got all three gears in at once—his oil tank also appears to be falling out. Undaunted, he stuffs a handkerchief in the radiator, a bolt through the oil tank support, juggles with the gear lever, and goes on. Meanwhile, the Austin, A.B.C. and Derby are running well, the last-named at over 70 m.p.h., but still not really warm; the astounding little Austin has actually speeded up, to lap at 75, doing over 80 down the Railway Straight. Salmsons are not having it all their own way, for Jones's car loses a nut from a clutch spider, which punctures the fuel tank, necessitating a long halt by the Members' Bridge. The G.N., dogged by elusive trouble, is eventually forced to retire. And so it ends. Bueno comes home the winner at 82.83 m.p.h., running for 2 h. 25 m. 2.24 s. The Austin Seven comes in 2nd at 76.84 m.p.h., having lapped at 78 at the end, and Benoist, in spite of his repeated stops for water, is

3rd, at 73.4 m.p.h. Bassett, Tollady and Heaton (66.47 m.p.h.) follow the victors in. The credit for fastest lap goes to Benoist, at 92.57 m.p.h. Bueno finished with his air-cushion flat and Benoist, of course, was soaked to the waist.

Attention was now focused on the 1½-litre race, to which the two supercharged Fiats, in the absence of the Talbots, lent so much allure. Salamano started at evens, Campbell at 3 to 1. As the flag released the field, the latter hesitated a moment, and it was Cushman's slim, yellow Bugatti that found a way through, followed by the Aston-Martin "Bunny" and Harvey's brilliant green Alvis 3rd. Lap 1 saw Cushman lead, with Salamano 2nd and Campbell 3rd. However, by lap 2 the Fiats were in the lead and George Duller had got 3rd place in the Marlborough-Thomas. Some there were who thought the Fiats were being opened up rather soon, considering the large

the bonnet sides, while the mechanic winds. At first there is no response, then the engine fires. Campbell listens for a moment, switches off, and, spreading his hands in a gesture of despair, says "Retired." Both the Fiats are out! The trouble was never really disclosed, but probably the bearings failed to stand up to the speed of the blown engines round Brooklands—it has been rumoured that the bonnets remained locked until the cars got back to Italy.

While this excitement is being discussed in a thousand ways the race goes on. Duller changes plugs and loses his place, and Douglas (Bertelli) tries hard to trace an elusive misfiring, as did Marshall (Bugatti). Eyston's Aston-Martin now leads from Joyce's A.C., in spite of the latter's two tyre stops, one away from the pits, and Harvey's Alvis. The Marlborough-Thomases experienced more and more plug trouble, and Capt. Miller's A.C. retired. Newman's Wolseley, Hawkes's Horstman with E. A. D. Eldridge having a sort of busman's holiday as passenger, and Peacock's sports Hillman, were all going well, if at different speeds. Eyston, Joyce, Harvey and Cushman engaged in a four-cornered duel, but the A.C. lost ground, due to its tyre stop, and after a long run in the lead, Eyston's Aston-Martin developed a baffling engine trouble—blamed on its silencer—and its lap speed dropped from 98 to 83 m.p.h. The Alvis was doing 93 to 94 m.p.h., and Joyce was pulling out 98½, fastest car in the race. Harvey actually did 15 consecutive laps and did not vary his lap time by more than .5 of a second! Naturally, the big field thinned out. Moss's Crouch retired with a blown gasket, Parry-Thomas stopped for good after 45 laps, while Temple took his Horstman round with much spluttering, not electing to investigate. So Joyce led, until he had the searing luck to burst another tyre, after 55 laps—his third stop for this malady. Then Eyston decided he really must change plugs and the Aston-Martin thereafter promptly went back to lapping at its former 98.

It was all most interesting. Joyce, virtually defeated, drove all he knew to make up his stops, Eyston likewise to wipe out his slow laps, while Cushman, who had been nursing his Bugatti for 60 laps on account of low oil pressure, threw caution to the winds and was lapping at 94.86 m.p.h. Harvey, in the Alvis, had long ago seen his chance, and at a steady 4,100 r.p.m., refused to be drawn into unnecessary battles. Round and round went the Alvis, and on and on. Inevitably, under the circumstances, the late C. M. Harvey was the winner, at the rousing average of 93.29 m.p.h., after a run lasting 2 h. 8 m. 37.44 s. Cushman's Bugatti was 2nd, at 91.10 m.p.h., after a non-stop run, and Joyce, untroubled mechanically, but dogged by tyre troubles, brought the A.C. in 3rd at 88.40 m.p.h. Eyston managed 4th place, Pawkes was 5th and non-stop, likewise Morgan's Aston-Martin, which was 6th. Lancaster's Bugatti was 7th, Brayshaw's Alvis (with normal duck's-lack tail) 8th, after one stop for plugs and to check fuel,

*Continued on page 160*

Previous articles in this interesting series appeared in the February, March, April, May and July issues, when the races of 1921 and 1922 were dealt with.—Ed.

quantity of oil in circulation—they were soon lapping at 101.64 m.p.h., against the 91 or so of most of the others. Meeson's A.C. went out early, diving deeply into the ditch by the aeroplane sheds, when the near-side front wheel came off at 80 m.p.h.; no one was hurt. Drama! After only 11 laps smoke-haze is seen to come from Salamano's cockpit. The car pulls up with a slither opposite the pits on the far side of the Track, and flames flicker from the bonnet louvres. Even before fire-extinguishers can be found and rushed across, the brown-clad figures spring out and cope with the situation. Then the driver walks over to the pits, a hush falls on the crowd, a red disc is hooked up beside No. 32—the Fiat is out for good. But stay! Where is Campbell? Even as the question is formed, Fiat I, on its 12th lap, coasts into the pits with a dead engine. The race is something apart; all eyes are on the stationary car. Campbell is out, "finished" he mutters, and turns away. But an order snapped from the pit bids him try her again. "It may smash her up," replies Campbell, "do you mind?" "No! No! Try her again. Who knows?" The driver stays supporting himself on

### Where are the Pictures?

We very much regret that as a result of enemy action all the illustrations intended for this issue were destroyed too late to be replaced.



## THE EX-ELWES M.G.

IT was a satisfactory day for me when I decided to visit a tiny village in the heart of Warwickshire to have a "look-see" at a J4 M.G. Midget which was for sale at a very reasonable figure, together with a few spares, including a cylinder-head complete with valves, two S.U.s, dynamo and differential assembly. On being introduced to the car, the registration number, AGP 291, appeared very familiar, but for the moment I couldn't place it. I remarked on this to the owner and asked if he knew anything of its history, but he professed ignorance, and a look at the log book did not help, as it was a duplicate, for the only other name appearing besides his own was Huxham's, of Bournemouth, from whom he acquired the car. A few minutes later a sudden thought made me look through a collection of photographs I had with me, and there and then I produced a snap of the car taken at Worthing in 1935 or 1936, looking exactly the same, with J. C. Elwes sitting on the back of the driving seat. I then knew that if the model had been reasonably looked after in its later life, it was a very potent piece of machinery and one of the fastest 750-c.c. "touring" cars in the country. Half an hour's careful examination revealed only badly worn king pins and bushes and upholstery and floor boards sadly in need of renewal, so I paid my money and a week later brought the car home.

My first job was to write a letter to Maclachlan, of Austin fame, who is a business partner of Elwes, and who was responsible for tuning the motor, and ask if he could give me any "dope" concerning it. Although I had had considerable experience with a Marshall-blown "P.A." M.G. Midget, the J4 was almost a closed book to me, which is not surprising, as only about 12 cars were built. It so happened that he still had all his data and notes, and I am indebted to him for most of the information given below.

Car No. J4 003 was bought by Elwes and Watson in 1933. It ran in four events that year, the last one, unfortunately, ending in tragedy. Its first race was the J.C.C. International Trophy, with Elwes driving, but during a "mix up" on the opening lap it hit a wall and the steering was too badly damaged to allow it to continue. Amends were made on its next appearance, however, for at the Empire Trophy Meeting it won the 50-Mile India Trophy at an average of 101.23 m.p.h. The Relay Race followed, ending in a broken crank, and then came the ill-fated "500." Elwes drove in the opening stage, and at the appointed time came in to refuel. Watson took over and on his third lap the car overturned, caught fire and was nearly burnt out. Poor Watson was thrown out and did not recover from the injuries he had received. The cause of the accident has never been solved, for Elwes stated that when he handed over, the car was running perfectly.

The following year was spent in rebuilding, and then commenced several seasons of very successful motoring, first in the hands of Elwes and later by C. E.

**A. E. L. Antell describes his supercharged 750-c.c. J4 M.G. Midget, which gained many competition successes in 1934.**



Robb, the Irish driver. Running fully equipped, with lamps, guards, and all the usual touring paraphernalia, the following results have been obtained:—

Shelsley Walsh, 48.2 sec.; Brighton standing  $\frac{1}{2}$ -mile, 61.22 m.p.h.; Lewes, 22.3 sec.

Without the touring aids, a Mountain race was won at 66.65 m.p.h., and Craiganlet Hill climbed in 1 min. 25 $\frac{3}{4}$  sec. The car also held (and still does as far as I know) the 850-c.c. lap records for the Cork Circuit at 76.9 m.p.h., for Leinster at 72.6 m.p.h., for Limerick (speed unknown), and has lapped Phoenix Park at the resounding speed of 84.04 m.p.h.

Turning to the mechanical details, the engine has a bore and stroke of 57 mm. by 73 mm., giving a capacity of 746 c.c., and follows M.G. practice in that the single overhead camshaft is driven from the crankshaft *via* the dynamo through the usual bevels and spring coupling. The dynamo is specially wound to withstand high r.p.m., and the valve fingers are standard, except that the bushes are made of a light alloy instead of bronze, thus effecting a desirable saving in weight. Tulip valves are fitted, held in place by a tiny spring circlip, no split cotters being used. The cylinder head is copperised, with beautifully polished ports and cut-down valve guides to assist gas-flow, while a solid steel gasket is used, necessitating grinding the head faces together after every decoke if a perfect joint is to be obtained. The pistons are of Aerolite manufacture and differ from the usual "P" type in that the gudgeon pin is very much nearer the crown, presumably to aid in the dissipation of heat; they give a compression ratio of 6.6 to 1. The two-bearing crank, of M.G. design and manufacture, is fully counterbalanced, while the rods are I-section steel. The elektron sump holds one gallon of oil and an auxiliary 2-gallon tank on the bulkhead feeds this, *via* an S.U. float feed, as soon as the level drops. Cooling is by pump and differs from the "C" and "J2" in that the water jacket is built out, allowing a greater depth of water between the bores and the side plate. Later blocks had a series of holes between the bores to eliminate steam pockets which had a habit of forming.

The supercharger, a No. 8 Powerplus, is clipped on two tubular cross-members at the front end of the chassis and is driven at about  $\frac{3}{4}$ ths engine speed from the crankshaft *via* a short shaft with two self-aligning races. The "gasworks" is unusual in that a Solex is fitted, and this is the first blown M.G. I have seen with anything other than an S.U. This layout has proved eminently satisfactory and gives a clean pick-up throughout the

range. Lubrication of the blower is looked after by a pipe taken from the off side of the cylinder head near the oil-drain housing. The pressure should not exceed 1 $\frac{1}{2}$  to 2 lb. per sq. in., and can be adjusted by suitable alteration to the amount of metal on the restrictor pin governing the feed to the valve gear. In addition, a double quantity of upper cylinder lubricant should be added to each gallon of fuel. Blower pressure is 15 lb./sq. in. Maclachlan gives the following settings for varied fuels:—

For road work a 50/50 mixture is used with a 32-mm. choke, 190 by 44 main jet, and 65 pilot jet. K.L.G. 718 plugs are O.K. up to 4,500 r.p.m., and this speed should not be exceeded, as unless a harder plug and fuel comprising 75 per cent. benzole and 25 per cent. Ethyl is used, there is a risk of cracking the head. In sprints, using a 60 per cent. alcohol fuel, the main and pilot jets are increased to 270 by 44 and 70, respectively, while for short-distance races, where acceleration is the first consideration, a 33-mm. choke is an advantage, using K.L.G. 646 or 690 plugs. Maximum engine speed should not exceed 6,000 r.p.m., for although one can momentarily go to 6,500, to hold it at that is courting disaster, as at that speed the life of the crankshaft is literally a matter of minutes!

The gearbox is E.N.V. with a two-plate clutch and is common to the J4 only. With a 4.5-to-1 axle ratio the lower ratios are: 6.16, 8.37 and 12.1 to 1, giving a theoretical road speed at 6,000 r.p.m. of approximately 108, 78, 60 and 40 m.p.h. respectively, with 4.50 in. by 19 in. rear tyres.

The rest of the chassis, with a few exceptions, is standard M.G. practice. The steering box is a Bishop, and the patent M.G. divided track rod is fitted. The front axle is plated and two hefty torque cables prevent twist when treading heavily on the brake pedal. The brakes themselves are special, having 12-in. drums, made by R. R. Jackson, and, strangely enough, they have no cooling fins. The back plates are reinforced, especially round the cam bearings, and wind scoops are fitted fore and aft. Outsize racing Hartfords look after the road shocks and 2 S.U. fuel pumps are bolted to a flange at the back of the chassis and draw from a 24-gallon tank, on which is mounted the spare wheel.

The body is nothing more or less than an aluminium-alloy shell and was originally on H. C. Hamilton's M.G. Midget (which car finished 2nd to Nuvolari in the 1933 T.T., and was last heard of as belonging to R. D. Poore). The bonnet and mudguards are of the same material, the latter being quickly detachable, with the lamp wires in pin plugs for easy removal. Each electrical component has its own tumbler switch, and the instruments include a large rev.-counter reading to 8,000 r.p.m., blower pressure gauge, blower oil gauge, oil and water temperature gauges, ammeter, etc., with manual ignition control on the steering column.



The body is in need of some attention as it splits so easily, and if considered too stark by some people they must bear in mind that the saving in weight over the standard article must be considerable and is one reason why the car will pull a 4.5-to-1 top gear.

Up to now I have only managed a short run round the houses. The steering is really first class and totally unlike that of any other M.G. I have driven (always, to my mind, the weak point on the everyday product), due, no doubt, to the divided track rod which ensures that whichever way the car is steered the rod is

always in tension. The gearbox makes the car, the changes either way coming through as rapidly as one can shift the lever through the gate. The engine is beautifully smooth, but has absolutely no torque below 2,500 r.p.m., and this fact, in conjunction with the high bottom gear, caused me to stall on my first attempts at getting away until I realised that the car had little in common with my blown "P." The rev.-counter is no ornament and must be consulted, as the engine speed rises in an incredibly short space of time and it is very easy to exceed the permitted maximum. All the road springs are corded, and the car sits on the road really

well and corners in a fashion that would be asking for trouble in the more normal motor-car.

The car has been completely stripped and is now in the process of being rebuilt. This, in view of the very limited time at my disposal, is taking a long while, but results so far have justified the attempt. I had intended to use it for road work, but in view of Maclachlan's observations on the desirability of using a fuel mostly consisting of benzole, I am not so sure that this intention will be fulfilled, unless, of course, 87-octane fuel is generally available after the war.

## A Frazer-Nash m.p.h./r.p.m. Ready Reckoner

by Lt. J. P. Shenton, R.N.

CECIL CLUTTON'S extremely interesting article on gear ratios has no doubt prompted many people to investigate the gear ratios of their particular cars and discover to what extent they comply with some of the principles mentioned. In the case of Frazer-Nashes and G.N.s this is of especial interest owing to the ease with which the ratios can be altered.

This "ready reckoner" was actually drawn out for use with a Frazer-Nash, but some parts of it may be useful in principle for other, more conventional, cars.

The object of the diagram is to give "at a glance" relationship between m.p.h., r.p.m., gear ratio, and sprocket teeth, without having to resort to endless pages of scribbled calculation which, all too often, prove to be entirely devoid of meaning!

To draw the diagram, proceed as follows:—

(1) Take a sheet of graph paper of the type which has a thick line every tenth line. Preferably it should not be less than 14 large squares long by 10 deep.

(2) On the left mark off m.p.h. vertically on the basis of one large square to 10 m.p.h.

(3) Along the bottom, from left to right, mark off engine r.p.m. on the basis of one large square to 500 r.p.m.

(4) Calculate the speed of the car on an imaginary gear ratio of 1 : 1 at 500 r.p.m. This is:

$$\frac{\text{Overall diameter of tyre } 22 \text{ } 500}{88 \times 60 \times 12} \times \frac{1}{7} \times \frac{1}{1} \text{ m.p.h.}$$

For 4.50-in. by 19-in. tyres this works out at 41.67 m.p.h.

(5) Mark the point corresponding to 500 r.p.m. and 41.67 m.p.h.

(6) Draw a horizontal line through the point. Mark the point itself as "1," and continue numbering to the right at intervals of large squares. This line is the gear ratio scale.

(7) Calculate the theoretical number of rear axle sprocket teeth used in conjunction with a 17-tooth bevel shaft sprocket to give an overall gear ratio of 1 : 1. This is:

$$\frac{17 \times (\text{bevel pinion teeth})}{\text{bevel teeth}}$$

and in the case of the normal 3.5 bevel, ratio works out at 4.86 teeth.

(8) Draw a line from the origin of the m.p.h. and r.p.m. scales up through the "1" on the gear ratio scale. Draw a line parallel to the m.p.h. scale and 4.86 small squares from it. Through the point where these two lines intersect draw a horizontal line and number it from left

to right, starting with the m.p.h. scale line as "0" and continuing at intervals of large squares, counting each large square as 10. This is the 17-tooth bevel shaft sprocket scale.

(9) Repeat 7 and 8 for the cases of 11, 12, 22 and any other bevel shaft sprockets that may be considered. For the sake of clearness only the 17-tooth scale has been included in the description.

In order to obtain greater accuracy it is as well to make use of larger scales, e.g., instead of marking the spot corresponding to 41.67 m.p.h. and 500 r.p.m., mark the spot corresponding to 83.34 m.p.h. and 1,000 r.p.m., and find the former point by means of proportion.

*Use of the diagram.*—Suppose it is desired to find out the effect of fitting a 43 rear axle sprocket with a 17-bevel shaft sprocket. Draw a line from the origin of the m.p.h. and r.p.m. scales up through the "43" mark on the 17-tooth bevel shaft sprocket scale, and continue it upwards.

This line then gives the direct relation between m.p.h. and r.p.m. for that particular sprocket combination, and shows that 47 m.p.h. will correspond to 5,000 r.p.m., for instance. The overall gear ratio is indicated by the point at which the line cuts the gear ratio scale, in this case 8.9 to 1.

### THE OUTER CIRCUIT "200s"

—continued from page 158  
and Hall's Aston-Martin "Bunny" 9th, after tyre trouble far from the pits two-thirds of the way through. Newman was next, and the Hillman got in last, at 72.98 m.p.h., both these competitors going the 200 miles non-stop. So the classic Brooklands long-distance race ended in a British victory. The Alvis went through without a stop also, of

course, and it says much for the efficiency of the new o.h.v. engine that it actually gave 24 m.p.g. Harvey took the 200-mile class record at 93.29, and also the 2-Hours class record at 93.51. He used Lodge plugs, B.T.H. magneto, Solex carburetter, Rudge wheels, Hartford shock-absorbers, Alvis radiator, Petroflex piping, Englebert tyres, A.T. rev.-counter and speedometer, Wellworthy pistons, Woodhead springs, lined with Richards

plastic metal, and Castrol oil. In the course of the race Bueno took the 50, 100, 150 and 200 mile and 1 and 2 hour Class H2 records, and England the 50, 100, 200 1 hour and 2 hour Class J2 records. The Salmson did 88.41 miles in the hour and the Austin 73.9 miles. The fastest lap was a tie between Joyce's A.C. and Eyston's Aston-Martin, at 99.61 m.p.h.

(To be continued.)



THE exact birth of a craze to drive swift cars in competition is lost to memory, but from the age of about seven I filled the house with every copy of every available motoring periodical, compiled an exact scrap-book of the best material from the combined race reports from each, and filled in my spare time in making models of my contemporary favourite. As I got older the models became more and more accurate. I wish I had kept the odd specimen, but as the previous one always had to be destroyed to provide the materials for the next, they never survived. During the holidays, I would interminably make attempt upon attempt to shatter my bicycle-record round a path track in the garden and, at my prep. school, I laid out intricate road courses and persuaded my often disinterested friends to race their factory-produced model cars with mine. My family and their friends murmured that I would "grow out of the craze," and so all went comparatively peacefully.

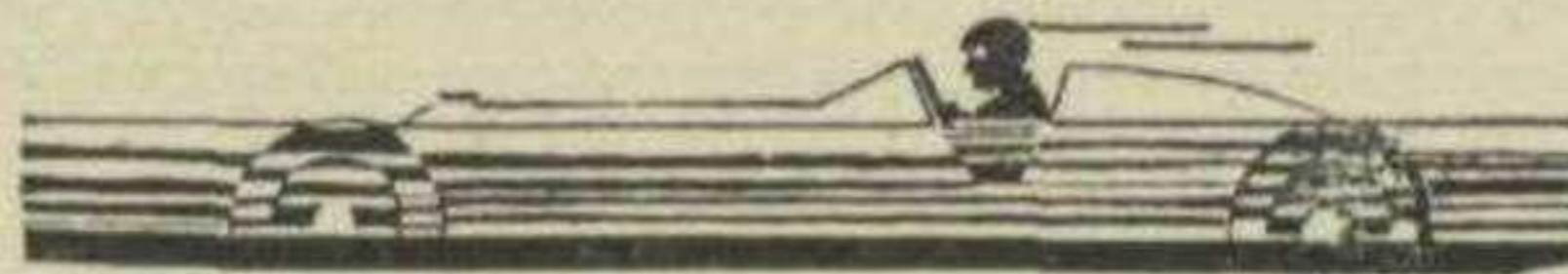
I got my first motor vehicle when I was 12. It was an incredibly ancient 350-c.c. V-twin, 2-speed Royal Enfield. The engine layout was most eccentric. Operated by separate camshafts, the side valves lay in front of the forward cylinder and behind the rear one, with a frame-member within half an inch of each set of tappets, presumably to facilitate adjustment! I have often wondered just what made the designer favour this particular design. I finally got it started and sailed happily through the village, passing the local "copper," who was a firm friend, and only administered a reprimand. For two years I amused myself getting things into some semblance of working order and ended up by fitting a side-valve J.A.P., with the assistance of the gardener. This was never completed, as during the summer holidays, when I was 14, I obtained my first car.

Had I had any idea of what I had obtained I would never have parted with it. Lacking a body from the scuttle back, it was an absolutely perfect specimen of "Prince Henry" Vauxhall. With the exception of the metallurgique-like pointed radiator, still bearing the famous flutes and the artillery wheels, it can best be described as a slightly diminished "E" Type "30/98." It was mechanically faultless, so I built it a rather neat 2/4-seater body similar to those then being used on the Fox and Nicholl "90" Talbot team. It was thereafter driven determinedly up and down a long and winding drive. Memory dims the record, but my main recollections are that the steering was enormously heavy and that it had the normal Vauxhall characteristic of non-existent brakes. The gear-change was comparatively simple, and I really believe that we travelled quite rapidly. I amused myself vastly with it until the next summer, when I sold it to a farmer, who promptly shortened it into a tractor. My heart bleeds with shame.

When I was 15, being terribly Shelsley-minded, I acquired a sports type, V-radiated i.o.e. GN, to amuse myself during the summer holidays. With enormous determination the body was stripped off, the steering centralised, and everything polished in the best "Special-builder's" tradition. A few attempts at starting the engine revealed the fact that

## CARS I HAVE OWNED

It would be invidious to say which article in this most popular and prolonged series has been the most interesting, but certainly this contribution by Sqdn. Ldr. J. R. M. Boothby, D.F.C., takes a very high place.—Ed.



some enthusiast had been trying to run it on a 60° magneto, and the search for a suitable 90° replacement was no mean job. Thereafter it motored quite efficiently, albeit nowhere near so fast as the "Prince Henry"; however, to my untutored ideas, it felt very much like the real thing. On the last day of the holidays, the starboard cylinder blew off and missed my head by the narrowest margin. For the very first time I felt that hot and sticky sensation on the palms of my hands, which was later to become quite familiar. The chassis lay about for some time and then changed hands rather rapidly, finally falling to the O'Reilly brothers and, I believe, becoming the basis of the original "Red Biddy." During my two remaining terms at school I rebuilt an aged Morgan in the Radley workshops. I left before it was finished and sold it to a contemporary, who was serving out his full term (!) of education.

When I was 16 I immediately set about getting on to the road. A paternal veto forbade me a Morgan, so I had to be content with a motor-bike. Wishing to make my first mistakes cheaply, I bought an ancient 500-c.c. o.h.v. Raleigh. Its frame was at least six inches out of line and it steered like an inebriated mule. It was not particularly fast and it was almost incredibly unreliable. I kept it long enough to acquire a modicum of road sense, and sold it without regret. My next purchase was a modern 350-c.c. Triumph of the pansy "enclosed" type. Words fail to describe the horror of that machine. It was slow. It was awkward. It was unimaginative. It was not even unreliable, so there was nothing to relieve its ghastly tediousness. Three weeks of ownership was more than enough. I found a silly little man who wanted a means of transport to get him down to see his nephews and nieces, and sold it to him gladly.

My next acquisition was in every way satisfactory. A new model, that year (1933), it took no place in the annals of history, which I regard as a pity. It was a Matchless "Sports 500," the first really cheap fast bike, and sold with an 80-mile an hour guarantee. It really was fast. It had excellent acceleration and, although later experience showed that its steering could be improved upon, it went where you asked it quite satisfactorily. A stop-watch trial showed 84.6 miles per hour. I sold it only because the success of my riding had sufficiently pleased my father for him to remove the three-wheeler veto.

My first Morgan venture was entered in much the same spirit as I had bought the Raleigh. From a shady Brighton dealer I obtained a 1927 Anzani-engined "Aero" model, and set about doing it up. It was never very fast and possessed the most terrifying wheel-wobble I have ever met. Nothing on earth would cure it. A reduction gear, and even a Hartford used as a steering damper, made no impression. After about two months I drove Nigel Orlebar up to see the famous Shelsley meeting, when Mays beat the Stuck record with the white Riley, and again with the old Vauxhall Villiers, only to be beaten by Straight in the Maserati. On the way back the bevels stripped, and my mother came up and towed us home behind a "77" Chrysler. She remains the best hand at the towing end I have ever met, and so we returned without trouble, although I irritated my maternal parent more than somewhat when I found that I could produce the most satisfying broadsides by slamming on the handbrake on bends. On investigation, it was found that the sides of the bevel box were distorted beyond economical repair and, as it had cost next to nothing, anyway, it was decided to scrap it. The remains only left our place, for salvage, a year or two ago.

My next purchase was much more pleasant, one of the Maskell-owned Morgans which Allard used to race. It was fitted with an air-cooled 980-c.c. J.A.P. engine and was in complete Mountain Circuit form. An interesting modification was a very neatly-made rear shock-absorber bracket, which made no end of a difference to the steering as compared to the standard product. Although I was, even at 16, a reasonably large type, I found the Morgan driving position horribly uncomfortable. One sat on the floor with the steering wheel under one's chin. So a bucket seat was fitted on the driver's side and a neat Bugatti-type scuttle cowl was made, with the aero-screen above it. The result was most satisfactory. In this car I had my only bad crash when I was at the helm, and it has made me cautious on this one point ever since. I was coming back from watching a Lewes meeting and had had two smooth track tyres fitted to the front wheels, as I intended to get the car timed up the hill; I did, and it recorded 23.2 secs. I stopped at our garage on the way home and asked them to fit my normal road tyres. As I headed home I came into a fast left-and-right bend, and the left-hand front tyre came off as I came out of it. It subsequently transpired that neither the locknut on the valve nor the security bolt had been secured. Both the Morgan and I were not a little bent as it sat on my chest after the third roll, and retired for repair. Five weeks later my mother drove with me in the car, holding the steering wheel while I changed gear, my left shoulder being still in plaster. A reconnaissance about my finances, after the repair bills came in, showed that the car must be sold. It went to a rabid enthusiast who kept it until he got married. I saw it just before the war; it was nice, shiny and covered in club badges. The tappet clearances must have been in the seventy thou.!

Transport now became a pressing problem. I had taken employment as a



marine machinist—with a view to gaining lathe experience to build bigger and better "specials"—and I had to move from my "digs," a moored yacht hulk, to my place of work and get home now and then. So I bought a shaft-driven overhead-camshaft 250-c.c. O.K. Supreme. It was a lovely little bike, but an impossible nightmare to maintain, and I sold it in favour of a 350-c.c. radial-valve Rudge. It was fast and fairly stable to steer, but it had been hopelessly flogged and expired on the slightest provocation. It, in its turn, disappeared in favour of a brand new 1934 250-c.c. unit-construction New Imperial. Slow and very uninspiring, it covered many miles with complete reliability, and it was exasperation alone that made me sell it in favour of a comparatively old 500-c.c. P. & M. "Panther." This really moved, but was as manoeuvrable as a bison. All the weight was on the front wheel, which lay down in fast turns, while the back wheel would spin away from under you, if you gave it any chance. An amiable publican, who did not like riding fast, fell in love with its beautiful chromium plate and bought it for the same price as I had paid for it.

Throughout this period, as I was nearing my 17th birthday, I had been working, with my elder brother (who will never make a true motorist, as he usually buys the wrong sort of cars) on an aged Salmson. It was one of the strange four push-rod, 4-cylinder eleven hundreds and, when we got it, was fitted with a very ugly boat body. We toiled away to get it into shape and I designed a body rather similar to that of the aged T.T. Humber, which used to creep about Brooklands at that time, which we built for it. When we had finished, it looked very pretty, with cycle-type guards and two aero screens. Nothing, however, would persuade its weird and wonderful engine to function for more than ten minutes. A cousin of ours took it over and fitted it with a twin-cam motor he had from a wrecked car. Thereafter he used it regularly as a swift London runabout, using his big car only for long runs.

At this time I came to a sudden decision. I had noticed how valuable

motor-cycle racing was for experience and, while I could barely afford to touch car-racing, I could easily manage a big bike programme. To this end I purchased two bikes. One, a new 250-c.c. Grand Prix New Imperial, was taken in hand for preparation. The other was used to get the maximum 250 experience on the road, while getting to and from my job. It was one of the 1928 lightweight T.T. J.A.P.-engined O.K. Supremes, one of which, in the hands of Frank Longman, had won the race. It was quite astonishingly fast and, I state here and now, the best steering bike I have ever handled. Although it is eight years since I have ridden seriously, I have kept my hand in and have ridden every form of road-race machine in existence, yet I have yet to meet one so completely free from vice. I sold it only as the season started to help to defray expenses.

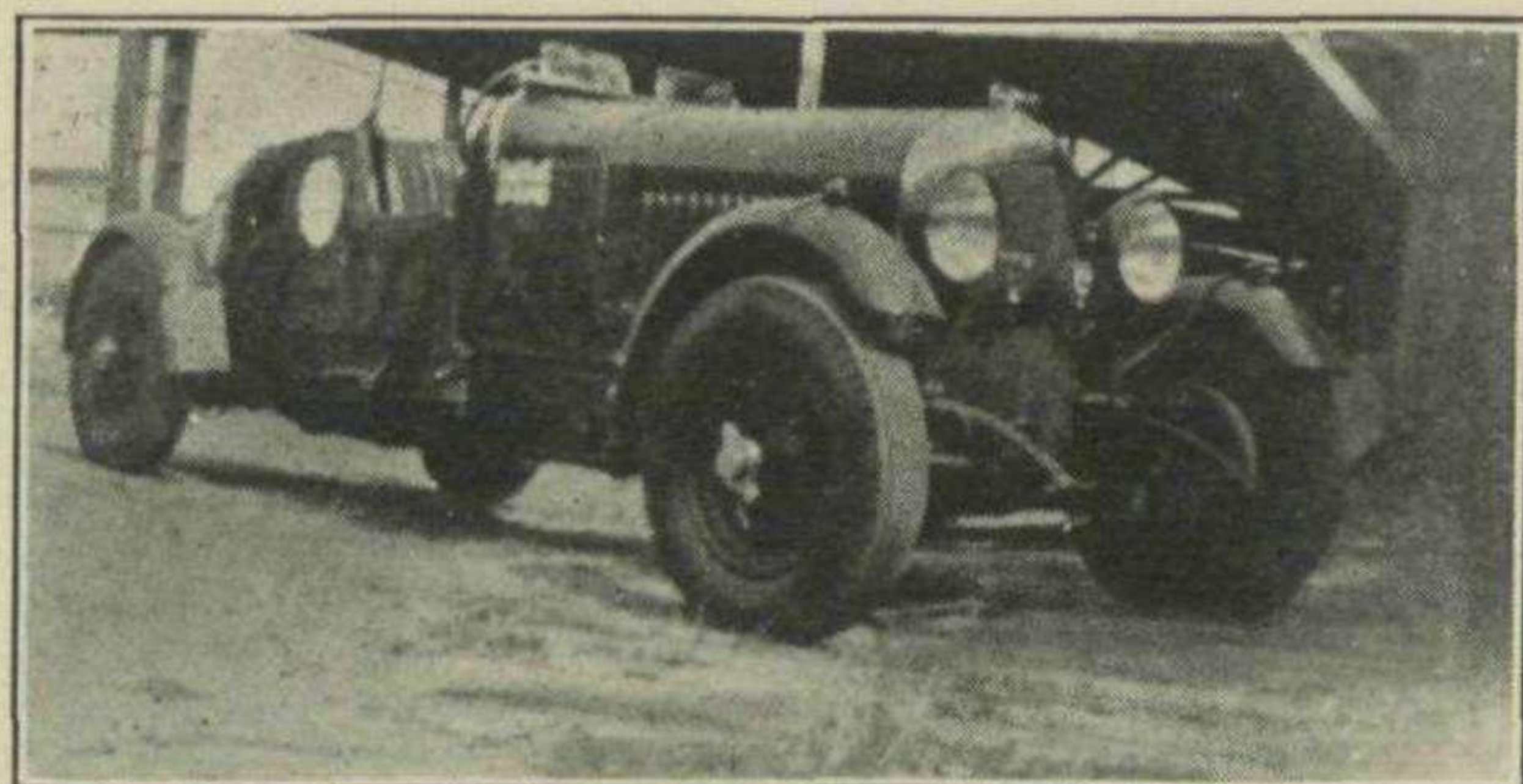
I rate the 1934 season as one of the happiest periods of my life. All the South-Eastern Centre grass-tracks, Biggin Hill, Brands Hatch, Sompting, Leatherhead, Ashford and Rochester, were visited for each meeting. The New Imperial, although it was running on 50/50, got me several places. Lack of transport enforced the riding of the bike to each meeting, and yet the same K.L.G. LKS5 plug lasted the whole season. The only trouble encountered was the binding of the phosphor-bronze bushes on the rockers, due to their movement, and this was overcome by the use of spring washers. I never could see why the designer saw fit to thread the rockers into them and rely on their improbable adhesion to the rocker-box to prevent a seizure. It was the only design fault. Although it was considerably heavier than the O.K., the way the New Imperial would hang on to the fastest, highly-specialised, dope-fed bikes was amazing. Many of the field could not get within smelling distance and were duly horrified.

During this period I used a 3-litre Sunbeam, which was the property of a friend, during the week. It was a truly lovely car. It was admittedly in magnificent condition when we got it, but its reliability was most impressive. It was good for better than 90 whenever it was

asked, accelerated well, and steered like a dream. I never saw a 3-litre Bentley that could hold a candle to it in any way, and I adored playing pretty tunes on its superlative gearbox. I have glorious memories of catching up with a cream and chromium sporting buzzbox just as it came into a turn and watching the crouch adopted by the conductor as he decided to show me where I got off. The expression on the face of its Semitic proprietor as he slid backwards behind a telegraph pole, watching the Sunbeam go by as if on rails, will remain with me for ever. It nearly broke my heart when it was sold.

With the end of the 1934 season, I sold the New Imperial and, as I was thinking of trying my hand at sidecar racing, invested, for practice, in a new 1935 Model 55, 350-c.c. Norton, to which I fitted a T.T. Noxal chair. It pulled the weight exceedingly well, and my voluntary passenger, Philip Towle, the lawyer, who still owns a very fine 3-litre Sunbeam, put in many hours with me, hopping round bends. Philip's engagement and my first sight of a very good twin-cam "Grand Sport" Salmson nearly coincided, and the Norton went the way of all flesh.

The Salmson, when I acquired it, proved to be a most entrancing machine. It had a green bar down the side of the bonnet and had belonged to E. P. Huxham, who used it for trials and the M.C.C. and J.C.C. shows at Brooklands. Since he had sold it, it had certainly had a hard life and a lot of work was required to get it into shape. We found that it had a phosphor-bronze head when we stripped it down, and all the internals showed the signs of loving care. Once on the road it proved delightful. The maximum was around the 70 mark, but the roadholding and acceleration were excellent. With our checked speedometer showing 70, we frequently overtook shrieking toy sports cars which were supposedly bettering the 80 mark. With this car once more I found that Bugatti is the only man who produces a comfortable driving position, and again had to do mighty things to the cockpit. The end was sad. I used too many revs. getting away after a badge-besmeared roller-skate, and there was a horrible noise. You could see daylight



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through the engine from any direction you liked, and there was unlicensed metal everywhere. On stripping her down, we came upon an unsuspected kink, together with a fracture, in the chassis, and decided to let her die. The axles now serve a trailer and a garden cart.

My next venture was forced upon me and was horrible in the extreme. A kindly relative, hearing that my beloved car had blown up, decided to buy the "Dear Boy" a car. She therefore rushed along to her normal service station and told them that she desired to purchase a fast car for a youth who would want something very special. To my vast astonishment, I became the owner of an Abbey-bodied 1932 Wolseley Hornet. Although it was pre-Hornet Special, it had had a lot of work put into it. It sported a 4-speed gearbox, with a very dubious remote control, a rather special camshaft, a Scintilla "Vertex," and two S.U.s. Although it had the standard small-diameter brakes, it was fitted with Rudge hubs and, of course, stoneguards, a pansy steering wheel and the inevitable Union Jacks. Really necessary items, such as that most useful instrument, the oil-temperature gauge, and a rev.-counter were, needless to say, omitted. That it went quite fast there could be no doubt. It would give a very good account of itself against a very special "12/50" Alvis, with lowered and lightened frame and a special body, belonging to a friend. That, however, was all you could say in its favour. Never has a motor-car

steered so erratically! It weaved wildly all over the road at anything over 50, and nothing would cure it at all. It was utterly unreliable. One replaced the half-shafts as often as one filled the tank, the clutch thrust race seized on the slightest provocation and chewed the bottoms off the clutch fingers. Any prolonged burst of speed resulted in a shower of reciprocating parts. It cost a fortune to maintain and, even at its best, was not worth running from the driving standpoint. The advent of the 1935 racing season gave me an admirable excuse to get rid of the brute without hurting anybody's feelings. Transport no longer worried me, as I had the permanent use of the family "77" Chrysler, which was now used as the kennel car to take my mother's Samoyeds to shows. Little need be said of that vehicle, considering that it had no claim to sporting characteristics. Suffice it that it was utterly reliable and as serviceable as a battleship. It was cruised everywhere at a steady 60, often with two racing motor-bicycles on the back, and spares, fuel, tool kits and five passengers inside. It never steered, so the load made no difference. The only way one could get oil into it was to drain the sump and its angle of progression in regard to the horizontal impressed it not in the least. I am fully convinced that it would have towed a London bus up the Nelson Column, still at 60, and still in top gear.

My new possession, for racing, was a 1933 SW5 Douglas, which was, I believe, the last ever built. It had been raced

in the Senior T.T. of that year by "Ginger" Woods, and had afterwards put in some very fast-timed miles at Southport in the hands of Clary Wood, the fastest being in the neighbourhood of 112, I believe. I was greatly amazed at the time at the low price asked for it, although it was in 100 per cent. condition and fully prepared for a season's racing. It took me only a very short time to discover the reason. It was quite astonishingly fast and would leave dope-fed Nortons and D.T. J.A.P.-engined Grass Excelsiors on the getaway, but nothing on earth would haul the ungainly monstrosity round a corner. Despite the fact that the gearbox was mounted over the rear cylinder, the wheel-base went from "thar to thar." It was sufficiently fast on acceleration to lead the field away from the line, sufficiently unwieldy to drop right back on the first corner, and sufficiently reliable to regain the lead on the first straight. That was as far as it went. Only once did it finish a race, at Sompting, and that it won with considerable ease. The most incredible things could happen to that bike. Once the rear hub collapsed at speed and I had to withdraw myself from the tangle of sundry cloth making up the skirts, slips, petticoats and so forth of an old lady spectator in whom I became almost inextricably entangled in the resultant pile-up. Once the gearbox retaining studs sheared, and I was caught a shrewd blow under the knee by the final drive-sprocket. And, finally, just as I was entering the dip at Sompting, at some 70

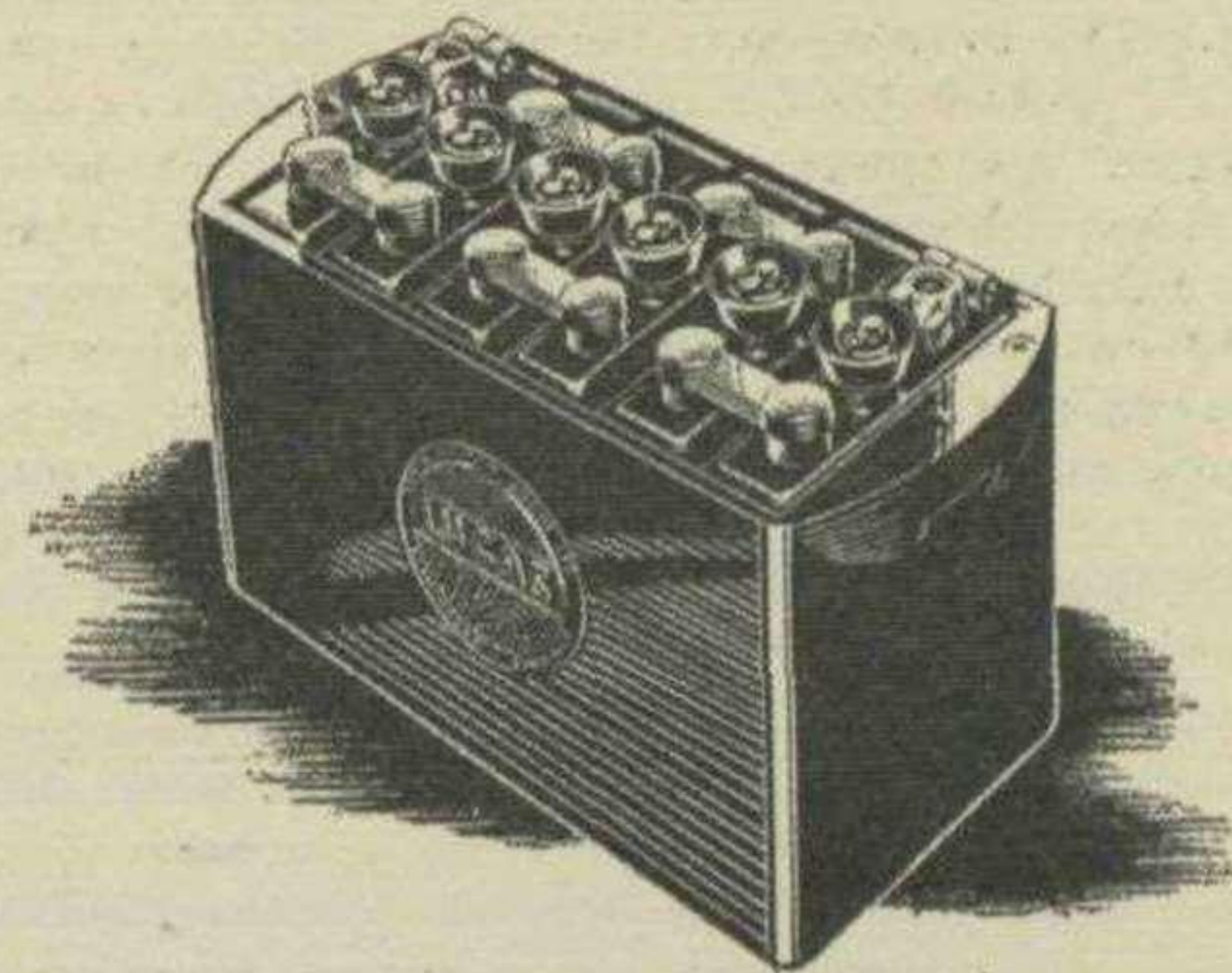
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m.p.h., and coming into a slight right-hand bend, it blew its front pot off completely and flattened the rim of the front wheel. The human body, as a projectile for shattering a mud bank, leaves much to be desired and, after I had picked myself up, I decided that it must go. Once it was reassembled I sold it for the price I had paid for it, but never saw anything back for all the priceless parts I had put into it.

While all this was going on, I put in many cheerful miles in a Vernon-Derby, which my brother had bought, but seldom used. Instead of the standard, vastly inferior Ruby engine, it had an 1,100 Chapuis-Dornier and was, according to Rupert Bellamy, for whom it had originally been imported, one of the only four of that type in the country. It was quite incredibly fast and would easily better the 80 mark, with complete reliability. The front axle was very Molsheim in appearance, as was the whole car, and the general handling was more like a good Bugatti than anything else. Two points only deserved criticism. First, the bolt-on wire wheels completely blanketed the brake drums (which did not help cooling), and they had to be tightened once or twice during every long trip, otherwise sparks would fly in every direction. Secondly, reverse could only be selected by pushing the lever straight through the bottom gear position. This was so unpositive that one could never be quite sure when one would make a swift backward getaway, in traffic, from a crowded traffic light. A simple reverse stop, however, cured this fault. Otherwise the car was perfect. The engine was simplicity itself to work on, but required only routine maintenance. It was possible to put up astonishing stop-watch averages over quite long runs, while the handling was so perfect that the wildest driving could be indulged in in utter safety. As an additional advantage, it could be driven in any clothing, without fear of getting covered in oil, which is more than one can say for many far more modern cars. I was terribly sorry when he sold it to a friend, as I would like to have bought it myself.

With the departure of the Douglas, in mid-season, I had to do some fast thinking to procure a mount on which to carry on. After a swift search I bought a rather odd Excelsior, with a two-port 350-c.c. ex-Fernihough J.A.P. engine, installed in a 250-c.c. frame. It had been built for a rider named "Ginger" Hill, from Eastbourne, and was complete with all necessary modifications to be put into competition straight away. I had a very satisfactory season with it and it did more than reasonably well, although it was always at its best on the shorter and more windy circuits, where its light weight and general handiness gave it a considerable advantage over its heavier classmates. On long circuits, such as Brands Hatch, where a speed nearing the three figures is possible on the straights, it was not so happy. If it hit a bump—and they are abundant—coming out of a fast open bend, nothing would stop it taking off and flying gracefully into the local scenery. It had rather a capacity for plugs, which was not surprising with a compression-ratio of around 12 to 1, but it was otherwise in every way satisfactory. It only

let me down in the last race of the last meeting of the season, at Rochester, when the gearbox gave out when I was leading the whole field up the steep 1-in-4 hill. I now fully appreciate the saying, "My past life flashed before me." Mine certainly did, as I lay on my face and waited to be hit, while the whole crowd scrambled by.

With the end of the season I sold the Excelsior and, owing to the collapse of a motor-cycle agency in which I had been interested, I was now at a loose end, so I decided to satisfy a lifelong desire and take a short-service commission in the R.A.F. As I wanted to brush up on my ever dubious mathematics, I decided to enrol at a local crammer's and, so that I might get into an uninterruptedly studious frame of mind, to dispense with any sort of motor vehicle. Vain thought! After a month I was so irritable and browned-off that I decided to amuse myself in my spare moments by producing a really fast unblown 750, which then had some vogue, following Wharton's successes at Donington. To this end I purchased a really good Austin chassis, already fitted with an "Ulster" axle, aluminium-alloy head and other desirable features. With loving care it was stripped down to the last nut and bolt. The steering was centralised and every single faulty part replaced. Infinite trouble was expended on the suspension and steering, while a 4-speed box was obtained and fitted. Weight was pared in every direction. The whole chassis frame was buffed and polished, lest the weight of a coat of paint should have a bad effect on the performance. At last all was ready. A neat single-seater body was designed, consisting only of two sheets of beaten aluminium and put in the hands of a body builder. And so, with the completed bare chassis fully prepared, I set out to make my first test run on the familiar drive. Down through the village I drove, keeping the revs. low until the oil was thoroughly warm. At the starting point I sat ready for the getaway. The exhaust note, through the lovely copper manifold and pipe I had constructed, was crisp. I counted five slowly and released the clutch. The getaway was smooth in the extreme, and a minute or two later we were doing a brisk 35. The 70-mile-an-hour "S" in the middle of the drive was negotiated safely and smoothly, which was not surprising, as I think I could have pushed it round quicker. One run only did I make. As I was coming back through the village, flat-out, I was overtaken by the grocer's Morris Ten delivery van. I like to think that he had a difficult dice to do it, but I doubt it. I rolled it back into the garage and turned my back on it. I will never see the point of seven-fifty racing and will never be a keen member of the 750 Club. Roller-skating is far more exciting. Yet the keen seven-fifty man who bought it never ceases to congratulate me on the wonderful car I produced. I saw it only just before the war; it was still practically motionless.

My application was accepted by the Air Ministry and, as my training was not due to start till June, 1936, I decided to put in half-a-season's racing. My first acquisition was a very special, very high-compression, sprint 500-c.c. Rudge.

It was a terrifically potent machine, but to persuade the clutch to transmit the power to the back wheel was a work of art. Finally, Bill Hurn and I succeeded in curing its troubles and, with high hopes, I took it to the straight quarter-mile speed trials at Gatwick. The practice runs were promising in the extreme and I had high hopes of winning the "Newcomers" 500 class. On the first run, before I had reached full r.p.m. in second, there was a horrible noise. Later investigation showed that not one but all four valves had fallen in. The mess had to be seen to be believed, and the remnants were sold for a fiver. As there were still a few meetings I could go in for, I hastily constructed a crossbreed KTT/KTS Velocette. It was a most successful bike, a lot faster than the Excelsior, and utterly reliable. At a Brands Hatch meeting at the end of May I collected two thirds. It was the last bike meeting I ever ran in and I enjoyed it to the full. I was sorry to sell the Velocette, but the time had come to pack in motor-cycle racing. I retain a conviction that there is nothing so good for a car driver than a period on motor-cycles. It teaches one to think quickly. It is an excellent way of learning the secrets of obtaining power at the minimum cost. And it teaches you road sense of the highest order. In flying, too, I believe it helps, as it gives you that most invaluable thing, a sensitive seat to your trousers.

With my training almost due to start, I began to think about a sound and reliable car to use during the summer and winter of frequent and sudden moves. I was busily deciding between a 3-litre Sunbeam and a rather special "12/50" Alvis, when the same relative suddenly presented me with another car, and my second, and last, excursion into the realms of chromium plate began. The vehicle turned out to be a standard 1934 Singer Nine 4-seater. Our adventures proved to be somewhat remarkable from the start. During a short run, when Nigel Orlebar was driving, he performed a perfectly normal change into top and handed me the gear-lever. . . . I was to be trained in Scotland and had a very satisfactory trip to my civil school. We bowled merrily up the Great North Road at a rousing and noisy 50. Except for the replacement of three plugs, one whole carburetter and the float from the other one, very little trouble was experienced. During two months up north I was too busy to use the car much, and so encountered no further bothers. It was on the way down to Uxbridge that it really proved its worth. Just near Gretna we were rushing down a slope at all of 55 m.p.h., when my passenger suggested mildly that we had better stop. I saw the point immediately, as flames were pouring up through the floor-boards. I slowed her down to about 15 m.p.h., when we baled out. I deeply regret that we ever extinguished the flames. I never drove the little beast again, and sold it as soon as it was repaired. For the rest of my training period I used an ancient Essex Super Six coupé, which gave very little trouble—or performance. Some very amusing times were had, however, as Air-Commodore Bowen-Buscarlet was then on the staff at my F.T.S., and took us on long jaunts round the test hills in the district. The



Essex's best effort was a remarkable climb of Bwlch-y-Groes, performed without assistance, but very slowly. When I was posted south to a fighter squadron, in the spring of 1937, I bought an excellent 5th Series Lancia "Lambda" from Granville Grenfell.

That Lancia was a truly magnificent motor car. Already of the short-chassis variety, it had been shortened by a further 18 in. As a result the rear-seat passengers had absolutely nowhere to put their feet. After it had had a thorough clean-up and overhaul, it took to quite the hardest life I have ever seen a car take, with complete equilibrium. It toured and city-carriaged, towed and cross-countryed, with equal facility. It became the squadron knockabout, and almost knew the local pubs by heart. In it, I took part in the only trial in which I ever became involved. We netted a Premier and collected the acutest case of boredom I have ever had. To see all the silly little men making a monumental fuss about driving through a spot of mud and listen to the stupid cheering when someone crawled through something he should have been shot for failing was, to me, the highlight in futility. The old Lancia lasted for an age and remained long after better cars had come to take her place. Safe as a house and as reliable as Big Ben, she was a perfect car on which to teach a beginner to drive. I only sold her, just before the war, because the purchaser was so pathetically keen to get her.

For several years before this I had

mechanicked Nigel Orlebar when he set out to race that astonishingly inconsistent brute, the ex-K. M. G. Anderson blown "Akela" G.N., and also Tom O'Reilly with "Red Bidy," the highlights being the continuous rapid manufacture of bulkheads, which Nigel would always forget, and travelling on tow in "Red Bidy" through Eton. A top-hatted youth asked me whether I "really called that thing a car," and Peter O'Reilly thoughtfully pulled its top-hat down on to the bridge of its fleshy hook nose. As a process in the steady travel I was making to real racing, I decided that I could now find the time and facilities to go really hard for the speed trial end of the business. For some time, Nigel had had a short-chassis, Full Brescia Bugatti, with a very promising look about it, lying around, but had not had the time to do anything about it. This I separated from him and towed back to my aerodrome to get it into comparative shape for final tuning. The C.O.'s fitter, L.A.C. Stone, a rabid enthusiast, volunteered to help.

We set upon the Bugatti with horrible determination and stripped it to its barest parts. To our delight and amazement, we found a fully counter-balanced roller-bearing crankshaft, with "Amherst Villiers" stamped on one of the webs. The big-ends were re-metalled and the block carefully checked over. After the valve "bananas" had been renewed and the valve-seats reground, we assembled the engine with all the care in the world. A "San Sebastian" Salmson front axle,

with 11-in. brake drums, was substituted for the previous rather lamentable affair, which would shear the drums clean away from the face plate if any reasonable pressure was applied. A rather Heath-Robinson linkage system was made up and, lo and behold, the brakes really worked, which is rare in a Brescia. The car was entered for the second Lewes meeting and, as our squadron leave commenced about a week in advance, we took her down to Granville Grenfell's place at Brooklands. Stone had to go home, so I was left to complete the good work. I built it a body by the lightest method I could devise. The standard bonnet and scuttle were left in place, together with a Grand Prix cowl and aero-screen, which was already on the car. A single rectangular cross-member was built behind the seat and then fabric was stretched down from the scuttle, over the vacant passenger's seat, and down to the rear chassis member. The whole appearance was slightly reminiscent of a T.T. Lea-Francis and, as the fabric was laced on with copper wire, I doubt if it weighed more than 10 lbs. The morning before the meeting we took the car on the track and she lapped at a little better than 90, but when we brought her in we found the valve clearances all over the place. With Grenfell and Mrs. Grenfell I set to work cutting shims. At 11 p.m. they sent me home to bed and arranged to meet me at Lewes with the car. I discovered afterwards that they had worked till five in the morning. With its horribly high bottom gear the car didn't like getting away.

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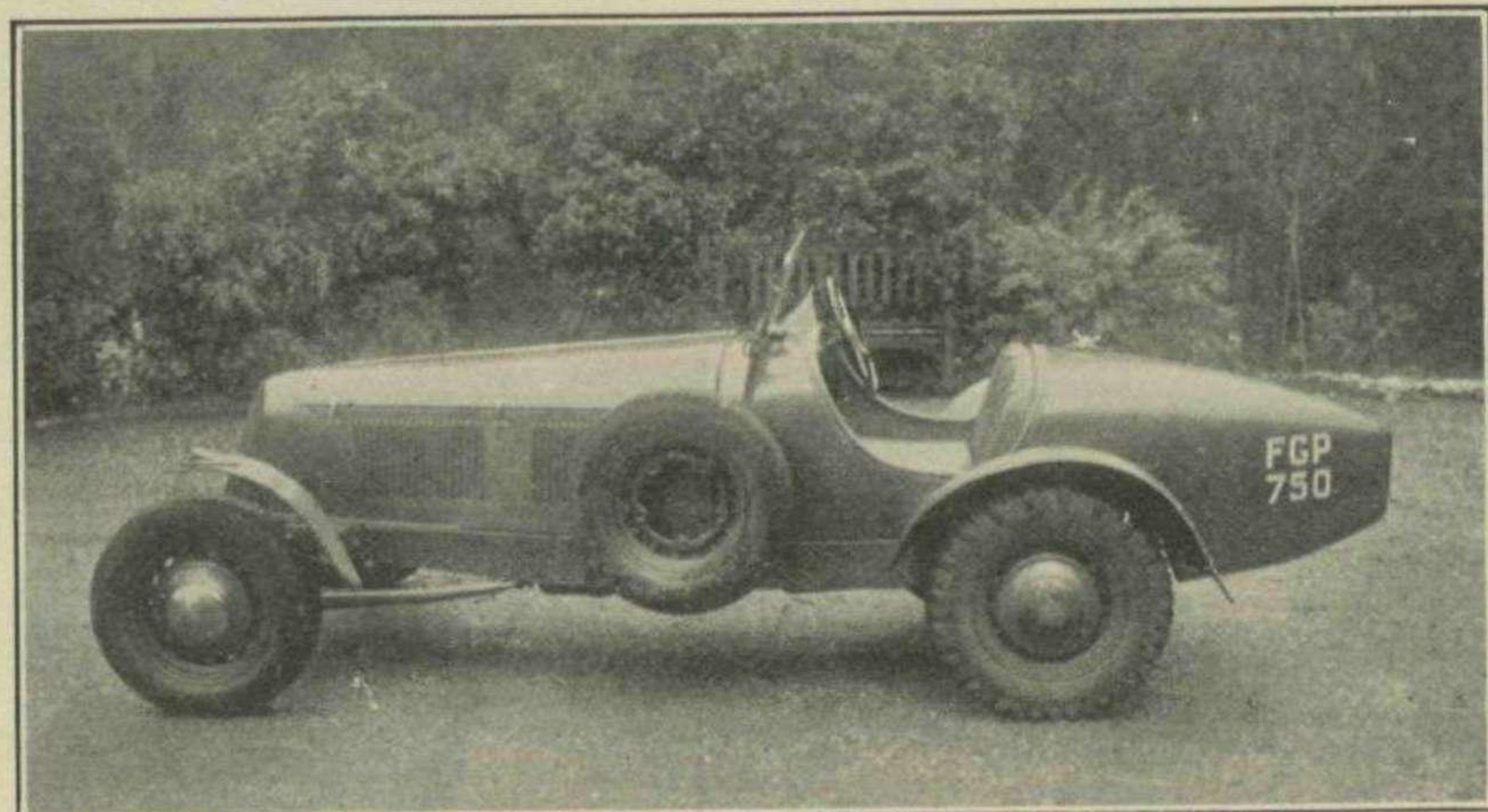
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My first time, after nearly losing the engine on the line, was 26.2 secs; on the second, still getting away badly, I made 25.4. Stone, who was driving in the 2-litre class, made 26.7 and 25.5. The handicap class was still to be run. The getaways had been lousy throughout. Grenfell, looking as solemn as ever, told me to let the revs. go off the clock, to me a rather doubtful procedure with an aged and frail engine. When I expressed my doubts, he took full responsibility for any damage, which is more than most tuners will do. We pushed her to the line and, at the three-second light, I pushed my feet hard down and the revs. howled up, cleared the 6,500 r.p.m. mark and moved a  $\frac{1}{4}$  in. beyond. The wheels span as I let in the clutch, which was probably only due to the wet state of the tar, and she really got moving. We never went frightfully fast, but it felt most impressive. The time was 23.2 secs., good enough to win the class fairly easily and give us a nice little pot to take home from the first meeting. Lewes was the only point with just such a gradient to start on, and we never had any further difficulties getting the brute away.

The next meeting, a week later, was the Vintage Car Club's show at the Aerodrome at Croydon. A change of plugs was all that was required to get things ship-shape, so I enjoyed the next few days of my leave in, or nearly in, the swimming pool at home. I was entered in the 1 $\frac{1}{2}$ -, 2-litre, and Unlimited Classes and was looking forward to six cheerful runs. On the day before I had the old girl out for a test run, and the bottom stud on the clutch withdrawal arm sheared completely. This necessitated a rapid run to the track in the Lancia, where I discovered that Grenfell could produce no replacement. An arrangement was therefore made that Louis Giron, who was to run a "2.3," would meet me with the required bit. When I returned late in the evening I found utter chaos ruling at home. "Red Biddy," which was to have been run by Nigel Orlebar in the same classes as the Bugatti, and by a girl friend of Tom O'Reilly's in the ladies' class, had been down for a run on the same old drive. All had gone well while Nigel was at the helm, but when the girl had taken it out for her first run, she had tried to take a 50-mile-an-hour bend at better than 70, with the inevitable disastrous results. "Biddy" was smashed beyond immediate repair, but the injuries to the girl, who had put her foot in the uncovered clutch, had been far less amusing. After pushing the wreck back to my garage I set out in the morning, leaving a far from cheerful atmosphere. Young Rupert Orlebar steered the Bugatti, on tow, and seemed to be having a very beautiful time, judging by the happy grin that could be seen in the mirror.

On arrival, it was discovered that the clutch withdrawal arm, like practically everything else on the motor car, had threads of a totally non-standard size. I then sat back and watched a most unusual repair, for Louis, I consider, with John Passini, to be the most precise and efficient motor engineer I have ever met. The standard stud was forced in, with a 3-ft. leverage spanner, as far as it would go. Tony Darbishire then produced a jack and a large brick, which he placed

under the loop in the withdrawal arm. Under Louis's directions another friend then took a 16-lb. sledge and smote the top of the loop an incredible blow. When I opened my eyes everyone was smiling. The repair worked and, as far as I know, is still in the car untouched. Croydon was a circus drive, but great fun. As far as I can remember we were the third fastest unblown 1 $\frac{1}{2}$ -litre.

For the whole of the next week, being on leave, I totally rebuilt "Red Biddy," so that Nigel could drive her at Shelsley. In five days and nights I produced a serviceable vehicle, with new chassis frame, prop.-shaft, bevel-box, front and rear axles and radiator. When she finally left for the meeting, I found that I had had seven hours' sleep in the entire period. I regret to say that she failed to qualify owing to clutch trouble. I was not there to witness her misfortunes, I was fast asleep in bed. To that tune my leave ended and we towed the Bugatti back to my aerodrome.

On my return I decided that the Lancia would be somewhat miserable for winter travel, the views not being my own, but those of a girl friend whom I was pursuing with remarkable intensity. To ease the situation I bought, for £5, an incredibly filthy 14-h.p. D.I.S. Delage coupé, and proceeded to clean it up. When we had scraped the dirt off, I found that I had a really remarkable possession. The body was by Labordie, of Paris, and was upholstered in unbleached pigskin. The trimmings were of satin wood, and all the door and window handles were of sterling silver. A minimum of work was required to get it back into really perfect condition, and for quite a period I enjoyed real luxury motoring. It was not very fast, but would cruise silently and effortlessly at 50 m.p.h. all day. Despite a complete lack of shock-absorbers, its springing was perfect. I am convinced that if Rolls-Royce were to have produced a car of similar size, it would have been its closest rival. Unfortunately, I got over-excited on the Guildford Bypass and broke a piston. The resultant damage put her beyond economical repair. I got £22 for the fittings and the aluminium.

In October I ran the Bugatti in a 10-lap racing-car handicap on the Inner Circuit at Donington. We dropped on to three cylinders after five laps, through the most inexcusable fault in racing—faulty preparation. An improperly secured plug lead had come adrift. As I had no idea what had happened, I finished at reduced engine speed. Before the failure, we put in four laps at better than 65.

Winter was now in and, with the death of the Delage, I had only the old Lancia, which lacked a lot of refinements, such as a hood. After a short search, I bought a special 2-seater 3-litre Bentley "Blue Label," modified to "Red Label" specification. There may be something wrong with me, but I loathed that car. After the 3-litre Sunbeam it was incredibly loggy and slow. Its acceleration was poor and its steering as heavy as a 3-ton Bedford lorry. Its one saving grace was its reliability, but my main impression was that it gave one all the discomfort of a real fast car, allied with the sort of performance one would expect from any 10 h.p. saloon. After two months I sold it happily, and invested in a 4-door 1933

Ford V8 saloon. Its steering was frightful and it rattled like sin. On the other hand, it went like a scalded cat, used a lot less petrol than the Bentley, and never went wrong. I used it in standard form for the rest of the winter and most of the summer.

For the 1938 season I had made a sort of arrangement with Nigel Orlebar to share the driving of the "special" he was producing, with an A.C. "Ace" engine in "Akela's" old chassis. Preparation delays held things up for most of the season, but, finally, just as my next batch of leave was due, it was ready. Nigel was to take it to Poole and I would have a crack in the Vintage meeting at Prescott. Some hitch in the towing arrangements occurred, with the result that Nigel towed it straight through a Morris-Cowley, with detrimental results to both. Thus I was left, at the start of my leave, with an entry for Prescott and no motor to drive. The action was obvious. A quick telephone call changed my entry to the Unlimited Racing and the Allcomers' Class.

One morning, ten days before the meeting, the Ford V8 found itself, all unsuspecting, standing outside Tanfield Motors, whose workshops Arnold Lancaster had put at my disposal, while several grim men discussed a course of action. Then we pushed her inside. An axe seemed the best thing to get the body off, and then work started in earnest. At four o'clock on the Friday afternoon, a week later, the product of my efforts stood, once more, outside. One-sixteenth of an inch had been milled off each head, and Brico had produced a set of pistons. Ke 965 sodium-filled valves and Terry triple springs had been fitted, while the porting and the manifolds had utterly changed shape. Lloyt 81 main and big-end bearings had been fitted, together with a Lucas "Racing" coil. That completed the engine side of the proceedings. As far as the chassis was concerned, a van mainleaf had been put in both the front and rear springs and the shocks were "absorbed" by No. 9 triple Hartfords in front, and by No. 5 doubles at the rear. A longer drop-arm had been forged and the steering column raked down. A metal body, not unlike that of the Bugatti, with one seat, had been built. The wheels had been balanced and shod with a lovely set of "pneu.-grippad" Dunlops. It made most un-Fordlike noises through a straight 2-in. pipe, and the getaway was a strange sight, as time had not permitted me to move the engine back in the frame, and all the weight was on the front wheels. At five o'clock, complete with a week's growth of beard, I went to bed. On Saturday afternoon Philip and Pauline Towle woke me up. Whilst I enjoyed a shave, they hitched the tow-bar on to the back of the Morris Twelve-Six which had replaced the Chrysler as kennel car, and off we went.

I have never enjoyed a meeting as much as that. I did not know the hill and the Ford was certainly tricky. The wheel-spin was amazing getting away, and though I gradually got the rest of the course clued up, I could not stop the brute floating all over the road on the first steady bend away from the start. Each climb showed an enormous improvement, and my time in the Allcomers'



Class was good enough to have got me a third in our own. I left, highly contented, with the conviction that we could really make the "2.3s" think the next time.

1938 was the year of the September crisis, and due to the necessity for Fighter Command to stand by, I missed Shelsley. I also missed the final Prescott and Lewes meetings, and then, just as I was finishing my entries for the final Donington meeting, we were sent off to Northern Ireland. The beginning of November found me possessed of a car to race and nothing to race it in. Sometimes I would tow the Ford down to the "Phoenix" and we would all drive it along that most illegal Phoenix Hill. Once I got within 0.2 sec. of the record made by the big Delage. I was incredibly browned-off. I had only the old Lancia as a road car. The inevitable happened. A set of light guards, a bracket for the spare wheel, some lamps, a windscreen, and the Ford became once more a road car. A very phenomenal car it made. With all equipment on, it weighed under 13 cwt. The addition of the spare wheel helped to keep the back down and, although it was always a handful on wet roads, it really handled very safely and could be flung about in a most impressive way. The maximum was a bit better than 100, and the acceleration, of course, was astronomical. The most remarkable thing was the petrol consumption, which worked out at a shade under 20 m.p.g. I ran it until early spring, when Sandy Campbell, the younger brother of Dennis, who used

with an Aston-Martin, took a liking to it and bought it from me. He put in an enormous amount of work, and specialised it even more, but, unfortunately, he raised the compression still further. It was too much for the indignant bottom end and, after he had lapped the outer circuit, stripped, at better than 110 m.p.h., it sadly blew itself to bits.

Stuck with the weary old Lancia once more, I looked around and then bought a 4-seater 4½-litre Bentley from John Passini. I fancy that it had once carried a saloon body. Marcus Chambers had got hold of it and fitted a cut-down "Speed Six" Van-den-Plas open body. The whole thing looked very nice, bar the fact that it was impossible to open the driver's door owing to the outside brake lever. Anthony Heal had bought it and used it to tow the Fiat about, and thereafter Louis Giron had got hold of it. The only modification I made was to replace the floppy aluminium mudguards, which used to tear like paper, with steel Le Mans-type semi-cycle guards. Once I broke a halfshaft, which John came all the way to London to replace; otherwise, except for routine maintenance, not a spanner had to be laid on it. No car ever worked harder. It played the normal part of an Air Force hack. It towed friends' cars to meetings. It did short trips and long fast runs. Once, at dead of night, with my future wife in the front and Nigel Orlebar sticking his head up anxiously through the tonneau cover, it covered the 21 miles between Guildford and Horsham in 19 min. 39.7 sec., aided

by its magnificent, ex-Alfa-Romeo Italian Bosch headlights. When I thought of running it round the Outer Circuit on August Bank Holiday, I stripped it completely except for one aero-screen and, before any work had been done on the engine, it lapped at something better than 97. Quite a lot of attention had to be paid to the brakes, but when they were adjusted right, they really stopped her. In every way she steered, accelerated and proceeded exactly as a fast car should. When we took off for France in September she was acting as a grandstand for my wife and some Service friends. I hope the old girl liked our show formation as we left; she was a lady and liked nice things. My very irreverent brother had christened her "Nausea Bagwash," a name that stuck. The fellow who was to have looked after her was killed, and I have not been able to trace her since.

I did nothing during the 1939 season, for my heart was set on acquiring a "2.3" Bugatti. Once I ran the old Brescia in the "Brescia Cup" at Prescott, and had clutch trouble, which disimproved the gearbox. That was all. Just as the "2.3," long dreamed of, became a reality, and I was all set for a magnificent season in 1940, the war started. I got married on August 30th and had a 1½-day honeymoon, in which I had to clear up all my affairs. On September 9th I was away. My French motoring was limited to Service transport, although one of my friends bought a really magnificent "Lago" Talbot coupé. In April, 1940, I bought a genuine British-built G.N. from

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a Lille scrapheap, but things really got hot before I could get her going. I had the good fortune to command as magnificent a flight as anyone could wish for. In late May I left it, with my facial appearance somewhat altered, to undergo a seemingly interminable period that consisted of doctors, hospitals, more doctors and still more hospitals. When I emerged I felt utterly satisfied with the Ford Twenty-two V8 saloon, which had been run by my father, who died while I was in France. A little sense returned and, on meeting Jock West, I bought the once famous Hartley Ariel, which was basically an old 1926 500-c.c. side-valve which had pulled a milk float. By the time they had finished with it, it would lap the Outer Circuit at about 98 m.p.h. It had a T.T. Sturmev-Archer 3-speed box and a racing A.J.S. con. rod, with an eccentric big-end bearing to overcome the greater length. I had immense fun with it, as it looked like the sporting farmboy's ideal. It would easily murder replicas of every make, and did, on every occasion. I sold both it and the Ford, which I had now come to dislike, when I was posted out to Canada at the close of 1940.

My first action in Canada was to find a car. As a stop-gap, until I found something better, I bought a 1937 Ford V8. It was very like any other of its breed and did me very nicely. A month later I found what I wanted and exchanged it for a 1938 V8 "La Salle." For those who do not know, a "La Salle" consists of the big General Motors chassis, common to Oldsmobile Eight, "Special" and "Century" Buick and La Salle, with the very potent V8 Cadillac engine. The body, which is common to all, has better fittings than the others. By way of tidying things up I had  $\frac{1}{16}$ th milled off the heads, a 2.9 to 1 crown wheel and pinion cut, and obtained a set of special valves and springs. To help the steering I doubled up on the shock-absorbers all round. When I had finished I had a car with a timed maximum, four ways, over a half-mile, of 107.8 miles per hour. A standing start to 60 occupied 10.2 secs. Over the magnificent roads of Ontario I was able to cruise at 85 to 90 all day long. With two specialist navigators on board, with synchronised chronometers, I clocked 2 hrs. 27 min. and some odd secs. for the 167 miles from the Royal York Hotel, Toronto, to the gates of Port Albert, the last 12 miles being over dirt roads. The steering was infinitely superior to that of many very expensive British luxury cars, and it carried heater and defroster gear. It would have cost, in America, with modifications, about £285 new, which makes you think, I covered 27,000 odd miles, much of it over the worst dirt roads, gave my new-born twins their first taste of three-figure motoring at five weeks old, and toured in the Northern Ontario backwoods. My total repair bill amounted to 12 dollars 50 cents, and I only sold it when it ran out of tyres, which were then unobtainable.

In the place of the La Salle I bought a magnificent set of Dunlop 90 Forts and found that they were supporting a 1938 Buick "Special." Its record and mileage were impeccable, but it was a horrible car. I can think of nothing that didn't go wrong with the brute and, with every mile, my loathing grew. For no known

reason Buicks fit coil springs to the back of the standard chassis and nothing will stop the swine from lurching around. The clutch was a nightmare of trouble, as was the valve gear. I kept it until I came home, through necessity, and, as the tyres still looked lovely, sold it for what I had paid for it.

There is no need to tell anyone that motoring is temporarily dead in England. I have driven a friend's "Silver Eagle" Alvis a few miles on duty runs. I have driven many miles in the wonderful Jeep, but one keeps on waiting for the time to come back. I'm happy in anticipation, really. A while ago I bought a really magnificent "38/250" Mercedes-Benz and it is slowly getting into shape. It has a genuine Mercedes-built regulation body and is fitted with triple-cross, well-base Dunlop wheels and Hartford shock-absorbers, so all the worst problems are already looked after. I will be able to really devote my time to motoring after the war, and I have a very handy unblown "special" well on stocks, for the express purpose of lowering the unblown Shelsley record. It is very unconventional, but terribly simple. I will not divulge its layout because I think I have got something really worth while. The choice of an engine will not surprise anybody. There are other things brewing, too. I have very determined ideas on ultra-reliable long-distance cars. Somehow, I do not think that highly stressed, existing 1½-litre cars will have much luck when racing returns. They have lain dormant for too long. For a while, big reliable road-race cars will be the acme of post-war racing, which, I fear, will have to be on a handicap basis for some time to come. I can hear the sodden tears of the unblown 750 kings, but who on earth will want to watch the little lice creeping about, except as a comic turn during a meeting for real cars?

One thing is certain, thanks to the few enthusiasts like those who publish MOTOR SPORT, there is a steadily growing interest in racing. One can notice it wherever one goes. Once it is in one's blood it becomes a way of life, rather than an enthusiasm.

\* \* \*

## A SUSPENSION PROBLEM

—and other points arising out of the last "Cars I Have Owned" article

The 1937 Riley Big Four mentioned and illustrated in Capt. K. Richmond's article (July issue) had a quaint induction system with the branches from the hot-spot leading through the head to the inlet valves on the opposite side. This was altered the following year to the current superior arrangement, with the carburetter on the inlet side and an exhaust heated hotspot fed through the head.

After abandoning the free-wheel overdrive (3.97 to 1) the gear ratios adopted were quoted by the makers as: 4, 5.67, 8.6, 14.6 to 1, quite pleasant, though with the colossal urge obviously available despite the car's weight, third and second seem a shade low. Without altering the tooth-pitch, 5.2 and 7.9 would have been possible and, I think, preferable.

Now for the problem. Current suspension theory favours lateral (anti-roll)

stability concentrated in front. Hence the success of a really good i.f.s. Hence, apparently, the abominable rolling and untoward excitement on corners referred to by Capt. Richmond as characteristic of a certain "10," which, like most cars only rather more so, is virtually single-point suspended in front though well enough endowed aft, raising the obvious question whether this particular suspension would not have been better the other way round. But the interesting point is that fundamentally the Riley is nearly the same—front semi-elliptics unusually close-set to secure a good lock, and a torsional stabiliser at the rear only; yet outstandingly excellent cornering.

Perhaps Mr. Bastow, or one of our other suspension experts, will oblige with an explanation of this anomaly.—J. R. E.

\*\*\*\*\*  
LETTERS—continued from page 174

It will be greatly appreciated if you can give me any information regarding the following:—

- (1) Is it practicable to run the Bugatti sans blower?
- (2) Compression ratio with and without blower?
- (3) Will she run on pump fuel without blower?
- (4) Is it possible to obtain an induction manifold and single carburetter for converting to unblown?

It is my intention to use the car on the road sans blower, and use the latter article for any serious racing work. Having had very little practical experience in this type of business it will be greatly appreciated if you will enlighten me on the foregoing.

Thanking you again for your assistance.  
I am, Yours, etc.,  
H. B. KELFKENS.

P.O. Box 6653,  
Johannesburg.

[These queries apply to a 3.3-litre G.P. Bugatti. If you can help, please write direct.—ED.]

\* \* \*

Sir,

First let me thank Mr. Biggs for the information regarding the Marshall blower. Concerning the speeds of the T-type "Musketeer" M.G., I only remember seeing one reference in print, and that was in the August issue of the *Light Car* in 1942.

In an article describing Macdermid's 1937 T-type (ABL961) Mr. J. Reiss, who was then the owner of the car, claims to have had 101 m.p.h. at Brooklands and 104 m.p.h. at Donington.

It would be very interesting to hear from one of the actual team *re* the performance of a blown T-type.

In any case, according to Mr. Clutton's remarks, the T-type needs 70 b.h.p. per litre at 95 m.p.h., and it is this statement which I am endeavouring to prove false.

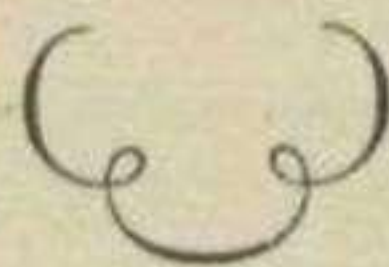
I am, Yours, etc.,  
Potter's Bar. A. G. SANDERSON.

[Mr. Biggs's further comments appear on page 172, following which Lt.-Comdr. R. A. Macdermid himself disposes of the Reiss claims. Why, oh why, are T-type owners such romancers?—ED.]



# French Tendencies in the Early Twenties

By Cecil Clutton



I HAVE received from the Editor a copy of *The Autocar* for October 15th, 1921, accompanied only by a cryptic note about curing the influenza. As I am not suffering from the influenza just at present this doesn't seem to get us any place much, but I conclude that I am expected to produce a story.

It really is rather an interesting number of *The Autocar*, because it deals with the 1921 Paris Salon. The reporter comments, with great truth, that "French designers cherish an innate love for a mechanical masterpiece, and not infrequently they have allowed this love to over-rule commercial difficulties." This was clearly apparent at the 1921 Salon, at the very moment when the post-war slump was beginning to assume its most menacing expression.

Manufacturers were, indeed, pandering to the slump to the extent of producing cycle-cars of horrifying frailty, and there were some sound, cheap light cars among which the Citroen was outstanding; but among the great houses were many superlative cars in which inconvenience and expense of manufacture had received no concessions whatever. External engine neatness is highly prized in a way that was seldom found in English products except the Sunbeam, which was certainly a model in this respect.

Among these super-cars the Hispano-Suiza, Delage and Farman were outstanding, while Fiat and Voisin had twelve-cylinder models. Straight eights were represented by Panhard and Bugatti, the former being a sleeve valve, doubtless the forerunner of Eyston's famous razor-blade of the later twenties.

The Bugatti was, however, the lion of the Show, and an entirely remarkable effort it certainly was, attracting so much attention that it was practically impossible to get near the thing.

So far as I know, no type number was ever publicly attributed to it, but it was presumably somewhere between 23 and 30. Whether an example was ever delivered to the public even seems open to doubt. The more sceptical, like John Bolster, who squints horribly and froths out of the corners of his mouth when in proximity to a Bugatti, may even question whether there were any works inside the engine.

Be that as it may, this model was a remarkable premonition of the small-capacity multi-cylinder engine which received its first real impetus from the 1923 2-litre Type 30 Bugatti. Compared with the rather experimental nature of the Type 30, the 1921 show model suggests a maturity of design which was not again found in touring Bugattis until the 5-litre, Type 46, introduced in 1929.

The engine dimensions are 69 by 100, like the Type 44, giving a capacity of 2,991 c.c. It had the usual square, monobloc appearance, but was, in fact, two blocks, like the Type 49, with the camshaft drive between them—a very sound arrangement which it seems remarkable

that le Patron did not adopt more frequently.

A cross-shaft at the base of the camshaft drive worked the water pump on the near exhaust side, and the magneto on the off side. The magneto was decently concealed from the vulgar gaze in a neat aluminium box.

The head was flat, having three valves per cylinder and this was the first public appearance of the traditional Bugatti "square" block and cambox arrangement, usually attributed to the 1924 G.P. cars.

The big ends and ten main bearings were all plain metal, and had the advantage of pressure lubrication throughout. Having regard to this it seems remarkable that it was nearly eight years before plain bearing Bugattis again had pressure lubrication, relying, instead, upon the very temperamental spit-and-hope method. The pistons were aluminium.

Once more anticipating the Types 46 and 49, the off side of the engine is graced by the 16 sparking plugs which (as appeared from a recent public utterance) so displease Mr. Bolster. Now, it strikes me that 16 sparking plugs are no funnier than the four carburetters with which Mr. Bolster has festooned his Delage tourer, and not half as funny as the four engines with which he has endowed his racer. In fact, it is my belief that Mr. Bolster is jealous of Mr. Bugatti's 16 sparking plugs and 24 valves.

This typeless Bugatti had two carburetters of special Bugatti design, expressly arranged, it seems, so as to preclude entirely the changing of the sparking plugs on cylinders 3, 4, 6 and 7.

The engine was said to develop 90 b.h.p. at 3,400 r.p.m. which, if more than a pious hope, was a very good performance, being equivalent to 118 b.m.e.p. at a piston speed of 2,250 f.p.m.

The chassis followed usual Bugatti lines, though the tubular front axle had not yet arrived. Front brakes, cable-operated, were fitted, but these were intended to be replaced by hydraulics—a system which Mr. Bugatti was then contemplating, but which he dropped after he had had a horrifying oleo-accident while rushing down a mountain. He was not to resume hydraulics for another 17 years, until the very latest Types 57 and 57C.

The front springs were semi-elliptic, but each spring was composed of two separate sets of leaves, side by side, and each very narrow. This arrangement also appears in "Black Bess," and Mr. Bugatti naively commented that it was "very original"—but vouchsafed no further explanation.

Again looking forward to the Type 46, the gearbox lived on the back axle, but in this instance it contained only two gears (like the Baby Peugeot) which were considered adequate for such a light chassis and powerful engine.

Yet another unusual pioneer feature was an adjustable steering wheel, the adjustment being effected by the simple means of arranging the wheel so that it could be slid up and down the column, and fixed at any point by tightening a key. However tentative this model may have been, at least its outward semblance existed, and its specification shows how clearly Mr. Bugatti had envisaged the high-speed touring car of the future, at this very early date. What does seem queer is that we had to wait seven or eight years before any other plain-bearing Bugatti of such mature design was put into regular production.

Going back to the rest of the Show, perhaps its outstanding feature was the great advance of four-wheel brakes. Some 40 firms had adopted them at a date when, I believe, the Argyll was the only English car so fitted, and most manufacturers regarded them as little short of heretical. The fact was that the French had seen f.w.b. in successful operation in racing, and they were not slow to appreciate their value in ordinary motoring. In addition to these high-priced models the famous makers were also meeting the financial slump by offering small, high-quality models, and in view of the then exorbitant price of petrol, considerable emphasis was laid on fuel economy. Some of these had sleeve valves, of which the smallest was the 4-cylinder, 60 by 105, 1,200-c.c. Panhard, and there was a Voisin only a little larger. In so small an engine the frictional losses from double cast-iron sleeve valves must have been quite horrifying.

Suspension systems were fantastically varied and complex, among the more remarkable being the Gobron, of which *The Autocar* reporter remarked that it had "a very peculiar type of rear spring; only the main leaf is a true cantilever, the rest of the spring being quarter-elliptic, and added to this is another quarter-elliptic, shackled up to the end of the frame, the use of which is very obscure."

Apart from the Salon, the same issue deals with entries for the forthcoming 200-Mile Race, and it is a fair measure of the interest which this event aroused that one finds the Morris-Cowley concern covering a full-page advertisement with laboured excuses for their non-participation in the race.

## OBITUARY

Another famous motorist has been flagged-in—Capt. Sir Lionel Phillips, Bart. He owned a Leyland Eight, and with it achieved the very fine average of 97.85 m.p.h. in the 1937 M.C.C. One Hour High Speed Trial.



# RUMBLINGS

It will be recalled that D. K. M. Marendaz once toyed with the idea of renovating "30/98" Vauxhalls; his plan never got under way, but, subsequently, Crackington Motors, of Welwyn, and other firms did this work. And H. M. Bentley and Partners, Ltd., made an excellent job of reconditioning old-school Bentleys, after these cars had gone out of production. We are now able to announce that after the war John Haining and L. H. Muskett hope to offer "12/50" and "Silver Eagle" Alvis cars reconditioned in a similar manner. The scheme is to thoroughly overhaul these chassis at Haining's Chester workshops and to fit light 2/4-seater sports shells, upholstering the front seats only, and fitting close-up wings, fold-flat screen, cut away for the driver's elbow, a new, well-stocked instrument board, detachable valance over the rear dumb-irons, outside exhaust system, etc. The lines would be rather like those of a Van den Plas 3-litre Bentley, with outside brake-lever, and equipment will probably be kept to a minimum. Clutch and brakes would be relined, transmission and axles overhauled, and engines rebored if necessary, and, in any case, restored to hale and hearty order. It is thought that such cars could be sold at £150 apiece, possibly less, and being (in the case of the "12/50") of 12 h.p. and able to give 25 m.p.g. or so, with proven reliability, they should certainly appeal to those enthusiasts anxious to get on the road at once in vintage type cars, or having no workshop facilities of their own. The idea could quite easily be extended in scope, to cover other makes, or to offer a full range of modern equipment in cars appealing to those with vintage sentiments.

\* \* \*

With the Red Army advancing at a truly commendable rate, and British and American Forces penetrating deeper and deeper into France, the Nazi future just doesn't exist. We all look forward to, and deserve, a quick return to peace. Even so, everyday things are likely to be a bit upset for some while after the armistice, and books, therefore, are likely to continue to play a considerable part in brightening the outlook for some time to come. More and better paper being then available, publishers should have their big chance. These thoughts are very satisfactory after seeing the Harborough Publishing Co., Ltd.'s latest effort: "The Book of Westland Aircraft," by A. H. Lukins. This book, which sells for 12s. 6d., is truly beautifully produced, even by peace-time standards, and we sincerely hope to see others on the same lines following it, dealing, let us hope, not only with aeronautical subjects, but with motoring matters. This particular book gives a short history of the Westland concern, followed by a description and specification of each of its products, in every case accompanied by very excellent photographs and scale three-view drawings. The diverse products of

**New Wine . . .**

the Westland concern mean that some most unusual, as well as early and historic, aircraft are presented in this intimate and interesting manner. If the Harborough Publishing Co., Ltd., were able to produce such a work covering each of the big aircraft concerns, what a wonderful library that would make for aviation enthusiasts. Is it too much to hope that they will also do likewise for our world? A history of Rolls-Royce, Ltd., for instance, thus beautifully produced, would be most acceptable.

Another very stout effort in the book line is G. R. Doyle's new edition of that stupendous little work, "The World's Automobiles." This amends the 1932 edition, putting in 500 American cars not previously included, extending British, French and other records to the outbreak of war or thereabouts, and altering certain errors. A supplement running to 30 pages covers these additions, and the author offers this, incorporated in a pen-and-ink amended main volume for 8s. 6d., or less to previous subscribers, who are invited to enquire for terms. This little reference work is unique, and early application should be made to 22, Windmill Hill, Ruislip, as only 300 copies are available.

\* \* \*

Unfortunately, as a telephone call from Rivers-Fletcher pointed out, we were in error in respect of last month's front cover explanation. A poor printer's "pull," from which little detail could be seen, led us to confuse Denis Evans's ex-Montlhery M.G. for Kenneth Evans's Wilkinson-prepared Q-type M.G., while the car we said was a Riley is actually the V8 Harker-Special. Sorry! Clutton recently queried Truffault shock-absorbers. "J.R.E." says they were a sort of primordial Hartford of the 1904 (or thereabouts) era, with oil-soaked leather discs sandwiched between steel; Rolls-Royce apparently used a similar shock-absorber for years, with coned discs to increase friction. "J.R.E." also says that M. Bugatti overcame the manufacturing problems often associated with the guides for his Brescia-type "banana" tappets by arranging the tappets in pairs, each in a bronze casing, into which white-metal was run with the tappets held in the correct position. Thus the accurately-fitting curved slots were obtained without machining!

\* \* \*

This month's cover picture shows E. K. Farley tackling a re-start test on the Brooklands Test Hill in his Meadows-engined 1½-litre H.R.G., during a J.C.C. Members' Day meeting. Farley drove F.W.D. Alvis and Singer cars before he competed with the H.R.G. It is an optical illusion that the car appears to be going downhill—or should we say curious camera-craft?

**Cover Picture**



**WE HEAR**

Michael May still waxes very keen on the subject of "Silver Eagle" Alvis cars, but he has lately been using his mother's Hotchkiss saloon for business journeys, and getting some excellent service at 17 m.p.g. Which reminds us that there is a rather forlorn Hotchkiss saloon, in rough order, derelict at a garage on the Barnet Bypass, which someone might well recondition. Flying bombs messed up some moderns at a certain showroom, but entirely missed a carefully-preserved Renault landaulette of about 1910 vintage, which was once the property of Queen Alexandra.

In London a Swift "Cadet" saloon and a very well-preserved Humber Eight fabric saloon, used by a baker, are pleasant sights. At a breaker's in Hertfordshire we came upon the remains of a small and early supercharged touring Mercedes, a "Redwing" Riley, a Schneider, a "Cammy" Velocette and an Excelsior "Manxman," and later on the same journey saw a Moon saloon in another breaker's, and a very nicely-preserved Lancia "Lambda" 7th Series tourer, and an Alfa-Romeo coupé outside a hotel at Hatfield.

K. Cobbing, in sending us some excellent photographs of his extensive collection of early motor-cycles, mentions that a fitter at his airfield has a "Red Label" 3-litre Bentley laid up, and that he has noted a 1923 Humber and a special D.K.W. with knock-off wheels and steel coupé body in use in Bucks. Cobbing also says he found a sound 1912 4-cylinder Renault on a farm, which the farmer is keeping for his nephews when they grow up, and he is trying to acquire an early Iris car. He would like to hear from anyone who has an A.B.C. or Wooler motor-cycle for sale. Then Victor Axelberg has a 1915 belt-drive Triumph, with chair, for sale, and there is a well-preserved 2-cylinder Renault still at Ripley, the A.B.C. car is presumably still available at Byfleet, and a Lanchester Twenty-one ambulance, mentioned in these columns ages ago, still serves at Ripley. Coming to more modern happenings, Lt. Shenton, R.N., has acquired a 1932 Frazer-Nash Meadows, and Sub. Lt. A. H. L. Barlow, R.N.V.R., was considering purchasing a 1933 3.3-litre Type 49 Bugatti. Cyril Peacock has his "12/50" Alvis stripped right down, and the new owner of his Alvis G.N. "Special" recently took delivery by road. Robson has nearly completed his short-chassis 8th Series open Lancia "Lambda," and we saw a very fine saloon "Lambda," driven by a naval officer, in Oxford Street recently. Ralph Venables reports really wonderful service from his V-twin B.S.A. 3-wheeler, which he wrote up in *MOTOR SPORT* soon after acquiring it; in two pretty full years he says he has only had to clean the plugs twice and adjust the tappets once, and oil consumption is virtually non-existent and the tyres unworn. The 1924 Horstman went, in the end, to L. H. Muskett, of Chiddingfold, lucky man, and Rowland achieved 50 m.p.h. in it on the delivery run. Muskett, incidentally, has stored his recently overhauled 1937 Riley "Sprite" 2-seater, but would sell it to anyone really keen on the type.

We are grieved to hear that amongst the more serious damage caused by

# Club News



Germany's aerial torpedoes was the write-off of the two Le Mans V12 Lagondas, which had recently been re-acquired from private owners by Lagonda, Ltd., it is said, at a cost of £6,000 each.

The quite irrepressible Birkett has found a 5-litre Type 46 Bugatti in a breaker's yard, and another reader has bought a straight-eight, single cam G.P. Bugatti, presumably a Type 35. At a Newbury breaker's is a 1905 tonneau chain-drive 28-h.p. Daimler for sale for about £40, and a rather rough "10/23" Talbot. We learn that a K3 M.G. Magnette, K3008, believed to be one of the Mille Miglia cars, was caught in France when war came, but its owner, Nigel Mann, was able to strip it down and hide the parts. He now seeks an Alfa or Bugatti.

**"MOTOR SPORT" LIBRARY**

It has been decided to loan books from the *MOTOR SPORT* library on trust to readers free of charge, providing a large stamped addressed envelope is enclosed. Such books should be returned as soon as possible, of course. A full list of books available will be published shortly, and already many readers have availed themselves of this service.

**INFORMAL**

We understand that on Saturday afternoons certain enthusiasts have been getting together in the "Ship," at Shepperton-on-Thames. These gatherings are quite informal and the usual mode of transport has been by push-bicycle. Perhaps the sad inability of Capon to continue with 750 Club meetings in London prompted them; anyway, doubtless a few more motor-minded men and women in the bar would do no harm.

**V.M.C.C. OF A.**

The Veteran Motor Car Club of America is exceedingly virile. It organises socials, publishes a very ambitious magazine, *The Bulb Horn*, each month, is planning to revive the Glidden Tour, and is altogether an active body—although it must be pleasing to be in a country where it is possible to work up excitement over the discovery of a 1921 Essex tourer. [We discovered a Hudson Super Six Sedan at a bombed-out London garage recently and only wish we could ship it out to Bob Townsend!] The April *Bulb Horn* contains this story of the salvage of the Essex, another about salving a 1912 Underslung, and a description of early Winton cars, besides other very absorbing matter. For the sake of this magazine alone British veteran enthusiasts might well join the V.M.C.C. of A. Secretary, Vassar Pierce, 133, Brooklin Avenue, Boston, Massachusetts.

**A COMBINED MEETING**

An attempt will be made in Belfast on August 20th to unite motor-cyclists and

motorists, at a combined motoring and motor-cycling film show and Brains Trust, to be held at the Grand Central Hotel at 3 p.m. Tickets can be obtained from C. G. Robb, Robb's Garage, Ltd., Dundonald, Belfast, price 4s. each.

**NOTICE**

After a rather near miss from one of Hitler's latest toys the Editor evacuated most of the *MOTOR SPORT* records to a more healthy spot in the country. Consequently, it may not be possible for a while to answer quite so fully as in the past readers' technical and historical queries; indulgence is craved until it is again possible to consult these books and papers.

**TRIAL!**

Jenkinson and Holden recently staged a trial in the Hampshire area—for enthusiasts and their bicycles. Right up to the last double section there were about five possible winners, and in the end Arklay (Scott man) tied with Newton (Singer Le Mans owner) for first place, Newton winning the slow race to settle the issue. Roy Petty (B.M.C.R.C. rider) was third, and Joe Lowrey on his ancient touring bog-wheel was fourth.

**HERE'S HOPING**

We quote the following from the *Evening Standard* of July 20th, incidentally wishing Sqdn. Ldr. Storrar the best of luck:—

"Sqdn. Ldr. James Storrar, D.F.C. and bar, tells me he has a personal interest in the taking of Caen. He has been flying between England and Normandy since the first landing strip was prepared. One day he met a young Frenchman who was lamenting that his Bugatti sports car, hardly used since he bought it new in 1939, was in a garage in Caen. 'I do not expect there will be much left of it,' said the Frenchman. Storrar offered £30 for the car, saying he would take a chance about its condition. The Frenchman accepted the offer. The car was garaged in that part of Caen which held out until yesterday. Storrar hopes soon to collect it—if it is still there."

**A FRAZER-NASH APPEAL**

There is a feeling among numerous Frazer-Nash owners in the South of England that, in view of the increasing enthusiasm for this marque, and the scarcity of Frazer-Nash cars and spares, it would be beneficial to arrange some scheme whereby owners could exchange information about Frazer-Nashes and help one another over spares problems, etc. It has been agreed first of all to form a register of all owners and cars, and Mr. B. R. Martin, of "Red Leys," Station Road, Normandy, Hampshire, and Mr. D. S. Jenkinson, of 99, Park Road, S. Farnborough, Hampshire, have offered to collect any available information for this register, as between them they already have quite a considerable collection of Frazer-Nash information.

Would any Frazer-Nash owner or prospective owner who is interested please write to either of the aforementioned



## LETTERS *from* READERS

Sir,

It was fortunate that, early in June, I received a visit from Lt.-Cmdr. R. A. Macdermid, on leave. I was thus able to show him the letter, appearing in your June issue, from Mr. Jack Reiss.

Our resulting conversation left me in no doubt as to the accuracy of my original statement, that the speed of the "T"-type "Musket" was 80-plus and 90-plus, unblown and blown.

Maybe I should have pointed out that I referred to speed *on the level*.

I am, Yours, etc.,

HAROLD BIGGS.

Enfield.

\* \* \*

Sir,

My attention has been called to a letter in the June issue of MOTOR SPORT wherein I am quoted as having said that my T-type M.G. regularly attained 104 m.p.h. going down to Starkey's Corner at Donington in the 1937 12-Hour Sports Car race.

Now, maximum speed arguments I abhor, and speeds other than those recorded by dead accurate recording equipment can be most misleading. I would prefer to say that I consider the figures given by Mr. Biggs, of 80+ unblown and 90+ blown, as being reasonable for a good T-type, and of sufficient elasticity to allow of the inclusion of exceptional performances.

My memory is not good enough to recall at this date what speed was indicated by the rev.-counter in the circumstances quoted, but surely to drag downhill speeds into an argument lays one open to be gravely misunderstood. The T-type could certainly give a good account of itself and was responsive to tuning: when adequately conducted it was even capable of "seeing off" sports cars of many times the cost, as witness the fact that the sports car record at Backwell is held by a T-type M.G., and in quite good company.

Wishing your excellent journal every success.

I am, Yours, etc.,

R. A. MACDERMID (Lt.-Cdr. R.N.V.R.)  
Naval Quarters.

\* \* \*

Sir,

My interest in the Sport—purely as a spectator—goes back to just after the last war. I followed the Sport in the weekly journals very closely, but was only able to get to Brooklands to see races, except in a few cases which provided some high lights: notably the last hill climb at Kop in 1926, when Given's Bugatti (ex-Mays) ran amok and did some damage. At this meeting Freddie Dixon on a Douglas motor-bike made some sensational climbs, with some colossal leaps on the poor surface, returning an average of over 80 m.p.h., and easily the best time of the day. With the sidecar outfit, his head swept perilously near the spectators as he took the inside of the bend, leaning over to assist balance. After his amazing climbs a special warning was broadcast up and down the hill for spectators to stand well back from the road—the car classes were about to begin. All set for something super, we

all waited in great expectation. Up came a little Rover Nine tourer at a snail's pace, and stopped on the hill! The anti-climax was a huge joke. However, Given's accident later on showed the wisdom of the warning. At this particular climb also were Segrave, Frazer-Nash and Parry Thomas. Altogether it was quite a day, though the intense cold was responsible for many of the spectators sloping off before the end.

At my first visit to Brooklands, racing was cancelled owing to rain (it was an Essex Club meeting), but some people put in some good laps for practice. The old Lorraine, now belonging to R. G. J. Nash, which for many years subsequently was to provide grand entertainment in the hands of W. D. Hawkes and others, was then a Campbell "Bluebird," and was a joy to watch. Harry Hawker had a fine-looking aluminium tourer which lapped silently and impressively around the 90 mark.

At subsequent meetings I saw Segrave with the 4½-litre Opel, Birkin driving consistently but unspectacularly on the little D.F.P., the big Alda (was it A. G. Miller driving?—I forget), Kaye Don on the Viper, etc. Then there were those fine racers, the 3-litre Vauxhalls (designed for the 1922 T.T., and if they had only been able to give the performance then that they developed later, would no doubt have won it). J. C. Park, Barelay and H. W. Cook were the principal drivers, though I believe there were others whose names escape me. The advent of the 18-litre 12-cylinder Sunbeam was of great interest, but it was dogged by misfortune from start to finish. As you know, Hawker crashed it in practice, many minor troubles prevented it giving of its best, notably on one occasion with Hornsted up, when gearbox trouble arose soon after the start; this prompted an indignant spectator to ask why "amateurs" should be put down to drive such a car. (The records list at the back of the programme would have provided a sufficient answer.) Then the arrival of "Chitty-Bang-Bang I" was a high spot in Brooklands history. I was there for its first race, and with its big drainpipe exhaust and big body (no streamlining), it thundered round in a really sensational manner. It was always a real attraction and just opposite to the big Sunbeam—in more ways than one, of course.

Bedford's Hillman was a consistent and successful competitor in these early post-war years, and it had many interesting duels with Frazer-Nash's G.N. "Kim." It was during one of these that I saw the only crash I ever saw at Brooklands, though I was present when several others took place, out of my sight. No doubt you remember the incident, when "Kim," following in the Hillman's slipstream, coming off the banking on to the Railway Straight, suddenly spun round like a top and crashed into the fence. There was an awe-inspiring moment of absolute silence from the crowd, but soon Frazer-Nash was seen cheerfully waving to the crowd, a broken collar-bone being his only serious injury.

Geach was then driving a 6-cylinder Indianapolis Sunbeam of about 5 litres,

and lapping around 120. The car disappeared from my view behind the aeroplane sheds and I never saw it again. It skidded at that moment, overturned, and crashed into the sewage farm. Geach suffered a few broken ribs.

Then there was the famous Blitzen-Benz, the huge 4-cylinder of how many litres? Cyril Paul drove this amongst others whose names I cannot recollect. What a sight that car was! Other car personalities were the Berliet "Whistling Rufus," Tommy Hann's 1911 Lanchester, "Softly Catch Monkey," Sanderson's silent Rolls, Rapson's Lanchester Forty, Eldridge's huge Fiat, and the smaller Fiat of about 10 litres that J. F. Duff used to drive so well. That was a fine match race between Parry Thomas and Eldridge, when the crowd showed its appreciation of the former by backing him almost exclusively, despite the fact that Eldridge's car had achieved 147 m.p.h., a speed never credited to Thomas's car. It looked at the start as if Eldridge's car would do the trick, because he left Thomas almost standing in the early stages, relatively speaking. But gradually Thomas crept up, and Eldridge's efforts to hold the huge Fiat on the banking were most spectacular, particularly when he tried to keep it low enough for Thomas to pass in the later stages. Thomas got by to win a really fine race.

The 1926 British Grand Prix was interesting, when the 1,500-c.c. Delages swept the board, despite nearly burning their drivers' feet to cinders—the fiery Senechal among them. Bugattis tried hard to hold them, but had not the speed. Campbell drove his own Bugatti quietly and consistently to come in fifth.

I was able to get to Le Mans in 1930 to see "Barnato's last race." The impressive 7-litre Mercedes, with "Carratsch" up, the fine Big Six Bentleys, and the supercharged "4½s" headed by Birkin which kept throwing tyre treads and crumpling their little mudguards, all made a spectacular race and fine entertainment.

I also saw the Belgian Grand Prix in the same year, if I remember rightly—a clean sweep for Bugatti, Chiron as polished and capable as ever. Some special Fords (I forget their designation) put up a fast demonstration run.

Then the tit-bit of the lot—to Donington for the 1938 Grand Prix. Rosemeyer and the second string drivers against the cream of the Mercedes team—and he pipped them beautifully—a grand piece of driving. The utter astonishment of the crowd as Lang's Mercedes burst into view along the straight at 170 (that's Shell that was)—the marvellous view from the bottom of the winding hill from the woods—"Bira's" impeccable driving (surely a second Chiron!)—Johnny Wakefield's fine driving of the fast little Maserati—Dobson's white E.R.A. driven with great dash and determination—Carratsch polished and efficient as ever (did he misjudge the speed which was necessary to win?)—these are amongst my recollections of this magnificent race—though I almost forgot to mention von Brauchitsch, whose spectacular performance I shall never forget. Seaman



was fine until his car was rammed. Many others contributed to this racing epic.

The whole cavalcade of motor racing has always been of intense interest to me, and in MOTOR SPORT I have always found the very spirit of the enthusiast, and so it has prompted this bit of reminiscing.

As far as participating in anything of the kind, much as I would delight in the opportunity, finance and other circumstances keep me to family cars. True, I had one short flip on a Rolls-Bentley to show me what real motoring could be like, and a fine long-distance run on a Humber Snipe, but on something really hot—the opportunity has yet to come my way, though I never fancied myself as likely to become anything of a racing driver, as many might. I have only thought I could get some grand fun, excitement and sport out of it. Added to this the fact that I am the most absolute duffer at things technical, have no hint of the dare-devil attitude often present in the budding racing driver; I just get a real kick out of "safety fast"—and you will see why I am merely a spectator, and likely to remain one.

Well, I think that will do for now. More power to your elbow, and the very best of luck.

I am, Yours, etc.,

T. G. COCK (Dvr., R.A.S.C.),  
Home Forces.

\* \* \*

Sir,

I yield pride of place to no one in my admiration of Raymond Mays, but I do think that Wing-Cdr. Lester does the late Murray Jamieson an injustice when he states that Raymond Mays started him on his specialised career.

I first met Jamieson in 1920 and we were inseparable companions until I left London in 1936. During this time I saw him grow from a slight, retiring schoolboy into far and away the most brilliant car designer England has ever had.

He had an unusually successful academic career—in three years he collected no fewer than fourteen diplomas and medals, with which qualifications, and an altogether unnatural genius, he went to the Green Engine Co. at Twickenham, in 1925, which was the start of his "specialised career."

His association first with Amherst Villiers and, later, with Raymond Mays, began on June 18th, 1928.

I had the privilege of working with him on the design and production of the supercharged Bentley for Tim Birkin, by whom I was then employed, and was quite overawed by his unreasonable capacity for sustained effort and his very wide knowledge of the science and art of designing.

Incidentally, there are one or two facts about the Birkin stable which make interesting reading if I cared to relate them. They are first-hand facts in my own experience as Birkin's only designer during the 1929 racing season, and are not to be confused with the fables usually retailed about this particular marque (revolting word!).

I also worked under Jamieson's inspired guidance at Amherst Villiers Superchargers, Ltd., for over two years and helped with the metamorphosis of the 1922 T.T. Vauxhall into the Villiers Supercharge. And how much midnight elec-

tricity was consumed on that labour of love! "C.A.V." always had a last-minute brain-wave just before Shelsley—and we never had half enough time in which to sort it out. (But we sometimes got there!)

I still have a number of letters from "T.M.J." outlining his future plans for the camshaft Austin in some detail, which also make interesting, and very exclusive, reading. I believe he would have broken the Land Speed Record with it had he wanted to, as he was proposing to extract 200 b.h.p. from it at 14,000 r.p.m. in its existing form. He had an altogether superior design for a "real" 750 ready when he had the necessary financial "right-away."

I have often felt like writing a biography of this not-properly appreciated genius, whose most untimely death was such a blow to British motor racing. He was definitely the presiding genius in the circle in which he moved, and the successes of the Villiers Supercharge, the Austin and the E.R.A. are due almost exclusively to Jammy's wizardry.

This is necessarily only a sketchy outline of the career of a very great engineer. I must apologise for the frequent repetition of the personal pronoun, but as I am writing of him as I knew him, it is unavoidable.

If your readers are interested I should only be too pleased to add to this narrative, and recount a few of my impressions and experiences of those halcyon days of the early thirties, chiefly in connection with Tim and the Bentley and other matters and cars touched upon herein (not to mention design generally, which still appears to be so little understood, in spite of 50 odd years' use of a fundamentally simple mechanism).

I am, Yours, etc.,

ERIC G. RICHTER.

Derby.

[The suggested account would be most acceptable.—ED.]

\* \* \*

Sir,

We feel that MOTOR SPORT could be made much more interesting if many more photographs and mechanical drawings were included than appear in the present make-up. The current edition seems stodgy and uninteresting by comparison with earlier issues.

We hope you will not consider that you have collected an undeserved Naval "bottle," as this is meant to be a constructive suggestion. We are far from unappreciative of your valiant and sustained efforts to keep us in touch with our first love.

We are, Yours, etc.,

CURZON (Lt.-Cdr., R.N.V.R.).

F. E. MOSLEY (Lieut., R.N.V.R.).

[After the war—yes; at present the minimum of material and labour must be employed.—ED.]

\* \* \*

Sir,

I see that reference is made in "News from Australia" in MOTOR SPORT for June to the "14/40" Lea-Francis, an engine out of one of these cars having been reconditioned and rebuilt for sporting motoring out there.

This has reminded me of a long letter forwarded to me by the Editor in reply to a request of mine for information

## READERS' SALES AND WANTS

To meet the repeated demands for something on the lines of the old Spare Parts Announcements, we have instituted a system of inexpensive advertisements. Each announcement must be limited to twelve words, plus the advertiser's sufficient postal address, and the charge will be 1s. 6d. per announcement, payable at time of posting. The system will be governed by the following rules:—

(1) Each announcement to cost 1s. 6d. and be limited to twelve words and the advertiser's address. Box Numbers cannot be used.

(2) The publishers accept no responsibility for loss of advertisements, non-publication, late publication, or incorrect wording, but will endeavour to insert announcements in the next issue, if posted within eight days of the publication of the previous issue.

(3) No advertiser may submit more than two announcements per issue and each must apply to a separate article. Only spares for sale, spares or cars wanted, or really cheap cars for sale, should be announced. Prices should normally be quoted.

(4) The proprietors of MOTOR SPORT offer this scheme for the mutual benefit of enthusiasts and can take no responsibility of any sort whatsoever. All transactions must be made to the published addresses and no correspondence can be entered into in respect of announcements, transactions or any other matters arising from the scheme.

(5) Announcements should be sent within eight days of the publication of the current issue of MOTOR SPORT, accompanied by stamps or crossed postal orders to the required amount. Cheques or coin cannot be accepted.

### FOR SALE

GRAND PRIX BUGATTI  
SPARES AND SERVICE

F. O. CLEVELAND HARMER  
Bugatti Specialist  
83, Old Oak Road, Acton, W.3  
Shepherds Bush 5022.

### 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.

WANTED. J2 M.G. engine. Also any other J2 spares. Huffadine, Cherry Grove, Marsh Lane, Nantwich.

SET cycle-type wings, suit 19 by 4.00 tyres, "J" type wings ideal. A. E. Brooks, 25, Victoria Square, Bristol, 8.

1932/33 J.2 M.G., less engine. Must be reasonable condition and price. Norman, 1, Princes Avenue, Didsbury, Manchester 20.

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



about these rather rare motors published in April, 1939. Evidently pressure of current sporting events precluded publication of this letter at that time, but this no longer applies, and as it seems that other readers may be equally interested, I am forwarding the letter herewith for publication.

The only other information that I have available about this motor is that externally it is very similar to the well-known "12/40" Lea-Francis. Perhaps to complete the facts you, sir, can provide further details of the specification.

I am, Yours, etc.,

J. S. MOON (Capt., R.E.M.E.)

[The letter returned to us by Capt. Moon follows.—ED.]

I notice that your correspondent J. Moon asks for information about the Lea-Francis "14/40" 6-cylinder twin-camshaft model of about 1928.

Having run one of these cars from 1934 to 1937, perhaps I may offer a little general information about this rather interesting motor car.

The car appears to have been originally designed and built as a Vulcan, with the Meadows-designed engine which, I believe, is still manufactured by Henry Meadows, Ltd. There are cars in existence carrying the Vulcan radiator which are otherwise indistinguishable from the Lea-Francis.

The original engine in my car was of the following general description: 6 cylinders, bore and stroke forgotten [60×100—ED.], alloy sump and crankcase, iron block and head. Twin o.h. camshafts driven by roller chain from the rear end of the crankshaft. Valves adjusted by shims and operated directly from the cams with the interposition of a small rocking rider—incidentally, it was very difficult to get the clearances right and keep the operating mechanism quiet when the parts were at all worn. Magneto driven in tandem with the dynamo by chain from the front of the crankshaft. This end of the crankshaft also carried a vibration damper. Steel con.-rods were fitted in this engine. Its most serious drawback was, however, that the plunger-type oil pump was mounted high up on the rear timing cover, driven by the chain, and often it refused to prime itself, more especially if the suction filter was not scrupulously clean—although this latter could be removed without draining the

sump by reason of a cunning valve in the base chamber. If the crank-pins were not perfectly round and true, they combined with the occasionally imperfect oiling system in violent attacks on the big ends, confiscating the white metal and abandoning the rods. After two of these efforts this engine was demobilised.

Two further engines were now acquired which gave better service. The crank-pins were  $\frac{1}{8}$ -in. larger in diameter, the con.-rods were of duralumin with bronze-backed white metal big-ends, the rods in the third engine acquired being really substantial affairs. These motors had a gear-type oil pump driven in the same way as the old plunger-type, and gave much greater satisfaction in maximum oil pressure, although it was still possible to get an air lock in the suction side after draining and refilling the sump. No trouble was experienced in priming normally. If the crank-pins were not round, however, it was still possible to disintegrate the big ends by sustained running at 50 m.p.h., though an engine in proper order in this direction was very reliable.

I have omitted to mention carburation. This was by a Solex vertical carburetter, with an outside manifold and water-jacketed hot spot. The exhaust manifold was on the opposite side of the head. The cylinder heads were, incidentally, hemispherical.

The outstanding feature of this engine was its smooth running. Dead quiet when properly adjusted, it compared very favourably for lack of vibration with some rubber-mounted engines, although it was anchored solidly to the chassis at the rear and, interestingly enough, carried in a single metal-to-metal bearing complete with greaser at the front.

The drive went through a single dry plate clutch to the unit gearbox. A clutch stop was fitted. There were four speeds forward which could well have been a little closer between third and top, although the car performed excellently on top. It seemed to have a maximum of about 65-70 in standard touring form, and did about 26 m.p.g. on average docile running.

The change, right-hand gate, required a modicum of skill, but with practice, clutchless changes were possible. Racing changes worked beautifully.

The brakes were boosted by a Dewandre vacuum servo cylinder, and worked very smoothly in 14-in. ribbed iron drums, although care had to be taken to see that the cross-shafts did not seize. Needless to say they had a pronounced anchoring effect.

Semi-elliptics all round, friction "shockers," Rudge knock-on wheels, Marles steering (grand), and autovac feed from a 12-gallon rear tank completed a very pleasant car.

One of these cars, fitted with three S.U.s and doubled oil feed, heavier "shockers" and better lighting equipment, would be a very good motor, and not very expensive to buy (one of my spare engines came wrapped up in quite a good car for £5), and should Mr. Moon ever consider this, and desire any further and specific information, I should be pleased to place my hard-earned experience of the car at his disposal.

R. K. MATTERSON.

Rochdale.

[Top gear was 4.7 to 1 in 1928-9 and 5 to 1 before that, the tyre size 28×4.95 in. or 29×5 in., the wheelbase 9 ft. 9 in., and the "tourer" cost £395.—ED.]

\* \* \*

Sir,

I want to take this opportunity of thanking you for all the trouble you have gone to on my behalf and the prompt manner in which you attended to my various cables and letters. May I have the pleasure one day of returning your favours in kind. For your information I have arranged with a Joh'Lurg motor firm to import the crankshaft through their London agents, of which I have informed Burton. Work is progressing very satisfactorily in the rebuilding of the Bugatti. When received the car was in rather shocking condition, having stood in the open for a number of years, with most metal parts badly rusted. The car has been stripped down completely and the following carried out: Chassis completely cleaned and scraped and repainted, all rust removed, all aluminium parts cleaned and polished, and the more visible parts chromed. All this work is mostly carried out during evenings and week-ends, and the process of assembling is now commencing.

*Continued on page 168*

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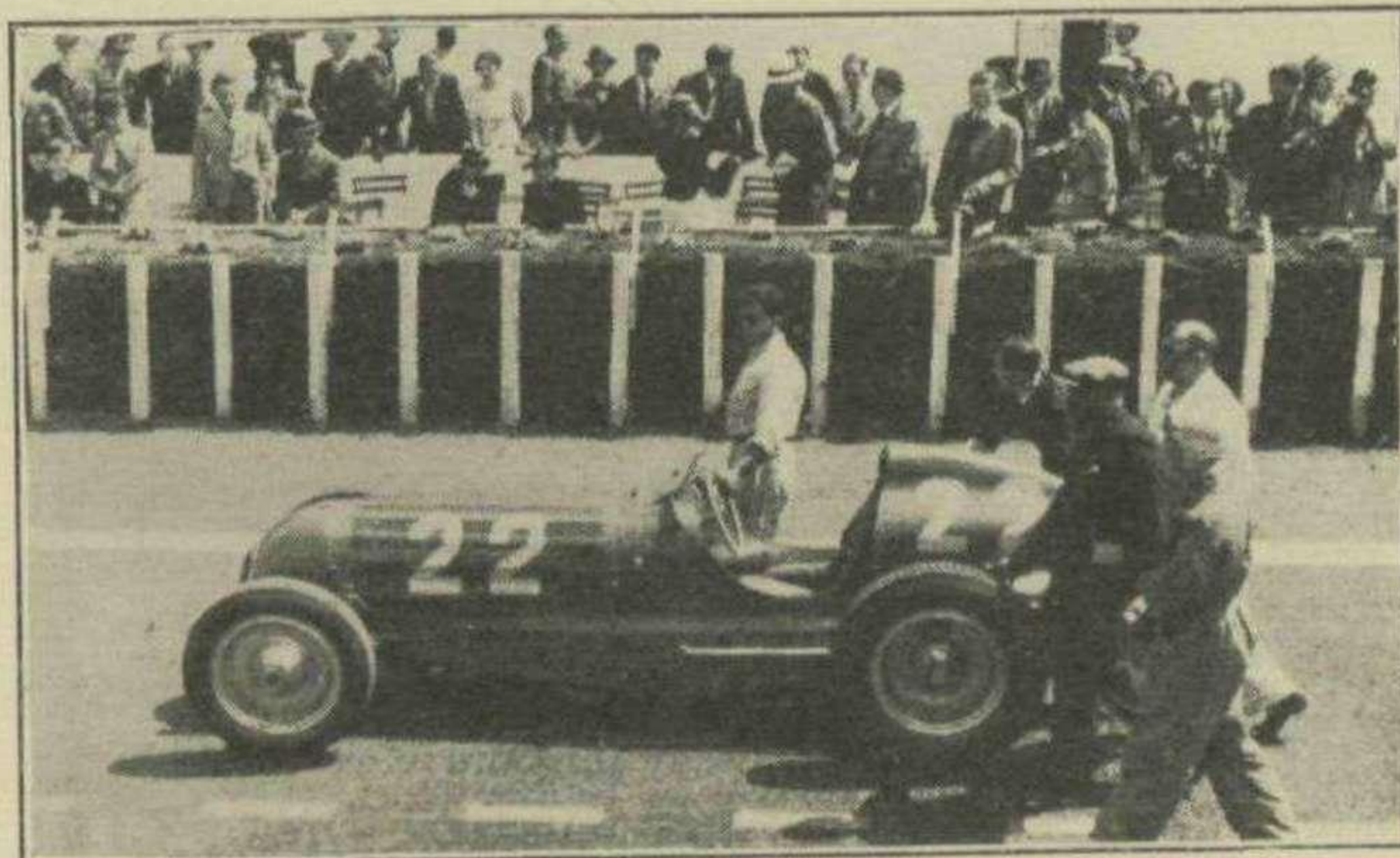
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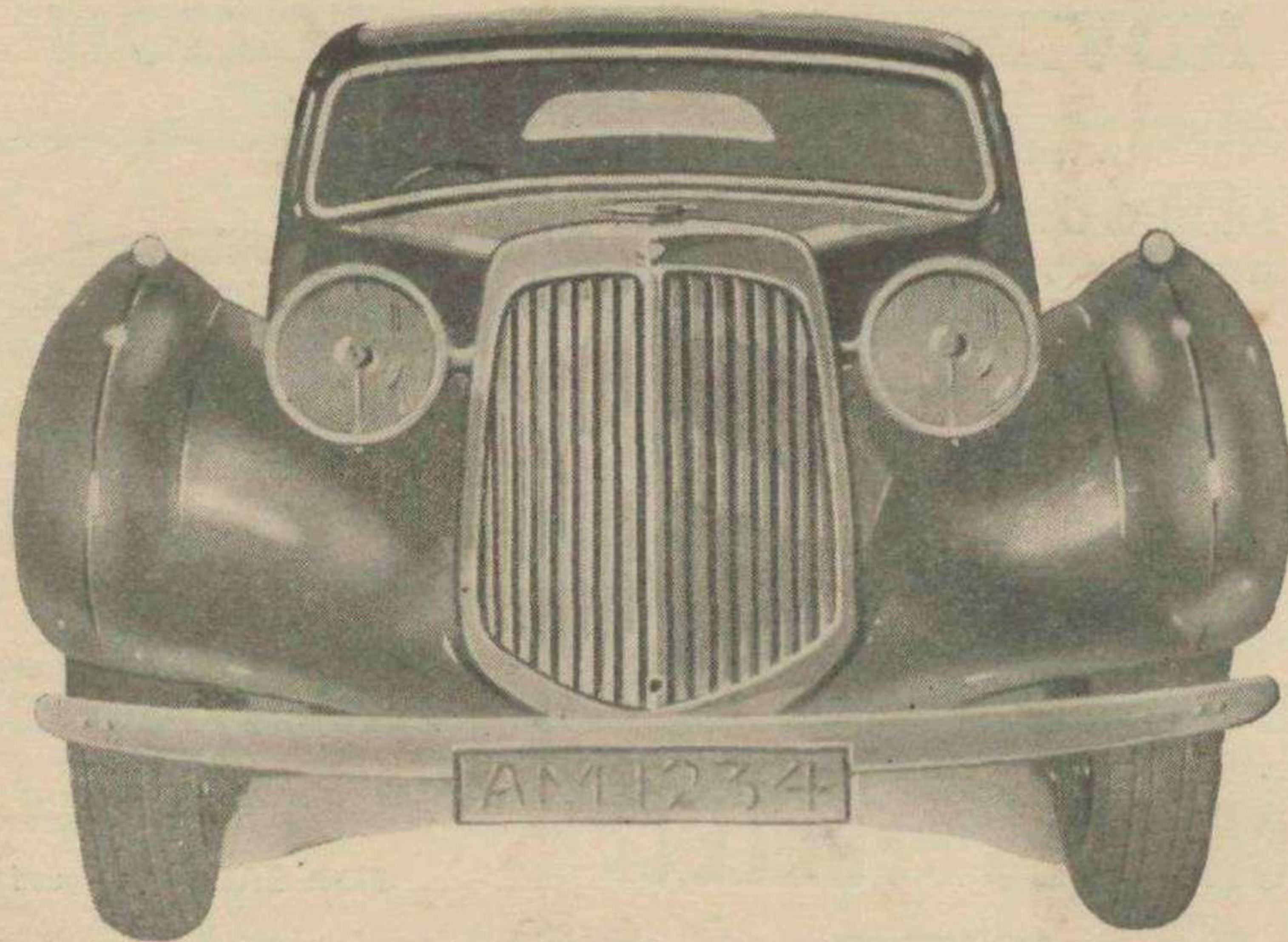
*Photograph from the Jack Lawrence Collection*

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★ 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

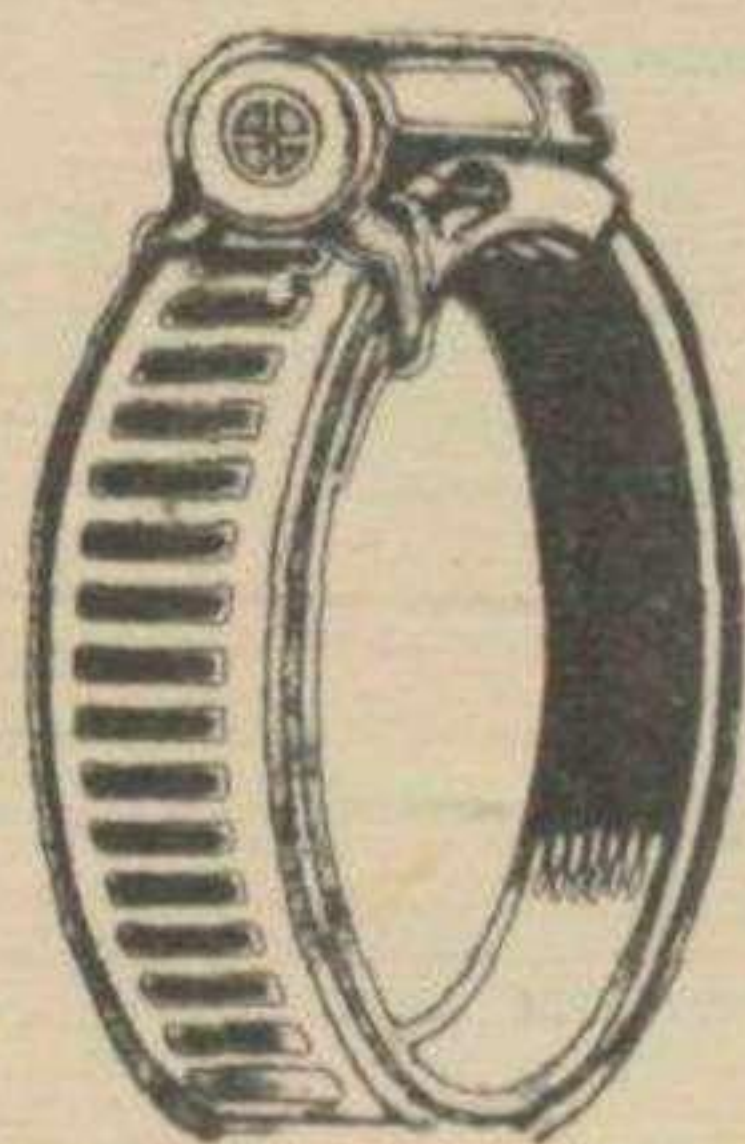




*The great aim of culture, the aim of setting ourselves to ascertain what perfection is, and to make it prevail*  
*Matthew Arnold*

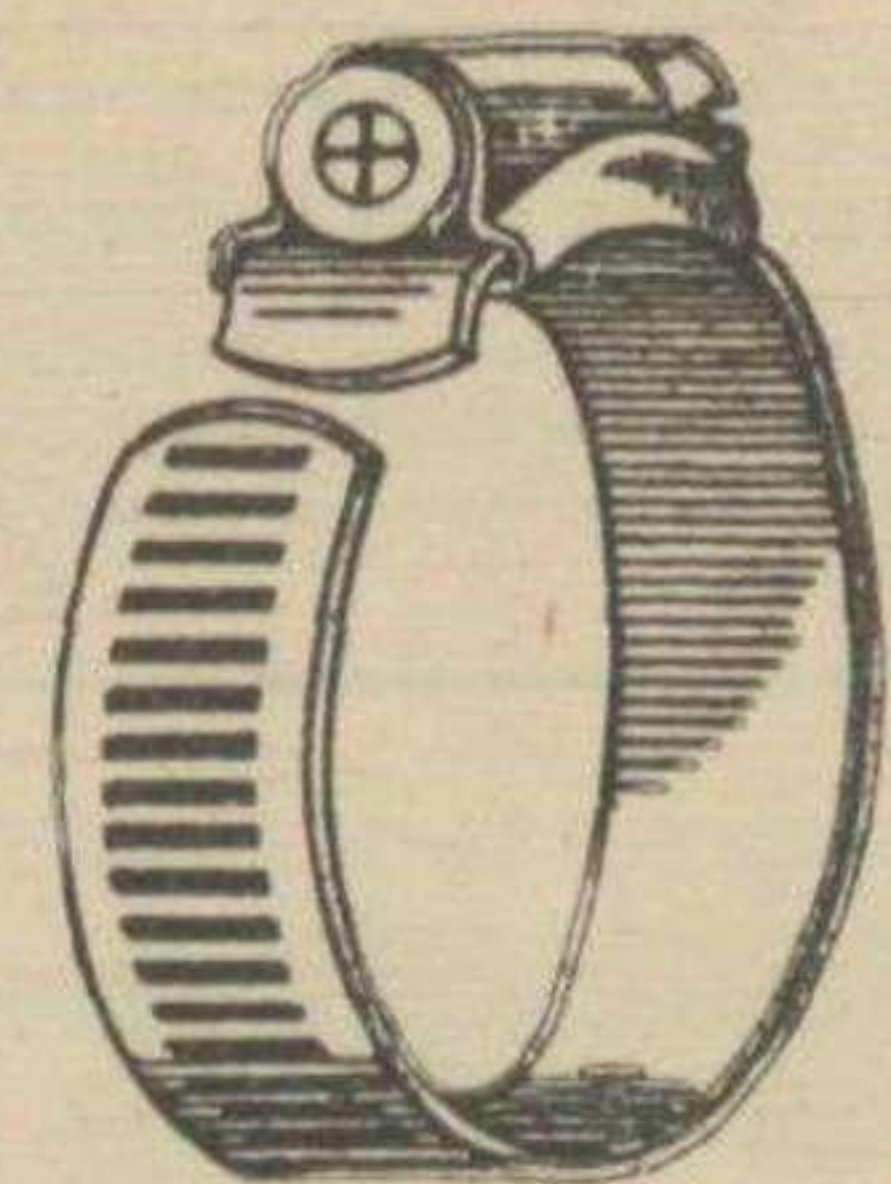
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