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INCORPORATING **Speed**

Norman Purdell

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Paper Age

SOME enthusiasts are still fortunate enough to run high-performance cars on their lawful occasions, but for the great majority this is, alas, a Paper Age. Those folk of our world who are fighting the Nazi overseas, and those who are striving at home to maintain the war effort, derive no little satisfaction from being able to read about the pastime with which they once had more active associations.

We must count ourselves fortunate that the motoring Press has suffered so few casualties. Laurence Pomeroy, Douglas Tubbs and other writers in *The Motor* are doing grand work, not only by unearthing and sorting out motor-racing history and technical achievement, but in writing-up the very early days of the motoring movement.

In *The Autocar*, H. S. Linfield is aided by keen readers in turning out weekly his unique "Talking of Sports Cars" feature, which constitutes both an invaluable record, and a yardstick of almost every sports car built during the last decade and a half. Those who can preserve the aforesaid articles will ultimately possess a quite remarkable record of motoring history and endeavour, such as hardly existed, certainly did not exist in such concise form, before this war.

In our own way, too, we do what we can to maintain interest in, and further the knowledge of, the Sport; a task which it would be quite impossible even to attempt were it not for the generosity and ability of voluntary contributors. And so, for wartime, the lot of the enthusiast is not altogether an unhappy one.

But with the return of peace will come a great and widespread desire to re-experience to the full the pleasures of motoring in this green and pleasant land in cars of no mean performance. So let us remind authority now that the motoring enthusiast, as we know him, has contributed as much as anyone to winning the war and has sacrificed more than most in the process. In consequence he will expect reasonable consideration when motoring is again possible. He will not welcome continued high taxation and unfair methods of extracting it. He will not take lightly to new petty restrictions having no bearing on increased road safety. He will be unlikely to look kindly on further raids on the Road Fund while our system of roadways remains ill-suited to the volume of traffic it has to carry.

We hope that authority will be sage and will enable all road users to be amongst the happier mortals in the promised brave new age. If this is not the case, we can only hope that the hitherto inoffensive and retiring section of the community known as "motorist" will commence to write letters to their M.P.s, to answer promptly Press and public criticisms, and generally to constitute such a nuisance that their all-too-reasonable demands *will have to be satisfied.*

GREAT BRITISH ACHIEVEMENTS

I.

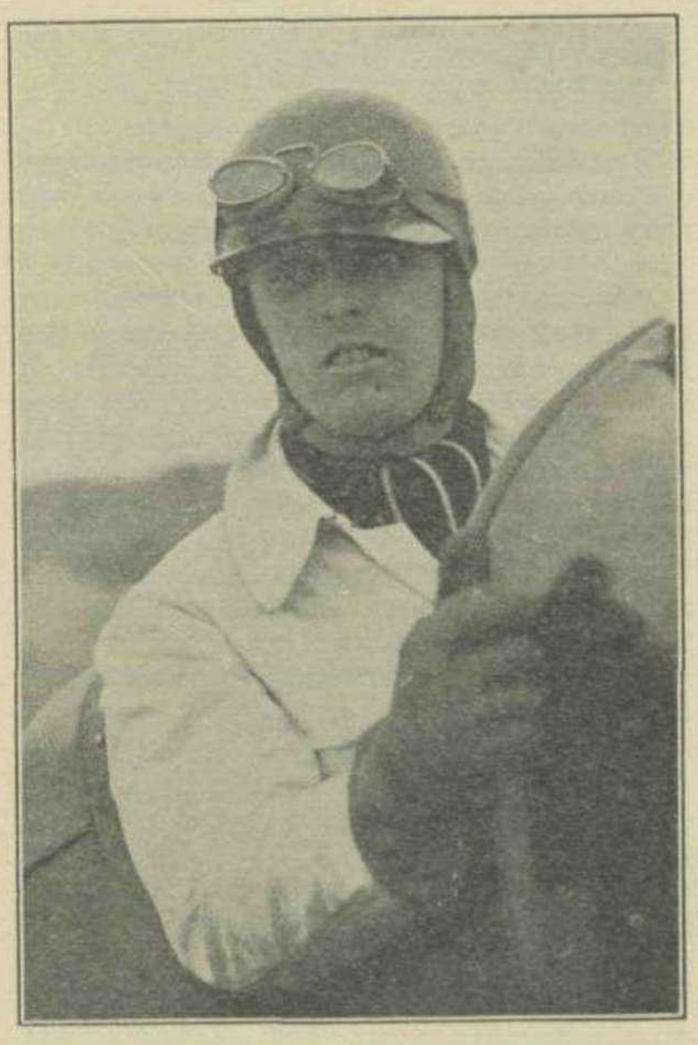
The only British victory in the French G.P. : Anthony S. Heal records Segrave's win at Tours in 1923 with a 2-litre Supercharged Sunbeam.

THIS year marks the twentieth anniversary of the first and only occasion that an Englishman, driving an English car, won the Grand Prix de l'Automobile Club de France, the traditional blue riband of motor racing. On July 2nd, 1923, Major H. O. D. Segrave (as he then was) drove his 2-litre 6-cylinder Sunbeam to victory in the Grand Prix at Tours, scoring the solitary British success in that long series of classic races. And what a race it was! Full of thrills and shattered hopes, almost every lap was a hotly contested struggle for the lead. It was certainly no hollow victory that Sunbeams won that hot summer day on the winding, dusty, rather dangerous 14-mile Touraine circuit.

Apart from the prestige which is deservedly earned by the winner of the Grand Prix, the English car's success had too an unusual interest from the technical standpoint. Rarely had there been such a diversity of design among the competitors or such a galaxy of unorthodox ideas being tested for the first time in an International road race. The regulations imposed a cubic capacity limit of two litres, and a minimum weight of 650 kilogrammes. Apart from these two limitations the designers had a free hand to use whatever bore, stroke and cylinder arrangements they best fancied. Let us now have a look at the formidable opposition that the Sunbeam team—the sole English entries—had to face. All the *grandes marques* then engaging in international racing were represented—Sunbeam, Fiat, Delage, Bugatti, Rolland-Pilain and Voisin.

The Fiats, dashingly handled by Bordini, Salamano and Giaccone, were undoubtedly the fastest cars in the race. The Italian firm were set on repeating Felice Nazarro's 1922 victory at Strasbourg. Their svelte and workmanlike cars had straight-eight roller bearing engines fitted with superchargers—the first time that forced induction had been used in the Grand Prix. Delage had produced a 60 degree Vee twelve, with tiny cylinders, 51.4 mm. in bore, ball and roller bearings being used throughout the engine. Work on this very interesting design had only been started some four months earlier, and although the car was completed in time for Réné Thomas to start in the race, it was obviously not fully developed. Two of the Rolland-Pilain entries, driven by Guyot and Hémery, were the same straight-eight machines that had run at Strasbourg in 1922. Certain improvements and modifications had been made meanwhile which had improved their performance and reliability. Hydraulic front wheel brakes and left-hand steering were noteworthy characteristics of these Tours-built racers. The third car, which should have been driven by Jules Goux, was fitted with a "cuff valve" engine built under S.R.O. patents with the collaboration of Ernest Henry, the well-known Peugeot and Ballot designer. Unfortunately, Goux was a non-starter owing to engine trouble which developed during the practising period. Gabriel Voisin, that eccentric personality, brought a team of three fiercely unorthodox cars, built more in accordance with aeronautical technique than automobile methods of construction.

In side elevation the low-hung "fuselage," which combined the functions of chassis frame and bodywork, was of semi-aerofoil profile with a dead flat undershield only a few inches from the ground. The very narrow rear track (2 ft. 6 in.) brought the wheels within the body sides.



Major (later Sir) H. O. D. Segrave, the only Englishman to win the French G.P.

Knight 6-cylinder sleeve-valve engines were fitted. Incidentally, this was the first appearance of this type of engine in the Grand Prix. Bugatti, who has never been afraid of being unconventional in his design, produced a team of narrow-track, short-wheelbase chassis with tank-like streamlined bodywork which enveloped all four wheels. The straight-eight 24-valve engines were very like those used in the previous year.

The Sunbeam cars, which had to face this array of advanced and unorthodox design, were straightforward 6-cylinder jobs with engines of 67×94 mm., with roller-bearing mains and big-ends, and using servo brakes and 3-speed gearboxes. Bertarione had produced the design in collaboration with Louis Coatalen and at the *pésagé* it was found that they were the lightest cars in the race. With 7.4-to-1 compression ratios the engines developed 108 b.h.p. at 5,000 r.p.m. K. Lee Guinness, Major H. O. D. Segrave and A. Divo were the drivers.

During the practice period most of the cars were found to be uncomfortably fast and rather tricky to handle on the highly cambered, narrow circuit. To make matters worse the edges of the road began to crumble and passing became a very hazardous performance.

The Fiat équipe did their best to conceal details of their superchargers, but nevertheless Bordino put in the fastest practice lap at 85.6 m.p.h. Segrave lapped at 81 m.p.h. As previously recounted, the cuff valve Rolland-Pilain succumbed with internal troubles. Various people demolished parts of the palisading round the course, and on the eve of the race all the Bugatti team, except Friedrich, elected to change their pistons.

The night before the race found Tours crowded with visitors, motor-cars parked everywhere and all the noise and excitement that usually preceded this, the greatest Grand Prix. Early in the morning a never-ending procession of cars made its way to the *tribunes*. It was a gloriously fine day with a slight breeze to ruffle the gay tricolour flags that bedecked the grandstand. Some 200 yards up the course the 17 cars, blue, red and green, were drawn up in pairs: three British and three Italian challenging the products of the French motor industry. The band, which was such a characteristic part of all motor races in France, played the "Marseillaise"; engines were started and warmed up. Then a motor-cyclist led the pack up to the starting line, and as he drew to one side, M. Rene de Knyff, President of the A.C.F., dropped the starting flag; the race was on.

Réné Thomas (Delage), who was in the front row with K. Lee Guinness (Sunbeam) went ahead, but he was hard pressed by Bordini (Fiat), who soon managed to pass him. Thomas was on Bordino's tail as they came down to the tricky hairpin bend at La Membrolle and behind them, in a cloud of dust, followed the rest of the field. De Vizcaya (Bugatti) arrived at the corner and, unable to see for dust, ran into the palisading, coming to rest against a tree. Bordino was the first to reach the *tribunes* but Guinness was second, the Delage third and then followed Giaccone's and Salamano's Fiats, and Segrave's and Divo's Sunbeams. Bordino had done his first lap, from a rolling start, at 87.18 m.p.h. and had covered a 300-metre timed stretch at 122 m.p.h. On the second lap he had 1 minute 15 seconds lead from Guinness.

The race was fast and furious and the tricky condition of the course made the drivers' job all the more difficult. Salamano slid across the road at Semblancay, knocking down some yards of fence and stopping his engine. Friedrich's Bugatti, arriving round the corner rather rapidly narrowly missed piling into the stationary Fiat. By the fifth lap Bordino had increased his lead to 2 minutes 20 seconds.

Positions at 5th lap.—1, Bordino (Fiat); 2, K. Lee Guinness (Sunbeam); 3, Giaccone (Fiat); 4, Salamano (Fiat); 5, Divo (Sunbeam); 6, Guyot (Rolland-Pilain); 7, Segrave (Sunbeam).

The pace was already beginning to

tell. Marco's Bugatti stopped at the pits and retired. Duray, driving the leading Voisin, stopped for a while at La Membrolle but managed to get going again. The Fiat's position looked unassailable with Bordino doing the "Seiler act" and Lee Guinness cast in the role of Georges Boillot. Anyone with a memory of the 1914 Grand Prix would have been forgiven had they discerned Mercédès tactics in the Fiat's battle order. But suddenly the stopwatch experts show signs of restiveness: Bordino has not come round at his appointed time. The loud-speakers confirm that he stopped on the straight but soon got going again. Guinness has stepped up into first place; an English car is leading in the Grand Prix! Such a thing has never happened before. The loud-speakers announce that Bordino has stopped again and has retired with a hole in the crankcase, the official story being that it was made by a stone. Guinness has 3 minutes 31 seconds advantage over Giaccone on the second Fiat, and at ten laps the positions were:—1, K. Lee Guinness (Sunbeam); 2, Giaccone (Fiat); 3, Salamano (Fiat); 4, Guyot (Rolland-Pilain); 5, Divo (Sunbeam); 6, Segrave (Sunbeam).

Nine cars are still running, eight have retired: Vizcaya (Bugatti) crashed on the first lap, Thomas (Delage) had a stone puncture his petrol tank when lying fifth, Bordino (Fiat) had a hole in his crankcase, de Cysteria (Bugatti) ran into the sandbank at La Membrolle and after a delay got going again only to retire. Marco (Bugatti) is in trouble at the pits. Hémery has withdrawn after trouble with the lubricating system and Morel (Voisin) has also abandoned the struggle. The loose stones are causing a good deal of trouble and have added an additional danger for the faster cars as they overtake the slower. On his eleventh lap Divo's mechanic is knocked out by a flying stone, and the car stops at the pits, Moriceau taking the injured man's place. Guinness pulls in, according to schedule, and without any fuss he and Perkins fill up with petrol, oil and water in 3 minutes 13 seconds. As he gets away Giaccone and Salamano roar past to take the lead. Thomas (Delage), Bordino (Fiat), Guinness (Sunbeam) and Giaccone (Fiat) have each held the lead and the race is not yet one-third completed. Guinness is in trouble again on his twelfth lap. The spare magneto, carried in the cockpit, has come loose and charging across the floorboards has bruised the driver's and mechanic's legs and damaged the gear lever, so that Guinness has difficulty in changing gear. In addition the clutch has started to slip, and after jettisoning the errant magneto, Perkins fits a rope round the pedal so that he can exert a little extra pressure. Segrave's clutch is slipping too, and he cannot go over 4,500 r.p.m. It is left to Divo to take up the chase of Giaccone's and Salamano's flying Fiats.

Positions at 15 laps:—1, Giaccone (Fiat); 2, Salamano (Fiat); 3, Divo (Sunbeam); 4, Guyot (Rolland-Pilain); 5, Segrave (Sunbeam); 6, Guinness (Sunbeam).

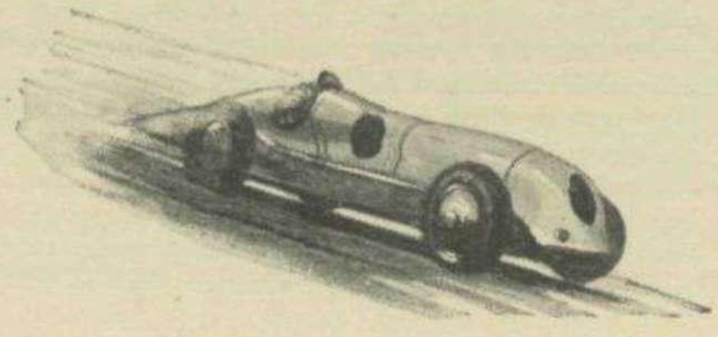
The Voisin of Rougier has retired, which leaves only seven survivors, and the race has not yet run half distance. At 16 laps Giaccone makes his scheduled pit stop, quickly and methodically changing all the plugs and his rear wheels, and filling up with petrol and oil. Salamano therefore takes the lead until the next lap, when he, too, stops to change wheels and refuel amidst scenes of the wildest excitement and commotion; perhaps this is due to the Italian temperament. No sooner has he gone than Giaccone is back again. He works on the carburetter, closes the bonnet and the mechanic pushes the car to try to start it. The engine fires once or twice and then stops—Giaccone is out, the exhaust valves having been unable to stand up to the extra strain imposed on them by the supercharger. Divo (Sunbeam) is now in the lead (the sixth change so far), 51 seconds ahead of Salamano, with Segrave in third place 2 minutes behind the Fiat.

Positions at 20 laps:—1, Divo (Sunbeam); 2, Salamano (Fiat); 3, Segrave (Sunbeam); 4, Guyot (Rolland-Pilain); 5, Guinness (Sunbeam); 6, Friedrich (Bugatti).

Only one Fiat left in the race and the Sunbeam team as yet complete. The "Mercédès tactics" have not brought the same reward as they did in 1914. On the 22nd lap Salamano passes Divo (making the seventh change of leadership) and by the 25th lap has built up an advantage of 2 minutes 20 seconds over the English car. The Italian is clearly a good deal faster and with only ten laps to go he has only to maintain his lead to win comfortably. Guinness's car is misfiring and the damaged gear lever is causing difficulty in changing gear. By the 30th lap Salamano has increased his lead to 4 minutes 11 seconds. With only five laps to go it should be all over bar the shouting. Here are the positions at 30 laps:—

Positions at 30 laps:—1, Salamano (Fiat); 2, Divo (Sunbeam); 3, Segrave (Sunbeam); 4, Guinness (Sunbeam); 5, Friedrich (Bugatti); 6, Lefebvre (Voisin). Guyot (Rolland-Pilain) stopped but got away again at the tail of the procession.

Divo comes in to make his scheduled replenishment stop. He cannot catch the Fiat and has only to keep going to be sure of second place. The mechanic has difficulty in unscrewing the filler cap. Divo has a try and finds it too stiff to move. Quick! a hammer, and cold chisel! In the excitement of the moment Divo hits his fingers hard with the hammer but appears not to notice it. The filler cap will not budge and precious minutes tick inexorably past while second place gradually and exasperatingly slips from Divo's grasp. There is nothing for it but to run on the reserve tank and re-fuel every lap. After 15 minutes of heartbreaking delay Divo gets away only to return again, on the next lap, to fill up once more.



On the 32nd lap Salamano is suddenly overdue after having lapped regularly at 78 m.p.h. Over the brow of the hill beyond the pits an overall-clad figure is seen running. It is Ferretti, Salamano's mechanic! He has sprinted 1¾ miles to fetch petrol for the Fiat which is stranded at the side of the course. He arrives panting and a fresh mechanic starts back carrying a *bidon* of much-needed essence. After he has covered 50 yards he is stopped by an official who has decided that it is against the rules to change mechanics. Great excitement is aroused by this action, which does not seem to be quite in accordance with precedent of other races. The crew of the Fiat have the sympathy of the crowd—Ferretti mounts a bicycle and is again stopped by the official amidst hisses and catcalls from the public enclosure. But the commissaire insists that the mechanic must proceed on foot, and away he staggers, carrying the *bidon*, only to find that something far more serious than an empty petrol tank is the cause of the Fiat's stoppage. Salamano, the last remaining Fiat hope, is out of the race! Divo, still stopping to refuel each lap, is passed by Segrave, whose car is now in fine fettle, the slipping clutch having cured itself. So Segrave leads, with Divo second and Guinness, who continues regularly but with troublesome misfiring, in third place.

The green cars now occupy the first three positions. Segrave crosses the finishing line, having averaged 75.3 m.p.h. for nearly 500 miles, the winner of one of the most hotly-contested motor races ever known and the first Englishman ever to win the Grand Prix. Divo follows him into second place, but the unlucky Guinness misses his gear at Semblancay on his last lap and stalls his engine. Before he can get going again Friedrich's Bugatti passes him and takes third place.

Here are the times at the finish, after 35 laps:—

		Hr.	Min.	Sec.
1. Maj. H. O. D. Segrave	Sunbeam	6	35	19 3/5
2. A. Divo	Sunbeam	6	54	25 4/5
3. Friedrich	Bugatti	7	0	22 4/5
4. K. Lee Guinness	Sunbeam	7	2	3
5. Lefebvre	Voisin	7	50	29 3/5

Segrave pulls his car on to the grass beyond the pits and he and his mechanic Dutoit, walk back to the *tribunes* to be presented to the Minister for War and to receive the cheers of the multitude and congratulations of the officials. The band plays "God Save the King" and the little band of Englishmen in the Sunbeam pit stand stiffly and proudly to attention.

* * * *

Since 1923 racing has changed a great deal, and Sunbeam is no longer among the starters. Other English marques have come and gone, and although some have achieved notable successes, none has succeeded in repeating Segrave's victory in the French Grand Prix. In 1902 S. F. Edge brought home the Gordon Bennett Cup to this country; 21 years later Sunbeams won the Grand Prix de l'A.C.F., which had succeeded the G.B. races. Is it not time we produced another world beater?

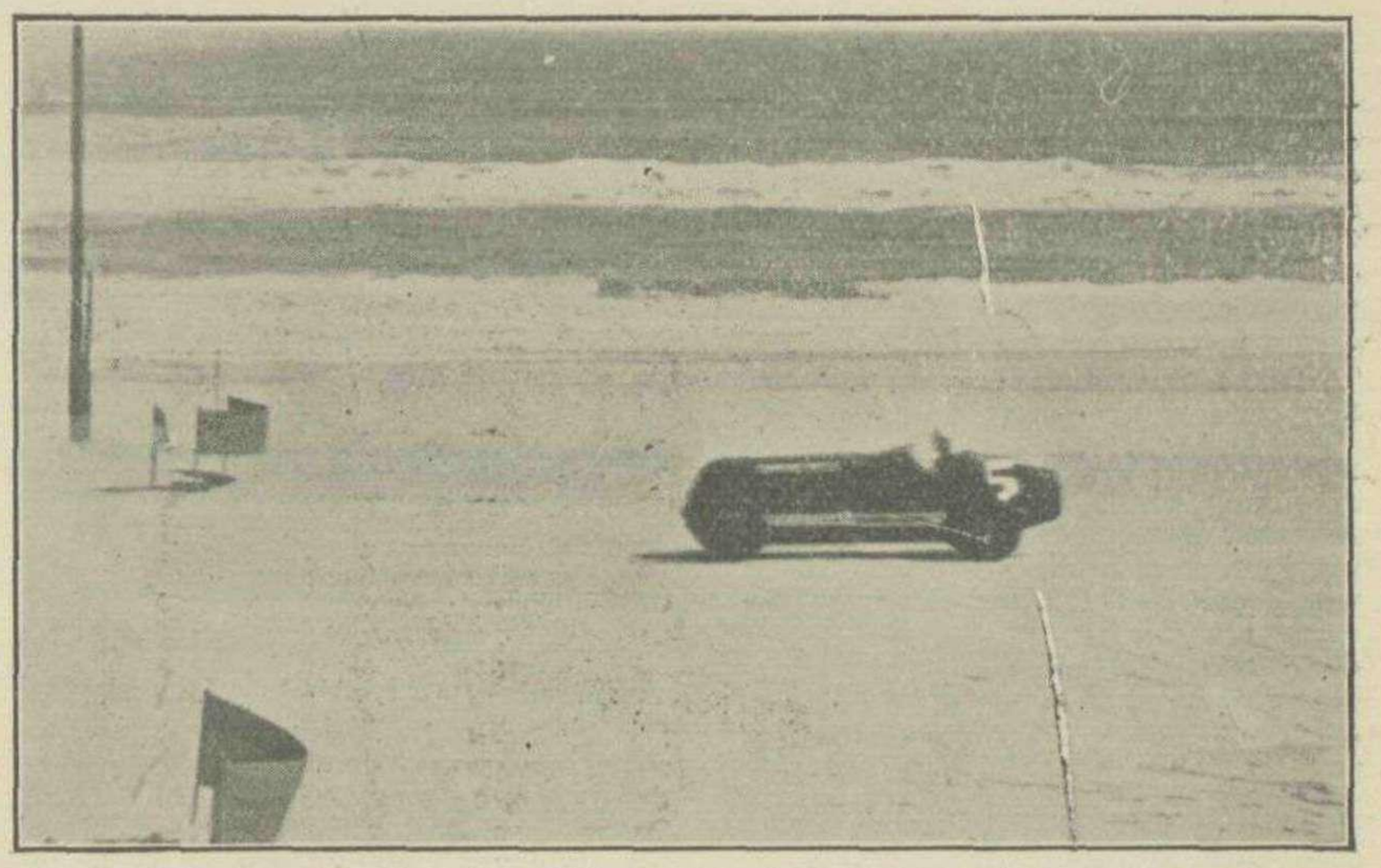
Sorting Out Speed!

STUDY the International Class records as they existed at the outbreak of war and what do you find? That the highest speed achieved by a 350-c.c. car is Cecchini's 91.3 m.p.h. with the Moscerino. That the fastest 500-c.c. record belongs to Count Lurani's Nibbio at 106.7 m.p.h., and that amongst the 750-c.c. cars Bobbie Kohlrausch's M.G. has achieved 140.7 m.p.h. Going on through the lists one finds Major Gardner's M.G. topping the 1,100 c.c. and 1½-litre categories, respectively, at 203.5 and 204.3 m.p.h., that the fastest 2-litre is Mrs. Stewart's Derby-Miller at 147.7 m.p.h., the fastest 3-litre Caracciola's Mercédès-Benz at 248.3 m.p.h., the fastest 3-5-litre car Rosemeyer's Auto-Union at 219.5 m.p.h., the most rapid Class B record-holder (5-8 litres) Caracciola's Mercédès-Benz with a two-way kilo at 268.9 m.p.h. And fastest of all to date is John Cobb's Railton, with a two-way mile 369.7 m.p.h. This is interesting, but it is only part of the story. True, the speeds quoted are beyond question, but what of the dates at which these records were established? We find on examination that the Class I and J records were made in 1939. Kohlrausch ran the M.G. on the Frankfurt-Heidelberg highway in 1936, but Major Gardner took his great 200 m.p.h. records in 1939, whereas Mrs. Stewart took the Class E record in 1934, at Montlhèry. The German cars ran in 1938, 1937 and 1939, respectively, and Cobb, of course, ran just before the war at Utah.

Already, therefore, in looking at just one record in each capacity class, it is not speed alone that tempers comparisons. Bring in achievements in road and track racing, and some sorting out of performances of varying, but comparable, standards becomes desirable.

A speed of 100 m.p.h. is exciting from a sports car, but now commonplace in racing. We find that as long ago as 1904 Rigolly's Gobron-Brillie had officially clocked 103.56 m.p.h. Laurence Pomeroy of *The Motor* has been at great pains to establish the authentic speeds of road-racing cars, and by his reckoning the 1907 G.P. Mercédès could exceed 100 m.p.h. in road-racing trim. Just which was the first small car (taking "small car" to mean a car of under 1½-litres capacity) to exceed 100 m.p.h. is a moot point, because class records divided as we now know them were not introduced until 1925, and soon after the 1914-18 War several light cars were achieving this speed (notably A.C. and Aston-Martin), while in 1910 a 3-litre Vauxhall had established fame as the first car of this size to exceed the magic century.

In 1922 a 1,496-c.c. unsupercharged 4-cylinder A.C. lapped Brooklands in a race at 100.61 m.p.h., and the following year this car did 102.69 m.p.h. as against the best lap of the supercharged 1½-litre Fiat in the 200-mile Race of 101.64 m.p.h. So we can safely say that the 100 m.p.h. 1½-litre car was born certainly by 1922, perhaps even prior to the last war. Here we get, at once, two interesting comparisons, namely, the fact that the unblown A.C. was apparently more rapid than the blown 1½-litre Fiat and that the winning 2-litre G.P. Fiat of 1922 was about as fast as the 1922 1½-litre A.C.



Unfortunately, of course, we are beginning to wander into the realm of "guesstimates," because few persons can agree as to the discrepancy which should be considered to exist between "flat-out" and Brooklands lap speed (indeed, it varies car to car), while we know that the Fiats were prepared for a 200-mile race, the A.C. for a sprint. Nevertheless, it is better, surely, to attempt such comparisons than to flounder entirely in the dark. This matter of road racing versus track speeds is nicely portrayed by the 100 m.p.h. 3-litre record-breaking Vauxhall of 1910 and the estimated speed of 100 m.p.h. for the 7.6-litre G.P. Peugeot of 1911, when a 3-litre G.P. Sunbeam probably did 81 m.p.h. approx., and the speed in excess of 100 m.p.h. at which the 1913 Coupe de l'Auto Peugeot was timed at Brooklands.



Captain George Eyston was the first man to achieve 100 m.p.h. with a 750-c.c. car and the first to exceed this speed for an hour in a car of this size. On both occasions he drove a Powerplus-blown M.G.

Incidentally, Zborowski lapped Brooklands at over 109 m.p.h. in an unblown 2-litre Miller in 1923, in which year the fastest road-racing car was probably the supercharged 2-litre Fiat, which Pomeroy estimates could reach 118 m.p.h., so the track car showed little advantage then. These comparisons begin to become quite involved enough without investigating the 1,100 c.c. and under position, but in 1926 came Goutte's Brooklands lap of 114.49 m.p.h. in a blown 1,100-c.c. Salmson, at which time the fastest record in this class was Morel's 122.67 m.p.h. with an Amilcar Six, although up to that time 1,100-c.c. cars had not generally exceeded 90 m.p.h. Here, again, comes a striking comparison, if the 100 m.p.h. of Capt. Frazer-Nash's G.N. "Kim" in 1920 is authentic.

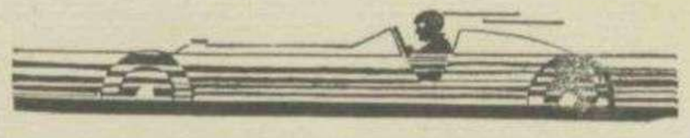
The battle between the "½-pint" cars was being contested at speeds of over 100 m.p.h. by 1931, between M.G., Austin (as a side-valve) and Lord Ridley's Ridley-Special, all of which exceeded this speed, as did, incidentally, an 850-c.c. side-valve Morris Minor. All used blown engines, of course, and the honour of first exceeding the still magic century in a 750-c.c. car fell to Capt. George Eyston, who, in February, 1931, covered 5 kilos at Montlhèry at 103.13 m.p.h. The M.G. was virtually a 2-seater, and not the later "Magic Midget," incidentally. Just to show how much sorting out of speed there is to do, Venatier, with a 746-c.c. Ratier-built Grazide, had covered 5 kilos at Montlhèry at 96.76 m.p.h. five seasons earlier, in 1927. In the 500 c.c. category 100 m.p.h. was first exceeded in 1935, by Count Lurani's Nibbio.

So far, we have considered the attainment of 100 m.p.h. by different size and type cars as a maximum speed effort. But what of the attainment of this speed over a considerable distance? Taking the hour record first, we find that by 1912 Lambert had managed to exceed this speed with the 4½-litre s.v. Talbot, averaging 103.84 m.p.h. By 1922 a 1½-litre car in the form of Joyce's A.C. had put over 100 miles into 60 minutes, and in 1928 Prince Ghica's 1,100-c.c. Cozette-blown M.G. had done likewise at Montlhèry. The record lists during 1931 chronicled a like achievement in the 750 c.c. class, to the credit of Eyston and an M.G. Incidentally, the present 750 c.c. Hour Record stands at 113.99 m.p.h., to the credit of Dodson's Austin Seven, established in 1936, but then the 1,100 c.c.

Continued on page 165

CARS I HAVE OWNED

In this entertaining contribution to a much-appreciated series, Sir Anthony Stamer, A.T.A., tells how he graduated from Austin Seven to Alfa-Romeo.—Ed.



AN article of this type must take one of two definite forms—either it can be packed with technical data and full details of modifications, etc., carried out on one's cars (thus laying oneself open to correction and much sarcastic humour from better-informed readers), or it can skip technicalities and concentrate on the varied experiences that one has had through the medium of cars in those seemingly carefree days before the war gave us that heartless being, the D.P.O.

I intend to take the latter course, since my memory is astonishingly bad and I am miles from all my references and data. Accuracy of detail will therefore be almost purely coincidental, and technicalities will be avoided. You have been warned.

My enthusiasm for cars was heavily damped from the word " go " by intense parental disapproval, and, human nature being what it is, consequently increased steadily as the years went by. Right up till his death, I think my father regarded cars as an invention of the Devil, and after years of wrangling, I came to the conclusion that it was humanly impossible to de-coke his ideas, and I became resigned to the fact that I would receive no assistance, financial or moral, from that direction.

The family car during my early days was a fearsome 16-20-h.p. Sunbeam of about 1912 vintage which my father ran until 1925, by which time its looks made it more suitable for a veteran's race than for daily use. The amount of brass on that car had to be seen to be believed, while one sat behind a windscreen of vast acreage.

From 1925 onwards, my father ran two Wolseleys, followed by two Dependable Austins, of the mobile greenhouse variety, in which one could have comfortably stood up when wearing a top hat should one have felt so disposed. This type of car holds no attractions for me, and I could almost understand my father's feelings towards motors in general when I travelled in them! They performed with monotonous reliability, however, and the low speeds at which they were driven enabled them to stay on the road—much to my disappointment! Maybe the Devil does look after his own.

I learnt to drive at the age of 10 in a friend's bull-nosed Morris-Cowley 2-seater since our grounds contained a carriage drive of quite impressive length, but for financial reasons, coupled with the fact that I could use the family Austin if really in need of transport (this was frowned upon, however, following a slight " incident " when, full of *joie de vivre* after the party at my sister's wedding, a sharp corner came towards me far too quickly for Austin anchorage), it was not until 1935 that I bought my first car—strangely enough another Austin!—for £6 10s. It was an open Austin Seven Chummy of 1924 vintage (XU4399), and I believe was one of the first of its type to possess a self-starter—not that that counted for anything as the battery hadn't enough guts to turn the engine over anyway.

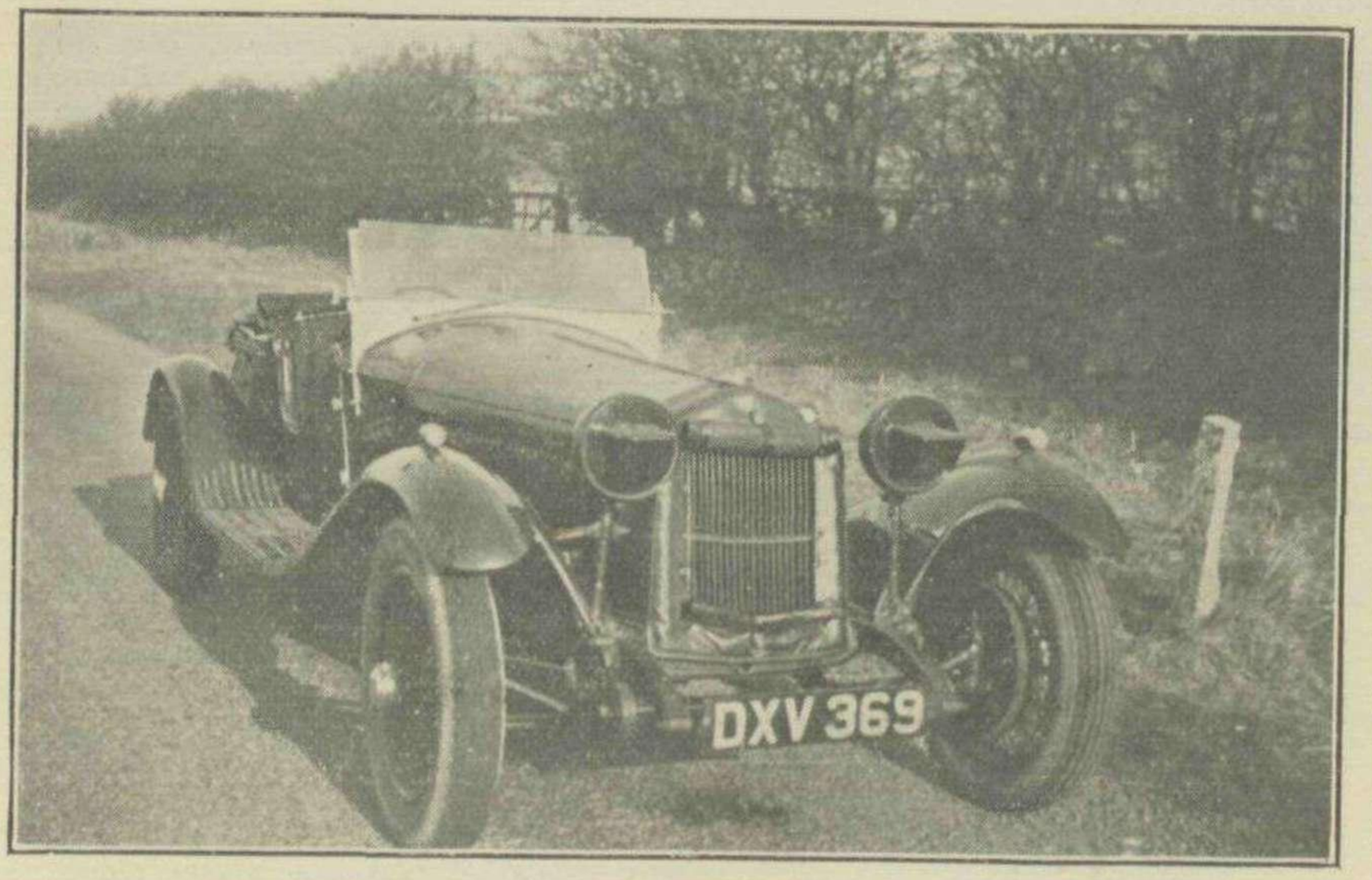
I had noticed this car reposing in a local breaker's yard, and having removed two resident hens from the front seat (though their fleas remained behind to give my passengers hell for many days to come), I filled up with petrol and water, and proceeded home with nothing more than a blocked jet on the way. Pulling up with much rattling of loose wings outside our front door, and depositing a quantity of oil on the new Colas drive in the process, I was met by my father who at first failed to recognise me, and then remarked " Whose beastly thing is it? " " Mine," I said, swelling with pride at my investment. " God! " he said, and retired indoors, nor would he speak to me for the next three days. Such was life, and I felt rather an oppressed minority.

Most of that car came to bits and was carefully reconditioned and reassembled, while I learnt much in the process. Trying to replace cotters on the valves of an s.v. engine *in situ* when in a hurry was something new to me in those days. The whole process was assisted by parental remarks (made in all seriousness) such as, " How can you expect the rotten thing to go when you keep pulling it to bits? "—there *is* something in that remark and I must sit down and think it out one day.

However, the Austin not only went, but showed great reliability. Roadholding when flat out (approximately 35 m.p.h.) was fantastic, the rear wheels always making a spirited attempt to pass the front ones when cornering, while the whole car showed a strong tendency to slow roll. Matters were improved slightly by keeping a 2-cwt. weight off a farm weighing machine on the back seat, but this was inclined to wander about the car with horrifying results. Many miles were covered in that car, and many were the excitements. The bonnet fasteners showed a tendency to spring undone, and at intervals the whole bonnet cover would suddenly blow off, missing one's head and the windscreen by the fraction of an inch. This undermined morale, and several friends flatly refused to ride with me once they had seen it happen. The brakes, for no apparent reason, were prone to " off days," and I well remember proceeding down the hill at Exeter, on the wrong side of the road and against all the traffic lights, at the sedate speed of 20 m.p.h. while I pulled the hand brake on with both hands in a panic-stricken attempt to stop. Somehow I avoided oncoming traffic and the local police, but the remarks of the drivers of halted cars that I had to overtake gave much food for thought.

There followed an early Morris Minor (DF8314) with the o.h.c. engine which had far more possibilities and which I persuaded to go quite rapidly, all for £10. The fabric saloon body was pulled off just in time to prevent it falling off on the road, and I built a 2-seater body from fabric and 3-ply, with cut-away doors, etc., which at least made it *look* like a sports car, if in a vague sort of way. Its first outing in this guise was to a local meet of the hounds, and the disapproving looks given it (and me) by the horse-loving and horselike local gentry filled my warped soul with a glow of satisfaction.

In 1936 I pawned most of my worldly belongings and purchased a 1932 " F " type M.G. Magna with the bath-like open 4-seater body (MG1538) and for four days I was the proud possessor of a car that really could claim a degree of performance, though the brakes left much to be desired. The E.N.V. gearbox with the short lever that you pull towards you to change down from top to third was probably the most pleasant I have ever handled, and definitely encouraged gear-changing. But whatever made M.G.'s fit one of those repulsive oil gauges (the maker shall



The author's blown 1¾-litre Alfa-Romeo " Zagato " 2-seater, which took by no means unkindly to " Pool."

remain nameless) that either shows red, indicating "No pressure," or white, meaning "Anything up to 80 lb. per sq. in."?

On the 5th day of ownership the worst happened. I was pursuing a P.A. M.G. Midget down the Gloucester-Bristol road at about 65 m.p.h. just after a heavy storm of rain, when one of the ball races in the off-side front hub proceeded to disintegrate and lock the wheel solid. The resulting slides made the happenings on the oil patch at the hairpin during the 1938 Donington Grand Prix seem quite tame. I held one slide in each direction and missed a lorry in so doing, but then the bank came at me and I remembered nothing more until I found myself clambering out of the remains of the M.G. Onlookers stated that the car did a flick roll, landed on its wheels, charged the opposite bank, and then came back and finished up in the original hedge. Very spectacular. The lack of wheel marks for quite a distance proved the car to have been airborne in no uncertain manner, though its final condition was far from airworthy.

For some time afterwards I had to wear some form of headgear in the house, American fashion, in sheer self-defence, since the doctor shaved most of my hair off before doing several inches of neat stitching, and the general effect seemed to produce unending cracks about "Safety Fast" from all and sundry.

For the next fortnight I worked 14 hours a day on the remnants of that car. Axles were straightened in defiance of the M.G. Car Co.'s remarks about heat-treatment, etc., mudguards were rolled out to their original shape, likewise the panels of the body, and local breakers' yards were searched for suitable road-wheels, sheets of Triplex, and other oddments. The only thing I couldn't do was straighten the chassis, which was one inch out at the rear, and since I needed the car badly, I decided stupidly to leave this and hope for the best. The car carried me many miles in this condition and was far more reliable than a friend's early T-type M.G. which gave endless trouble with valve spings and push rods, new sets of which were supplied at regular intervals under the guarantee by the M.G. Car Co., Ltd., without a murmur. However, the Magna needed much care in handling on wet roads, and the tyres of course wore out rapidly, so I decided to dispose of it. A well-known London dealer bought it, after a trial run, and how I laughed when I saw it advertised in the next week's motoring papers as in "Excellent condition, carefully used," and at a nice fat sum. I often wonder what sucker fell for that!

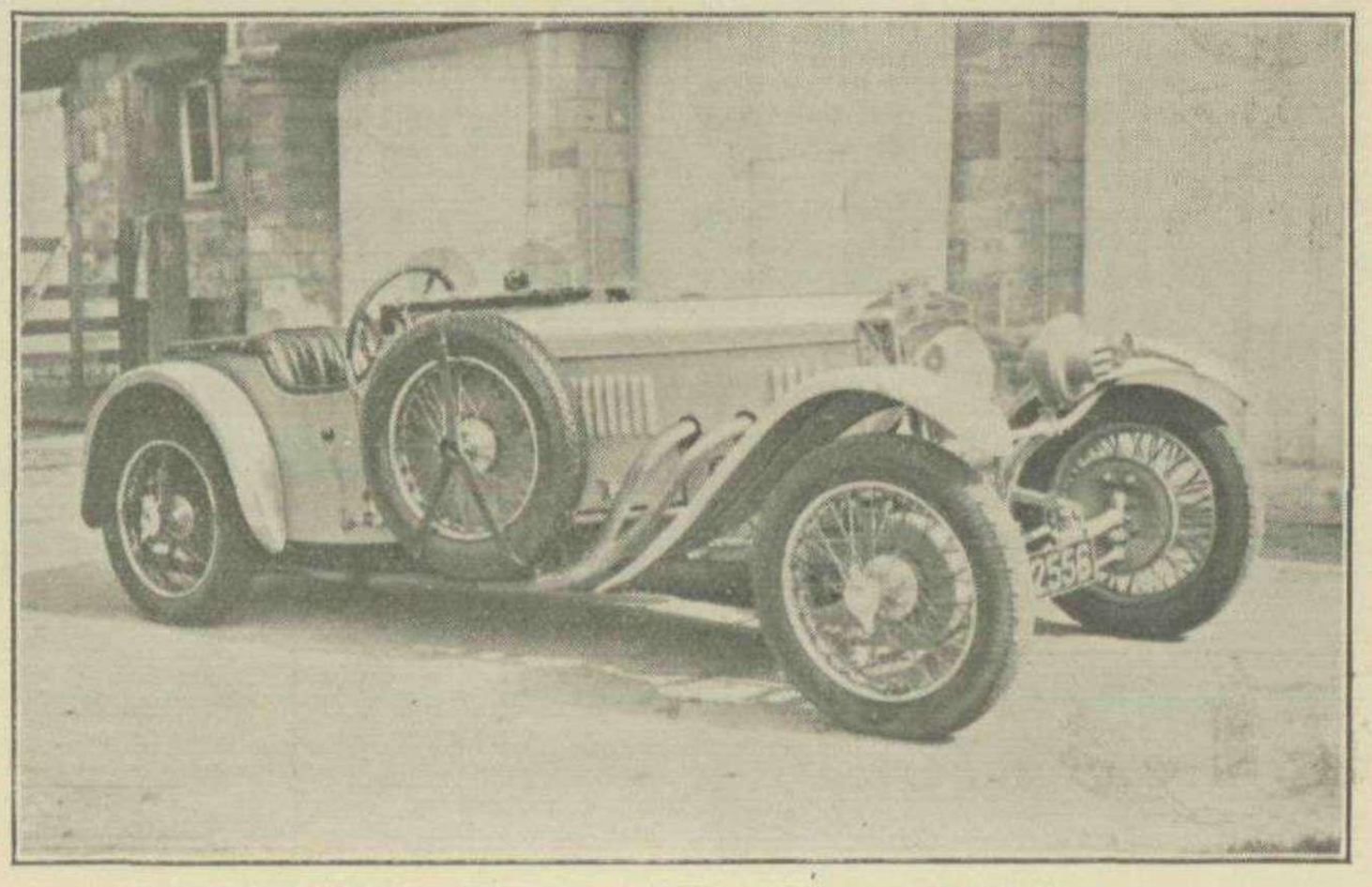
I now had a good working knowledge of M.G.'s, so a chain of that make followed during the next two years, their age and condition gradually improving. There was another "F" type Magna (VT7487), which, rebored and thoroughly overhauled, provided a wonderful summer holiday in North Cornwall, carrying fantastic loads of surf-boards, beer and human flesh. On the way home again, bad "missing" developed in one cylinder, and the reason could not be found. In actual fact, the cylinder head nuts were in dire need of being tightened, and cooling water had begun to leak through into one cylinder—but we didn't know, and blissfully carried on on 5 pots. At Highbridge things happened thus:—(*a*) a rear tyre burst, (*b*) the gasket blew between two cylinders, (*c*) we stopped rapidly. Getting out to investigate the rear tyre, leaving the engine running, my passenger and I were both struck dumb by the awesome sight of cooling water spurting out of the tail pipe in gushes as if from a pump. As one man, we both blindly rushed for the door of a neighbouring alehouse, from which they removed us at closing time with great difficulty since we were once more speechless for quite a different reason. Next day the M.G. was towed the 90-odd miles home behind the family Austin. Was I mortified?

There followed a 1934 "J2" Midget (AMB692) on which I spent far too much money (thank God for an amenable bank manager!), having the engine completely overhauled. In return, it let me down in every way it could think of. Proceeding at around maximum engine speed down the straight between Faringdon and Stanford-in-the-Vale, the main pipe from sump to oil pump sheared off. I was looking at the oil pressure gauge at that moment, and I saw the needle make a dash for "zero." Frantic avoiding action was not quick enough to stop all four big-end bearings calling it a day. On another occasion, when heading for Brooklands to see an International Trophy race, a half shaft packed up when I was seven miles west of Newbury. A lorry driver gave me a tow to Newbury, where I left the car in disgust, and there ensued a frantic rush by bus, steam and electric train to make Brooklands a quarter of an hour after the race began. Had an M.G. won that race, I think I should have become soured for life! Nevertheless, I had a lot of fun with that "J2," though the exhaust note was too much of a good thing, and the fitting of a new Burgess silencer plus one of motor-cycle pattern on the end of the tail pipe failed to stop me finishing long journeys with singing ears.

I part-exchanged this car for a 1935 "NA" M.G. Magnette with open 4-seater body (MJ8327), and my luck was out. Although it performed creditably on the trial run, it developed nasty symptoms just as soon as I'd handed the cheque over, and removal of the head soon showed why. One piston had only got half a head! The firm who supplied the car provided a replacement piston gratis, and after a thorough engine overhaul this car was a model of reliability, the 6-cylinder unit seeming beautifully smooth after the rough but lively engine of the J2. I ran in a trial or two, usually in the Chilterns area, but the standard Magnette is really too low for this sort of game, and though it was funny at first, the act of climbing out into the mud and retrieving a mangled Burgess silencer and bent tail pipe (usually in spots where cows had behaved frequently as only cows can) began to pall somewhat. I can't remember how many exhaust systems I rigged up for that car—it was only my intense dislike for the fitting of "every conceivable sports extra, including grabrail and St. Christopher badge" that prevented me from fitting some sort of an outside exhaust.

All my M.G.'s suffered from the usual complaint of oil running down the o.h.c. drive on to the vertical dynamo, and though the M.G. Co. swore that it could be cured by correct assembly, supporting their argument by diagrams, I was completely unable to overcome the trouble. I had to resort to leaving the car parked with its nose pointing uphill whenever possible.

Around this time I had a most enjoyable holiday in the Strong Country (New Forest area to the non-beer drinking types) in an Alvis "Speed 20" of early vintage. This was my first experience of a car of relatively high h.p., and although the smoothness and comfort were revelations to me, I was not impressed by the car as a whole. I do not claim to be an Alvis expert, but I believe this model is not a good example of the breed. One incident connected with this car stands out. It was Sunday evening, around opening time, and we pulled up for some traffic



The Blackburn Frazer-Nash Six, now run by Gordon Woods.

lights on the edge of Bournemouth. On the pavement was a Salvation Army band, its members taking a deep breath prior to letting fly on "Lead, kindly light." As the lights changed to green, we all leant out of the Alvis and shouted "Swing it, boys!" One member of the brass section let out a somewhat questionable note, but the rest never made the grade at all.

I part-exchanged the Magnette in early 1939 for a similar car of 1936 vintage with 2-seater body, ex-Wiltshire police (AAM 370). (Yes, I know this is getting monotonous, but this is *positively my last M.G.*) I had got this car into very presentable condition and it was performing like a train (express variety) when I joined the R.A.F. as a pilot in May, 1939. It is amazing how Formation Flying improves one's driving; one's judgment, control and ability to think rapidly and clearly when in a tight spot are improved to an astonishing degree.

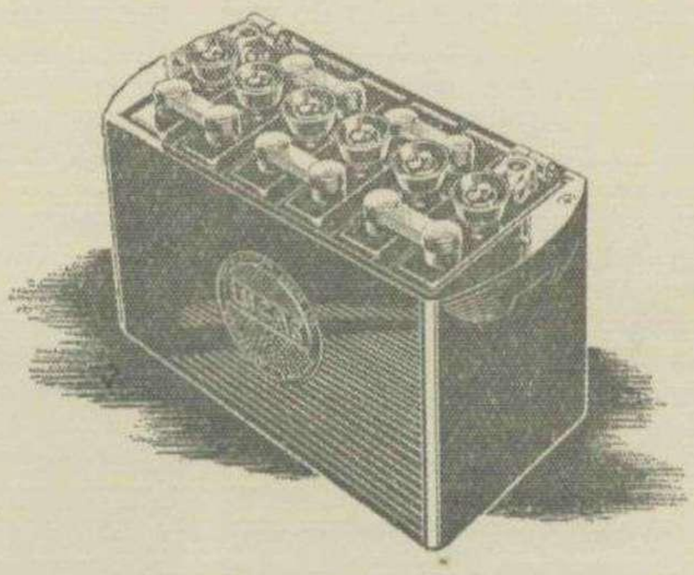
After petrol rationing began, my training as a bomber pilot gave me a number of pleasantly long drives around the country from one R.A.F. station to another, and when I reached an operational squadron I found that we were billeted away from the station and were allowed petrol to drive backwards and forwards, so life still had its moments. Flying will always leave me cold when compared with motoring rapidly, incidentally.

My rear gunner, by the way, had earned his living before the war by performing on the "Wall of Death" at country fairs, accompanied by a large and very doped lion which sat in his sidecar! Since he was more or less pickled in alcohol in most of his off-duty moments, it seemed rather tough luck on the lion—a point on which he did not agree, his retaliation being that motor cycling with a dopey lion was a far more healthy occupation than going on ops. with me. His inexhaustible supply of stories and incredible remarks cheered up many a cold and lengthy night trip, and I missed him badly when he was transferred to another crew and eventually met his end over Berlin. Incidentally, in an idle moment we reduced our pay to an hourly rate and found that we received something in the region of 8s. for the return trip to Berlin, a fact that drew reminiscences from my gunner about the Days of Plenty when he was on the dole!

Things always happened to the M.G. when I was making a last minute dash to the R.A.F. station to attend briefing. On one occasion the short gear lever snapped off at the base just as I got into top gear, leaving me looking rather ineffective. Since there was a steep and completely un-top gear hill to be surmounted, I had to abandon ship and borrow a bicycle, and there ensued a rush rather like one of those dreams where you try to hurry but don't seem to move. On another occasion I was dashing back from Lincoln, up Ermine Street, when there were shattering noises and a con-rod emerged via the side of the block. After a hasty glance at the mess, I had to leave the car by the roadside and beg a lift. I got my own back that night on cars as a whole, however, as our target was the north-western suburbs of Berlin, which included a branch of the B.M.W. concern. I hadn't time to deal with the Magnette myself, so had to hand it over to the local country garage who said they could "do" it—and "do" it they did, the way they repaired that engine being just nobody's business.

At this time I came out of the R.A.F. with a complete nervous breakdown, and during my period of recuperation I looked around for a Frazer-Nash as I had decided that this was just what the doctor ordered. In April, 1941, I found one, a 1933 "T.T. Replica," with 14-h.p. 6-cylinder Blackburn engine (TJ2556). It had received much loving care when young, but had been allowed to go sadly to pieces of late. After an overhaul it visited the coachbuilder and emerged light blue with chromium wheels—rather pansy for a 'Nash. It took a few hundred miles to get used to 'Nashing, but the hard suspension and high-geared steering did my tummy muscles no end of good. You can't have a temperamental liver and a 'Nash at one and the same time! The performance and roadholding of that car I shall never forget, and I have never had another car to date that gave me so much pleasure. Away from traffic lights there were few cars that could touch it, and I was never held by one of similar h.p. My one regret was that I was never able to drive this car on real petrol—it would have been a real experience. Incidentally, why aren't all cars fitted with a hand-

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brake that operates on the rear wheels only, enabling one to deal with front wheel slides? Time and again during the snowy winter I proved the value of this point.

Somehow, during my early ownership of this car, I managed to select one of the forward ratios and reverse at the same moment. Forward won! The key fixing the reverse sprocket to the countershaft sheared, and to replace it it was necessary to remove the petrol tank, rear axle and all the bevel housing assembly. I hadn't the time or the inclination, and A.F.N. Ltd. couldn't undertake any work, so I began one-directional motoring. It's really quite easy when you get used to it, and you get very crafty, always parking where you can turn round in one sweep (thank God for the 'Nash lock!) or facing up a slope so that you can run backwards. Many are the times that astonished London onlookers have seen me leap out of that car in a traffic block and push it back a foot or so (burning my hands on the radiator in the process) when I have been too close behind a heavy vehicle that was likely to run backwards on take-off! I had some grand times with that car, but I believe Blackburn engines have a habit of suffering from excessive corrosion of the water jacket near the pump, and mine was no exception. I was working with A.T.A. by this time, and on coming out from work one evening I found the radiator empty and the sump more than over full! It seemed hopeless to try to get another block (though I believe the 1½-litre Invicta carried a similar one) and there was only one other hope—Wonderweld. And, to my astonishment, it worked. Gradually my confidence rose until I was driving at normal speeds again. Then Fate stepped in. Proceeding rapidly from the Chelsea district back to Maidenhead in time for work early one morning, things began to smell hot and r.p.m. dropped. I stopped to investigate, and found that the starter could not turn the engine. As the engine got cooler, so it got "tighter," until one could stand on the starting handle without it budging one inch. To cut a long story short, a small amount of cooling water plus Wonderweld had been leaking into the sump all the time and the Wonderweld had got on to the cylinder walls—and, true to its name, it had gradually done a bit of welding between the pistons and the bores. It took me a long time to live that one down! However, I towed the 'Nash home, emptied a non-standard looking liquid out of the sump, took the plugs out, emptied large quantities of Redex into each cylinder, and 10 minutes later the engine was quite free again!

Nothing daunted, I poured another pot of Wonderweld into the cooling system, and once more it did its stuff. Having filled up with fresh oil, I decided to dispose of that car quickly before anything further happened. A cad's trick, I know, but what else could I do?

The very next day I was offered a 3-litre 1924 "Red Label" Bentley by a resident of Maidenhead, its owner having been killed in action. The price was unbelievable, and I bought it on the spot. It had the typical Vanden Plas 4-seater body, "Speed Six" four-wheel brakes, and a 1926-7 engine (NX5589).

I have never been a devotee of the battleship type of motor, but my ownership of this car was valuable from the point of view of experience. Petrol consumption was horrid, about 14 m.p.g. while oil pressure staggered me by dropping to 1 lb. per sq. in. when hot! A mechanic at Rolls Royce didn't seem at all worried, telling me that the "Red Labels" when raced used to run at 2-lb. pressure regularly when hot! However, when I at last loosened a nut that was absolutely solid and was able to remove the oil filter, I found that it contained all the ingredients of a dustbin except broken glass and cigarette ends. When everything was clean I got a steady 12-lb. per sq. in., which made me happier. However, I couldn't compete with the petrol consumption nor was it my ideal car, and I eventually sold it to Sqdn.-Leader David Phillips, who has completely reconditioned it. The actual sale was the most pleasant I have ever done. A trial run, a large dinner and much ale at the "Olde Bell," Hurley, lasting until a late hour, and then I took the Bentley home until he could have it collected. What did it matter that the external battery had short-circuited against the metal running board and there were no lights at all! I knew the road back to front, and thundered home at speed by the light of a small torch! The memory of it shook me considerably in the light of next morning.

But I still had the "T.T. Replica" Frazer-Nash, and I decided that a car of similar make was the only thing that would keep me happy. As luck would have it, I found that Gordon Woods had a "T.T. Replica" with o.h.c. Gough engine (AHX495) for sale, and was also on the lookout for a Blackburn-engined 'Nash. So a meeting was arranged at the "Wheatsheaf," Virginia Water, one summer evening. Over a couple of pints and two trial runs a level swop was arranged, and we both felt quite happy as neither of us fully appreciated the shortcomings of the other's car as we motored away in them, Gordon to Epsom and myself to Maidenhead. "*What* a sucker!" I said to myself with a smile. "*What* a sap!" thought Gordon (although I should like to have seen his face when he first tried to reverse and remembered he hadn't got one!) How differently we might have felt had we known each other better in those days, and Gordon known how I had a habit of Wonderwelding my pistons to the bores (he knew about the internal water leak—I'm not as low as all that!) and I knew of *his* habit of turning his 'Nashes over in ditches with poor defenceless girls in the passenger seat late at night (a rather low form of tactics I always tell him, but the element of surprise is no doubt excellent, I wouldn't know!)

The o.h.c. 'Nash turned out to be very reliable mechanically, though somewhat lacking in punch as a series of owners had gradually de-tuned it in vain efforts to stop it blowing up (so A.F.N. Ltd. blissfully told me when I visited them!). I must say they had certainly succeeded. Never, moreover, have I heard a more noisy o.h.c. engine, the sounds given off by it closely resembling a metal wheelbarrow full of gravel being violently shaken about.

Roadholding was well up to 'Nash standards, and I enjoyed ownership of that car even if it was a bit rough and even if the designer of the engine, when I called on him at Atalanta's, did give it one look and say "Get rid of it—it can't help letting you down before long!" I believe I am correct in saying that this was their No. 3 o.h.c. engine and was put into this chassis "straight off the drawing board" without ever having been tested! The electrical system was tricky, having been completely re-wired on the rather unorthodox "Woods system." I was just putting the car away in the garage one evening when there was a nasty sizzling noise, followed by clouds of white smoke from under the dash, while the ammeter did fantastic things and then burnt out. Almost before I had time to move, the smoke turned to two large sheets of flame which curved up over the dash. There were two other cars and a certain amount of petrol in that garage, and I began to panic in a big way. I rushed round making noises vaguely reminiscent of Stan Laurel, and, thank God, I found an old sack. Armed with this, I fell upon the burning wires under the dash and ripped them off in a mass. Gradually things returned to normal, and I was able to stagger away and partake of a very large glass of strengthening Guinness. Such happenings bear out the sense of a master switch somewhere near the battery.

Meanwhile, Gordon Woods, wise man, had poured a further double dose of Wonderweld into my old 'Nash before my original treatment gave up the ghost, and from then onwards it gave no more trouble in that line for quite a long time, and he was quite pleased with the car. Not only that, but he was moved to Hawker Aircraft Ltd., and came to live at the same billet as myself. In the same district lived another Blackburn 'Nash owner called Martin, and the three of us formed a Scuderia in a small way, though war-time petrol restrictions made our activities very limited. Gordon, however, was frequently o/s owing to his somewhat distressing habit of getting off his Norton when it was going at full speed through sharp corners and biting the road in the way in which the Fuehrer is said to treat his carpets. "And so another Redskin bit the dust," I remember thinking as I carted him off, streaming with blood, to the doctor to get patched up once more.

The Blackburn 'Nash suffered too at this period, since a bus decided to back without any warning and Gordon still had no reverse! He didn't have time even to abandon ship, let alone push the 'Nash out of the way, and so the front end suffered as a result.

At this time I felt the need of something more potent than my 'Nash, and the answer presented itself in the form of a 1,250 c.c. blown Alfa-Romeo with 2-seater "Zagato" body (DXV369). It wasn't a particularly wonderful example of the breed, having had a hard life in the hands of many owners who had treated it pretty heartlessly, but it was able to convert me from an ardent member of the "Chain Gang" to an out-and-out Alfa enthusiast. It performed very creditably on Pool provided one kept the engine speed down to 1,000 r.p.m. below normal maximum, and it was impossible to make it pink. Its method of roadholding was very different from that of a 'Nash, and at first I missed that "glued to the road" feeling that the latter has. But once I learnt to look at the road well ahead and to hold

the steering-wheel really lightly, I found that the car seemed to more or less steer itself without any effort on my part, and went exactly where one wanted in a most impressive manner. As someone once remarked, "You just put your hands in your trouser pockets and look at the road ahead, and the car goes there by will-power." It does, almost. My only criticisms of this car are the driving position, which gave me chronic cramp in the right leg with unfailing regularity after about three hours of driving, and a tendency to oil up plugs during the first few moments after starting up if the engine speed was allowed to drop below 2,000 r.p.m. The latter trouble was caused, I imagine, by the oil which is mixed with the petrol to provide lubrication for the blower collecting in the bottom of the blower casing, and giving a particularly oily mixture on starting up.

A detail that always amused me was the label on the side of the block, telling one to fill the sump with "Oleoblitz Sporto." I used to look furtively around to see that there were no onlookers before I filled up with mere Castrol.

The lines of the "Zagato" 2-seater body are particularly pleasing, but why does a coat of Alfa red paint always make children come up to one wherever one stops to ask if it's a "ricer"? I got heartily sick of this, though it gave much scope for the imagination, and I eventually evolved quite a good story of how the car won the 1934 Grand Prix of Latvia (that insanitary country) which vastly impressed them, and on one wonderful occasion led to a free fight between rival groups—those who said it *was* a ricer, and those who quite rightly said it wasn't.

However, all good things come to an end, and towards the end of 1942, I was moved to an airfield where it was possible to get to work by public conveyance, and my supply of petrol coupons consequently ended abruptly. I therefore decided to take the Alfa home and store it until better times, but a week before this trip actually happened I came face to face with the exact car it has always been my ambition to own—in short, a blown 2.3-litre Alfa-Romeo, and a particularly fine example at that. A part-exchange was arranged on the spot, and next week I drove the 1,750 c.c. Alfa up to town and handed it over, while it was decided that the new car should be completely stripped down and overhauled, that all plating should be renewed, and a new coat of paint added before I took it over.

The new car has a red "Zagato" 2-seater body on the short (9 ft.) chassis, and is slightly lower and more graceful than the 1,750 c.c. edition.

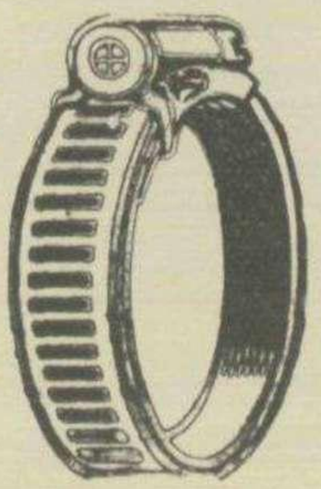
This car awaits better days. I have no idea what the performance will be, but judging by the road tests published by the motoring Press, I don't think I should be exactly disappointed. Meanwhile, much of my spare time is being spent in getting the car "just right" for those days when it will travel rapidly to all those spots that one has longed, but been unable, to visit during the last long 3½ years.

So, for the past six months, interesting motoring has been almost non-existent. At the end of May I was posted from the Border area down South, and since three years of wandering by car had given me far too many bits and pieces for a train journey, I looked around for something cheap and yet readily resellable. The answer presented itself in a 1932 Riley Nine saloon (GX8668), owned by Bertie Gilmore, now one of A.T.A.'s Flight Engineers. After my Alfa the performance naturally seemed a bit flat, but the way that old car would cruise at around 48-50 m.p.h. (indicated) on quite a small throttle opening, with all my belongings on board and a trailer of tools and spare parts tied on behind, was really surprising. The plugs were oil cooled (or heated), owing to my slackness about purchasing new cork gaskets for the camshaft covers, but beyond that the car had no vices and it was most pleasing to find so many sports-car characteristics in an outwardly sober saloon.

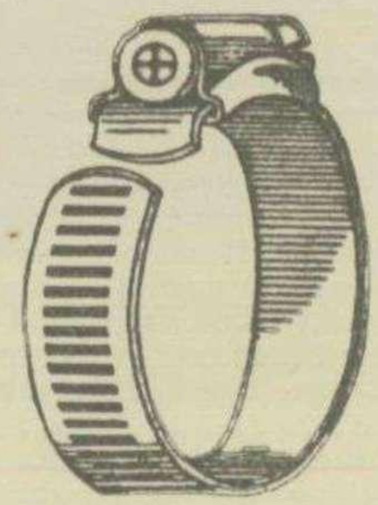
The journey south, naturally, had its Big Moment. While descending a short and steep hill there was a loud crash from behind, and it was obvious that something had happened to the trailer, so I stood on everything. There followed a rumbling and crashing noise, and I was horrified to see my trailer speed past me on the offside, tear down the hill (which was free of traffic, thank God), go into the ditch, and then fly up in a vast somersault over the far hedge, throwing tools and treasured Alfa-Romeo spares in every direction. The next half-hour was spent in feverish activity retrieving bits and pieces from slime and ploughed field, while the missing retaining bolt which caused all the trouble was miraculously replaced by a local farmer from the tool box of his tractor. Infuriating as they are, such happenings do much to cheer up a life which is becoming rapidly more restricted and colourless. May the days of Discol and Donington soon be back!

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More Bamford and Martin Data

We here present further information concerning these cars supplementing the notes in our May issue.

WHEN we published F. W. Ellis's article on the Bamford & Martin Astons in the May issue, we certainly "started something"—for additional information came in and was published in "Rumblings" last month, and now, yet more is to hand, which we have no compunction in printing, for these cars are amongst the most exclusive of British vintage sports models. In last month's issue we said that the twin o.h.c. Aston-Martin engine exhibited at Olympia in 1925 was designed by the Hon. Geoffrey Benson and used in Humphrey Cook's 1925 200 mile race car. We have since had a letter from John Benson, now in N. Wales, in which he kindly gives us the true facts. He designed this engine just before Bamford and Martin Ltd. went into liquidation, and consequently only one engine was made. This he used himself in a 4-seater side-valve type Aston-Martin, covering 125,000 miles without as much as touching the main or big-end bearings. This engine had two valves per cylinder, of 45 mm. diameter and set at 90°. The sparking plug entered the combustion space between the valves but was masked in a recess having a communicating hole of approximately 5 mm. diameter. The two camshafts and the auxiliaries were driven by a train of gears at the front of the engine, and a vernier gave ½° steps in the timing, which really served no practical purpose. The cylinder head was detachable, and the compression-ratio about 5.6 to 1, the engine peaking at about 3,300 r.p.m. The cams were of gentle tangential shape, as the engine was intended to be blown; as stated, it proved wonderfully reliable and in the whole of its life damaged only one valve, the guides never needing replacement, although the tappets suffered when more violent camshafts were experimented with. The tappets, incidentally, operated via "jam-pots" and had shim adjustment. Cooling and lubrication systems were the subject of very careful design. No fan was used and the bulk of the cooling water was delivered to an internal manifold immediately below the exhaust ports, the remainder passing between the jackets and up under the inlet ports. This proved highly satisfactory, but it is of interest that when an experimental head was put on to a s.v. crankcase and used in a fast motor-boat, distortion resulted, so effectively did the flow of stone cold water do its work. In a car, of course, such extremes of temperature were not experienced. Big-end and main bearings were lubricated at 60-lb./sq. in. pressure and the camshafts, valve gear and timing gears at 12 lb./sq. in., and there was 1¾ galls. of oil in circulation. Mr. Benson does not tell us whether his engine went first into Humphrey Cook's ill-fated racing car, but he ran it in the 4-seater car until 1937. It pulled gear-ratios of approximately 3.5, 4.5, 6.5 and 9.2 to 1, and was good for about 85 m.p.h., the speed being much the same in top or third ratios. The chassis proved well up to these speeds in respect of road-holding and handling, but the extra power output made itself felt in the form of sheared differential bolts and clutch-shaft couplings—which, however, were standard s.v. parts. In 1937 the touring body was replaced by a single-seater and the engine was supercharged—no doubt our allusion to Mr. Benson's experiments with a Zoller compressor on a 16-valve engine should, in reality, refer to this experiment on his own 8-valve car. As he was called abroad rather unexpectedly he had reluctantly to dispose of the car to a London garage before much was done, but he recalls getting 100 m.p.h. in third gear in "an astonishingly short space."

Shortly after these interesting facts were given to us (which, incidentally, should do much to dispose of current rumours of blown 100 m.p.h. side-valve Aston-Martins) we were very kindly presented by Mr. Houldsworth who came all the way down from Harrogate to attend the July 750 Club meeting, with some further data about the standard Bamford & Martin productions. This takes the form of a catalogue of the s.v. cars and reprints of *The Autocar* and *The Motor* road tests, literature which we value very highly. *The Motor* had the car first (it was, we believe, the very first production model—Reg. No. AM270—later illustrated in *The Brooklands Gazette*) and reported on it in May, 1921. Starting at midnight one Friday they motored almost continuously until 7 p.m. on the Saturday evening, and then started for home at 9.30 a.m. on the Sunday, getting in about 7 p.m., during which time they got from London to Holyhead and back, a distance of 625 miles. The return run of 275 miles was done at a 33 m.p.h. average, and the Aston gave 31¼ m.p.g. On Monday the sump was topped up, the plugs changed and the Houdaille shock-absorbers filled, and the car was taken to Brooklands, where it did a lap, two up, at 65 m.p.h., so that the genuine maximum speed was set at around 72 m.p.h. in touring trim. The engine was reported to run smoothly at upwards of 4,000 r.p.m. and gave 24, 40 and 55 m.p.h. respectively on the indirect gears. Top gear was given as 3.75 to 1. In the course of the test Alms Hill was climbed at never less than 15 m.p.h., and the car did not boil in climbing Bwlch-y-Groes.

The Autocar reported on the same car in October, 1921, and had undertaken a test embracing a long Continental run, which we suspect was suggested by Lionel Martin himself. After 12,000 miles, including some competition work, the block had not been lifted, but 69 m.p.h. was attained and one stretch of 158.4 miles was covered at slightly over 40 m.p.h. without really pushing the car. In this country the Aston was driven to Bridgwater and Sidmouth and back to London, and climbed Salcombe Hill easily, while Chard called for second as the lowest gear needed. Taken to Brooklands, still without a de-coke, this 4-seater lapped at 68.98 m.p.h. The top gears were now quoted as 3.73, 4.87, 6.9 and 13.2 to 1. The weight was 14 cwt. 3 qrs. 7 lbs. without passengers, the tyres 710×90 mm., and the wheelbase and track 8 ft. 7½ in. and 4 ft. respectively. Fuel consumption was 32 to 35 m.p.g. This was the experimental car, and it was said that engine, gearbox and exhaust were noisy, the oil pump drive liable to chatter, and the alloy body to flex and crackle. It is interesting that there were said to be four cars in existence in October, 1921, when the price was given as £850, and the production programme then laid down sanctioned only 100 cars.

Mr. Ellis dealt so comprehensively with these cars that the catalogue, which is undated, tells us little that is new, although it reminds us that drilled connecting rods were a feature of the original engines. That the Aston-Martin appeared in 1914 is confirmed, and it was announced that a sporting model was in course of preparation, similar to the standard chassis, but lightened by elimination of starter, battery, etc., and with tuned engine and close-ratio gearbox. The cars were guaranteed for a year and, furthermore, the ordinary model was guaranteed to lap Brooklands with driver and one passenger at a minimum of 65 m.p.h., carrying open 2- or 3-seater body, electric lighting and starting, hood, screen and spare wheel. We like the statement:—"It is well understood that this average speed entails a maximum in excess of 70 m.p.h., but we guarantee the lap speed instead of the maximum as being, in our opinion, more capable of being checked by those interested." We like, also, the statement:—"A starting handle is provided for testing compression, etc., but starting is effected by an electric motor mounted on the engine and driving by positive gearing to the flywheel." 32-37 m.p.g. of fuel and 1,000 m.p.g. of oil was claimed. The gearbox mounting was very reminiscent of Bugatti practice. It seems that originally coil ignition could be supplied, but alterations to the catalogue in Houldsworth's father's handwriting suggest that this never came about, and also that the wheelbase was increased to 8 ft. 9in., the price reduced from £850 to £695 (*The Motor* quoted about £700 complete) and that Claudel and Cox Atmos carburetters were never fitted, although S.U., Zenith or White & Poppe were standardised. The back-axle ratio could be 3.5, 3.73, 4.0 or 4.5 to 1, to choice. Curiously, the catalogue contains no address, but it is worth recording that the Bamford & Martin Aston-Martin was made at 53, Abingdon Road, Kensington. We are indebted to Mr. Houldsworth for providing this additional data about the prototype and to Mr. Benson for information about his interesting "one-off" twin o.h.c. 8-valve engine. No wonder competition amongst connoisseurs to acquire the few remaining examples of these classic cars is so intense.

A SIMPLE METHOD OF CHECKING POWER OUTPUT

F. W. Roberts has kindly sent us this data for checking the output of an engine without recourse to a dynamometer. Although quite as accurate results should be obtainable from Tapley meter readings, Mr. Roberts's method has the topical advantage that the car need not necessarily be driven on the road—so, to our mathematically-inclined readers we have pleasure in presenting his calculations.—Ed.

MOST enthusiasts would like to know the power output of their engines and to find out what effects any alterations and modifications have had. Few have access to professional testing machines, but the method given here enables anyone to obtain an approximate idea of his engine's capabilities. It is not necessary to disturb the car at all; indeed, the method is such that the car is run on the road in the normal way. Observations can therefore often be made while going about one's usual business, although in these days it is perhaps not in the public interest to try for the maxima speeds.

It is proposed to divide these notes into two parts. First, a general picture of what apparatus is needed and what figures are to be recorded. Second, how to turn these figures into the b.h.p. output of the engine.

Required are:—(*a*) Stopwatch; (*b*) accurate speedometer; (*c*) known laden weight of car as driven.

If (*b*) is doubtful, it can be calibrated at various speeds over a measured $\frac{1}{4}$ or $\frac{1}{2}$ mile using the stopwatch; (*c*) can be found for sixpence at any public weigh-bridge; (*a*) is indispensable. Beyond pencil and paper, and perhaps a passenger of known weight to operate the stopwatch, the only other thing needed is a straight *level* stretch of road, and the absence of any appreciable wind.

The method of testing is to time the maximum acceleration possible over a number of short ranges of speed in top gear on a level piece of road. The time to decelerate freely without touching the brakes over the same piece of road in the same direction over the same speed range is also measured. If this coasting is carried out with top gear in, the i.h.p. of the engine—*i.e.*, the power developed in the cylinders—will be measured. If the car coasts in neutral, the b.h.p. at the clutch will be found. The difference is due to considerable piston friction and the power consumed by various auxiliaries and the valve gear.

More accurate results are obtained by taking several pairs of acceleration and deceleration figures and using the average value; this minimizes personal errors. In all cases, for simplicity in calculation, the time in seconds to increase or decrease speed by exactly 10 m.p.h. should be noted.

After performing the following simple calculations, the results should be plotted on ordinary graph paper and the smoothest possible curve drawn among the points:—

M is total weight (including driver, etc.) of car in pounds.

t_1 is the time to accelerate 10 m.p.h. in seconds.

t_2 is the time to decelerate 10 m.p.h. in seconds.

V is the higher speed reached in m.p.h.

U is the lower speed reached in m.p.h.

Then firstly V-U must be 10, since all times are measured for a change in speed of 10 m.p.h.

$$\text{b.h.p.} = \frac{M \times (V+U) \times (t_1+t_2)}{1500 \times t_1 \times t_2} \quad \ldots\ldots(1)$$

The above includes an allowance of 10 per cent. for the rotational inertia of the rotating parts.

The b.h.p. calculated above for each speed range (V to U) should be plotted against the mean speed of that range, *i.e.*, $\frac{V+U}{2}$ m.p.h.

The method is simplified if two tables are first drawn up, one to use while taking the figures, the second to use when calculating.

TABLE FOR USE IN CAR.

Effective rear tyre radius = 13.1 in.
Top gear ratio = $6\frac{1}{4}$ to 1.

Range m.p.h.	Acceleration t_1 secs.	Deceleration t_2 secs.	Mean Speed m.p.h.	Gear when Decelerating
10—20	7	23	15	Neutral
15—25			20	,,
20—30	6.5	16	25	,,
25—35			30	,,
30—40	8.5	10.3	35	,,
35—45			40	,,
40—50			45	,,
45—55			50	,,
50—60			55	,,
etc.			etc.	

TABLE FOR USE WHEN CALCULATING.

Car weight = lb.
Driver's weight = lb.
Passenger's ,, = lb.
TOTAL = 1,933 lb. = M.

A						B	C		
U m.p.h.	V m.p.h.	V+U	$\frac{V+U}{2}$	t_1	t_2	t_1+t_2	$t_1 \times t_2$	h.p.	r.p.m.
10	20	30	15	7	23	30	161	7.2	800
15	25	40	20						
20	30	50	25	6.5	16	22.5	104	14	1600
25	35	60	30						
30	40	70	35	8.5	10.3	18.8	87.6	19.4	2400
35	45	80	40						
40	50	90	45						
45	55	100	50						
50	60	110	55						

Then b.h.p. $= \frac{A \times B \times M}{C \times 1500}$ at $\frac{V+U}{2}$ m.p.h.

where A.B.C. refer to column headings.

Also r.p.m. $= \text{m.p.h.} \times \frac{\text{overall gear ratio}}{\text{tyre diam. inches}} \times 335 \quad \ldots\ldots(2)$

The worked out figures show, for example, the results obtained with a 7-h.p. car; lack of time prevented further observations being made. Mathematically-minded readers can derive torque-speed curves and estimate b.m.e.p. curves in the usual way from the power output graph thus obtained.

If present-day restrictions have laid up the car, it is still possible that readers may have some performance figures available. By guessing at the quantities opposing motion, it is still possible to estimate the power-curve, although accuracy becomes doubtful. These resistances are in general the sum of tyre drag and air resistance. The first is proportional to the weight on the tyres and is best represented by the curves given in Fig. 1, page 165, for three typical tyre sections. The second is more complicated, being dependent on the speed, frontal area of the car, and its shape. The formula is usually quoted as:—

$$R = k \times A \times (\text{m.p.h.})^2 \text{ pounds drag} \quad \ldots\ldots(3)$$

where A is frontal area in square feet. Values of "k" are tentatively suggested as being as follows:—

Veteran very square cars	k=0.0022 to 0.0028
1925-1935 tourers	k=0.0018 to 0.0022
1925-1935 saloons	k=0.0017 to 0.0018
1935-1940 rounded tourers	k=0.0017
1935-1940 rounded saloons	k=0.0015
Modern well streamlined saloons ..	k=0.0011 to 0.0013
Extremely streamlined saloons ..	k=0.0006 to 0.0009
Theoretically perfect	k=0.00008
Theoretically flat plate	k=0.0032

Incidentally the power consumed by these resistances is easily calculated since :—

$$\text{h.p.} = \frac{\text{m.p.h.} \times \text{drag in pounds}}{375} \quad \ldots.(4)$$

The calculations are now different from, and more difficult than, the preceding ones, and are as follows :—

(A) Calculate for 10, 20, 30, etc. m.p.h. the tyre drag and air resistance using Fig. 1 for tyres and equation (3) for air resistance ; a value for " k " can be taken from the table given.

(B) Add these two resistances together and plot them as a graph of pounds total drag against m.p.h. This represents all the losses against which the rear wheels are working, the road being assumed level and the wind speed zero.

(C) If any maxima speeds are known, then for these speeds the corresponding total resistances can be read from the graph and converted to h.p. by equation (4). This gives points on the power-speed curve if m.p.h. are turned into r.p.m. by using equation (2).

(D) If any hill climbing data are available work these out as follows :—

Pull to climb a hill of 1 in x is approximately :—

$$P = \frac{M}{x} \text{ pounds} \quad (x \text{ not smaller than } 6)$$

To this must be added the total tractive resistance found in (B) above. The sum of all these can be converted to h.p. again as before, although care must be used if the hill was not climbed in top gear.

(E) If acceleration data such as time in seconds to accelerate from 10 to 30 m.p.h. are available proceed according to the following equation which allows 10% for rotational inertia :—

$$\text{Pounds to accelerate} = \frac{M \times (V - U)}{t \times 20}$$

M, V, U, are as in Part I ; " t " is time to raise speed from U to V in seconds. To the pounds effort so obtained add the total pounds drag from (B) above, and convert to h.p. by equation (4). The result can then be plotted to a base of r.p.m.

Conclusion.—The results obtained according to known performance are passably accurate since the coasting period takes care of tyre resistances, air resistance, rear axle losses, gearbox drag, etc. If the coasting is performed in gear, the extra engine losses are also included, and in that case the b.h.p. obtained is not at the clutch shaft but is an approximation to the i.h.p. in the cylinders. Results from " gestimated " performance data are much less accurate since they depend upon an estimate of losses outside the car ; rear axle losses are neglected and the data available for working out sections C, D, and E are usually very meagre. It might be helpful to note the following :—

1 gallon of water=10 lb.
1 gallon of petrol=8 lb.
Average passenger=120-200 lb.

$$\text{b.h.p.} = \frac{\text{r.p.m.} \times \text{torque in lb.-ft.}}{5{,}250}$$

Effective tyre radius=Ordinary diameter $\times 0.478$.

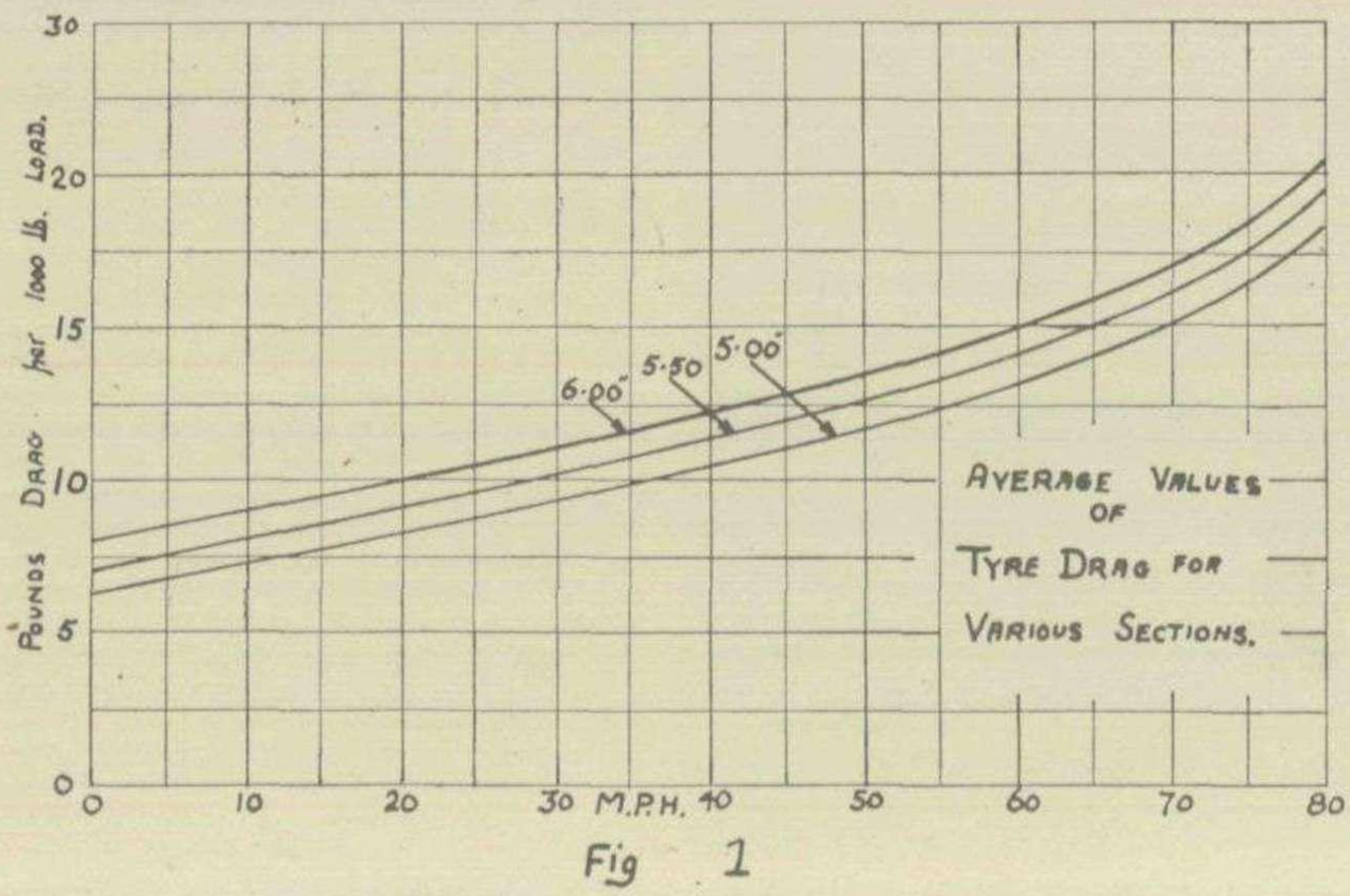


Fig 1

SORTING OUT SPEED !

—*continued from page* 157

" Hour " has soared to 120.88 m.p.h. (Eyston's M.G. " Magic Magnette "—1934), and the 1½-litre " Hour " has risen to 119.01 m.p.h. (Veyron's Bugatti—1933). In Classes I and J speeds over a considerable distance have yet to rise above the century, but the present Class I one hour record is up to 86.02 m.p.h., established by Cecchini's wonderful Fiat in 1938 at Monza, while the Class J " Hour " belongs to Gush and the tiny Vitesse, at 73.04 m.p.h., which he established at Brooklands in 1934. Just in case this record of the rapid rise in speeds in all the International classes over both sprint and considerable distances tends to damp the ardour of possible future would-be record contenders, or the long time that has elapsed since cars in almost every category have attained 100 m.p.h. for brief periods and for the hour run, should have a like effect, let us list the oldest World's and International records still remaining in the Record Book. The oldest World's record is Sir Malcolm Campbell's 238.6 m.p.h. for the flying 10 kilos, at Daytona Beach in 1932, this standing also in Class A. No single record stands out as vintage in Class B, but in Class C we find two 1933 records, the 50 kilos and 50 mile, to the credit of Frame's Union 76 Special, at nearly 140 m.p.h. for the latter distance. Class D gives us Jack Dunfee's flying 5 miles with the Sunbeam at 126.8 m.p.h., set up at Montlhèry in 1930, while Class E gives us Dunfee's 200 mile record with a 2-litre Sunbeam at 117.67 m.p.h., which just beats Prince Liechtenstein's 1930 record at Tat (standing mile at 94.0 m.p.h. with a Bugatti). In Class F we get several records by Eldridge's Miller, dating right back to 1926, at up to 122.48 m.p.h. Class G has some long distance records by Eyston and Denley with a Riley, made at 98.99 m.p.h. in 1931, and Class H more Eyston and Denley runs with an M.G., set up in December, 1932, at speeds of 92.25 m.p.h. for long distances. Class I produces a solitary 1927 record—Rovin's " Hour " at 74.44 m.p.h.—and Class J the Jappic's standing-start sprint records of 1925, Walters up. Comparison with more up-to-date adjacent records shows whether the fact that these records have lived on is attributable to apathy on the part of later contenders, or an outstanding performance never surpassed. There really is no end to this sorting out of speed.

(*To be continued.*)

RACING CAR EVOLUTION

—*continued from page* 166

As Capt. Moon surmises, the differences for the Bugatti are a legacy from " Milestones of Speed," to which he has already drawn my attention.

Answering Capt. Moon's queries, the valve areas are quoted on the basis of the valve head, but I am afraid I cannot answer the point regarding the relative r.p.m. of the Ballot and Aston-Martin at low engine speeds, as I have no power curve for the latter.

As far as the Delage is concerned, the radiator was, as Capt. Moon surmises, mounted behind the front axle in 1926, as in this version the blowers were at the side of the engine.

Comments on "RACING CAR EVOLUTION, 1918-27"

Captain J. S. Moon, now with the Middle East Forces, has let loose his slide-rule on Mr. Pomeroy's articles. For the sake of accuracy and as a matter of interest, we publish his remarks and Mr. Pomeroy's reply.—Ed.

I HAVE read with very great interest the first and third parts of Mr. Pomeroy's series of three articles on Racing Car Evolution—unfortunately, one issue of MOTOR SPORT has apparently been sunk, but I hope that an eagerly awaited replacement is now on its way.

While studying the two tables of Engines Statistics, I happened to spot one or two apparent discrepancies, and was led to work through Mr. Pomeroy's figures. While I found in general fair agreement, there are one or two points on which I should like Mr. Pomeroy's comments.

Dealing first of all with the table on page 202 of October, 1942, concerning the 1921 engines, the b.h.p. per litre figures quoted appear a little low due to the unusual capacity in litres being used as a divisor. (Incidentally, from the bore and stroke quoted the Monroe has a capacity of over 3 litres—3,046 c.c.—and should have been disqualified, presumably.)

I calculated b.m.e.p. by multiplying h.p. per litre per 1,000 r.p.m. by 12.97 (which is a deduction from the standard formula) for 4-stroke engines, and this gives figures within a few per cent. of Mr. Pomeroy's, except for the 1921 Ballot, which develops 10.9 h.p. per litre per 1,000 r.p.m., giving the excellent b.m.e.p. of 142 lb./sq. in.

The piston speeds for the Ballot and the Fiat respectively should be 2,420 ft./min. and 3,380 ft./min. for the engine speeds at maximum power.

The two remaining errors are probably attributable to the printer—the stroke/bore ratio of the Peugeot should be 1.84 and the h.p. per sq. in. inlet valve area of the Fiat should be 9.8.

Coming on to the statistics of the 1½-litre engines, I reproduce below the table with the figures as I have calculated them, with those that differ widely from Mr. Pomeroy's printed in bold type, and with, in some cases, my comments underneath.

MAKE	Aston-Martin	Talbot-Darracq	Fiat	Bugatti	Delage
YEAR	1922	1924	1926	1926	1927
No. of cylinders	4	4	6	8	8
Dimensions	65×112	**67×105.5** (*a*)	52×58	52×88	**55.8×76** (*b*)
Capacity	1487	1488	1479	1496	1487
B.h.p. and r.p.m.	55 at 4500	102 at 5500	174 at 6500	110 at 5500	170 at 8000
B.h.p. per litre	37.0	**68.5**	117.5	73.5	**114.4** (*c*)
B.m.e.p.	106.5	**162**	**(117=235)**	174	**185** (*c*)
Piston area	20.6	21.8	**39.5**	**26.3**	**30.4**
B.h.p. per sq. in. piston	2.67	**4.68**	**4.40**	**4.18**	**5.59**
Max. piston speeds	**3300** (*d*)	3800	**2470**(*d*)	3170	3980
S/B ratio	1.72	1.58	1.12	1.69	1.36
Inlet valve area	7.7	8.5	—	**10.1** (*e*)	9.4
Inlet valve area/piston area	0.374	0.390	—	**0.384**	0.310
B.h.p. per sq. in. inlet valve	7.15	12.0	—	**10.9**	18.1

NOTES.—(*a*) It appears that the printer is at fault here.

(*b*) Both in the table and in the text 57.5×75 mm. dimensions are given.

(*c*) Only a slight discrepancy, but in view of the great interest attached to this engine it should be given due credit.

(*d*) Discrepancy may be due to maximum speeds not being speed at peak h.p.

(*e*) This, I believe, is an error repeated from the "Milestones of Speed" article in *The Motor*, dealing with the Bugatti engine, in which the areas quoted for the inlet and exhaust valves do not agree with the diameters which are given as 0.9 in. and 1.4 in. respectively. Scaling from *The Motor* sectional drawing indicates that the diameters are correctly quoted and that the areas should be 1.27 and 1.54 sq. in. per cylinder.

Having now finished with my criticism of Mr. Pomeroy's articles, may I add one or two further comments and questions.

Firstly, can Mr. Pomeroy definitely confirm that what he quotes as inlet valve areas are the cross-sectional areas of the valve throats? It appears that this is so from the drawings, but as scaling is inaccurate, I should like this point confirmed.

It is rather interesting to note that the 3-litre Ballot and the 1½-litre Aston-Martin with nearly identical Henri-designed heads give much the same h.p. per litre, but at very different speeds, and with widely differing b.m.e.p.s at peak speeds. It would be interesting to know if the Aston-Martin's b.m.e.p. approached that of the Ballot at lower speeds.

It appears from the cross-sectional drawing of the 1½-litre Delage that in its original version the radiator was mounted behind the front axle and not in front. Perhaps Mr. Pomeroy has some definite information on this point.

Finally, what a car we should have had in 1927 if M. Lory had combined his own genius with the ability to produce a car with the super roadholding of Bugatti. It would not have met its master until 1939, I think.

To these comments Mr. Laurence Pomeroy replies:—

To get out a considerable number of figures for articles of this nature is a difficult task which is by no means improved by not having a mathematician handy to check over the figures, and not having printer's proofs for correction before the article appears. The latter item accounts for the discrepancy in the Ballot figures, where the maximum r.p.m. should be 3,800 in both text and table, which results in the piston speed and m.e.p. quoted. A further example of a printing error is the bore of the Talbot-Darracq (as surmise), but repeated calculations on the slide rule give me 3,200 ft. per minute, not 3,300 as the maximum piston speed of the Aston-Martin, and on the Fiat 39.2 for the piston area, and 4.42 for the b.h.p. per sq. in.

Turning now to the Delage, I regret the error made in the bore and stroke, and this, of course, affects the other figures.

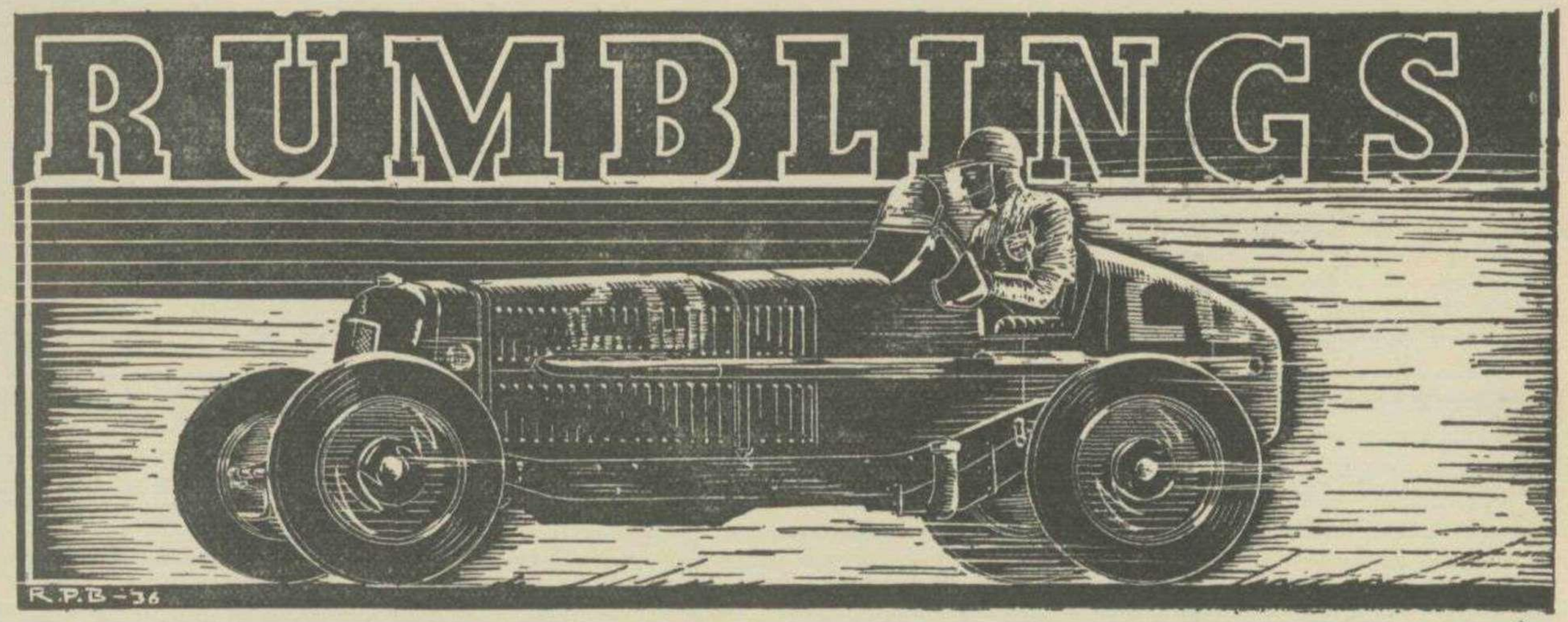
continued on page 165

JUST AN IDEA

A correspondent has sent in a letter for publication in which he suggests that, as a gesture of appreciation of MOTOR SPORT, each reader should send in a photograph of his or her present car, thus enabling an album of readers' cars of the war years to be compiled. Our first reaction to this suggestion was to ignore it, lest it smacked too strongly of an "Editor's benefit." However, our correspondent goes on to remark that as such an album would be unique it might be commenced now, added to from time to time, and loaned to the secretaries of those clubs which still hold meetings, for handing round at war-time gatherings. As this aspect would confer pleasure on others besides the Editor, he has decided to make known this idea and, should it develop, to compile the proposed album—he would certainly regard it as a most pleasant souvenir of the war years. Presumably, photographs would be either of readers' present war-time cars, or of sports cars now in storage or process of rebuilding, and if the owner features in the picture, or signs it, so much the better.

It is not difficult to visualise the kind of thing our correspondent has in mind, and if a reader owns a number of cars, as so many do, no doubt the favourite one, or a group embracing them all, would be most suitable. It would not seem necessary to send anything larger than postcards or half-plates. We shall be quite unable to acknowledge receipt of any photographs sent, but it should be possible to include lists of contributors in these columns from time to time, to let club members know how large an album to anticipate. And after the war it might be possible to make the album generally accessible, to remind our grandchildren that even a major war does not subdue enthusiasm for the Sport.

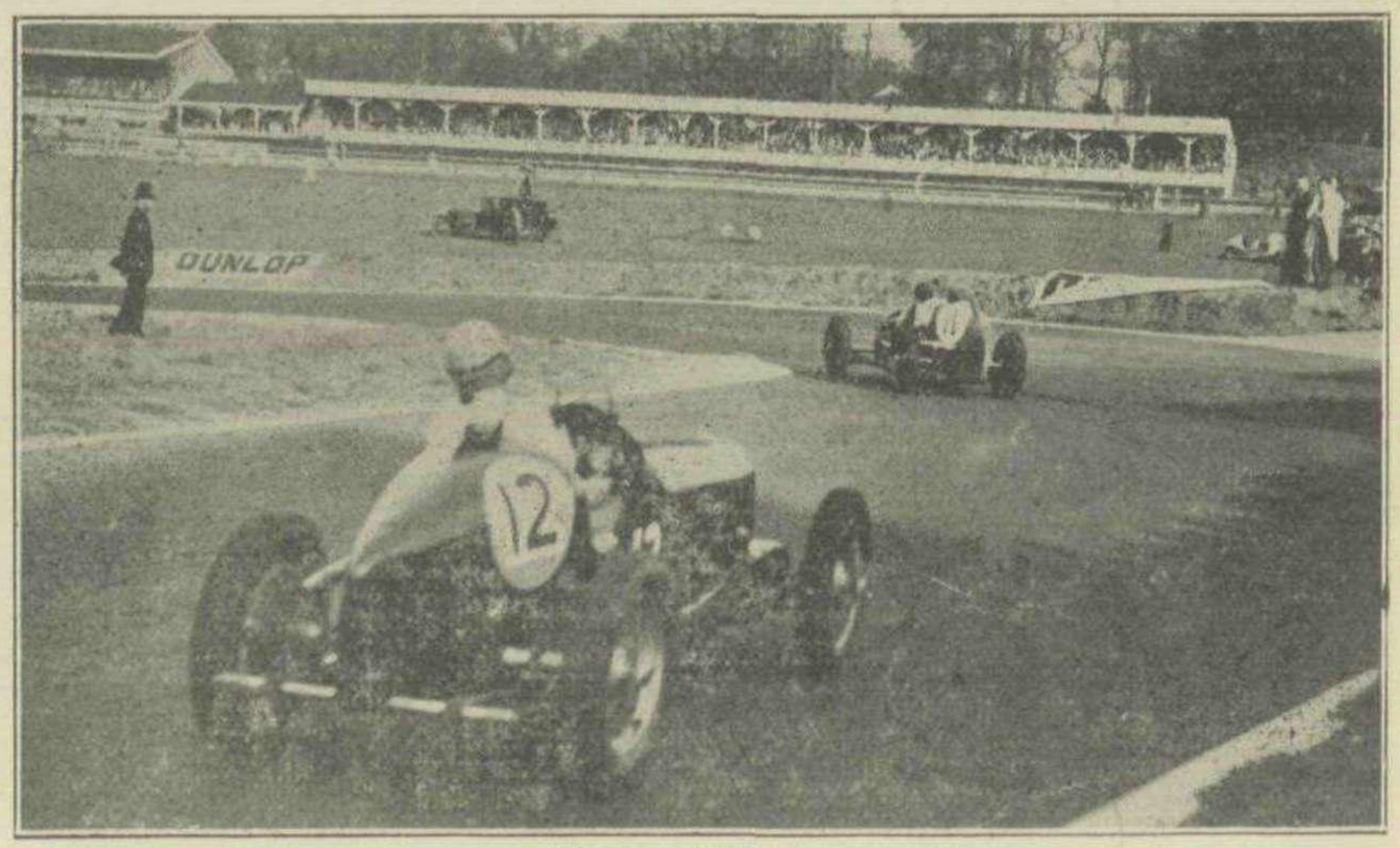
If anyone wishes to send photographs, kindly address to, W. B., 129, Fleet Road, Cove, Farnborough, Hampshire, and please accept assurance of the Editor's appreciation in advance.



Frazer-Nashes

We have known for some time that enthusiasm for the Frazer-Nash is rife in the town of Bristol, from whence emanate other fast things, but not until last month were we able to go down and see for ourselves. The visit proved well worth while. In one lock-up garage we were shown R. Bickerton's short-chassis "Six" and Gordon Jones's Gough-engined T.T. Replica. The 6-cylinder car has the Blackburn engine in the 8′ 6″ wheelbase chassis, and was built originally for the late A. F. P. Fane. Three S.U. carburetters are used in this engine—as on Piercey's Blackburn Six which lives at Langley, where Gordon Woods's similar car keeps it company, albeit with two carburetters on a rather different head. Incidentally, Piercey's car may soon come on the market, as a desire to own an open Alvis "Firefly" has assailed him. To revert to the short-chassis car at Bristol, the urge is, as would be expected, quite something, the 3.8-to-1 top speed giving an easy 70 m.p.h. at 3,300 r.p.m., very nice with 1,496 c.c. The maximum speed is in the region of 87-88 m.p.h. and 0 to 50 m.p.h. can be attained in about 10 seconds. This car, like the 4-cylinder job which lives with it, has the late-type chassis and an extra large rear fuel tank. The Gough-engined car is a 1935 model and has the type of engine which was used, in supercharged form, for the "Shelsley" cars, consisting of a 1½-litre, single o.h. camshaft, 4-cylinder unit, with twin S.U. carburetters. The wheelbase is 9′ and the weight about 17¼ cwt., and the maximum speed is around 85 m.p.h., the engine reaching its maximum effort at about 4,200 r.p.m. The brake drums are heavily ribbed. Top speed, in this case, is 4.1 to 1. At another garage we were able to view MacCormack's car, which is more in the nature of a special. The older chassis is used, and the engine is the familiar two-port 1½-litre Meadows, to which is being added a Type 260 AH Centric compressor, very neatly mounted on the front of the crankcase and supported from the cylinder block. This supercharger weighs 20 lb., and delivers 1,300 c.c. of mixture per revolution, being capable of a safe 5,500 r.p.m. It will be driven by belt from the extreme nose of the crankshaft and it draws from a 1⅛″ S.U. carburetter.

The polishable parts of the engine have been carefully attended to and the whole car is beautifully constructed. The lubrication system will incorporate a filter mounted at 45° at the base of the supercharger mounting, a Tecalemit oil-cooler before the front cross-member and a special box-like breather. One of the most interesting features is the conversion of the brakes to Lockheed hydraulic, the layout being extremely neatly done. The front brake back-plates came from a Triumph, adapted to the Frazer-Nash axle, and at the rear cable operation is retained for emergency operation. The wheels take 4.50″ × 19″ tyres and the transmission is, of course, 4-speed, the largest sprocket being drilled. The battery is carried beneath the passenger's seat. Originally this car was a "Nurburg" model, with



"Crystal Palace."

blown engine, so the present modifications are essentially practical, and, when complete, a very rapid and controllable car should result.

* * *

Why Go Fast?

Opinions have recently been aired in the weekly motoring Press as to just why lots of men, and some women, wish to rush about the roads at high velocities in sports motor-cars. The desire to impress the companion on one's left, and the psychological aspect of over-coming repressions by showing-off and even taking risks, have both been put forward as very probable reasons. The joy of fast travel on the ground, because it is not possible to analyse, is put down as something only sought by persons unable to appreciate more sane sensations, and who thus endow speed with mystical associations, instead of something arising from light pressure on the accelerator pedal. We agree with the first two charges—*amongst a certain proportion* of rather stupid *young* men and women. We will not attempt to enlarge on the fascination of speed as such, any more than we would attempt to analyse or, unable to analyse, to deprecate other simple yet extremely enjoyable sensations—diving into sunlit water in the early morning, gazing at moonlight filtering through a copse of close-set trees, listening to good music.

Over and above all that, lots of us drive fast in a good car because, in a thinly-disguised 100 per cent. mechanical age, we have acquired the art of deriving pleasure from the skilful control of good machinery. We find that a sound car responds very agreeably to our control, but that the skill needed has not to rise above the mediocre until travel along the straights and around open bends is reasonably rapid, implying a cruising speed in the region of 70 m.p.h. Incidentally, fast driving, undertaken thus, is seldom dangerous.

* * *

For Infant Prodigies

At a house-party where young folk gather, the suggestion of tennis or swimming finds everyone quite agreeable, which gives rise to the thought that to offer anyone your G.P. Bugatti for a dice, remarking that you could provide a pair of goggles and a pair of suitably-narrow shoes, would have very different results. Doubtless this is due to lack of training in early life. To ride well, you have your own pony almost before you have mastered the art of walking, and tennis, net-ball, hockey, swimming and other conventional sports are part of every school's regular curriculum. So why not a like training for a mechanised future, for a generation which can be said to owe their freedom to the result of the Battle of Britain? When Percy Maclure's young son opened the course at a Riley M.C. speed trial with a tiny, petrol-driven model Riley we saw the germ of an idea. When boy-scouts brought pedal-actuated soap-boxes to the Crystal Palace circuit, many of us deplored the "circus" aspect of the thing. Perhaps we were wrong. Such humble beginnings are certain to instill into the rising generation a love of the game we ourselves support. And this is no bad thing, either, from the viewpoint of the non-motoring-minded masses. Whenever we pass through Windsor these days we are conscious, not so much that the Battle of Waterloo was won on Eton's playing fields, as that the Battle of Britain was won, if not on Brooklands, then almost certainly at Calshot. . . .

* * *

Middle East

From an outpost of Empire in the Middle East comes a news-letter from Capt. J. S. Moon, prominent member of the 750 Club in peace time. It is accompanied by an interesting article outlining the type of 1½-litre car Moon hopes to see produced in the coming brave new world, which we will publish next month. Interesting cars which Moon has found amongst the heat and the flies include an "Ulster" Austin Seven and a Bugatti, the latter thought to be a Type 35 or 39. It is road-equipped, finished Bugatti-blue, and has alloy wheels. There is also a blown 1¾-litre Alfa-Romeo, being worked on by numbers of filthy Arab boys. Moon also reports seeing some 1,100-c.c. Skoda, with 4-cylinder engines, a backbone frame with gearbox at its rear end, twin transverse front springs and rear suspension by means of a single spring beneath the swing axles. Four-door saloons and neat 2-seater versions abound, the latter with nicely swept tails, and it seems these cars may have been dumped in the country in order to obtain Egyptian currency, after the Germans took over the Skoda works, as all models appear to be of about the same age. Most popular car of all out East is the Fiat, including 500s and 1½-litres, the 1,100 c.c., however, predominating. What appears to be the 1940 version has a very handsome V-fronted radiator grill replacing the steeply-sloping front as we know it. The Lancia is conspicuous by its rarity, but a few "Lambdas" and "Aprilias" have been seen, and also a car which was either a very late "Aprilia" or a new "Ardea." Motor-cycles are nearly all British, back through many vintage models to belt-driven devices, interspersed with B.M.W., D.K.W., Guzzi, Gilera and Benelli, etc.

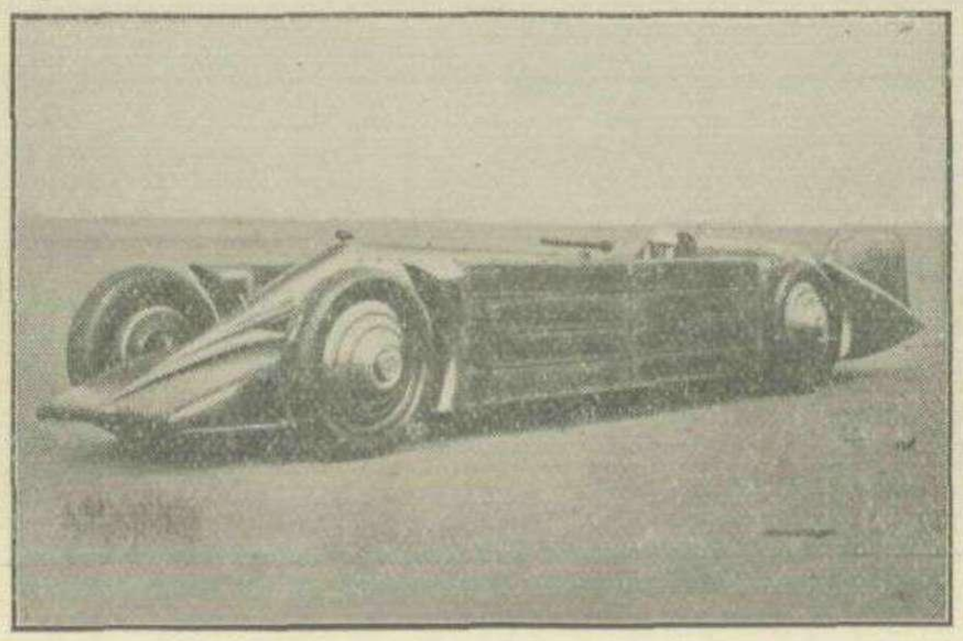


Happy days! The Paddock at Brooklands before the war.

Club News

WE HEAR

Houldsworth, who is mentioned elsewhere in this issue in connection with Bamford & Martin Aston-Martins, is running an " International " Aston-Martin and is very anxious to find a 1¾-litre Alfa-Romeo. The condition is immaterial as he intends to strip it. Douglas Tubbs now has his two Astons side-by-side in a London garage and, aided by Inman-Hunter, is engaged in making a thorough examination of what he has in his 16-valve chassis. He has presented our Library with a 4½-litre Bentley Instruction Book. John Cooper has added a partially-dismantled Type 38 Bugatti to his growing stable, and has recently rendered his famous " 12/50 " Alvis very silent, at all events as far as its exhaust note is concerned, apparently having some respect for the Leicestershire constabulary. Of cars for sale, there is, or was, a 1926 4-speed Frazer-Nash with queer body, a single-port Lea-Francis style Meadows engine and narrow-track front axle for disposal in going order for £35 in Reading, and Harry Munday *might* be persuaded to part with his very perfect " Silver Eagle " Alvis 4-seater for £70 or so, but only because he has found a desirable 4½-litre Bentley. There has been a valve-dropping epidemic amongst Fleet enthusiasts, Birkett doing it first with his Type 40 Bugatti and Jenkinson more recently with his Norton, which has a 600-c.c. head on a 500-c.c. barrel and an outsize Brooklands silencer. Excellent news—the White steamcar illustrated in the June issue has been bought for the Veteran Car Club by A. P. Farrash, who intends to restore it to sound order and steam-tightness. Hutton-Stott, who has disposed of his 1911 Indian motor-cycle to Charles Broad, of Forest Hill, did the negotiating on behalf of the club. We greatly regret to learn that Lt. A. N. Brookes, R.N., a contributor, is a prisoner of war in Italy, and that Shortt was suddenly taken ill with appendicitis some while ago. Major Johnson, who has sold his 1922 G.P. Sunbeam to Grosscurth, now rides a very fine 1929 S.S. 100 Brough-Superior solo; he is associated with very rapid aircraft and hopes to stay on in this country after the war and take part in our motoring events. Grosscurth's Frazer-Nash turns out to be an Anzani-engined " Boulogne " with 4-speed transmission and wide f.w.b. front axle and a streamlined body having a full-length undershield and divers aircraft-type inspection doors. He also has a 3-litre Sunbeam in mind. Another example of defunct-marque small car safely preserved is an Eric Longden with Alpha engine, which is in safe keeping, although possibly for disposal, at Sidcup. Last month we published a letter from Lt. Maule about his Anzani-engined Marendaz-Special with a footnote to the effect that another of these race cars had turned up in London—we were wrong, the car in question being a *six-cylinder* Marendaz saloon. In the article entitled " The Fair Sex Should Race—a Defence " mention was made of Sommer's Montlhèry lap record, which beat Mrs. Hawkes's time. The new record was made on May 7th, 1939, presumably with an Alfa-Romeo, to the tune of 148.44 m.p.h., or 0.65 m.p.h. faster than the Miller-Derby. Mrs. Hawkes and her husband are fearfully busy these days and nights, in this country, in the cause of Nazi-extermination, by the way, and we have a hunch that what fast transport they need is looked after by Lancia " Aprilia." On the subject of V-twin motor-bicycles, two Brough-Superiors were spotted on a recent run to the west, one a s.v. S.S. 80, the other an S.S. 100, and in Southampton there is a 1914-15 Indian with leather-covered sidecar in superb order, which could be bought for about £12. We hear that a 1904 Cadillac, belonging to a police surgeon, is carefully preserved in the same town, and a 1913 13-h.p. Isotta-Fraschini, last used in the early nineteen-twenties, is reported as safe from the breaker-folk. Charles Rayner has a rather rough 1924 aluminium-bodied " 30/98 " Vauxhall " Velox " and an Aston-Martin, the latter a rounded-tail 2-seater with cycle wings like the example tested by MOTOR SPORT in 1929, and one of the oldest Bertelli Aston-Martins we have encountered for quite a while. There is a roughish s.v. Amilcar 2-seater " Grand Sport " available very cheaply in London, and Cyril Peacock, who has one of these cars, relishes the idea of a 3-litre Bentley, but is likely to devote his interests to " 12/60 " Alvis for a while. We know of a sound 3-carburetter Alvis. " Silver Eagle " 2-seater which might possibly be sold to a good home, although its owner isn't particularly anxious to sell it. L. F. Lomas, who has been trying to trace the 1924 Straker-Squire Six he once owned, is acquiring a " Blue Label " 3-litre Bentley with a view to converting it to " Red Label " standards. Lieut. Inman-Hunter has recently bought Ellis's 4-seater s.v. Aston-Martin (No. 1966). The Irving-Special " Golden Arrow," with which Segrave took the " Land Speed Record " at 231.44 m.p.h. in 1929, is said to be at L.E.P. Transport, still in its packing-case just as it was shipped back from Daytona Beach.



Ken Hutchison, who, by the way, has some very sound ideas about how trials should be run after the war, is building up a special, linered-down Ford Ten for competition work, and has had his recently-acquired Allard-Special tailored by Abbotts of Farnham. Healey, of Napiers, has bought a Type 37 Bugatti from F. O. Harmer, having sold his Riley " Imp." He has for disposal a " Special Series " Riley Nine engine with two exhaust camshafts, reground crank and remetalled bearings. Which reminds us that someone has found a " Brooklands " Riley in Devon and bought it for £15, complete with Scintilla Vertex and twin S.U.s. F/O. Cowell has been using some of his leave petrol in a Meadows Frazer-Nash, and a modern-bodied 6½-litre Bentley, Lancia " Artena " saloon, Le Mans Singer, Vale Special, 3-litre Bentley, various M.G.s, H.R.G., a Le Mans Replica Aston-Martin, 1931 Alvis " 12/50 " coupé, and a Riley " Imp " were all seen within one week in use for official journeys. A side-valve Aston-Martin, with platform body, used for H.G. duties until the rear axle failed, is rumoured in a Hampshire village—we are hot on the scent. Those who are now forced to propel themselves from A to B on bicycles may be interested to learn that Jenkinson recently cycled from Farnborough to the Albert Hall for a Promenade Concert and back after a day's work, averaging 17.7 m.p.h. going up. A 1913 16-h.p. Metallurgique engine, with Laystall cast-iron pistons, reground crankshaft and all bearings remetalled, which was rebuilt in 1914. run-in, and then put in storage, is offered for £10. Unfortunately the rest of the car has been scrapped. The L.G. Special, based on an open 2-litre Lagonda, but now rated at 14 h.p., still covers appreciable mileages on official journeys. J. Granville-Grenfell now has his own engineering premises again, and toys with the idea of producing a utility car bearing a famous name, when his contribution towards winning the war is no longer needed.

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750 CLUB

The 750 Club held another of its gatherings at the " Chez August " on the first Sunday in July, and very successful it was, for these meetings, which, by the way, are open to all, are recognised as providing regular opportunity for enthusiasts to get together. On this occasion Birkett, Boddy and Jenkinson came up from Farnborough, and Houldsworth journeyed all the way from Harrogate by train. There was much talk of side-valve

Aston-Martins, as Douglas Tubbs, Lieut. Inman-Hunter, Grosscurth and Houldsworth found themselves seated together.

Then P/O. Mallock, who had trained from even farther afield than Houldsworth, was seen in earnest conversation with Ballamy about his new blown Austin Seven engine, Capon, Phil Hunter, Harmer, and Ashwood were there, the last-named now with A.B.C.'s, and Birkett, Bowles and Trowbridge had much to discuss in connection with Bugattis. The service was considerably improved and it was the opinion of all those present that these meetings should continue—they will do much to enliven the coming winter. At the time of writing it is undecided whether the next meeting will be held on August 1st or 8th, but a definite announcement will be made later, and we hope the attendance will break all records. Hon. sec.: S. H. Capon, 159, Upper Tulse Hill, London, S.W.2.

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THE FRAZER-NASH CAR CLUB

It seems likely that after the war the Frazer-Nash Car Club may be reformed, perhaps exclusively of the B.M.W. element. Certainly enthusiasm for the marque is as alive as ever, rather particularly in the West, and unofficial meetings of owners still occur. The person who suggested that the Chain-Gang's motto might well be based on that famous uttering of Levassor's when he surveyed his original crash-type gearbox is surely, in reality, a compliment, inasmuch as the Frazer-Nash transmission evades anything so crude as sliding cogs!

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THE N.Z. SPORTS AND RACING CAR CLUB

We have to acknowledge another bulletin of the New Zealand Sports and Racing Car Club. It is an excellent little effort in war-time, and proof-positive that enthusiasm out there is quite unquenchable.

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OBITUARY

We deeply regret to learn that E. R. M. Hardie, a well-known member of the Enthusiasts Car Club, died suddenly some while ago from heart failure. Hardie's stable numbered a Bentley, blown Balilla Fiat and G.P. Bugatti. We believe that he had realised an ambition of long standing just prior to his death, having acquired a Type 55 Bugatti, and that his sad demise occurred shortly after he had taken a brief trial run in this car; the happening is all the more unexpected as Hardie had shown no signs of heart trouble. To his relatives and his many friends in the Midlands we tender our condolences.

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BUGATTI OWNERS' CLUB

The annual general meeting of the Bugatti Owners' Club was held at the R.A.C. on July 12th. Brig.Gen. G. M. Giles, Eric Giles, K. W. Bear, Lemon-Burton, Pope, Birkett and Massey-Riddle were the only persons present. In the course of the evening's business Eric Giles announced that the club car—a Type 51 G.P. Bugatti, kindly given to the club by Ettore Bugatti some years ago, and believed to have been built originally for the King of Spain, who found it too rapid—had recently been sold for £750. He explained that it has always been something of an embarrassment, costing £20 every time it was used, which was considered too high a figure to charge ordinary members for the privilege of racing it. Hon. sec.: E. L. Giles, 2, Queen Street, Mayfair, W.1.



T. Doman, the man who used to put the horses in harness for the Chain Gang.

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OUR COVER PICTURE

This month's cover picture is of H. J. Aldington, driving a Meadows-engined Frazer-Nash in the Alpine Trial about ten years ago, this being the car which also finished 7th in the T.T. race. We believe the car also averaged over 85 m.p.h. in an M.C.C. One Hour High Speed Trial, and had a maximum speed of 92-98 m.p.h. It is now stored in Wales, its owner being a prisoner of war.

ENTHUSIASTS' TEA PARTY

On July 24th, Messrs. Capon and Rivers Fletcher arranged another Saturday afternoon gathering of enthusiasts at Regents Park Zoo. Although the attendance was small compared to that at Rembrandt gatherings, it was good enough to justify the efforts of the organisers; the right crowd and no crowding, in fact. Incidentally, fine weather in the Straits of Dover contributed not a little to the pleasures of the afternoon.

Nominally a car-less meeting, it was a pleasant surprise to see a quartet of sports cars appear. F/O. Cowell used some precious leave petrol to bring along an S.S. 100, and Mrs. Cowell, unwilling to be seen in such a "modern," was towed through London in an incredibly clean Meadows Frazer-Nash. In addition, Austin and Bentley owners timed their business journeyings to pass the Zoo at the appropriate time.

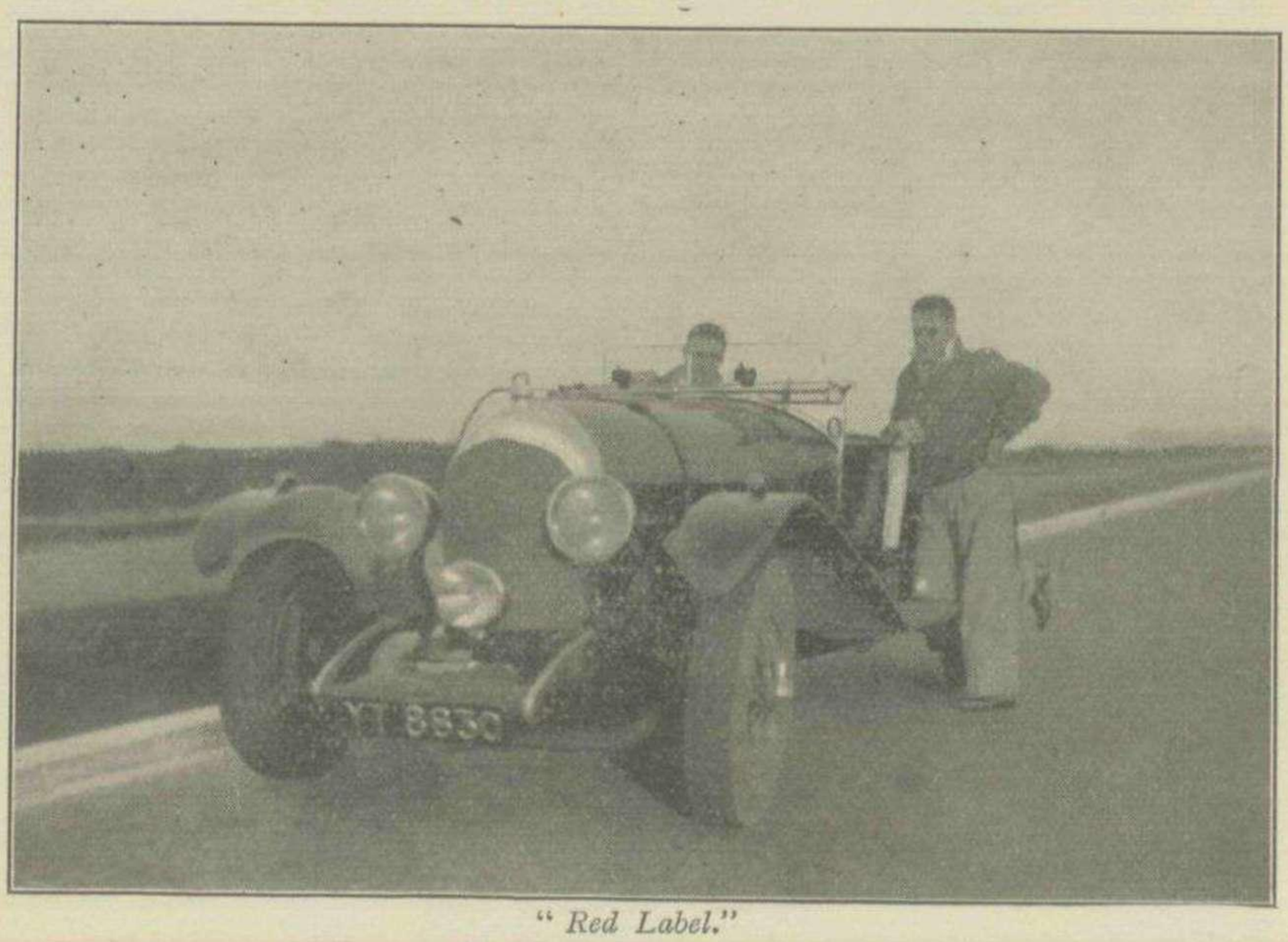
In the main it was a civilian gathering, although the three Services were represented by Marcus Chambers, Walter Norton and Mallock. Clutton appeared too, on leave from the R.A.F., but had reverted to "civvies" for the occasion.

Pomeroy and Tubbs of *The Motor* attended, as did Baker of *The Autocar*. Designers Roesch and Berthon were present, while John Cooper had travelled down from Leicester for the occasion and arrived with Austin Partridge.

Happy in the belief that someone else was reporting the affair for MOTOR SPORT, I made no attempt to list those present, but names which spring to mind are Bolster, Nixon, Gibson, Fall, Clarke, Ashworth, Merrilees, Birkett and C. Dunn.

No set programme existed for the meeting, beyond talk and the exchange of photographs, proceedings which lasted for a considerable number of hours. The party did not break up, in fact, until a Sunday School Treat crowded us out of the restaurant!

We understand that, apart from the monthly 750 Club lunches, the next motorists' party will be a Rembrandt lunch in September. J. L.



"Red Label."

Letters from Readers

Sir,

When, in my recent article "Cars I have Owned," I expressed my own views on the always-controversial subject of British versus Continental cars, I half expected that someone would quickly write a spirited reply in defence of British productions. It would, I suppose, be a bad thing if this was not so; but it was never my intention or wish to embark on any sort of lengthy discussion through the medium of your correspondence columns, as obviously the whole subject is one of personal opinion and experience. It is, moreover, a subject which at the present time offends some people since we are all fighting for Britain and its future and the majority of Continentals can (and probably will) go hang—and that means 100% of the Hun race. But, nationalities apart, as far as motor cars are concerned, I have very definite views which no one will alter, and I don't care two hoots if the majority disagree. Just as Mr. A. F. Brookes, as per his interesting letter on page 122 of the June issue of Motor Sport, and countless others no doubt, somehow or other see in British cars everything that is good and preferable to foreign productions, so, conversely, I cannot conceive how anyone can, apart from purely patriotic motives, buy British cars on their merit in preference to their Continental counterpart. But since Mr. Brookes has asked me specific questions, I am willing though rather diffident (Irish!) to reply: diffident because my reply will doubtless disappoint him and, quite probably, bring forth a crescendo of scorn and disapproval from other readers. More especially, since at the present moment British engineering in the shape of aircraft and aero engines is undisputably supreme in a crazy world of fierce and vital competition. Being in a mechanised cavalry regiment, I have been able to gain a pretty good idea of British engineering in so far as it concerns wheeled and tracked vehicles, engines and components; but in this instance will refrain from comparing them with their Continental, and particularly their American counterparts until after the war. I have, however, always maintained that Messrs. Rolls-Royce (and they alone) could produce sports and racing cars that would beat all comers, including Mercs. and Auto-Unions, if provided with the incentive and necessary funds.

Now, regarding Mr. Brookes's first question, viz.: "Do I think that the French, or any other Continental firm, have ever produced, or could ever produce a small, cheap, reliable sports car which could possibly compare with our own galaxy of suchlike cars—M.G., Singer, Riley, Morgan, Rapier, Alta, H.R.G., Austin, and many others, in any respect, particularly performance?" My answer is most emphatically "Yes, I do; and they have." I consider that the small Amilcar and Salmson and Brescia Bugatti, in the later "twenties," were vastly superior to anything we then produced—I would go so far as to say that even to-day I would sooner have a good tenth-hand example of any of the above, particularly Brescia or Type 40 Bugatti, than a new edition of any of the cars he names, even though the former be nearly 15 years old. Since about 1930, however, when the three French light, cheap sports cars mentioned above were admitted to be the tops not only in France, but also in this country, the French have produced very few small, cheap sports models, presumably because the demand in France for this type of car is insufficient. Even so, in immediate pre-war years, there were some excellent small high-performance Continental cars. In the middle "thirties" the Balilla Fiat sports 2-seater took a lot of beating; while more recently, the 1100 Fiat was even better, the sports edition as raced by Gordini was definitely streets ahead of all comers in its class. Remember the astonishing performance put up by the streamlined coupé? Perhaps the most outstanding foreigner is the Lancia "Aprilia." The *Mille Miglia edition* would do over 90 m.p.h. in saloon form which, together with its superb suspension, handling and running economy, places it far ahead of any of the so-called sports cars mentioned by Mr. Brookes. For reliability and long-wearing qualities, in my view, it is also on top. Only the H.R.G. and Alta would approach its performance (even the standard Aprilia), and then only in light 2-seater form accompanied by considerable discomfort, and more noise. The Type 55 B.M.W. is surely superior to these latter cars on *all* scores, let alone "in *any* respect"? Just as the Type 328 B.M.W. is vastly superior on all scores to our equivalent 2-litres, such as S.S. 100 and Aston-Martin, etc. The Le Mans 2-litre Peugeot was an over-90 m.p.h. low-priced car, again with independent suspension I believe. The Georges Irat would compare more than favourably with the other, cheaper marques mentioned and possessing better suspension and roadholding, possibly excepting the Morgan which, however, would lose points on speed. But, summing up, I would far rather have a standard Lancia "Aprilia"—even second or third-hand—than any of the cars Mr. Brookes mentions and back it to beat them all on a cross-country run, excluding the Alta. And if I wanted to indulge in that sort of motoring, then I would get a 15 years old Type 37 or 37A Bugatti, and "*really* go to town."

Regarding "the racing successes of M.G., E.R.A., and Alta," I freely admit that the two former makes have a most imposing list of successes to their credit, and are extremely good in their respective racing categories, particularly E.R.A., which marque and whose sponsors I have never ceased to admire. But, without in any way trying to derate their obvious merit, the E.R.A. did *not* come out on top as compared with the 10 years old Seaman Delage, or 1938 and 1939 1500 c.c. Mercedes and Alfas. It was, admittedly, far superior to the 1½-litre Bugatti and pre-1939 Maseratis; but then the Bugatti was a far older and heavier design which was, itself, unbeatable in its own heyday of the late "twenties" and early "thirties." I should be interested to learn of any success the Alta achieved abroad in competition with Continental 1½-litre racers? And, likewise, most of the M.G. successes were scored in this country where effective foreign competition was virtually nil. The Magnettes did well in the Mille Miglia several years ago; but, in spite of being specially prepared, driven and managed, I seem to remember that the leading M.G. was conclusively beaten by a very large margin by an 1100 c.c. Maserati. Count Lurani's successes with Maseratis in Italy are almost as numerous as M.G. successes in this country.

Mr. Brookes then goes on to say: "Salmson, Ratier and B.N.C. were poor *in comparison with their British counterparts* . . . and scored negligible successes as compared with M.G., Singer, Riley, etc." Once again, I am afraid I cannot even begin to agree, as facts dictate the opposite. Singer's successes have, almost entirely, been "local." M.G. and Riley have scored brilliant successes in the 500, T.T., Le Mans, and elsewhere. But what effective foreign opposition has there been? Virtually none; it has been a case of success of one of these marques over the other, and not British success over Continental. The Gordini Fiat has scored every time it has met these marques in its class. Ratier and B.N.C. are, in my view, very poor examples of French sports cars and, apart from moderate successes in the Bol d'Or, have nothing to recommend them. But Salmsons were most excellent little cars in their day; likewise the Amilcar. In the late "twenties," the blown 6-cylinder 1100 Amilcar swept all before it and probably scored more successes (certainly not "negligible") than the Magnettes of a decade later. And even after 10 years, the Amilcar is more than a match for the M.G.

I am sorry, Mr. Brookes, but even "in my heart," I do *not* think that Britain is incomparably supreme in the production of small sports cars, even though for the last 10 years or so she has catered for this class of car (and, admittedly, they are admirable as far as they go) far more than the foreigners. Nor do I think she is supreme in *any* class of car (except Rolls-Royce), as I consider the Citroen, Renault and Fiat score heavily on every count, save interior furnishings, over their British mass-production, cheap family counterparts. Certainly in wearing qualities, handling, suspension and performance. In the middle priced class, I vastly

prefer Lancia, B.M.W., Fiat, Hotchkiss to the Jaguar, larger M.G., Aston-Martin, Triumph brethren—again due to superior handling, comfort, suspension, wearing qualities and performance. I have previously expressed my views regarding the larger and more expensive sports cars, and I would sooner have an American (much as I dislike them) if I wanted a large, low-priced family saloon of any quality below, say, £700-800, in preference to the less comfortable and inferior performing British car of this type. In this class of car, I regret to say that a similar view is widely held throughout the Dominions and Colonies, and "neutral" foreign countries, to the detriment of our export trade. Our rotten system of taxation by h.p. has very little to do with it.

So much for all that. I would now like to say how interesting I found the article by Cecil Clutton, in the same issue, on the Type 51 Bugatti "Royale." I think I can solve the "mystery" of the engine capacity of this impressive automobile. I imagine Clutton refers to the article that appeared in *The Autocar* around 1926-27, in continuation of an article describing the then-new Type 43 2-3 Bugatti? Therein it was stated that the capacity of the "Royale" was 14,726 c.c. This I believe to be incorrect, though it may well have been the original intention to give it a stroke of 150 mm. Details of the Type 51 in my Bugatti catalogue, however, describe it as having a bore and stroke of 125 mm. × 130 mm., capacity of 12,760 c.c. R.A.C. rating 77.4 h.p. and 200 b.h.p., as opposed to 300 as mentioned in *The Autocar* article. The wheelbase, also, is 14 ft. 2 in. and not 15 ft. 4 in.; chassis weight 32 cwt. (price £5,250 in England in 1933!) and tyres of 36 × 6.75. Capt. C. W. Foster purchased a chassis several years ago and had a large but well-proportioned 7-seater enclosed drive limousine body fitted by Park Ward, the complete car costing over £6,000. It measured nearly 7 ft. from radiator cap to windscreen. The ceremony of collecting this monumental car from the coachbuilders was, I believe, impressive, Jean Bugatti coming over specially from Molsheim to start the engine and initiate the proud owner in the joys of this most costly and unique form of luxurymotoring. I often used to see this car in the West End of London, and at the Bugatti depot, 1, Brixton Road, when newer type bearings, con. rods and pistons were fitted free of any charge, purely as a modification. An unique, and I should imagine, necessary feature about the purchase of a "Royale" was that it was guaranteed and repaired free of charge, anywhere in the world for as long as the original owner possessed the car. The last I heard of it was just before the war, when Capt. Foster tried to sell it and could not get an offer better than £90!

Although Bugatti produced only very few completed cars of this type, the engines were being produced in fairly large numbers when I visited the factory in 1936, to propel the Bugatti railcars as used on the P.L.M. and Alsace and Lorraine railways. Some details of the performance of these luxury railcars may be of interest. The single coach models had two Type 51 engines, and the trailer models (two or more coaches) had four similar engines. They were introduced in 1933 (shortly before the last "Royale" was made) and in that year established a rail record of 173 k.p.h.; and a stopping record of from 150 k.p.h. to zero in 600 metres; and an average of 170 k.p.h. round a 750 metre radius curve. They reduced the previous fastest schedule for the 374 km. from Paris to Cherbourg by more than an hour. Up to mid-1937 they had exceeded 1,000,000 km. with no accidents, and established a new world record of 123 m.p.h. over 10 km. They ran a normal schedule for the 315 miles from Paris to Strasbourg in 3½ hours, an average speed of 90 m.p.h.! It was on this route that Jean Bugatti once told me he piloted a railcar in a race with a friend of his who was driving a supercharged 4.9 Bugatti. The railcar won it, but not by a very large margin, so presumably the 4.9's average speed must have been pretty meteoric! I reckon that most members of the Forces now serving in this country many miles from home would bless the name Bugatti if such transportation were now available here, especially when going on leave. 315 miles is a full day's most uncomfortable journey on our existing railway systems.

I am, Yours etc.,
C. W. P. HAMPTON.

Bolney, Sussex.

[While we refrain from passing comments on what we believe to be Mr. Hampton's sincere personal views expressed only after full consideration of the subject, we must recall M.G.'s grand Mille Miglia showing with the Magnettes in 1933, when George Eyston and Count Lurani won the 1,100 c.c. class at 56.89 m.p.h., with Earl Howe and Hamilton second, beating two Maseratis and four Fiats, and winning the Team Prize on the first appearance of these cars. In that race Birkin's Magnette averaged 87 m.p.h. for 129 miles in breaking up the Maserati opposition. So the British cars were not vanquished by a Maserati as Hampton suggests. There are also Major Gardner's 200 m.p.h. M.G. record to consider and Tazio Nuvolari's remarkable lap speeds in the 1933 T.T. with the M.G. Magnette.—ED.]

* * *

Sir,

I am writing to seek your assistance in the identification of a car which I have just purchased from a man whom I am afraid was a vandal. When I tell you that this man was about to sell the car for the alloy it is largely composed of, I am sure you will endorse my description of him. However, the car is an Alvis "12/50" and it has many features which defeat any attempt to classify it with any degree of accuracy. I have scanned all my copies of MOTOR SPORT and taken careful note of all points which have been mentioned about Alvises. As this has apparently confused the issue more than ever it seems that I must have resort to your columns to obtain a solution. Possibly Mr. Powys-Lybbe, Mr. Cooper or Mr. May can solve the problem?

The engine number is 3699/68/L171. The 68, I take it, refers to the bore, while L171 is the type number, apparently some relation of L201. The chassis number is SC or G 12/50/8621. Now I can find no mention of either L171 or SC or G in your list of Alvis types published some little time ago.

The car was originally fitted with a duck-back 2-seater body of polished aluminium. Wire wheels of Alvis bolt-on type are fitted and the dashboard was covered with some type of heavy celluloid. Unfortunately, the body had been torn to pieces by the previous owner, who had attempted to build a D.H.C. of sorts. However, he got tired of that and abandoned the car, leaving it for four to six years in a paddock.

Now here are the points of the car which puzzle everybody more than somewhat:—

(i) The wheelbase is 9 ft. and not 9 ft. 4 in., which is the only figure that I can find published.

(ii) The tyre size is 5.00 in. × 23 in., whereas the largest tyre size published is 21 in. The "dastardly form of split-rim" is fitted.

(iii) The clutch and gearbox are separate but the clutch is a cone type with a clutch body of aluminium. The whole clutch and flywheel assembly can be picked up very easily in one hand. No clutch stop is fitted and none appears to be necessary. The only mention of a cone clutch in your columns appeared in the description of a car belonging to Fenn-Wiggin and Swain, and incidentally, my car conforms to that description in numerous aspects.

(iv) The port size, both inlet and exhaust (except centre branch) is not 30 mm. (standard) or 40 mm. (big port), but 35 mm. Here again I can find no mention of this size.

(v) The exhaust system is of the outside type with three exhaust ports in the block. The centre take off surrounds the inlet manifold, forming a hot spot.

(vi) The inlet manifold is of cast brass fitted with a Solex up-draught carburetter with barrel throttle.

(vii) The pistons are of alloy with a solid skirt and at t.d.c. protrude above the top surface of the block about $\frac{3}{16}$ in.

(viii) The combustion chamber depth is not 16 mm. or 14 mm., which according to Mr. Cooper were the usual dimensions, but the unholy one of 10 mm. This in conjunction with the high top pistons must give something a little unusual in the way of C.R. Fortunately, our "Pool" petrol now carries an octane rating of 80! (That should make you writhe!)

(ix) The connecting rods are polished H section steel with a thickness of $\frac{1}{4}$ in. They are slotted at the top and carry the usual high tensile steel bolt and nut.

(x) The generator is mounted on the offside and is driven by belt from an extension of the magneto drive. The magneto is a B.T.H. polar inductor.

(xi) The timing wheels are steel-bronze-steel.

(xii) The starting handle is a fixture.

(xiii) The crankshaft is three-bearing, counter-balanced, machined all over and stamped "Ambrosia."

(xiv) The camshaft is marked E.N.V., as is the contents of the gearbox and the differential. By the way, the back axle ratio is 4.55 to 1 (41 × 9).

(xv) The valve timing does not appear to be standard, but as I have very carefully hidden the figures from myself I regret I cannot quote, but it appears to be

phenomenal and the exhaust note is correspondingly active. The amount of lift on the cams is positively mountainous.

Wishful thinking would indicate that this car may be something out of the ordinary, but as I cannot believe that I would be fortunate enough to strike lucky I quite expect that it will turn out to be a 1924 model or something of the sort. Still, there is the evidence—what do the expert Alvisti make of it ?

When I took delivery of the car some two months or so ago I dismantled it completely, and set out to make it as new. In spite of its age the only work found necessary was to have the big-ends remetalled with Hoyt's No. 11 (the other metal had cracked), the rocker fingers stellited, the magneto checked over, and two new bearings in the front wheels, which is not bad. Apparently a new block had been fitted as the bore was 68 mm. and no wear could be found with a micrometer. The valves are original and the seats have never been cut. Everything else about the whole chassis appears to be perfect—at any rate I can't find anything wrong.

I wonder if it is still possible to obtain tubular connecting rods ? After all the remarks I have read re ¼ in. B.S.F. pinch bolts I am positively afraid to use high r.p.m. at all. If you could persuade any of the Alvis experts to drop me a note I should be truly grateful. Tuning and general advice would be most welcome. MOTOR SPORT still turns up punctually.

I am, Yours etc.,
A. E. ANSELL.

12, Victoria Street,
Carterton, New Zealand.

[This is certainly a problem and one we will leave to the experts. The cone-clutch is found on early " 12/40 " and " 12/80 " cars, and the wheelbase of some early chassis was about 8 ft. 6 in., both these features applying to my own " 12/50 " ducks-back 2-seater, which was originally a " 12/40 " s.v. car—a 9 ft. wheelbase is rare. The Ambrosia crankshaft smacks of a 200-mile race engine ; the belt-drive dynamo and fixed starting handle were standard on early " 12/50s."—ED.]

* * *

Sir,

Whilst in the interests of the sport one is willing to part with information gained in the hard school of experience, it is regrettable to note that seekers after this knowledge seem to fall into two classes. The first would appear to think that their informant, having gained this knowledge, possesses such wealth as to be insulted by the receipt of the humble postage stamps to cover the return of the information required. The second, that he himself is of such importance that the honour of being able to supply the requested details is such recompense to the sender as to over-balance his out-of-pocket expenses.

This outburst is occasioned by the fact that, over the past three years, less than 5% of the queries that I have received have been accompanied by the courteous S.A.E.

I am, Yours, etc.,
HAROLD BIGGS.

Enfield.

[We should never have been brave enough to say this ourselves. But will wayward readers please read, learn and inwardly digest.—ED.]

* * *

Sir,

As a reader of your journal of many years' standing, may I first of all offer my congratulations to yourself and your staff on continuing to publish regularly and still maintain the very high standard of MOTOR SPORT.

I thought that perhaps readers would be interested to learn of what I believe to be a unique collection of button-hole badges of well-known makes of cars, of which I have over 120, comprising British and foreign makes, including motor-cycles.

I should very much like to obtain a Bentley button-hole badge and a B.R.D.C. coat badge, and if any reader can oblige I am willing to pay a reasonable price for them. I require these urgently as my collection is very near completion.

Keep up publication at all costs as MOTOR SPORT is eagerly awaited each month.

I am, Yours etc.,
F. BOARDMAN.

59, Milton Street,
Fleetwood, Lancashire.

[Please write direct if help is forthcoming. We recall a Bentley winged-B tie-pin, but was there a button-hole badge? That 120 button-hole badges have been collected is surely an achievement, as such are far rarer than radiator badges.—ED.]

* * *

Sir,

Judging from several of the letters that have been written by my fellow-readers to your most excellent journal, I imagine that few people in this country are familiar with the recent trend of American engine design. Don't get me wrong ; I am a vintage enthusiast first and foremost, yet in my work I have to deal with a lot of American vehicles and the design of some of them shows great promise from a sporting point of view.

Look at this specification :—6-cylinder o.h.v. engine, bore 3 23/32 in., stroke 3 13/16 in., compression ratio 6.15 to 1. Hemispherical cylinder heads with inclined push rod operated valves. Die-cast pistons with domed semi-deflector heads to give a good combustion chamber shape. Short stiff con. rods with very large big-end bearings and fully floating pressure lubricated gudgeon pins.

Camshaft machined all over, pressure lubricated bearings, drive by large fibre helical spur gear, also pressure lubricated. Inserted valve seats, and exhaust valve with a head of different metal from the stem, the joint being fused just below the valve head. Valve timing : Inlet opens 2.8° before t.d.c. ; closes 68° after b.d.c. Exhaust opens 78° before b.d.c. ; closes 45° after t.d.c. 72° of overlap.

Crankshaft a beautifully clean forging carried on very large main bearings. The clutch is a cunning device without springs or withdrawal arms, both of these being replaced by a heavy diaphragm which does both jobs.

When one considers that this is a *trade* engine and that the finish on it is really very good, and that the cooling system and porting are both excellent, it would seem to be an engine possessing great possibilities as a post-war power plant.

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 BUGATTIS

For Spares or Complete Cars
2 and 2.3 Litre
go to
F. O. CLEVELAND HARMER,
83 Old Oak Road, Acton, W.3

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.

LINCOLN V-12 engine and gearbox complete. Austin Seven engine. Bowler, Herons Lodge, Heronsgate, Rickmansworth, Herts.

OCTAGON shaped switch panel for J.2 M.G., or complete dashboard. J. Massey, 178, Long Lane, Hillingdon, Uxbridge.

LAGONDA " Rapier," complete, chassis or parts for same. R. P. O. Macey, St. Lukes, Lowestoft.

RILEY NINE, 1931-33 Gamecock sports tourer or March Special. Reasonable condition, good price paid. 3, Pollard Lane, Bramley, Leeds, Yorks.

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

After the war a supercharged version is going into a four-wheel drive trials job of my own design, and we shall see what happens.

I am, Yours etc.,
K. H. MILES, S/SGT.

Home Forces.

* * *

Sir,

With reference to the paragraph headed "Forgotten Episodes" in "Rumblings" in the June issue, I can perhaps supply you with a little additional information regarding "Eddie" Rickenbacker. He drove for Duesenberg in 1914, finishing tenth at Indianapolis and first in the 300-mile Sioux City race, and for Maxwell during 1915 and 1916.

I attach a list of his successes. From this you will see that the statement in *Skyways* that he never won a major race is nonsense. It is true, however, that he did not win any of the three big races of the year, *i.e.*, the Vanderbilt Cup, the American Grand Prize (both road races), or the 500-mile race at Indianapolis.

Regarding his connection with Sunbeams. In an interview on the 14th February, 1913, on his return to the U.S.A. from England, he stated that two 300-mm., *i.e.*, 4.9-litre Sunbeam racing cars, equipped with aviation engines and aluminium bodies, would run in America during 1913 if war was not declared. If war was declared they would remain in England. He further stated that speeds of 119 m.p.h. had been obtained at Brooklands during tests.

When war was declared Rickenbacker formed an air squadron from amongst the drivers and mechanics and offered his own and their services to the U.S. Government.

If it is of interest to you, I can give you particulars of the records of the two 6-cylinder 294 cu. in. (4.8-litre) Sunbeams raced during the 1916 season by Christaens and the American driver Galvin. I can also give you details of the racing record of De Palma's 1914 Grand Prix Mercédès during the three years that he raced it in the U.S.A.

1914, Duesenberg.

1st, 300-mile race Sioux City, 2-mile dirt track, at 78.6 m.p.h., won $10,000. Also ran in the following events:—500-mile race, Indianapolis; Chicago Automobile Club road race, Elgin, Ill.; Elgin National Trophy road race, Elgin, Ill.; Corona road race, Corona, Cal.; Beach races, Galveston, Texas. The beach races were short events, the longest being 50 miles, and I think he won one of these. Including his tenth place at Indianapolis, his "winnings," apart from appearance money, salary, bonuses, etc., would have been in the neighbourhood of $13,000.

1915, Maxwell.

3rd, 500-mile race, Maywood 2-mile board speedway, Chicago, won $5,000; 1st, 300-mile race, Sioux City 2-mile dirt track, at 74.7 m.p.h., won $7,000; 1st, 300-mile race, Omaha 1¼-mile board speedway, at 91.74 m.p.h., won $6,000; 1st, 100-mile race, Narragansett 1-mile asphalt track, at 67.11 m.p.h., won $4,000; 3rd, 100-mile Harkness Trophy race, 2-mile Sheepshead Bay board speedway, Long Island, won $500; Total $22,500.

Also ran in the following events:—Point Lana road race, San Diego, Cal. (drove a Peugeot); Grand Prize of America, San Francisco; Vanderbilt Cup, San Francisco; Grand Prix of California (road race); 100-mile dirt track race, Columbus, Ohio; 500-mile race, Indianapolis; Astor Cup race, Sheepshead Bay speedway. At the end of the season he had won $24,000, the $1,500 extra, no doubt, in consolation prizes. This, of course, excludes appearance money, salary, bonuses, etc.

Only three other drivers won more, *i.e.*, Rista, G. Anderson, A. E. Cooper. Rista won $37,750, but strangely enough, Cooper was the champion driver.

1916, Maxwell.

1st, Metropolitan Trophy race, Sheepshead Bay speedway, at 96.23 m.p.h., won $6,000; 3rd, 150-mile race, Des Moines 1-mile board speedway, won $750; 1st, Montamarathon Trophy race, Tacoma 2-mile board speedway, at 89.3 m.p.h., won $4,000; 2nd, Astor Cup race, Sheepshead Bay speedway, won $5,000; 3rd, 250-mile Grand American race, Marywood speedway, Chicago, won $1,500; *1st, 150-mile race, Ascot dirt track, Los Angeles, at 62 m.p.h., won $3,000; Total $20,250.

* He drove a Duesenberg in this race.

Also ran in the following events:—500-mile race, Indianapolis, 6th; 300-mile race, Maywood speedway, Chicago (drove a Peugeot); 150-mile race, Fort Snelling 2-mile concrete speedway, Minneapolis; 150-mile race, Omaha speedway; 300-mile race, Cincinnati 2-mile board speedway, Sharon, Ohio; 100-mile race Indianapolis; Harkness Gold Trophy race, Sheepshead Bay speedway; Vanderbilt Cup, Santa Monica, Cal.; Grand Prize of America, Santa Monica, Cal.

At the end of the season he was the third highest money winner, having collected $20,250, as opposed to Rista, the champion, with $44,400, and J. Aitkin, $30,206. Incidentally, both Rista and Aitkin drove 1914 4½-litre G.P. Peugeots. Between them they won every big race.

With best wishes to MOTOR SPORT.

I am, Yours etc.,
T. A. S. O. MATHIESON.

East Grinstead.

[Further historical notes would be most welcome.—ED.]

* * *

Sir,

Thank Heaven that, in these troublous times, we can still preserve our sense of humour, and now along comes Mr. B. FitzPatrick who, although he is getting upset because large numbers of people still consider the Bentley to be the world's finest sports car, provides a few moments of unconscious delight for we vintage wallahs.

I personally am one of those happy people who find everything that they have been looking for in a Bentley. (Mine is a McKenzie-tuned unblown 4½.) My car will give me all I want: a holding speed of 95 m.p.h., absolute reliability, safety at speed, and sheer economy of running. There is a Bentley for every type of sports car enthusiast. First, the 3-litre "Blue Label," with the single Smith carburetter, that will make a burble-burble noise, and do 70 m.p.h. Secondly, the 3-litre "Red Label" short chassis with the 2 S.U. carburetter, that will do its most happy 85 m.p.h. Thirdly is the unblown 4½-litre "Black Label" that was obviously built to prepare would-be owners for the blown 4½-litre; this a most potent form of 100 m.p.h. and over motoring. Then, of course, for the more wealthy enthusiast come the 6½-litre, the Speed Six and the 8-litre.

Incidentally, Mr. FitzPatrick, where will your 328 B.M.W. and Fiat "1,100" be in, say, 15 years? No, sir, you will never convince me that your Continental mechanised pressed beef tins can give one joy of motoring as can be attained behind the wheel of a good Bentley, "30/98," or 3-litre Sunbeam, etc. Furthermore, when I go for a long trip on my Bentley I know that I shall get back, and although I cannot corner or throw the car around with the ease that Mr. FitzPatrick can his Continental job, at least I do not have to renew my front suspension every 5-6,000 miles! It would, of course, be unfair on my part to make the very obvious remark that it is impossible to compare the Continental sports car with the purely vintage sports car of which the Bentley is representative, for the former is a spot-welded contraption built to give performance for a short time, and the latter is a highly efficient piece of hand-assembled machinery built for performance plus wear.

I would, by the way, beg leave to remind Mr. FitzPatrick that *The Motor*, in passing the opinion that sports cars "as such" will die out when the war is over, is quite out of touch with the question of present-day supply and demand. I myself have a sports and racing car emporium, and I would say that 90% of my customers are members of the various Services, who are acquiring their cars from all sources to lay up for the present. And afterwards all these cars will be on the road.

In conclusion, when Mr. FitzPatrick, in advocating the closed type of sports car, mentions the Alfas and B.M.W.s at Le Mans, he is surely not suggesting that we use that type of body on our English roads?

I am, Yours, etc.,
IAN METCALFE.

Shepperton, Middlesex.

OUT OF PRINT

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

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

RARE BIRD

MENTION of the almost legendary Sequeville-Hoyau, even amongst the knowledgable, usually arouses interest, but produces no real evidence as to what this early small car was like. Beyond the fact that it was built regardless of expense, as a sort of light car version of the Rolls-Royce or Hispano-Suiza, and that very few examples could ever have reached this country, no one has contributed anything concrete about this elusive car. We recall a rather pathetic letter which appeared in a weekly motor paper not long after the termination of the last war, in which someone who had paid a deposit on one of these cars plaintively asked whether anyone had actually taken delivery of one and, if so, please what were they like. We are now able to say something of this car, and this is possible, curiously, by reason of finding just such a car, partially dismantled but in very fine condition, occupying a garage in the very country town where this paper is now edited. The car in question is a sports 2-seater with helmet-type cycle wings and aluminium "aerofoil-section" running-boards or steps, and 4-piece V screen with glass side extensions and two-colour paintwork typical of the early twenties. The Sequeville-Hoyau, according to Doyle's, was made by S.A. des Ans. Ets. Sequeville-Hoyau, Avenue Laurent-Cely, Genevilliers, Seine, from 1915 to 1924. The example we inspected is probably of about 1922 vintage, being rather like that illustrated in a Paris Salon report in *The Autocar* of October, 1921. The engine bears a plate on the offside bearer saying it is No. 14, type AS.2. Another plate on the dash gives the chassis number as 12, the h.p. as 10, and the chassis weight as 550 k.g. The engine is a 4-cylinder side valve, with a massive alloy crankcase. The valves are on the near side and the carburetter appears to bolt on to this side of the block and feed through an internal passage. The block is an insignificant iron affair with screw-in valve caps, the head being non-detachable. The connecting rods are tubular, beautifully finished, the crankshaft appears to run in three bearings and to have circular, fully-balanced webs, and the steel pistons are of slipper type each with three rings. The engine and gearbox are built in one unit, but the small flywheel is exposed, and appears to house a multi-plate clutch. This unit is 3-point mounted, on a massive inverted-U extension of the crankcase at the front and behind the compact gearbox at the rear. The pedals are very small and neat, and there is a delightfully stubby little right-hand gear-lever, working, surprisingly, in a ball-gate. Outside it is the handbrake, working very smoothly on its concealed ratchet, from which it is freed by depressing a wooden knob. Prolonged study reveals some very high-class workmanship. The fascia is of highly polished mahogany, which matches the decking of the boat-like body. The imitation Rolls radiator bears the name in open-work brass lettering, and a badge comprising a narrow shield encompassing the letters "S.H." This same motif is found in the footboard ramp, which is held in place by numerous little hand-screws. The lampswitch is in the steering wheel centre, and the instruments include a 100 k.p.h. speedometer, thermometer and clock. The steering box is a beautiful piece of machining. The magneto is on the near side of the engine, and the dynamo appears to be driven transversely from the timing gears on the off side at the front, while the starter protrudes somewhat into the driving compartment. The fan is belt-driven and very sturdily mounted, and there is a convenient sump-drain control at the rear of the crankcase, on the off side. Our examination of the car had necessarily to be cursory, but we noticed a spring-off radiator cap with elaborate wing-motif mascot, rear wheel brakes, 710×90 tyres on wire wheels, long half-elliptic springs all round with hydraulic dampers, and a rear fuel tank with inset gauge reading to 40 litres. Behind the tank were trafficators reminiscent of a Talbot, probably a later addition. The car's electrics were Paris-Rhone. Rough measurement of the bore gave a figure of approximately 61 mm., but we believe that the correct size is 60×110 mm. The registration number is a London one and we believe the car was bought from a doctor by the present owner in 1926. That is all we know of the Sequeville-Hoyau, except that it might be worth somebody's while to assemble and play with it.

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

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